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Important Definitions

1. Adequate Distance: G.R.1.02 (2) – It means the distance sufficient to ensure safety.

a) Block Over-lap – The distance sufficient to ensure safety for granting line clear. It shall be not less than 400 meters in TALQ signalling system and not less than 180 meters in MAUQ / MACLS signalling system.

b) Signal Over-lap – The distance sufficient to ensure safety for direct reception of a train. It shall be not less than 180mt TALQ signalling system and not less than 120 meters in MAS signalling system.

2. Authority to Proceed: It means the authority given to the Loco Pilot of a train, under the system of working, to enter the block section with his train.

a) **Double Line –** Taking 'Off' the last stop signal.

b) **Single Line –**

i. Token extracted from the electrical block instrument or

ii. Taking 'Off' the last stop signal in case of token-less block instrument/track circuit/axle counter or

iii. PLCT where there is no block instrument.(T/C 1425, T/D 1425)

3. Station: It means any place on a line of Railway at which traffic is dealt with, or at which an authority to proceed is given under the system of working.

SR 1.02 (51) – 1 Stations, Definition of – Whenever the word Station is used in the Subsidiary Rules, it must be understood to mean either a block station or a block cabin.

4. Station Limit: It means the portion of a railway which is under the control of a station master and is situated between the outer-most signals of the station (or) as may be specified by the special instructions. It will be separate for each direction on a double line.

5. Block Section: It means that portion of the running line between two block stations on to which no running train may enter until line clear has been received from the block station at the other end of the block section.

6. Station Section: It means that section of station limits only at 'B' class station as under:

<table>
<tr><th>Line</th><th>TALQ</th><th>MAUQ / MACLS</th></tr>
<tr><td rowspan="2">Double line</td><td rowspan="2">Between Home to Last Stop Signal In either direction.</td><td>Between outermost facing points and the last stop signal in either direction OR</td></tr>
<tr><td>Between Block Section Limit Board, where provided, and Last stop signal in either direction</td></tr>
<tr><td rowspan="3">Single line</td><td>Between Shunting Limit Boards or Advance Starters (if any) OR</td><td>Between Shunting Limit Boards or Advance Starters (if any) OR</td></tr>
<tr><td>Between Home Signals if there are no SLB or Advance Starters OR</td><td rowspan="2">Between SLBs or Advance Starters if there are no SLB or Ad. Starter between Outermost Facing Points.</td></tr>
<tr><td>Between Outermost Facing Points, if there are no Home Signals or SLBs or Advance Starters</td></tr>
</table>

7. Block Back: It means to dispatch a message from a block station intimating to the block station immediately in

rear on a double line, or to the next block station on either side on a single line, that the block section is obstructed or is to be obstructed.

8. Block Forward: It means to dispatch a message from a block station on a double line intimating to the block station immediately in advance the fact that the block section in advance is obstructed or is to be obstructed.

9. Loco Pilot: Loco Pilot means the engine Loco Pilot or any other competent Railway servant for the time being in-charge of driving a train.

10. Guard: Guard means the Railway servant in charge of a train and includes an Assistant Guard or any other Railway servant who may for the time being be performing the duties of a Guard.

11. Station Master: Station Master means the person on duty who is for the time being responsible for the working of the traffic within the station limits, and includes any person who is for the time being in independent charge of the working of any signals and responsible for the working of trains under the system of working in force.

12. Interlocking: It means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so interconnected by mechanical locking or electrical locking or both that their operation must take place in a proper sequence to ensure safety.

13. Isolation: It means an arrangement, secured by setting of points or other approved means, to protect the line so isolated from the danger of obstruction from other connected line or lines.

14. Intermediate Block Post: It means a Class C station on a double line, remotely controlled from the block station in rear.

15. Intermediate Block Signalling: It means an arrangement of signalling on double line in which a long block section is split into two portions each constituting a

separate block section by providing an Intermediate Block Post.

Classification of Stations: Stations are divided into block stations and non-block stations for the purpose of the rules.

1. **Block stations** are those stations at which the Loco Pilot must obtain an Authority to proceed under the system of working to enter the block section with his train. There are three classes of stations under the Absolute Block System.

'A'Class station is a station where line clear may not be given for a train unless line on which it is intended to receive the train is clear for at least 400 meters beyond the home signal or up to the starter.

'B'Class station is a station where line clear may be given for a train before the line has been cleared for the reception of the train within the station section.

'C'Class station is a block hut, where line clear may not be given for a train, unless the whole of the last preceding train has passed complete at least 400 meters beyond the home signal, and is continuing its journey. This will also include an intermediate block post.

2. **Non-block stations or 'D'Class** stations are stopping places which are situated between two consecutive block stations, and do not form the boundary of any block section.

3. **Special class station** is a station which cannot be worked under 'A', 'B', 'C' and 'D' Class conditions. The SWR of such station must have the approval of CRS.

MINIMUM EQUIPMENT OF SIGNALS (G.R 3.27, 3.29 and 3.33)

Class	**TALQ Single line**	**TALQ Double line**	**MAS Single line**	**MAS Double line**
A	-	Warner, Home, starter	-	-
B	Outer, Home	Outer, Home, Starter	Distant, Home, Starter	Distant, Home, Starter.
C	-	Warner, Home	-	Distant, Home

As per GR 3.33 one stop signal only in each direction may be provided at each station on any section where traffic is light and speed slow and the trains are worked as per approved special instructions.

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Signals

Types of Signals: GR 3.02

1. Fixed Signals
2. Hand Signals / LED based HS lamp(warning signal)
3. Detonating Signals.

Minimum Sighting Distance: SR 3.26 – 3

It means the minimum specified distance from which a signal shall be visible to the Loco Pilot, which is as under –

Sr. No.	Description of the signal	Distance in metres
01	Permissive Signal	400
02	Outer Signal – where speed is 100 or more than 100 km/h	1200
03	Outer Signal – where speed is less than 100 km/h	800
04	Loop line starter signal (TALQ)	200
05	Rest all stop signals	From previous signal

Note: Where adequate visibility of stop signals can not be maintained, Repeater or Co-acting signal shall be provided. In the absence of the above, suitable speed restriction should be imposed.

Subsidiary Signals: These are used for the convenience of working of trains in addition to the main signals:

1. Calling-on Signal: GR 3.13, 3.45, 3.79

a. It is a subsidiary signal
b. It is fixed below a stop signal governing the approach of a train.
c. It provided below any other stop signal except the Last Stop Signal.
d. As per GR 3.45 a calling-on signal shall not be taken 'Off' until the train has been brought to a stand at the stop signal below which the calling-on signal is provided.
e. Calling-on signal is taken 'Off' under the following circumstances:
    i. Main signal is defective;
    ii. Conditions for taking 'Off' the main signal are not fulfilled;
    iii. Reception of train on an obstructed line;
    iv. Track circuit / Axle counter failed.

2. Shunt Signal: GR 3.14

a. It is a subsidiary signal.
b. It is used to control the shunting movements.
c. It may be placed on a post by itself or below a stop signal other than the first stop signal.
d. When placed below a stop signal, it shows no light in the ON position.
e. When taken 'Off', it authorizes the Loco Pilot to draw ahead with caution for shunting purposes.

3. Co-acting Signal: GR 3.15

a. Co-acting signals are duplicate signals it is placed below main signal.
b. When the main signal is not visible continuously from the sighting distance due to any obstruction.

c. Co-acting signals shall be fitted at such height that either the main arm or light or the co-acting arm or light is always visible.
d. Both are operated by same lever.

4. Repeating Signal: GR 3.16

a. When a signal not visible from its minimum sighting distance due to curvature or any other reason.
b. A signal placed in rear of a fixed signal for the purpose of repeating to the Loco Pilot of an approaching train the aspect of the fixed signal in advance is called a Repeating signal.
c. A Repeating signal shall be provided with an 'R' marker and shall be of Banner type, or a square ended semaphore arm, or a colour light signal.(shows illuminated 'R')

5. Gate Stop Signal: GR 3.34, SR 3.34 – 1

a. Gate stop signals are those signals which are placed at an adequate distance from the level crossing gate.
b. Generally, the gate signals of traffic gate are interlocked with the stop signals of the station.
c. The gate stop signal protects the road traffic in 'OFF' condition and protects the rail traffic in ON condition.
d. Gate signals are of two type:
    i. G marker type – G is painted in black colour on yellow circular disc. It can be passed in ON position after waiting for 1" by day and 2" by night.
    ii. Without G marker type – It is provided where there is bridge between Gate signal and Gate or when controlling the entry into Rail-cum-road-bridge. In ON position, the train is to be piloted past the signal.

Gate Stop Signal in Automatic Section: GR 3.17

a. Automatic Gate Stop Signal: It is provided with letter 'G' in black on yellow circular disc and white illuminated letter 'A' against a black ground. Illuminated 'A' indicates that the gate is closed and locked against road traffic, and Loco Pilot can pass it at ON position as per the rules applicable to pass an automatic signal at ON position. Extinguished 'A' indicates that the gate is open for road traffic or the gate signal is defective, and Loco Pilot shall pass it at ON position as per the rules applicable to pass 'G' marker type gate signal.
b. Semi-automatic Gate Stop Signal: It protects points in addition to the level crossing and shall be provided with white illuminated letter 'A' and white illuminated letters 'AG' against black back ground. The indications of such signal shall be as under –
    i. Letter 'A' shall be lit only when the gates are closed and locked against road traffic and points are correctly set and locked for the route, and Loco Pilot shall pass it at ON position as per the rules applicable to pass an automatic signal at ON position.
    ii. Letters 'AG' shall be lit only when the gates are either open to road traffic or have failed but points are correctly set and locked for the route, and Loco Pilot shall pass it at ON position as per the rules applicable to pass 'G' marker type gate signal.
    iii. Neither marker shall be lit when points are not correctly set and locked for the route or have failed, and Loco Pilot shall not pass it at ON position until proper authority is issued.

Intermediate Block Signalling: GR 3.11. SR 3.70 – 2 (b)& (c), **GR 3.42, GR 3.75,** SR 3.75 -1 to 4, **GR 14.14**

1. It is provided on double line MACLS territory.
2. It is an unmanned 'C' class station remotely controlled by the SM in rear.
3. The purpose of this system is to divide a long block section into two smaller block sections.
4. In this system, the stop signal provided in block section is called as IBS.
5. Letters 'IB' in black is painted on white circular disc for its identification.
6. Distant signal is provided at a distance of 1000 meters from this signal.
7. The line between LSS of the Station in rear and up to 400 meters beyond IBS signal is either track circuited or provided with axle counters.
8. A track berthing indicator is provided at the station in rear to indicate whether the track circuited portion is clear or not. Track berthing indicator shows Green or No light if the track circuited portion is clear, and it shows Red light if the track circuited portion is not clear.
9. A Signal Post Telephone is provided on the IBS signal to communicate with the SM in rear.
10. IBS signal is interlocked with the Block Instrument of the station in advance.
11. Line clear is obtained through track circuit / axle counter indicator and train can be dispatched up to IBS signal. Line clear is obtained on block instrument from the station in advance to take 'Off' IBS signal.
12. As soon as the train clears the track circuited portion, another train can be dispatched up to IBS signal.

Circumstances under which IBS signal is treated as closed:

1. During TSL working on a double line.
2. On failure of IBS signal itself.
3. On failure of Distant signal of IBS in 'Off' position.
4. On failure of Block Instrument.
5. On failure of Track Circuit / Axle Counters.
6. On failure of IBS signal repeater.
7. During Failure of All Communication.

Passing IBS signal at ON / Defective condition: GR 3.75, SR 3.75 –1 to 4.

1. When a Loco Pilot finds an IBS signal at ON, he shall bring his train to a stop in rear of the signal, advise the Guard of the fact by sounding one long continuous whistle and contact the SM in rear by the SPT provided on the IBS signal.
2. If the IBS is defective and the SM in rear has obtained line clear, then SM will give the Private Number with his initial to the Loco Pilot, which the Loco Pilot must enter in his memo book (T/245B) and sound 0 – 0 whistle and start his train after exchanging alright signals with the Guard.
3. If the SPT is defective, Loco Pilot shall wait for 5 minutes at the signal and if IBS is not taken 'Off' within this period, he shall sound one long whistle and start his train after exchanging alright signals with the Guard. Under such circumstances the speed of the train shall not exceed 15 km/h if the visibility is clear and 8 km/h if the visibility is not clear and he shall be extremely vigilant and continue to proceed cautiously till he reaches the foot of the next stop signal. On being received at the station ahead, he shall report the failure of IBS signal and SPT to the SM.
4. AS the SM in rear comes to know that the IBS signal along with SPT is defective, he shall treat the IBS

signalling as closed and after obtaining line clear from the station ahead, he will issue T/369(3b) clearly mentioning in the authority that line clear has been obtained from the station in advance and quoting the Private Number received.

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Detonating Signal: GR 3.59, 3.60, 3.61, SR 3.61-1, **GR 3.62, 3.63, 3.64,** SR 3.64-1 to 5.

Detonators or fog signals are appliances which are fixed on the rails and when an engine or a vehicle passes over them, they explode with a loud report so as to attract the attention of the Loco Pilot.

Use of Detonators:

1. One detonator –
   a. During testing;
   b. In case of emergency.
2. Two detonators –
   a. Placed 10 meters apart at a distance of 270 meters from the first stop signal (not required in double distant territory.)
   b. Placed 10 meters apart at distance of 600 meters at which banner flag is fixed in case of working of material train.
   c. Placed 10 meters apart at a distance of 180 meters from the end of the platform towards the approaching train, in automatic section.

3. Three detonators –
   a. Placed at a distance of 250 – 250 – 10 meters apart from the train in case of ACF, when train stopped in block section.
   b. Placed at a distance of 90 – 90 – 10 meters apart from the train in case of stoppage of train in automatic block section.

c. Placed at a distance of 10 – 10 meters by the SM / Gateman in case of train parting to attract the attention of Guard to stop the rear portion.
d. Placed at a distance of 1200 – 10 – 10 meters apart from the work site in case of engineering / lorry work where a banner flag is placed at a distance of 600 meters from the work site.

4. Four detonators – Placed at a distance of 600 – 600 – 10 – 10 meters apart on BG and 400 – 400 -10 – 10 meters apart on NG as per GR 6.03 and SR 6.03 -1, called as normal protection.

Duties of Loco Pilot on exploding detonator / detonator(s) noticing a warning hand signal GR 3.78

1. The Loco Pilot shall whistle intermittently when his engine explodes detonator(s) and take every possible caution including reduction of speed as necessary, so as to have the train well under his control and be able to stop short of any obstruction on the line.
2. after proceeding 1.5 kilometer from the place where his engine exploded detonator(s) if his engine does not explode any more detonator(s) he may then resume authorized speed and
3. Report the incident to the next station or cabin.
4. When the Loco Pilot notices a signal warning of an obstruction, except detonator(s) he shall stop his train immediately and act on advice of the person exhibiting warning signal or on the basis of obstructions noticed by him.
5. In case no further details of exhibition of warning signal is noticed after stopping for one minute by day and two minutes by night to ascertain the location and / or cause of warning he shall proceed cautiously up to the next block station, keeping a sharp look out.

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Defective Signals GR 3.68**,** SR 3.68 – 1

Duties of SM when a signal is defective:

1. Immediately arrange to place the signal at ON position.
2. Find out the cause of defect and remedy it if he can.
3. At an interlocked station, all the points detected by a signal must be treated as non-interlocked and SM/CASM/Cabin Master/Cabin man. will be responsible to ensure the points are correctly set, clamped and padlocked before authorizing movement of any train over them.
4. Advise SCOR on the controlled section.
5. Make an entry of the defect in the signal failure register
6. On being put right, SM /CASM/Cabin Master/Cabin man will personally ensure that the signal is working properly .
7. When the authority to pass defective signal is being issued by a person other than one who has ensured the correct setting and locking of points, Private No. must be exchanged between them, before issue of authority.

Warner / Distant signal defective in the 'OFF' position: SR 3.71 -1 & 2

1. SM immediately shall advise the SM in rear exchanging Private Number.
2. Line clear shall not be granted for a train unless a points-man has been deputed at the foot of the signal to exhibit danger signal to the approaching train.
3. In case a Warner signal is placed on an independent post, the fixed green light shall also be extinguished.
4. SM of the station in rear shall issue written advice to the Loco Pilot and obtain his acknowledgement.
5. Loco Pilot who has been so advised shall bring his train to a stop at the foot of the signal and proceed only after he has been hand signaled past by the points-man.

6. In case of defective Warner / distant signal of a gate stop signal, signal light shall be extinguished and the gateman shall intimate the SM, who shall advise the SM of the station immediately in rear exchanging private number to stop the train and issue caution order to the Loco Pilot of each train to stop short of the defective signal and further act on the aspect of the gate stop signal ahead.
7. If there is no communication between gateman and any station on either side, keeping the gate signal in ON position and for first train advised the Loco Pilot of the circumstance after closing the gate, against road traffic the road traffic may passed only when ensured that no train is approaching. Gateman shall exhibit danger signal from the defective permissive signal and pilot the train passed the gate. Loco Pilot shall report the matter to SM of the station ahead to issue caution order to all the succeeding trains till the defect is put right.

Outer Signal Defective: SR 3.69 – 2

When the outer signal is defective, the Home signal must be kept in the ON position and the SM on duty will take the following action.

A. When the Loco Pilot is pre-informed:

1. After fulfilling the conditions for taking 'Off' outer signal, a point's man will be deputed at the foot of the outer signal.
2. T / 369 (i) shall be issued by the SM in rear.
3. On seeing the approaching train, Points man will hand signal the train past the defective Outer, Home signal will be taken 'Off' for the admission of the train.

B. When the Loco Pilot is not pre-informed:

1. After fulfilling the conditions for taking 'Off' Outer signal, SM will send a points man with T/ 369(3b) to the Outer signal who after delivering the authority to

the Loco Pilot to pass the outer signal in ON position, will pilot the train up to the Home signal.

2. After the train is brought to a stop at the Home signal, Home signal will be taken 'Off' for the admission of the train.

   Note: When there is an Outer and no Home signal, the train will be piloted up to the station where the train usually comes to a stand.

Home Signal Defective: SR 3.69 – 3

A. If Home signal is the first stop signal –

1. When the Loco Pilot is pre informed –
   i. After fulfilling the conditions for taking 'Off' Home signal, a points man will be deputed at the foot of the Home signal.
   ii. Loco Pilot will be issued T / 369 (i) by the SM in rear.
   iii. On seeing the approaching train, Points man will hand signal the train past the defective Home signal
2. When the Loco Pilot is not informed –
   i. Train will be stopped at the Home signal.
   ii. After fulfilling the conditions for taking 'Off' Home signal, SM will send a points-man with T/369(3b) to the Home signal .
   iii. After delivering the authority to the Loco Pilot, Points-man will exhibit proceed hand signal from the foot of the defective Home signal.

B. If Home signal is the second stop signal –
   i. Both Outer and Home signals are kept in ON position, treating Outer signal also as defective.
   ii. After fulfilling the conditions to take 'Off' both Home and Outer signals, SM will send the Points-man with T/369(3b) to the Outer signal.
   iii. After the train comes to a stand at the Outer signal, points-man will deliver T/369(3b) to the Loco Pilot and exhibit green hand signal.

iv. Having secured the authority and finding the green hand signal from the Points-man at Outer signal, Loco Pilot shall proceed to station past the Outer and Home signals.

C. If Home signal is the first and the last stop signal –
   i. Pre-intimation will not be given.
   ii. Train will be stopped at the Home signal.
   iii. After obtaining line clear from the station ahead, SM shall issue T/369(3b) along with the Private Number, obtained in lieu of line clear, to the Loco Pilot as an authority to proceed.

Routing Signal Defective: SR 3.69 – 4

A. In case the Routing signal is interlocked with the Home signal –
   i. Home and Outer signals are also treated as defective.
   ii. After ensuring that conditions for taking 'Off' the Routing signal are satisfied, SM will send points-man with T/369(3b) to pass all the three signals at ON position, at the foot of Outer signal.
   iii. After delivering the authority to the Loco Pilot at the Outer signal, Points-man shall pilot the train up to the station.

B. In case the Routing signal is not interlocked with the Home signal –
   i. Home and Outer signals are kept at ON position.
   ii. Train will be stopped at the Outer signal.
   iii. After ensuring that conditions for taking 'Off' the Routing signal are satisfied, SM will send Points-man with T/369(3b) to the Routing signal, and Outer and Home signals will be taken 'Off'.
   iv. After the train stopped at the Routing signal, Points-man will handover T/369(3b) to the Loco Pilot and pilot the train up to the station.

Defective Departure Signals: GR 3.70

1. Starter Signal Defective: SR 3.70 – 1

a) No pre-intimation is given.
b) Trains will be stopped at the station.
c) After ensuring that conditions for taking 'Off' the starter signal are satisfied, T/369(3b) will be issued to the Loco Pilot to pass the defective starter signal.
d) After issuing the authority, Points-man shall exhibit proceed hand signal to the Loco Pilot from the foot of the starter signal, the Loco Pilot will start his train.
e) If Starter is the Last stop signal of the station, Private Number obtained in lieu of line clear received from the SM ahead shall also be mentioned on the authority T/369 (3b).

2. Advanced Starter Signal Defective: GR3.70**,**SR3.70– 2

a) Trains will be stopped at the station.
b) Line clear will be obtained from the SM ahead.
c) T/369(3b) on double line and PLCT on single line, along with Private Number obtained in lieu of line clear, will be issued to the Loco Pilot.
d) The points if any detected by the signal shall be set and locked and hand signals shall be exhibited from the foot of the signal.
e) Starter signal will be taken 'Off'.
   Note: If the starter is interlocked with advanced starter signal, then SM, after ensuring that conditions for taking 'Off' starter signal are satisfied shall fill up the number of the starter signal in the authority issued, and hand signals shall also be exhibited from the foot of the starter signal.

Advanced Starter Signal is defective and IBS is working

After ensuring that the block section between Advanced Starter and IBS is clear with the help of clear indication of Axle counter / Track circuit, SM shall issue T/369(3b) along with Private Number, and will indicate the words, 'You are authorized to proceed up to IBS and further follow its aspect'.

Both Advanced Starter and IBS are defective:

After obtaining line clear from the station in advance, T/369(3b) along with the Private Number received from the station in advance, clearly mentioning that 'Line clear has been obtained from the station in advance', shall be issued to the Loco Pilot to pass both Advanced Starter and IBS signals at ON position.

Gate Signal Defective: GR 3.73 and SR 16.06 – 1

1. Gate signal will be kept at ON position.
2. On seeing the Gate signal at ON, Loco Pilot shall sound one long whistle and stop the train before the Gate signal.
3. If it is provided with 'G' marker, after waiting for 1 minute by day and 2 minutes by night, Loco Pilot shall proceed cautiously and pass the gate if gateman is exhibiting alright hand signals. If gateman is not available, he shall stop the train and shall pass the gate after ensuring that the gate is closed and lock for road traffic.
4. If it is without 'G' marker Loco Pilot shall stop the train and sound continuous long whistle, Gateman shall close and lock the gate for road traffic, and proceed to the signal and report the matter to the Loco Pilot, and pilot the train past the LC gate.
5. Loco Pilot shall stop the train at the station in advance and report the matter to the SM. If the Gate signal is defective in 'OFF' condition, SM shall immediately

inform the SM in rear, and caution order will be issued to all the succeeding trains.

Duties of Loco Pilot and Guard when an Automatic Stop Signal is to be passed at ON:

When a Loco Pilot finds an Automatic Stop Signal at ON, he shall bring his train to a stop in the rear of the signal, and wait for 1 minute by day and 2 minutes by night. If after waiting for this period, the signal continues to remain at ON, he shall sound one long whistle and exchange signals with the Guard and then proceed ahead exercising great caution to be able to stop short of any obstruction at a speed of not exceeding 15 km/h when the visibility is clear and 8 km/h when the visibility is not clear.

SR 9.02 – 5 After passing an Automatic Stop signal at ON, the Loco Pilot shall ensure that minimum distance of 150 meters or two clear OHE spans is maintained between his train and the preceding train if any or any obstruction on the line ahead. In case of EMU train, the minimum distance of 75 meters or one clear OHE span shall be maintained between EMU train and a preceding train if any or any obstruction on line ahead.

Semi-automatic signal defective: SR 9.02 – 1,2 & 3

1. If 'A' marker is illuminated, Loco Pilot shall pass it at ON position as if it is an automatic stop signal.
2. If 'A' marker is extinguished, Loco Pilot shall not pass it at ON position unless he is issued proper authority to pass the signal at ON.

Gate signal with 'A' and 'G' marker defective:

1. If 'A' marker is illuminated, it means that the gate is closed and locked for road traffic, and Loco Pilot shall

pass it at ON position as if it is an automatic stop signal.

2. If 'A' marker is extinguished, Loco Pilot shall wait for 1 minute by day and 2 minutes by night and shall proceed cautiously and pass the gate if gateman exhibiting all right hand signal. In absence of Gateman he shall stop the train before the gate and shall pass after ensuring by engine crew or Guard the gate is closed for road traffic.

Gate signal with 'A' and 'AG' marker defective:

SR 9.15 – 2

1. If 'A' marker is illuminated, Loco Pilot shall pass it at ON position as if it is an automatic signal.
2. If 'AG' marker is illuminated, Loco Pilot shall wait for 1 minute by day and 2 minutes by night, and proceed cautiously and pass the gate on getting the alright signal of the gateman. Otherwise he shall pass the gate only after ensuring that the gate is closed for road traffic.
3. If both 'A' and 'AG' markers are extinguished, Loco Pilot shall not pass the gate signal at ON position unless he is issued proper authority to pass it at ON position.

Failure of signal lights, in colour light signals: SR3.68 – 4

1. SM must inform the station on either side and the SCOR immediately who shall inform the Sr. DEE / DEE and Sr. DSTE / DSTE concerned.
2. SM of the station in rear shall issue caution order to the Loco Pilot advising him of the absence of any light on the signals and therefore for keeping a good vigil and look out and to stop at the foot of the first stop signal.
3. Provision of GR 3.69.1 for issue of authority to pass defective approach stop signal by the SM in rear and the last nominated station shall not be applicable in such case.

4. After the train is stopped at the first stop signal, SM shall issue T/369(3b) for one or more signals of a group of interrelated reception and departure signals separately at the first stop signal and the starter signals.
5. As and when electric supply is resumed and signal is 'lit' again, the advise as indicated in (a) above shall be cancelled and the Loco Pilot of the train shall be guided by the aspect of the signal.

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Authorities

Manuscript Forms: GR 5.07

1. All messages and written authorities mentioned in G & SR shall be prepared on prescribed forms laid down in GR or prescribed under special instructions and shall be stamped with the station stamp.
2. If the authorized printed forms are not available for any reason or in exceptional circumstances a manuscript form containing all the particulars as contained in the prescribed form is issued as an emergency measure, and reasons scrutinize shall be recorded in the station diary.

T / 13 B : Guard memo book
T / 20 B : Guard journal
T / 66 B : Train Signal Register – Double Line
T / 81 F : Vehicle guidance (for goods trains)
T / 81 F A : Vehicle guidance (for passenger trains)
T / 84 B : Stock report register

T / 115 B : Block Competency Certificate
T / 137 B : Train Signal Register – Single Line
T / 138 B : Call book (Loco Pilot and Guard)
T / 199 F : Private Number Sheet

T / 220 B : Brake power certificate
T / 245 B : Loco Pilot memo book
T / 288 F : Combined Travel Report

T / 351 : S & T Disconnection and Reconnection Notice; 1 copy, 3 parts
T / 369 (1) : Advance authority to pass defective signal (to be given from station in rear for approach stop signals only); 2 copies – Loco Pilot and Record.

T / 369(3b) **:** Authority to pass signals in ON or defective position; 2 copies – Loco Pilot and Record.

T / 409 **:** Caution Order; 4 copies – Loco Pilot,ALP, Guard and Record.

T / A 409 **:** NIL Caution Order; 4 copies – Loco Pilot, ALP Guard and Record.

T / B 409 **:** Reminder Caution Order; 2 copies – Loco Pilot, and Record.

T / 431 **:** Train examination advice / report; 1 copy, 3 parts

T / 452 B **:** Sign on register (Loco Pilot)

T / 453 B **:** Sign 'Off' register (Loco Pilot)

T / 454 B **:** Sign on register (Guard)

T / 455 B **:** Sign 'Off' register (Guard)

T / 509 **:** Authority to receive a train on an obstructed line; 2 copies – Loco Pilot and Record

T / 511 **:** Authority to start from a non-signalled line; 2 copies – Loco Pilot and Record.

T / 512 **:** Authority to start from a line with common starter signal; 2 copies – Loco Pilot and Record.

T / A 602 **:** Authority proceeding for relief engine into an occupied block section, 3 copies – Loco Pilot, Guard and Record.

1. This authority consists of Three Parts:

a. Block ticket to proceed without line clear.
b. Authority to pass signals in ON position.
c. Caution Order

2. Name of the issuing station, time, date, train number, name of the obstructed block section, kilometer of obstruction, details of the signals to be passed at ON and speed restrictions are mentioned in this authority.

T / B 602 **:** Authority for opening communication during total interruption of communication on single line section; 2 copies – Loco Pilot and Record.

1. This authority consists of Five Parts:

a. Authority to proceed without line clear.

b. Authority to pass signals in ON position.

c. Caution Order.

d. Line clear enquiry message.

e. Conditional line clear message

2. Name of the issuing station, time, date, details of engine / self propelled vehicle, name of the station in advance, details of the signals to be passed at ON, caution order, name of the train for which line clear is to be enquired, private number for conditional line clear message and speed restrictions are mentioned in this authority.

T / C 602 **:** Authority for working of trains during total interruption of communication on double line section; 2 copies – Loco Pilot and Record.

1. This authority consists of Three Parts:

a. Authority to proceed without line clear.

b. Authority to pass signals in ON position.

c. Caution Order.

2. Name of the issuing station, time, date, train number, name of the station in advance, details of the signals to be passed at ON and speed restrictions are mentioned in this authority.

T / D 602 **:** Authority for temporary single line working on double line; 3 copies – Loco Pilot, Guard and Record.

1. This authority consists of Three Parts:

a. Line clear ticket.

b. Authority to pass signals in ON position.

c. Caution Order – in which Right / Wrong line, Kilometer of obstruction, Speed restriction of 25 km/h for the first train subject to observance of other speed restrictions, Warning to observe Neutral Section if proceeding on wrong line, Information of trap points / clamping of trap points and Caution orders in force in block section are mentioned.

2. Name of the issuing station, time, date, train number, name of the station in advance, private number obtained in lieu of line clear, details of the signals to be passed at ON and instructions to inform the Gatemen and Gang-men enroute for introduction of single line working are mentioned in this authority.

T / E 602 **:** Line clear enquiry message asking line clear for dispatch of trains during total failure of communication on single line section; 2 copies – Loco Pilot and Record.

T / F 602 : Conditional line clear message; 2 copies – Loco Pilot and Record.

T / G 602 : Conditional line clear ticket (Up); 2 copies – Loco Pilot and Record.

T / H 602 : Conditional line clear ticket (Down); 2 copies – Loco Pilot and Record.

T / I 602 : Message on restoration by any one of the means of communication; 1 copy – Record.

T / 609 : Written permission by the Guard to Loco Pilot when the engine or portion of a train is allowed to proceed to the next station from mid section; 2 copies – Loco Pilot and Guard.

T / 806 : Shunting Order; 3 copies – Loco Pilot, Guard and Record.

T / A 912 : Authority to pass automatic / semi-automatic / manually operated / gate stop signals; 2 copies – Loco Pilot and Record.

T / B 912 : Authority to proceed without line clear on automatic block signalling territories; 2 copies – Loco Pilot and Record.

T / C 912 : Authority for relief engine / train into an automatic block signalling section; 2 copies – Loco Pilot and Record.

T / D 912 : Authority to proceed on automatic block system during prolonged failure of signals; 2 copies – Loco Pilot and Record.

T / 1410 : Train Intact Arrival Register.

T / A 1425 : Line clear inquiry and reply message book filled by the train dispatching

station in the event of failure / suspension / non-provision of block instruments; 1 copy – Record.

T / B 1425 **:** Line clear inquiry and reply message book filled by the train receiving station in the event of failure / suspension / non-provision of block instruments; 1 copy – Record.

T / C 1425 **:** Paper line clear ticket (Up); 2 copies – Loco Pilot and Record.

T / D 1425 **:** Paper line clear ticket (Down); 2 copies – Loco Pilot and Record.

T / 1518 **:**Trolly / Lorry / OHE ladder trolly Notice; 1 copy, 3 parts.

T / 1525 **:** Motor trolley permit; 2 copies – Motor trolley in-charge, Record.

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Systems of Working

Systems of Working: GR 7.01

(1) All trains working between stations shall be worked on one of the following systems, namely –

(a) The Absolute Block System,

(b) The Automatic Block System,

(c) The Following Trains System,

(d) The Pilot Guard System,

(e) The Train Staff and Ticket System, or

(f) The One Train Only System.

(2) Systems of working in force on Central Railway: SR 7.01 – 1

(a) The absolute block system,

(b) The automatic block system, or

(c) The one train only system.

Essentials of the Absolute Block System: GR 8.01

(1) Where trains are worked on the Absolute Block System
(a) no train shall be allowed to leave a block station unless Line Clear has been received from the block station in advance, and
(b) on double lines such Line Clear shall not be given unless the line is clear, not only up to the first stop signal at the block station at which such Line Clear is given, but also for an adequate distance beyond it;
(c) on single lines such Line Clear shall not be given unless the line is clear of trains running in the same direction, not only up to the first stop signal at the block station at which such Line Clear is given, but also for an adequate distance beyond it, and is clear of trains running in the direction towards the block station to which such Line Clear is given.

(2) Unless otherwise directed by approved special instructions, the adequate distance referred to in clauses (b) & (c) of sub-rule (1) shall not be less than –
(a) 400 metres in case of two-aspect lower quadrant signalling or two-aspect colour light signalling, and
(b) 180 metres in case of multiple-aspect or modified lower quadrant signalling.

Essentials of the Lock and Block System: SR 8.01 – 1
(a) It shall not be possible to take ‘‘Off’’ last stop signal to permit a train to leave a block station until ‘Line Clear’ has been received from the block station in advance.
(b) The entry of a train into the block section shall cause the last stop signal to be automatically replaced at ‘On’.
(c) Line Clear shall not be given by the block station in advance until the preceding train has passed over the section clearing track circuit or it’s equivalent and until stop signal / signals in rear of the train has / have been replaced to ‘On’ position.

Essentials of the Automatic Block System on double line: GR 9.01

(1) Where trains on a double line are worked on the Automatic Block System –

(a) the line shall be provided with continuous track circuiting or axle counters,

(b) the line between two adjacent block stations may, when required, be divided into a series of automatic block signalling sections each of which is the portion of the running line between two consecutive stop signals, and the entry into each of which is governed by a stop signal, and

(c) the track circuits or axle counters shall so control the stop signal governing the entry into an automatic block signalling section that –

(i) the signal shall not assume an ‘‘Off’’ aspect unless the line is clear not only up to the next stop signal in advance but also for an adequate distance beyond it, and

(ii) the signal is automatically placed to ‘On’ as soon as it is passed by the train.

(2) Unless otherwise directed by approved special instructions, the adequate distance referred to in sub-clause (i) of clause I of sub-rule (1) shall not be less than 120 metres.

(3) (a) under special instructions one of the automatic stop signal between two stations in the automatic block signaling territory in each direction may be made as modified semi automatic stop signal.

(b) The mid section modified semi automatic stop signal so provided shall be interlocked with the signal of the station ahead through track circuits or axle counters or both and shall be controlled by the station master of the station ahead, the relevant indications

whether the signal is in normal automatic mode or modified semi automatic mode shall be available to the Station Master at both the ends.

(c) Advanced starter signal of the station in rear shall be interlocked with the mid section modified semi automatic stop signal in such a way that when working with **A** sign extinguished the Advanced starter shall assume Off aspect or be taken Off only when the line is clear up to an adequate distance beyond the mid section modified semi automatic stop signal similarly the mid section modified semi automatic stop signal shall assume Off aspect automatically or be taken Off only when the line is clear up to an adequate distance beyond the home signal of the station ahead.

(d) during abnormal conditions like fog, bad weather impairing visibility, the mid section modified semi automatic stop signal may be worked by extinguishing **A** marker in the manner prescribed under special instructions and this action shall also ensure that the **A** marker of the Advanced starter signal of the station in rear and Home signal of the station in advance shall also be extinguished.

(e) the adequate distance mentioned under clause (c) shall not be less than as prescribed under sub rule (2)

(f) during normal condition mid section modified semi automatic stop signal shall work as normal automatic stop signal.

(4) (a) When the loco pilot finds mid section modified semi automatic stop signal with A marker extinguished in ON position he shall stop his train in the rear of the signal and inform this fact to the station master of the station ahead on approved means of communication as prescribed under special instructions.

(b)The Station master of the station ahead may authorize the Loco Pilot to pass the mid section

modified semi automatic stop signal working with A marker extinguished in ON position through approved means of communication after ensuring conditions and procedure prescribed under special instructions.

(c) in case the Loco Pilot is unable to contact the Station Master of station ahead he shall pass the signal at ON after waiting for five minutes at the signal and proceed cautiously and be prepared to stop short of any obstruction at a speed not exceeding 10 kmph up to the next Signal and act as per aspect of this signal and

(d) the Loco Pilot shall report the failure of mid section modified semi automatic stop signal to the Station Master of the station ahead.

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Essentials of the One Train Only System: GR 13.02

Where trains are worked on the one train only system, only one train shall be on the section on which this system is in force, at one and the same time.

Procedure in case of accident or disablement on the one train only system: GR 13.04

(1) (a) If the train becomes disabled and requires assistance or if an accident occurs which renders it impossible for the train to proceed, the train shall be protected in accordance with the provisions of Rule 6.03 in the direction from which assistance, if necessary, is being obtained.

(b) The Guard of the train shall convey advice of the circumstances under which the train has become disabled and is not able to proceed, to the SM of the station from which assistance can best be obtained, and

if it is necessary for such Guard to proceed to such station, shall instruct the Loco Pilot in writing to keep the train stationary until his return, and obtain his written acknowledgement.

(2) (a) Such SM, if he is not the SM of the base station, shall communicate this information to the SM of the base station. On receipt of such information, the SM of the base station may allow another engine to enter the line.

The engine so sent shall either be accompanied by the Guard of the disabled train, who shall explain to the Loco Pilot where and under what circumstances the disabled train is situated, or the Loco Pilot of the engine so sent shall be given a written authority, containing such instructions as to where and under what circumstances the disabled train is situated and such other particulars as may be necessary to enter the line unaccompanied by the Guard of the disabled train.

(3) The Guard of the disabled train shall be responsible for the safe and proper working of the line until the disabled train has been moved and any other engine sent to the assistance of the disabled train has been returned to the base station.

(4) If there is no Guard of a disabled train, the Assistant Loco Pilot or Loco Pilot shall perform the duties imposed by this rule on the Guard, provided that the engine is not left unmanned in terms of Rule 4.20.

SR 13.04 – 1 If it is necessary for the Guard to remain with his train, he will send the advice to the nearest station through the Assistant Loco Pilot stating the nature and cause of the breakdown and at once protect the train in accordance with GR 6.03 in the direction from which relief is expected. If assistance has been asked for, he shall not allow the engine or any portion of his train to be moved until such time assistance arrives.

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Shunting (GR 5.13 to 5.21)

Definition: Shunting means the movement of a vehicle or vehicles with or without an engine or of any engine or any other self-propelled vehicle, for the purpose of attaching, detaching or transfer or for any other purpose.

Types of Shunting:

1. Hand shunting
2. Loose shunting
3. Hump shunting
4. fly shunting
5. Push and pull shunting.

General rules of Shunting: SR 5.13 -1 and SR 5.14 – 1

1. The SM or the person authorized to given instruction for shunting operation shall issue an authority on form T/806. However in the major yards other than road side stations where separate shunting staff is provided and regular shunting movement takes place within the defined area, issue of shunting authority T/806 be dispensed with.

2. Shunting must be performed under the supervision of properly authorized operating staff only including SM, YM, Shunting Jamadar, Shunting master, Guard etc.
3. At roadside stations, Guard in charge of the train must personally supervise shunting under instructions from the SM.
4. The Guard shall ensure that the points are correctly set and locked and exhibit hand signals to the Loco Pilot.
5. Guard must travel in the brake van while shunting a train from one line to the other across the main line.
6. Shunting may be performed in station section provided Outer and Home are in on position and on single line shunting may be carried on between the first stop signals without block back provided line clear has not been given.
7. Shunting shall be performed only by the Loco Pilot.
8. Guard shall sign shunting order T/806.
9. Guard is responsible to acquaint himself with shunting restrictions before starting shunting.
10. Shunting instructions shall not be changed and points shall not be changed unless shunting operation is completed and shunting staff have been advised.
11. MPS of shunting is 15 km/h which is restricted to 8 km/h incase of shunting/marshalling of wagons loaded with inflammable liquids, and explosives.
12. Impact speed when shunting one box wagon must not exceed 5 km/h while impact speed when shunting a group of 5 box wagons coupled with transition coupler must not exceed 2 km/h.
13. Securing of vehicles after shunting should be done by station staff.
14. If interlocking permits, lock bars shall be used to lock facing points at interlocked stations, otherwise all points at non-interlocked stations shall be locked either by a clamp/through bolt with a padlock provided,

points are not governed by shunt signals. This is not applicable to yard shunting.

15. Fixed signals except Outer, Home and the Last stop signal may be taken 'Off' for shunting purposes.
16. Hand signals shall be clearly visible to Loco Pilot who shall act only on the hand signals shown by the in-charge of shunting. However in case movement is done by taking off fixed signal / shunt signal the display of shunt signal is not necessary.
17. Conflicting signals must not be shown to the Loco Pilot.
18. Multiple unit is treated as one engine for the purpose of shunting but incase of two engines, one engine only must be used for shunting.
19. Screw couplings must not hang down and drag. Before the screw coupling is unhooked, vacuum/air hose pipes must be placed on dummy plugs.
20. When vehicles are moved by an engine for attaching to a passenger train, the vacuum/air brake should be connected up and in case of shunting a goods train at intermediate stations, vacuum/air brake should, as far as possible, be connected with the engine.
21. Carriages occupied by passengers must not be moved without warning the passengers and Guard shall see that vacuum/air brake is connected up and points are set correctly.
22. When shunting is done simultaneously from both ends, person in-charge of shunting must inform the CASM/Switchman/Cabin man at his end to inform the CASM/Switchman/Cabin man at the other end to advise the person in charge of shunting at the other end before shunting/backing a train which may foul a line on which shunting is done from other end. He shall also depute a man in rear of load to pin down hand brakes to prevent the points in rear being fouled and exhibit a danger signal when the fouling mark is being reached.

23. Except under the supervision of an operating 'Officer, no hand shunting by hands is permitted.
24. SM must personally ensure that the following practices are prohibited-
    - Uncoupling of vehicles in motion,
    - Riding on buffers/screw couplings in motion,
    - Getting between vehicles before the engine comes to a stop,
    - Passing under vehicles during shunting,
    - Sheltering under wagons,
    - Sleeping in the yard,
    - Working on vehicles under repairs without protection,
    - Keeping slip coaches on a blocked line in rear of a passenger train.

Shunting in block section:

If it is required to perform shunting in block section, the line shall be blocked back or blocked forward by the SM.

In such cases, one of the following authorities is given to the Loco Pilot to enter into the block section for the purpose of shunting:

(a) Shunting key; or
(b) Block occupation key; or
(c) Taking 'Off' the shunt signal provided below the last stop signal; or
(d) Private No. in lieu of block back or block forward on T / 806

Following train shunting on a double line: GR 8.06

1. Shunting or obstruction for any other purpose shall not be permitted in the block section in advance unless it is clear and is blocked forward: Provided that when the block section in advance is occupied by a train traveling away from the station, shunting or obstruction may be permitted behind the train under special instructions

taking into consideration the speed, weight and brake power of trains and the gradients on the section, and as soon as intimation has been received that the train has arrived at the block station in advance, the line shall be blocked forward if it is still obstructed.

2. SM shall obtain the permission of SCOR before performing such shunting.
3. Following the train traveling away from the station, T / 806 is issued to the Loco Pilot of the shunting train, clearly mentioning that 'Shunting is being done following a train traveling away from the station". The number and departure time of the train traveling away from the station along with the Private Number of block forward, if necessary, is mentioned on the authority.

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Speed

Maximum Permissible Speed: (MPS)

1. MPS is decided by Commissioner of Railway Safety.
2. It is authorized for particular section and must not be exceeded under any circumstances.
3. It is determined by the condition of track, section and the type of locomotive used.
4. Section-wise MPS and permanent speed restrictions are given on the relevant pages of WTT.
5. Loco Pilot and Guard shall acquaint themselves thoroughly with MPS and speed restrictions.
6. Time taken on MPS is called as minimum running time.

Booked Speed:

1. This is decided by the Authorized 'Officer (COM).
2. This is the speed at which a train is booked to run.

3. This is 8 to 10% less than the MPS.
4. It is determined by the condition of track, section and the type of locomotive used.
5. Section-wise booked speed and permanent speed restrictions are given on the relevant pages of WTT.
6. Time taken on booked speed is called as normal running time

Minimum Running Time: (MRT)

1. It is the time required between two stations at the MPS authorized for the section and includes the following:
   a. Running time as calculated at the MPS for the section irrespective of the load or class of the locomotive.
   b. The time required for permanent speed restrictions on the section.
   c. The time required for negotiating the gradients.
2. When a temporary speed restriction is in force over a particular section, the MRT would be that shown in the time table plus the time required for such temporary speed restrictions. The allowance for the temporary engineering speed restrictions is shown in separate column in the appendix of WTT.

Normal Running Time: (NRT)

1. It includes the time required at the booked speed for the run between two stations, the time required for permanent engineering speed restrictions, the time

required for acceleration and deceleration and the time required for negotiating gradients.

2. When a temporary speed restriction is in force over a particular section, the MRT would be that shown in the time table plus the time required for such temporary speed restrictions. The allowance for the temporary engineering speed restrictions is shown in separate column in the appendix of WTT.

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SR 4.11 Speed over points on Broad Gauge sections:

Sr. No.	Description	Speed Km/h
01	Non-interlocked	15
02	Interlocked when the train takes a turnout from one line to another with 1 in 12 or 1 in 8 ½ turn out with curved / symmetrical split switches	15
03	Motor trolly (heavy or light) while passing through points and crossings (irrespective of whether the trolly is running through the straight or a turnout)	15
04	When a train takes a turn out from one line to another over 1 in 8 ½ turnout with straight switches or over an emergency crossover having 1 in 8 ½ turnout with straight switches	10
05	Trains running through on the loop with 1 in 12 turn out or 1 in 8 ½ turn out equipped with	15

	curved / symmetrical split switches	
06	Trains running through on goods loop lines with 1 in 8 ½ turn outs with straight switches	10

Time of attendance for train crew: GR 4.04 and
SR 4. 04 – 1 and 2

1. Guards:
   a. Passenger Guard – 30 minutes before scheduled departure
   b. Suburban Guard – 15 minutes before scheduled departure
   c. Goods Guard - 45 minutes before scheduled departure
   d. At intermediate stations – Prescribed by DRM

2. Loco Pilot and Assistant Loco Pilots: They must 'Sign On' at such time in advance of the starting time of their trains, as the DRM will fix. In the calculation of the time required, the following will be allowed for –
   a. 30 minutes for examining and taking over engine in shed after signing on duty.
   b. Such time as is required for the journey between the shed and the train.
   c. 15 minutes for free shunting time before the departure time of the train.

They must also remain with their engines on arrival at the shed after finishing journey for such time as may be prescribed for the purpose of examining their engines, booking repairs or such other work as may be necessary.

3. Station Master: As per their duty roster.

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Head light, Marker lights and Flasher light

Head light and Marker lights: (GR 4.14 and SR 4.14 -1 to 3**)**

1. An engine shall have an electric head light of an approved design and two oil or electric white marker lights.
2. An engine employed exclusively on shunting at stations and yards shall have two red marker lights in front and in rear.
3. Head light shall be dimmed when the train remains stationary at a station, when the train is approaching another train.
4. The Loco Pilot must test the electric head light and satisfy himself that it produces sufficient illumination to enable him to see ahead clearly for a distance of 240 metres or more.

5. Before leaving the loco shed the Loco Pilot must ensure that he has effective head light and marker lights on his engine and also flasher lights on both sides in proper working condition.
6. If the electric head light becomes defective on the run during the hours of darkness and thick and foggy weather, the Loco Pilot shall light white marker lights and work the train cautiously at a speed not exceeding 40 km/h on BG, 15 km/h on NG, subject to the maximum permissible speed of the section and other speed restrictions in force and sound the engine's whistle frequently. The Loco Pilot shall also inform the SM of the next block station.
7. When a SM sees that a train is running through without head light and marker lights must send the 'Stop and examine train' signal to the station in advance.
8. The SM of the station in advance will stop the train and find out the reason why the prescribed head light and marker lights are not burning, and instruct the Loco Pilot to switch on the head light and marker lights.

Flasher Light: (As per WTT)

Flasher light must be switched on immediately on getting the following indications:

1. Train brought to a stand on a gradient for any reason.
2. Sudden drop in pressure / vacuum and fluctuation of air flow meter while on run.
3. Sudden heavy jerk / lurch.
4. Rail fracture / Weld failure.
5. Train parting.
6. Locomotive failure.
7. Derailment of the train.
8. Any other situation warranting protection on the adjoining track.
9. While running on wrong line during TSL working on double line section.

10. If there is no tension in OHE continuously.

Note:

(i) The Loco Pilot / Assistant Loco Pilot / Motorman should switch on flasher light before doing anything else.

(ii) On seeing the flasher light on the train Loco Pilots in the opposite direction must stop short of any obstruction.

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Pushing back

Engine Pushing: (GR 4.12 and SR 4.12 – 1)

In general engine must draw a train except under the following exceptions:

a. Within the station limits/ where specially authorized,
b. When used as an assisting engine under special instructions,
c. To push back as per SR 4.12-2,
d. To push the disabled train,
e. To push back to the site of accident in case of passenger thrown out except in Ghat /Automatic sections,
f. To work up to the point of obstruction when the line is obstructed,
g. To assist a train in starting,
h. To work a material train provided it is occupied by Guard in the leading vehicle,

i. When required by GM/COM/CE traveling on an inspection special train.

Train pushing back from section: (SR 4.12-2)

1. No train must be allowed to push back from the block section without a written authority from the SM.
2. Guard shall travel in the leading vehicle fitted with vacuum/air brake valve or hand brake and speed of the train while pushing shall not exceed 25 km/h otherwise it must not exceed 8 km/h.
3. SM must advise the station in advance on telephone and SCOR that the train will push back to the station and obtain line clear and give the departure signal as usual.
4. On return, the Guard shall sign in 'TSR' to intimate that the whole train has returned complete from the section.
5. Train going into the section with the pushing back memo shall always push back from the section.
6. While pushing back, both Guard and Loco Pilot shall be vigilant and be prepared to stop short of any obstruction including obstruction at level crossing while Guard shall keep a sharp look at in front and shall arrange to stop the train if required.
7. On double line the train shall stop at the outermost signal of opposite direction and Loco Pilot shall whistle and the train is piloted into the station.
8. On single line, the train shall stop at outermost signal and Loco Pilot shall whistle and train will be admitted by taking 'Off' the signals. But at a non-interlocked station, it shall be piloted into the station.
9. When material train is pushed back in night, the speed shall not exceed 8 km/h.
10. Line Clear shall be obtained according to the procedure detailed in the Block Working Manual if a train is required to push back to the station on single line section, with token-less block instrument. The train will

be scrutinize as usual when the 'TOL' indication will appear. When the train returns, the reception signals shall be taken ''Off'' using cancellation switch S-2 and the procedure for closing the line will be as for scrutinize block instrument.

Movement of trains against the direction of traffic on the Automatic Block System: GR 9.13 and SR 9.13 – 1

1. In automatic signalling territory, trains shall run in the established direction of traffic only.
2. In an emergency if it becomes unavoidable, the Guard of the train in consultation with the Loco Pilot / Motorman shall send written advice to SM of the rear station explaining the circumstances necessitating the train to push back.
3. The SM, after ensuring that the line in rear of the said train is clear up to his station shall send a written message scrutinize the Loco Pilot / Motorman to push back to his station.
4. The SM shall also advise the SM of the station in advance and the SCOR about pushing back of the train.
5. The SM shall also ensure that there is no train on the same line between his station and the train to be pushed back.
6. The Loco Pilot / Motorman and Guard shall observe provisions as under: [SR 4.12 – 2 (b)(g)(h)]

(a) Guard shall travel in the leading vehicle fitted with vacuum/air brake valve or hand brake and speed of the train while pushing shall not exceed 25 km/h otherwise it must not exceed 8 km/h.

(b) On double line the train shall stop at the outermost signal of opposite direction and Loco Pilot shall whistle and the train is piloted into the station.

(c) On single line, the train shall stop at outermost signal and Loco Pilot shall whistle and train will be admitted

by taking 'Off' the signals. But at a non-interlocked station, it shall be piloted.

7. In case of EMU train, the Motorman shall drive the train from the leading motor coach / driving cab.
8. The Loco Pilot / Motorman shall sound eleven short whistles frequently.

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Freight Operations Information System and Coaching Operations Information System

FOIS: Freight Operations Information System

FOIS is used for increasing efficiency in management and control over operations. This system was initiated by CRIS in the eighties. This system has been adopted through high capacity computers to provide accurate and instant access over operations of goods trains run on BG. Under FOIS, a high capacity computer is used, called Central System Computer. It is linked with the computers of Zonal Railways and field terminals, with which data can be transferred easily.

It is an on-line system which provides instant information about the movement of consignments to freight customers. Authorised users of this system such as CYMs, TNCs and Dy. CHCs and CGSs operate through ARC and enquiry terminals. Network of this system is operated through OFC digital channel and terrestrial and VSAT channels leased by BSNL. It is developed through two modules.

1. **RMS** (Rake Management System)
2. **TMS**(Terminal Management System)

RMS: RMS software was developed in two phases, P1 module and P2 module. The important functions of this system are –

1. Planning of load, ordering of trains, formation of rakes, and information of arrival and departure of trains.
2. Forecast of interchange, diversion, stabling of load, detention of trains, pre-departure detention of trains.
3. BPC, crew details, light engine movement, placement and release of piecemeal, sick and fit report of piecemeal etc.

TMS: TMS software was developed in third phase. The important functions of this system are –

1. Planning of programmed traffic,
2. Demand and forwarding note, advance registration fee, particulars of restrictions.
3. Generation of RR, calculation of freight, removal of wagons, calculation of wharfage and demurrage.
4. Particulars of loading and unloading, diversion, rebooking.
5. Account maintenance and e-payment etc.

Advantages of FOIS:

1. Optimum utilization of available resources.
2. Reduction in the maintenance cost.

3. Control over unconnected wagons.
4. Minimisation of claims.
5. Control and supervision over rakes.
6. Easy decision making based on factual information.
7. Watch over availability of rolling stock and their optimum utilization.
8. Control over mistakes and quick and transparent working.
9. Customer satisfaction due to advance information of rakes and planning.
10. Useful in increasing operating efficiency.

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COIS: Coaching Operations Information System

COIS is developed by CRIS for the purpose of better control over coaching stock. It is developed in four modules:

1. Punctuality module
2. Coaching stock module
3. Coaching maintenance module
4. Time table module

Punctuality module: It is activated in February 2004. It points out the reasons for detention of trains at interchange points at divisional level. Punctuality performance over various divisions and zones is dealt with in this module.

Coaching stock module: This module keeps the records of attaching, detaching, sick and fit marking during operation of trains for preparation of on line position of coaching stock. Better planning and supervision of rakes, running of special trains etc is done in this module.

Coaching maintenance module: This module controls the maintenance of coaching stock in the coaching depot. Due to this module, better supervision of maintenance of coaching stock can be done.

Time table module: This module provides centralized data base for all coaching trains running on IR. It provides improvement in preparation and printing of time table.

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Anti Collision Device

ACD means **'Raksha Kavach'**, an automated network based on microprocessor. As soon as the situation of collision arises brakes are applied automatically and collision is averted. First ACD has been used on 19th October, 1999 on Konkan Railway.

ACD is provided in Locomotives, Brake Vans, Stations and Level Crossing Gates etc. By the means of ACD, side on collisions, rear end collisions, head-on collisions and collisions at level crossing gates are averted. ACD finds out the collision like situation by the means of Global Positioning System, Digital modem communication and Angular deviation count, and causes application of brakes

at a distance of 3 kms. It is also useful in circumstances like parting of trains etc. It also gives audio-visual information to the road users, resulting in averting the accidents at level crossings.

At present, ACD is extensively used on NEF Railway and Konkan Raiway and is working successfully. By 2013 – 14, it is planned to provide ACD over entire BG on IR.

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ODC and Marshalling

ODC / ISMD: Over Dimensional Consignment / Loads Infringing Standard Moving Dimensions: SR 4.28 – 1 to 3. Loads which infringe standard moving dimensions will not be dispatched without the sanction of the COM (Chief Operations Manager), who will, if necessary obtain the sanction of CRS (Commissioner of Railway Safety) through CE (Chief Engineer).

When Guard wagons are attached due to projections beyond the ends of a wagon, Guard must see that they are not separated from the wagons in which the projected load is placed.

Standard moving dimensions are prescribed to each gauge for safe conveyance of loads so that the load should not come into contact with the fixed structures like Platforms, Signal posts, OHE masts, Bridges and Tunnels etc.
The standard moving dimensions on BG are:

1. Width	10' 6"
2. Rail level to top side	11' 3"
3. Rail level to top centre	13' 6"

A load can be declared ODC / ISMD depending on its height and width. Any load which exceeds the permissible height / width is called as Over Dimensional Consignment / Infringing Standard Moving Dimensions.

Except under approver special instructions issued by CRS (Commissioner of Railway Safety), no vehicle shall be loaded to exceed standard moving dimensions.

Types: ODC are classified into three types.

1. A' class	Also called as Permitted out of gauge load
2. B' class	Also called as Exceptionally out of gauge load
3. C' class	Also called as Extraordinarily out of gauge load.

ODC Chart:

Class	Net Clearance	Gross Clearance	Day / Night	Escort staff	Speed	Sanctioning Authority

A	6" or More than 6"	9" or More than 9"	Day and Night	Not required	75	COM
B	4" or more but less than 6"	6" or more but less than 9"	Day and Night	TXR during night	40	COM CE / CBE
C	Less than 4"	Less than 6"but not less than 4"	Day only	PWI, TI, TXR, OHE Supervisor.	25	COM CE/ CBE CRS

Precautions for the movement of loads with ODC:

1. For the movement of ODC, consignor shall submit the particulars of the consignment like – complete measurement, weight, booking and destination stations, mode of loading and unloading, and sketch of the consignment.
2. Proper sanction will be obtained as per extant rules.
3. Such loads shall be carried only on the specified route.
4. Loco yards, goods sheds, transshipment (TP) sheds and high level platform lines are to be avoided.
5. Passenger trains do not carry these ODC consignments.
6. On D/L section, C class ODC shall not be crossed.

7. Unusual consignments that require specially manufactured rolling stock are dealt with separately.
8. Additional precautions are taken for the movement of ODC in electrified section where the minimum clearance required shall be 100 mm between the contact wire and the consignment.
   a. 100 mm to 340 mm – Power 'Off' and speed 15 km/h; OHE supervisor shall accompany.
   b. 340 mm to 390 mm – Power on and speed 15 km/h; and OHE supervisor shall accompany.
   c. More than 390 mm – Power on and speed as per rules for classification of ODC.
9. TI, TXR with fitter and 2 khalasis must accompany 132 ton Broad gauge well wagon (BWL) carried by a special train with 6 Guard wagons on either side.
10. The speed of the special train with BWL wagon will be 30 km/h and it shall not be loose or fly shunted and it must not be booked beyond the Indian Territory.

Marshalling

Marshalling is attaching of vehicles on a train in a pre-determined manner to ensure train safety, provide operational expediency and to maximize customer convenience.

For block rake composition and marshalling order, 'Normal composition and marshalling order and Rake link of passenger trains' are issued by COMs of respective Railways from time to time.

General principles kept in view while marshalling are –

a. Passenger coaches are marshaled in middle.
b. Non-passenger carrying stock shall preferably be scrutinize next to engine or in the rear of the train.

Safety Marshalling of SLR and Anti-telescopic / Steel bodied Coaches on Passenger trains:

a. Marshalling of Mail express trains –

1. In case of SLRs having passenger portion on one side, luggage cum brake portion on the other, it should be scrutinize in such a way that luggage cum brake portion is trailing outermost or next to engine.
2. Passenger portion of SLR should be locked if scrutinize next to engine or trailing outermost.
3. In case of new design of SLR with passenger portion in the middle, these can be positioned in either way.
4. In case of shortage of SLRs, suitable other coaching vehicle or VPU may be provided and in case of coaching vehicle, its doors should be locked to ensure that passengers can't occupy it.
5. Two anti-telescopic / steel bodied coaches should be scrutinize inside the anti-telescopic or steel bodied SLRs at both ends.
6. After providing for Mail Express trains, all available anti-telescopic / steel bodied SLRs should be used on main line passenger trains and passenger trains.

b. Marshalling of short service trains – Railway Board has permitted marshalling of three coaches in front and in rear of SLR on short trains, provided they have working brakes and subject to two end coaches at either side is anti-telescopic. An inspection carriage may be attached as 4th trailer coach on such trains. [IROM 2008]

c. VPs, LRs WLRRMs, OCVs which do not carry passengers and occupied or empty inspection carriage may be scrutinize as operationally convenient.

d. Reserved bogies and saloons occupied by passengers and VIPs should be treated as a passenger coach and scrutinize accordingly.

e. Anti-telescopic / steel bodied coaches may be scrutinize as operationally convenient.

f. POH / sick wagons returning to shops shall be properly locked and secured to prevent entry of passengers and can be scrutinize as operationally convenient. If not locked and secured for any reason, these shall be treated as passenger coaches and marshaled accordingly.

Marshalling of passenger and mixed trains: SR (4.23-4)

1. The composition and marshalling of passenger, mail express and mixed trains is prescribed by COM under special instructions issued from time to time.
2. At least one Second class Luggage (SLR) Rake must be in rear.
3. Not more than two bogies or four four-wheelers can be attached behind the SLR. One inspection carriage can be attached in addition to two bogies.
4. Mixed train shall be arranged as Engine, Goods wagon, Passenger vehicle, SLR/LR, vehicles fitted with vacuum / air brake.
5. One four wheeler must not be scrutinize between two bogies.
6. Speed shall not exceed 75 km/h if four-wheeler attached.
7. Goods stock shall be certified 'Safe to Run' by TXR before attaching.
8. Piped vehicles in a mixed train are attached inside the rear brake van without causing interference to the train lighting connections.
9. TXR at maintenance stations shall examine the safe to run goods stock.
10. BPC is given by the C&W staff at originating station for both onward and inward journey, where there is no C&W staff at the terminal station.

Marshalling of goods trains (S.R.4.23-5)

1. There shall be at least one goods brake van in rear. (Except provisions of SR 4.23-1)
2. ODC wagon shall not be attached without the sanction of COM.
3. One four-wheeler must not be attached between two bogies except to avoid shunting enroute it can be attach between engine and bogie.
4. One empty four wheeler must not be attached between two loaded wagons in ghat section.
5. One damaged / sick vehicle / wagon / engine 'fit to run' may be attached in rear of brake van in day light hours only.
6. A dead loco can be attached to a train only if it is certified fit to run, escorted by assistant Loco Pilot, speed is similar to that of train, has applicable brakes, and permitted in that section.
7. A maximum of three locomotives (2 working + 1 dead) with the load is permissible.
8. An unbalanced locomotive sent for POH should be hauled by a light engine at a speed not exceeding 15 km/h.

Ghat marshalling:

1. Information on ghat sections is mentioned in the working time table of the division. The following are the ghat sections on Central Railway.
   Igatpuri – Kasara (Thull ghat) – Mumbai division
   Lonavala – Karjat (Bhor ghat) – Mumbai division
   Dharakoh – Maramjhari – Nagpur division
   Tigaon – Chichanda – Nagpur division.
2. Working instructions and marshalling of trains to be run in ghat sections is also mentioned in the WTT.
3. One empty wagon shall not be scrutinize between two loaded wagons.

4. All the loaded and empty stock shall be grouped in separate blocks and loaded stock shall be scrutinize next to engine followed by the empty stock.

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Isolation and Interlocking

Isolation: It means an arrangement, secured by the setting of points or other approved means, to protect the line so isolated from the danger of obstruction from other connected line or lines.

Need for isolation: When isolation is needed, the line on which the train shall pass at a speed of more than 50 km/h shall be isolated from the other lines.

Means of isolation:

1. Derailing switch

2. Sand hump
3. Short dead end siding
4. Long dead end siding
5. Scotch block

Note: Sand hump / long dead end are advantageous for simultaneous reception on single line and admitting a train directly on a loop line and at the same time, dispatching a train from the other connected line in the same direction.

Interlocking: It means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so interconnected by mechanical locking or electrical locking or both that their operation must take place in proper sequence to ensure safety.

Essentials or principles of interlocking: Lever frames and other apparatus provided for operation and control of signals, points, etc., shall be so interlocked and arranged as to comply with the following essentials:-

(1) It shall not be possible to take ‘‘OFF’’ a signal, unless all points including isolation are correctly set, all facing points are locked and all interlocked level crossing gates are closed and locked against public road for the line on which the train will travel including the overlap.

(2) After the signal has been taken ‘‘OFF’’ it shall not be possible to move any points or lock on the route including overlap and isolation, nor is to release any interlocked gates until the signal replaced to the ‘ON’ position.

(3) It shall not be possible to take ‘‘OFF’’ at the same time, any two fixed signals which can lead to any conflicting movements.

(4) Where feasible, points shall be so interlocked as to avoid any conflicting movement.

Types of interlocking:

a. Indirect interlocking – where points and signals are operated from two different places with KPL system of interlocking.
b. Direct interlocking – where all the levers of points, signals and lock bar etc. are located and operated from a single place.

Standards of interlocking:

No	Standard of Interlocking	Max. speed	Isolation	System of working the points	Interlocking	Signals TALQ	Provided MAS
1	Non interlocked	15	Not required	Clamp and Padlock	-	Outer	-
2	Modified non interlocked	15	Not required	KPL	Rudimentary	Outer, Common Home	-
3	Standard I	50	Not required	KPL	Indirect	Outer, Bracketed Home	Distant, Routing Home
4	Standard II	75	Required	KPL / Lock Bar	Indirect / Direct	Outer / Warner, Bracketed Home	Distant, Routing Home, Starter

5	Standard III	MPS	Required	Lock Bar / Motor point / Track circuit	Direct	Outer / Warner , Bracket ed Home	Distant, Routing Home, Starter, Advance starter.

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Differences between Panel and Route Relay Interlocking

Panel Interlocking	**Route Relay Interlocking**
It is route setting type – Points for the concerned line (including isolation) are set and signal is taken 'Off' by pressing signal and route buttons.	It is not route setting type – Signal and route buttons concerned are pressed. All the points including isolation gets set and locked and the signal will become 'Off'.
Provided at small yards / stations	Provided at major yards / stations
Shunting procedure is rigid	Shunting procedure is flexible
Illumination and control panel are together	Illumination and control panel are separate

It is cheaper	It is costlier
SM key will be there	There will be no SM key

Track Circuit: It means an electrical circuit provided to detect the presence of a vehicle on a portion of tack, the rails of the track forming part of the circuit.

Track circuit is used for the following:

1. To fulfill the conditions of lock and block system
2. To ascertain the position of track whether occupied or not.
3. In automatic block signalling
4. In panel and route relay interlocking
5. In centralized traffic control
6. In intermediate block signalling
7. In signal reverser to automatically put back signal to ON position.

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Reception and despatch of trains

Reception of trains at interlocked station: SR 3.36 – 4

a. SM shall telephone near and far-end cabin staff advise the number and description of train and nominate the line which is repeated by them.
b. If the points are to be connected to sand hump, SM shall advise far end cabin staff with Private Number.
c. Far end cabin staff shall set and lock the route and advise near end cabin staff and release his slot control on the required reception signal, and advise SM.
d. Near end cabin staff shall confirm to SM after setting and locking the route for the nominated line.
e. SM., then advise near end cabin staff with Private Number and release slot for Home signal, and the near end cabin staff will take 'Off' correct Home signal.

Despatch of trains:

a. On obtaining line clear, SM advises the far end cabin staff, the number and description of the train and the line from which it is to be dispatched, which is repeated to SM.
b. In case block instrument provided in cabin, after obtaining line clear, the cabin staff set and lock the route and take 'Off' the Starter signal.
c. On verifying correct Starter signal being taken 'Off', SM advises to take 'Off' Advanced Starter signal under exchange of Private Number.
d. He shall also release his slide control, where control over Last Stop Signal is exercised through SM's control.

Procedure for run through trains:

a. SM shall obtain line clear or ask far end cabin staff to obtain line clear and advise the number and description of train the line, instructing them to set and lock the route and to release the slot of relevant Home signal.
b. Far end cabin staff, after obtaining line clear, release slot after setting and locking the route and advise SM, who shall then release slot of Advanced Starter with Private Number to take 'Off' Last Stop Signal.
c. Then SM confirm with near end cabin staff that correct route has been set and advise under exchange of private number to take 'Off' Home signal by releasing slot.

Stoppage of trains out of course: GR 3.48, SR 3.48 – 1 and SR 3.37 – 2

a. Working Warner signal is kept at ON where is no Starter signal.
b. Starter is kept at ON where Warner signal is not provided.
c. Both Warner and Starter signals are kept at ON and

d. First Stop signal is kept at ON and train stopped at it, where is no Warner and Starter signals.
e. At non-interlocked station, Home and Outer signals are to be kept at ON. After the train stops, they may be taken 'Off' and danger hand signal to be shown form the platform.
f. On single line, Starter signal is to be kept at ON and authority to proceed must be handed over after the train comes to a stand.
g. In automatic section, two detonators 10 meters apart shall be placed at a distance of 180 meters from the end of platform towards the approaching train and danger hand signals to be displayed form the platform.

Simultaneous reception of trains:

a. There must be one loop line each at either side of main line.
b. Home signal must of route indicating type.
c. Far end points must be set for sand hump or long dead end siding provided with derailing switch at an adequate distance.
d. Each facing point must have locking arrangement either with lock bar or track lock or route locking through panel.
e. ICC system must be there between the two cabins.
f. Station must be of standard III interlocking.

Controller's responsibility in regard to crossing trains: SR 3.39 – 3

a. Controllers must study the running of trains very carefully before issuing instructions regarding the crossing of trains to give precedence to more important trains.
b. Definite instructions once issued must not be changed except in an emergency because sudden change of orders is apt to upset the working of a station.

c. On wet dark nights, orders once issued must not be changed except under very exceptional circumstances and such cases must be reported in the diary with reasons for change of orders.

Crossing of trains at stations provided with one platform line: SR 3.39 – 4

a. While crossing two trains, passenger train is to be received on the platform line.
b. In case of two passenger trains, first train is to be received on the platform line unless otherwise instructed.
c. No train shall run through, when a passenger train is on a line without platform.

Reception of a train on an obstructed line: GR 5.09

(1) In case of reception of a train on an obstructed line, the Station Master shall-

a. Whenever possible, intimate the Loco Pilot through the Station Master of the station in rear that the train is to be received on an obstructed line;

b. Ensure that the signal or signals controlling the reception of the train are not taken 'Off' and

c. Ensure that all the points over which the train has to pass are correctly set and the facing points locked.

(2) After the train has been brought to a stand at the relevant Stop signal, it may be received on the obstructed line by -

a. scrutinize the Loco Pilot to pass the Stop signal at 'On' by taking 'Off' the Calling-on signal where provided; or

b. scrutinize the Loco Pilot on the signal post telephone, where provided, to pass the Stop signal at 'On', in accordance with special Instruction; or

c. authorizing the Loco Pilot to pass the relevant signal or signals at 'on' through a written authority (T/509) to be delivered by a competent railway servant who shall pilot the train past such signal or signals.
(3) The train shall be brought to stand at the facing points leading to the reception line until hand-signaled forward by competent railway servant.
(4) A Stop hand signal shall be exhibited at a distance of not less than 45 meters from the point of obstruction to indicate to the Loco Pilot as to where the train shall be brought to a stand.
(5) The Loco Pilot shall keep his train well under his control and be prepared to stop short of any obstruction.

Reception of a train on a non-signalled line: GR 5.10
(1) Should it be necessary, in an emergency, to receive a train on a line which is not signalled for reception, the Station Master shall ensure that-
a. The train is brought to a stand at the First Stop Signal
b. The line on which it is intended to receive the train is clear up to the trailing points or up to the place at which the train is required to come to a stand;
c. All the points over which the train has to pass are correctly set and the facing points locked; and
d. The Loco Pilot is authorized to pass the approach Stop signal at 'ON' through a written authority [T/369 (3b)] to be delivered by a competent railway servant who shall pilot the train on to the non-signaled line.
(2) The Loco Pilot, while entering a non-signalled line, shall proceed cautiously and be prepared to stop short of any obstruction.
Departure of a train from a non-signalled line: GR 5.11
(1) In the event of a train having to be started from a line not provided with a Starter signal, the Loco Pilot shall be given a written permission (T/511) to start: Provided that

such permission may be dispensed with where a tangible authority to proceed is given to the Loco Pilot.
(2) The Written permission or the tangible authority to proceed referred to in sub-rule (1) shall not be given unless all the points for the departure of train have been set and the facing points locked.

Departure of a train from a line provided with a common departure signal: GR 5.12

(1) In the event of a train having to be started from a line out of a group of lines provided with a common departure signal, the Loco Pilot shall be given a written permission (T/512) to start in addition to the authority to proceed under the system of working.
(2) The written permission and the authority to proceed referred to in sub rule (1) shall not be given unless all the points for the departure of the train have been set and the facing points locked.

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Defective Points

S.R.3.77-1. Defective Points –

On receipt of information that points are defective or cannot for any reason be fully operated, the SM, or the CASM/Switchman must normalize the signals and points concerned and attempt to re-operate them. If the defect still persists, and S&T staffs responsible for the maintenance of S&T gears are available, they must be promptly advised. Where, however, such S&T staff are not available, SM must personally inspect the points to find out the cause and remedy the defect, if he can. If he cannot, he must promptly advise "All Concerned".

Points Damaged – S.R.3.77 – 2.

The Station Master must examine the damaged points immediately and take steps to prevent any movement over the damaged track until the defect has been rectified.

Points – Loco Pilots trailing through – S.R. 3.77 – 3
If on any account a point is trailed through, the Loco Pilot must not under any circumstances back his train over the point trailed through before the defect to the point has either been rectified, or the point been properly set and clamped for any further movement, provided that after clamping, the point does not gape.

Use of crank handles – SR 3.51 – 4
If motor points related to the panel get defective or flashing indication is given, they should be set right by the operation of crank handle as under:

a) In case of stations provided with interlocked crank handles:-
(i) If a point is defective and has been set to the required position by the crank handle a normal movement can be made if the crank handle is restored to its normal lock and the signal comes 'Off' after being taken 'Off' or the points in the route are locked by route setting with steady point indications on the panel but the signal does not come 'Off', no cotter bolting / clamping and padlocking is required in such case.
(ii) If the signal does not come 'Off' after the signal lever/button is operated or the route setting is not achieved for locking of points in the route, cotter bolting / clamping and padlocking is to be done as per S.R. 3.68-1(d) although 'N' or 'R' indication is available and trains are to be signalled past the defective signal in accordance with S.R. 3.69-1 to 3.69-5 & S.R. 3.70-1. In case of stations provided with non-interlocked crank handles-

If a point is defective and is required to be set by a crank handle, the crank handle should be issued to the Transportation 'Official deputed for setting the point to the required position. The ASM/CASM/Switchman in-charge of taking 'Off' the signal shall not take 'Off' the signal and scrutinize the movement over the point until :-

(i) The crank handle is either returned back to him and kept by him in the steel case/glass case provided for the purpose and locked or

(ii) The crank handle is retained in the possession of the Transportation 'Official not lower in the rank than ASM/CASM/Switchman who shall exchange private numbers with the ASM/CASM/Switchman in-charge of taking 'Off' the signal in token of the crank handle is being in his personal custody and of the points being correctly set for the intended move;

(iii) If the signal comes 'Off', after the signal lever/ button is operated or the points in the route are locked by route setting with steady point indications on the panel but the signal does not come 'Off', no cotter bolting / clamping and padlocking is required in such cases. If the signal does not come 'Off' after the signal lever / button is operated or the route setting is not achieved for locking of points in the route, cotter bolting / clamping and padlocking is to be done as per S.R. 3.68-1(d), although 'N' or 'R' indication is available and trains are to be signalled past the defective signal in accordance with S.R 3.69-1 to S.R 3.69-5 & S.R. 3.70-1 to 3. These instructions should be incorporated in the Station Working Rules.

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Abnormal Working

TSL working on Double line SR 6.02 – 1

1. Whenever an accident to a train or track or other obstruction takes place on a double line, the traffic may temporarily worked under the following systems:
   a. By obtaining 'line clear' on electric speaking instruments,
   b. By the installation of single line block instruments and SLB demarcating the block section in the wrong direction, if the affected line is likely to remain out of use for a substantial period.
2. On receipt of reliable information in writing that one line is clear, SM, in consultation with SCOR and the

SM of the station at the other end of the section shall take steps to introduce TSL working.

3. In case of doubt, Track Safe Certificate shall be obtained by the engineering Official not less than the rank of an Inspector.
4. TSL working shall be introduced between the nearest stations provided with cross-over between Up and Down lines.
5. IBS and C' class stations shall be kept closed and the commutators of the related block instruments shall be locked in 'TOL' position. Caution Indicator shall be hung on the handle of block instruments in case of Daido instruments.
6. SM proposing TSL working shall issue a message, to the SM at the other end of affected section, containing the following information under exchange of Private Numbers.
   a. Cause of introduction of TSL working.
   b. The line in which the TSL working is proposed.
   c. Source of information that the said line is clear.
   d. Place of obstruction.
   e. Names of intermediate stations if any, which would be out of use.
   f. Assurance that the trap points, if any have been spiked or clamped and padlocked.
   g. Assurance that if the train is running on the right line, the last stop signal shall be kept in the ON position. In case the train is running on the wrong line, all fixed signals shall be kept in the ON position; and
   h. The number and timings of the last train which arrived or left the block station issuing the message.
7. After exchanging of the above information, line clear shall be obtained through the means of communication.
8. Authority:
   a. Right line – T / D 602

b. Wrong line – T / D 602 and T / 511 / Pilot out memo.

9. Three parts of T / D 602 are as under:
   a. Line clear ticket;
   b. Authority to pass signals in ON position; and
   c. Caution Order in which the following are mentioned –
      1. Line on which the train is going and place of obstruction,
      2. Speed of the first train shall be 25 km/h subject to observance of other speed restrictions in force,
      3. Warning to observe neutral section for the train going on wrong line in electrified section and clamping / spiking of trap points if any, and
      4. Other speed restrictions in force.
10. Loco Pilot of the first train shall inform all Gatemen and Gang men on the way about the introduction of TSL working specifying the road on which the trains will run.
11. The Loco Pilot of the train proceeding on the wrong line shall switch ON the flasher light and sound frequently short whistles.
12. Second and subsequent trains may run at their booked speed subject to observance of other speed restrictions in force.
13. When a train is stopped between stations on account of accident, failure, obstruction or other exceptional cause and the Loco Pilot finds that it cannot proceed, it shall be protected as per GR 6.03.
14. Trains proceeding on the wrong line shall stop opposite the first stop signal of the right line or at the lass stop signal of the wrong line whichever comes first. SM shall depute a railway servant with a written authority to stop the train on danger hand signal and thereafter pilot the train into the station.

15. Trains proceeding on the right line shall be received by taking 'Off' the approach stop signals.
16. Resumption of normal working:
    a. On receipt of a written certificate from a responsible engineering 'Official that the obstructed track is free and safe for passage of trains, SM shall issue a message to the other station / stations under exchange of Private Number and in consultation with the SCOR, normal working shall be resumed.
    b. Block instruments and all fixed signals including those of IBH which were treated as closed shall be brought into use immediately.
    c. An entry shall also be made in the TSR of all stations concerned showing the time of suspension of double line working, introduction of single line working and resumption of normal working.
    d. Loco Pilot of the first train entering the section after resumption of normal working shall inform all Gatemen and Gang men on the way about the resumption of normal working.
17. All the records in connection with the TSL working shall be retained at the station and the TI of the section must scrutinize and submit his report to the DRM within 7 days of the resumption of normal working.

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All Communication Failure on Double line

(SR 6.02 –3)

1. In the event of total interruption of communication (TIC) occurring between two stations on a double line section, i.e. when Line Clear cannot be obtained by any one of the following means stated in order of preference viz :
   a. Block instruments; Track circuits or Axle counters;
   b. Telephones attached to the Block Instruments;
   c. Station to station fixed telephones wherever available;
   d. Fixed telephone such as Railway auto phones & BSNL / MTNL phones;

e. Control Telephone;
f. VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run.

The following procedure shall be adopted for train passing.

2. Train shall be stopped and the Loco Pilot and the Guard of the train shall be advised of the circumstance by the SM on duty.
3. SM shall issue T / C 602 to the Loco Pilot of each train which shall include –
   a. Authority to proceed without line clear;
   b. Authority to pass signals in ON position;
   c. Caution Order – 25 km/h when the view ahead is clear and 10 km/h when the view ahead is not clear.
4. In the event of a Loco Pilot approaching or passing any portion of the line where the view ahead is not clear, a railway employee with hand signals must be sent in advance to guide the further movement of the train. A sharp look out ahead should be kept and the engine whistle freely used.
5. The train shall be piloted, by a railway employee equipped with hand signals and detonators, through a tunnel only after ascertaining that it is clear. Before entering a tunnel, the head lights, side and tail lights shall be lit.
6. Trains shall be allowed to enter the block section after a clear interval of 30 minutes between each other.
7. Guard shall keep a sharp look out in the rear and be prepared to exhibit a hand danger signal to prevent the approach of a train from the rear and to protect if necessary.
8. When a train is stopped in the block section, on account of accident, failure, obstruction or other exceptional cause and the train cannot proceed, it shall be protected

by placing three detonators at a distance of 250 – 250 and 10 meters apart from the train on the way out.

9. No train shall be backed. In unavoidable circumstances, it shall be backed only after placing three detonators at a distance of 250 – 250 and 10 meters apart in the rear of the point up to which the train is to be backed.
10. On approaching the station ahead, Loco Pilot shall stop the train outside the first stop signal and sound continuous long whistle.
11. If the signal is not taken 'Off' within 10 minutes and if the detention is likely to exceed 10 minutes, train shall be protected in the rear by placing three detonators at a distance of 250 – 250 and 10 meters apart, and Loco Pilot shall send his assistant to the station / cabin to inform the fact that the train is waiting at the signal for its admission into the station.
12. After the train being admitted into the station by taking 'Off' the signals, the Loco Pilot shall make over the authority to the SM.
13. Trains must continue to work on this system until anyone of the means of communications is restored by the competent authority.
14. A record of all trains passed over during the period shall be maintained on the TSRs at both the stations concerned.
15. As soon as anyone of the means of communication has been restored, the SMs must send messages under exchange of Private Numbers and Line clear shall not be obtained or given until both the SMs are satisfied that all trains dispatched from their stations have arrived complete at the other stations. SCOR shall be intimated about this.
16. All the records in connection with the working of trains during the course of TIC shall be inspected by the TI of the section, who shall prepare a report on the working

of trains and shall forward the same along with his report to the DRM within 7 days of communication.

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All Communication Failure on Single line

(SR 6.02 – 4)

1. In the event of total interruption of communication (TIC) occurring between two stations on a single line section, i.e. when Line Clear cannot be obtained by any one of the following means stated in order of preference viz:
   a. Block instruments; Track circuits or Axle counters;
   b. Telephones attached to the Block Instruments;
   c. Station to station fixed telephones wherever available;
   d. Fixed telephone such as Railway auto phones & BSNL / MTNL phones;
   e. Control Telephone;

f. VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run.

The following procedure shall be adopted for train passing.

2. The SM who has a train to dispatch through the affected block section shall open communications by establishing contact with the SM of the block station at the other end by sending an engine or self propelled vehicle or any other vehicle as under in the order of preference viz:
   (i) Light engine;
   (ii) Train engine;
   (iii) Motor trolly / Tower wagon accompanied by a Guard or SM;
   (iv) Trolly / Cycle Trolly / Moped Trolly accompanied by a Guard or SM;
   (v) Diesel car / Rail motor car / EMU rake after ensuring that all passengers have detrained.
3. The SM on duty shall advise the circumstances and the purpose of the staff being sent with the above engine / vehicle into the affected block section to open the communication. He must also satisfy himself that the staff thoroughly understand the rules of working of trains during TIC on single line, and obtain their signature on the authority in token of acknowledgement.
4. T/B 602 is issued to the Loco Pilot of the vehicle going to open the communication after explaining the situation. It has the following five parts:
   a) Authority to proceed without line clear,
   b) Authority to pass LSS at ON,
   c) Caution order – 15 /10 /walking pace,
   d) Line clear enquiry message,
   e) Conditional line clear message.
5. <u>Duties of Loco Pilot and Guard:</u>

a) Loco Pilot shall go through the authority and ensures the correctness of the entries,
b) Loco Pilot shall proceed putting on the flasher light,
c) Loco Pilot shall observe the speed restriction in force,
d) Loco Pilot shall sound frequently short whistles,
e) Loco Pilot shall stop at an adequate distance if any vehicle is seen coming from the opposite direction and proceed after consultation with the Loco Pilot of the vehicle regarding the importance of the train, distance covered, gradients, catch siding etc.
f) Loco Pilot shall stop at the FSS and sound continuous long whistle to attract the attention of SM.

6. On hearing the whistle, SM gets the points set and facing points locked and receives the train by taking 'Off' the signals and collect T/B 602 and make proper entry in TSR.
7. The following authorities are issued to the Loco Pilot of the returning vehicle –
   a) T/G 602 or T/H 602 based on the conditional line clear message of T/B 602,
   b) T/369 (3b) to pass the signals at ON,
   c) T/409 or T/A 409 to observe the speed restrictions in force,
   d) T/F 602 – reply to line clear enquiry message,
   e) T/E 602 – if required to ask line clear.

8. While returning, the Loco Pilot of the vehicle proceed at normal speed, and SM will receive the train by taking 'Off' signals and obtain T/F 602 and T/E 602.

9. SM issues the following authorities to the waiting train before dispatching –

   a) T/G 602 or T/H 602 based on T/F 602.

b) T/369(3b) to pass signals at ON.
c) T/409 or T/A 409 to observe speed restrictions in force.
d) T/F 602 – if T/E 602 is received.
e) T/E 602 – if required to ask line clear.

Note: When the number of trains is same at both stations, SM shall issue T/E 602 and T/F 602 to Loco Pilot / Guard of each train.

10. When more than one train is waiting for line clear, T/E 602 is filled with details of all the trains.
11. If the other SM is in a position to receive all the trains, he shall give separate private number to all the trains and fill the details in T/F 602.
12. Under such circumstances, trains are dispatched at an interval of 30 minutes issuing the following authorities –
    a) T/G 602 or T/H 602,
    b) T/369(3b),
    c) T/409 – speed 25 /10 kmph.
13. On availability of any one of the means of communication, both SMs ensure that the section is clear and exchange private numbers and fill T/I 602.
14. Details of the movement are entered in TSR which are examined by TI and a report will be sent to DRM within seven days.

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Abnormal Working in Automatic Section

A. Working of trains during prolonged failure of signals when means of communications are available (S.R.9.12 – 1)

1. In the event of prolonged failure of all signals the 'Officials concerned of the Signalling Department shall take immediate steps to inform all concerned.
2. Before any train is allowed to enter the affected section, it shall be brought to a stand and the Loco Pilot, Guard, Controller and the Station Master concerned ahead of the affected section shall be informed.
3. The Station Master shall obtain 'Line Clear' for the train by one of the following means of communications, viz.

a. Station to station fixed telephones wherever available;
b. Fixed telephone such as Railway auto phones & BSNL / MTNL phones;
c. Control telephone;
d. VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run.

4. The Station Master on duty at the station in advance shall not give such 'Line Clear' unless –
   (i) The whole of the last preceding train has arrived,
   (ii) The line on which it is intended to receive the incoming train is clear at least 180 meters beyond the Platform Starter or the place at which the trains usually come to a stand, and
   (iii) All points have been correctly set and all facing points locked for the admission of the train on the said line.

5. Before handing over the 'Authority to Proceed' all the points over which the train will pass, shall be correctly set and facing points locked.
6. Whenever any power operated points have to be operated for diverting trains, these may be released and operated locally under the written instructions of the Station Master on duty by the Signal Maintainer at stations where Signal Maintainers are provided.
7. T/D 912 and T/409 are issued to the Loco Pilot who shall proceed with utmost caution and must not run at a speed exceeding 25 km/h under any circumstances, subject to other speed restrictions in force. He shall continue to look out for any obstruction until he reaches the station ahead.
8. Loco Pilot of all subsequent trains shall also proceed with great caution, subject to other speed restrictions in

force and must continue to look out for any possible obstruction.

9. When approaching the next station, the Loco Pilot shall bring his train to a stand outside the first Stop signal and sound one continuous long whistle.
10. The Station Master shall send a man in uniform to pilot the train from this signal, who shall obey hand signals, if any, relayed from the station platform.
11. Clearance of the section by each train shall be intimated to the station in rear under exchange of Private Numbers.
12. Train Signal Register shall be brought into use and all entries regarding train working recorded there in. The Controller shall be kept advised of all train movements taking place in the affected section, if possible.
13. As soon as signals are put right by competent authority, normal working may be resumed, after exchanging messages with Private Numbers by the Station Masters concerned, assuring that the section is clear. Controller's permission, if possible, should be obtained before resumption of normal working.
14. All the records in connection with train working on this system shall be retained at the station and the Transportation Inspector of the section must scrutinize them and submit his report to the Divisional Railway Manager within seven days of the resumption of normal working.

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B. Working of trains during failure of all signals when no means of communication are available (S.R.9.12 – 2)

1. In the event of failure of all signals and when trains cannot be worked by any of the following means, viz.,
   a) Station to station fixed telephones wherever available;
   b) Fixed telephone such as Railway auto phones & BSNL / MTNL phones;
   c) Control telephone;
   d) VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run.

   The following procedure shall be adopted for train passing:

2. The movement of trains on the affected section shall be controlled by such stations and on such lines as are prescribed by special instructions.
3. All points over which the trains will pass shall be correctly set and facing points locked.
4. Whenever any power operated points have to be operated for diverting trains, these may be released and operated locally under the written instructions of the Station Master on duty by the Signal Maintainer at stations where Signal Maintainers are available.
5. Before any train is allowed to leave the station the Loco Pilot/Motorman and the Guard of the train shall be advised of the circumstances by the Station Master.
6. The Station Master shall give the Loco Pilot/Motorman of each train T/B 912 which shall consist of three parts:
   (a) An Authority to Proceed without line clear;
   (b) A Caution Order restricting the speed to 25 km/h over the straight with clear view and to 10 km/h when approaching or passing any portion of line where the view ahead is not clear due to curve, obstruction, rain, fog or any other cause subject to the observance of other speed restriction imposed and speed over facing points being restricted to 15 km/h.
   I An authority to pass the Automatic signals intervening the two nominated stations at 'On', the Semi-Automatic signals and manually operated signals on being signalled past by a Pointsman or any other railway servant in uniform deputed for the purpose and the Gate signals cautiously up to the level crossing where he must ascertain that the gates are locked and the hand signals are displayed by the Gateman before he proceeds further.
7. No train shall be allowed to enter an affected section until there is a clear interval of 15 minutes between the

train about to leave and the train which has immediately proceeded, unless a shorter interval has been prescribed under special instructions.

8. Before entering a section where there are tunnels, the Loco Pilot shall light the buffer lamps and the electric head lights. A tunnel shall be entered only after it has been ascertained that it is clear. If there is any doubt on this point, the train shall be piloted by a Assistant Loco Pilot or Guard equipped with hand signal and detonators.
9. The Guard shall keep a sharp lookout in the rear and be prepared to exhibit a danger signal to prevent the approach of a train from the rear and to protect it, if the detention is likely to exceed 5 minutes.
10. When approaching the next station the Loco Pilot shall bring his train to a stand outside the first Stop signal and sound one continuous long whistle.
11. The Station Master after satisfying himself that all points have been correctly set and facing points locked, shall arrange for a man in uniform to pilot the train from the signal.
12. The Loco Pilots of all trains shall make over the Authority to the Station Master of the nominated station at the end of the section.
13. A record of all trains passed during the course of total interruption of communications shall be maintained in the Train Signal Registers.
14. Trains must continue to work on this system until either the signals are put right or any one of the means of communications is restored by the competent authority.
15. As soon as the signals are put right, normal working of trains shall be resumed, but where signals continue to remain inoperative and any of the means of communications is restored, trains will be worked as per SR 9.12 – 1.

16. All the records in connection with train working on this system shall be retained at the station and the Transportation Inspector of the section must scrutinize them and submit his report to the Divisional Railway Manager within seven days of the resumption of normal working.

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C. Temporary Single Line working in Automatic Block System: SR 9.12 – 3

In the event of obstruction of one line on the double line section and the communications are available, the following procedure shall be adopted –

1. When it is desired to introduce temporary single line working on double line on electric communication instruments, the Station Master at one end of the affected section shall, on receipt of reliable information in writing that one line is clear, take steps to introduce temporary single line working on that line in consultation with the Section Controller

and the Station Master of the station at the other end of the section.

2. If there is reason to suspect that the line over which temporary single line working is to be introduced is also fouled or damaged, temporary single line working shall not be introduced until a responsible engineering 'Official not below the rank of an Inspector has inspected that section and certified that the road is safe for the passage of trains.
3. The movement of trains on the affected section shall be controlled by such stations and on such lines as are prescribed by special instructions.
4. After ascertaining that one of the lines is clear for the passage of traffic, the Station Master proposing single line working shall issue a message under exchange of Private Numbers, containing the following information, to the Station Master at the other end of the affected section –
   (a) Cause of introduction of single line working,
   (b) Line on which single line working is proposed.
   (c) Source of information that the said line is clear,
   (d) Place of obstruction,
   (e) Restriction of speed, if any, on the line,
   (f) Number and timings of the last train which arrived/left the station nominated by the Divisional Railway Manager under clause 3 above, and
   (g) An enquiry about speed restriction in the opposite direction.
5. On receipt of acknowledgment and reply to the enquiry regarding speed restriction in the opposite direction, from the Station Master at the other end confirmed by a Private Number, single line working may be introduced.
6. Line clear shall be obtained on Station to station fixed telephones wherever available or Fixed telephone such as Railway auto phones & BSNL / MTNL phones or

Control telephone or VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run, as the case may be, and trains run on the procedure set out above.

7. Line Clear shall not be given unless the line on which the train is to be received is clear at least 180 meters beyond the first Stop signal pertaining to the correct line or the last Stop signal pertaining to the wrong line whichever is earlier.
8. For each first train running in the wrong direction, line clear shall neither be asked for nor given unless the two Station Masters have assured under exchange of Private Numbers that all the trains running in the right direction have already arrived complete at the station in advance.
9. Except for each first train running in the right direction for which the procedure laid down for the trains running in the wrong direction shall be followed, subsequent trains running in the right direction may be allowed to follow each other on Automatic Signal indications, provided the station in rear has intimated the station in advance of the fact that he is permitting particular train/ trains to follow and has ascertained the latter's readiness to receive it/them. Private Numbers shall be exchanged for this transaction.
10. Train Signal Register shall be introduced at the stations on affected section.
11. All the points over which the train will pass shall be correctly set and facing points locked before the movement of any train is authorized over them.
12. Whenever any power operated points have to be operated for diverting trains these may be released and operated locally under the written instructions of the Station Master on duty by the Signal Maintainer at stations where Signal Maintainers are available.

13. Loco Pilots of all trains, except the first train, running in the right direction must be given T/A 912 to pass the last Stop signal which shall be kept at 'red'. The Loco Pilots of trains running in the wrong direction shall be given T/D 602 and T/A 912 before entering the affected section.
14. The Caution Order part of T/D 602 shall include
    (i) The line on which the train or light engine is to run,
    (ii) The kilometers between which the obstruction exists,
    (iii) Any restriction of speed, and
    (iv) the instructions that Automatic signals in the wrong direction should be considered as out of use even though they may be showing 'Proceed' or 'Caution' aspect.
15. Loco Pilots of trains running in the wrong direction are instructed to pass the intervening non-governing (i.e. relating to the opposite direction) Semi-Automatic and Manually operated signals on being hand signalled past by a Pointsman or any other railway servant in uniform deputed for the purpose and the gate signals cautiously up to the level crossings where he must ascertain that the gates are locked and hand signals are displayed by the Gateman before he proceeds further. He must also ascertain that the points of the outlying sidings are correctly set and locked before passing over them.
16. Loco Pilot of the first train introducing temporary single line working in the wrong direction to stop and inform all Gatemen and Gangman on the way about the introduction of temporary single line working. The road on which the trains shall run is also to be specified.
17. The speed of all trains running in the wrong direction shall not exceed 25 km/h.

18. When approaching the next station Loco Pilot of the train running in the wrong direction shall bring his train to a stand opposite the first Stop signal pertaining to the correct line or the last Stop signal pertaining to the wrong line on which he is running, whichever he comes across first, and sound one continuous long whistle.
19. The Station Master, after satisfying himself that all points have been correctly set and facing points locked, shall arrange for a man in uniform to pilot the train from this signal, who shall obey hand signals, if any, relayed from the station platform. Manual/Semi-Automatic signals, if any, shall, however, be passed on a written authority on the prescribed form to be issued by the Station Master.
20. Resumption of normal working –
    (a) On receipt of written certificate from a responsible engineering official that the obstructed track is free for passage of trains, the Station Master shall issue a message to other station or stations, as the case may be, under exchange of Private Numbers and decide, in consultation with Section Controller, the train after the passage of which the normal working has to be introduced.
    (b) An entry shall also be made in the Train Signal Registers of all stations concerned showing the time double line working was suspended, time single line working was introduced and the time normal working was resumed.
21. All the records in connection with the temporary single line working shall be retained at the station and the Transportation Inspector of the section must scrutinize them and submit his report to the Divisional Railway Manager within seven days of the resumption of normal working.

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Train Parting & Train Dividing

Train Parting: GR 6.08, 16.08 & SR 6.08 – 1, 16.08 - 1

1. Meaning: Any portion of train, if becomes detached while in motion is called train parting.
2. Loco Pilot: If the Loco Pilot comes to know that the train has parted, he should put on flasher light and give — 0 — 0, whistle repeatedly to attract attention of the Guard till acknowledged by Guard. He should keep the front portion of the train moving until the rear portion has come to a stand.

3. Guard: If the Guard comes to know that the train has parted, he shall promptly apply hand brake of the brake van and then signal to the Loco Pilot by waving up and down a green signal by day and white light by night. The Loco Pilot must acknowledge this signal with —0—0 whistles and use his judgement to keep the front portion in motion until the rear portion has come to a stand.
4. Loco Pilot of Banking Engine: If there is a banking engine in the rear, the Loco Pilot of which discovers the parting, he must bring the rear portion to a stand and at the same time repeatedly give —0—0 whistle to attract the attention of the Loco Pilot of the leading engine.
5. If a Gateman observes a train running in two or more portions, he will draw the attention of the Loco Pilot, Guard or Assistant Guard by shouting and/or whistling. He should also show green hand signal during day and white light during night waving up and down vertically as high and as low as possible. He should show no other signal. Should he fail to attract the attention of the Loco Pilot and if there is sufficient distance between the parted portions of the train, he must place 3 detonators on the line 10 metres apart for the following portion or portions to attract the attention of the Guard by shouting and/or whistling. He should also wave green hand signal during day and wave white light up and down at night vertically as high and as low as possible.
6. Station Master:
   a) If the Station staff notice a train running in two or more portions, they will endeavour to attract the attention of the Loco Pilot and the Guard by waving up and down a green signal by day and white light by night, provided the line ahead is clear and send train divided signal (6 – 3) to the station ahead.

b) If the station staff is warned by – 0 – 0 whistle, they must promptly admit the train into the station on a vacant line, and immediately inform the station in rear that the train has parted and that the rear portion may roll back towards the latter.

c) If however, the rear portion is following the front portion, the Station Master must place three detonators on the line to attract the Guard's attention and endeavour to bring it to a stand by the application of wagon brakes or by heaping up earth on the rails or other suitable means or divert it, if possible, to a vacant loop or siding line.

7. As soon as the rear portion has come to a stand in the section, the Guard must protect it, both in rear and in front, or if the from portion is out of sight, in accordance with G.R. 6.03.
8. If there is a banking engine, the Loco Pilot of the banking engine will protect the rear and the Guard will protect in front of the train.
9. If both the portions have come to a stand on a single line section, the train Loco Pilot will depute Assistant Loco Pilot to protect in front and the Guard will protect the rear. On a double line, if the adjacent line is fouled, that line must also be protected in accordance with the rules.
10. When both the portions of the parted train are brought to a stand and it is possible to couple them up, the Guard will be responsible for bringing the two portions together in a safe and proper manner.
11. Parted load will not be coupled if the number of wagons in rear portion is 10 or less in four wheeler stock and 5 or less in eight wheeler bogie stock. In such case, SR 6.09 – 1 will be followed to clear the load. In case where there is banking loco in rear, the load can be recoupled.

12. When a train parts on its journey, the tonnage and number of vehicles/wagons of the train must be jointly checked by the Guard and the Loco Pilot and also by the Station Master where the train is taken in two portions. This information must be embodied in the joint report.

The 'Train Divided Signal' (BWM 4.11)

a. On seeing the train running in two or more portions, 6 – 3 beat must be sent to the station in advance.
b. On receiving this signal the SM shall acknowledge and place signals at Danger to prevent any train from the opposite direction proceeding towards the station from which such signal is received.
c. He shall take prompt steps to bring the first portion to a halt and take all possible measures to bring the second portion to a stop. He shall place three detonators at 10 meters apart on the line to attract the attention of the Guard in the second portion.
d. If stoppage of the first portion would risk a collision, it may be allowed to proceed ahead by waving a green signal by day and white light by night slowly, provided the line ahead is clear.
e. Any train going in opposite direction stopped by either SM, must not be allowed to proceed until it has been ascertained that the line on which it is to run is not obstructed.
f. If a train becomes parted while starting and the loco Pilot runs forward with first portion, the 'Stop and Examine Train' signal must be sent to the station in advance, and not the 'Train Divided' signal.
g. The block section must not be cleared until all vehicles of the divided train have arrived at either end of the block section and the line is safe for traffic.

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Train Dividing: (GR 6.09 SR 6.09 – 1)

1. When a train stops in a block section in consequence of an accident or the inability of the engine to take the whole train forward, the Loco Pilot of the train will give four short (0000) whistles repeatedly and the Guard will take immediate steps to protect the train in rear in accordance with G.R. 6.03.
2. After the train has been protected, the Guard will consult the Loco Pilot and if the engine, is capable of proceeding either light or with part of the load, the

Guard will take immediate steps to pin down firmly hand brakes of at least 50% wagons of remaining load or 10 wagons (whichever is more) and also apply the hand brake in the brakevan. The Loco Pilot must ensure that hand brakes on an adequate number of wagons have been pinned down. In air braked load close the angle cock of both the wagons/coaches from where the load is to be divided.

3. The Guard will give T/609 to the Loco Pilot to proceed to the next station, clearly stating the number of vehicles and also the painted number and the owning railway of the last vehicle of the load attached to the engine.
4. On a single line section the Loco Pilot shall hand over the 'token' or the Line Clear Ticket, whichever in use, to the Guard and obtain a receipt from him. The Guard shall retain the token or the line Clear Ticket until the block section has been cleared of all the vehicles of his train.
5. As soon as the engine with/without vehicles is drawn forward, the Guard will place his red hand signal in front of the remaining load and then Guard will protect load in front in accordance with G.R. 6.03.
6. The Loco Pilot will send his Assistant Loco Pilot to the Guard who will depute the Assistant Loco Pilot with hand signals to protect the remaining load in rear.
7. The Loco Pilot while working part load, without Assistant Loco Pilot on engine, should proceed cautiously up to the next block station.
8. On approaching the station ahead with the knowledge that the block section behind is obstructed, the Loco Pilot must stop at the outermost facing points and give (—0—0) whistles repeatedly to warn the station staff that only a part of load has arrived and that the section behind is obstructed. At stations where there are no facing points, the Loco Pilot shall stop opposite

station/Cabin without clearing the block section in rear and give the prescribed whistle code.

9. The Station Master after understanding the situation will take immediate steps to ensure that the block section in rear is not cleared and advise the Station Master at the other end of the obstructed block section and the Section Controller on controlled section. He should then exhibit 'All-Right' hand signal from the platform/Cabin for the train to be admitted into the station.
10. On arrival at the station, the Loco Pilot and the Station Master must jointly check the front portion of his load to see that it has arrived complete.
11. When the same Loco Pilot is returning to pick up the remaining load, he will be issued T/609; T/369(3b) or T/511 as the case may be and T/409 - the Loco Pilot must keep a sharp look-out and proceed cautiously at a speed not exceeding 25 kmph making frequent use of the engine whistle.
12. If the same Loco Pilot could not be returned due to failure or otherwise, another engine will be sent by Station Master under authority to proceed without line clear.
13. Station Master will depute a Pointsman with the Loco Pilot while returning to pick up remaining portion of the load.
14. Loco Pilot will immediately stop his engine at the site where the Guard is displaying the red signal. After stopping of engine, Guard will pick up 3 detonators and pilot the engine by riding on it towards the load bursting the intermediate detonator.
15. As soon as the portion of the load left in the section is either sighted by the Guard or Loco Pilot, the engine will be brought to a halt. The Guard will get down from the engine and pilot the engine onto the load walking at a safe distance ahead of the engine.

16. The Assistant Loco Pilot deputed to protect the train in rear will be recalled who will return leaving 3 detonators on the line and picking up the intermediate detonator.
17. Guard, Assistant Loco Pilot and the Pointsman shall release the hand brakes, connect all the hoses and the remaining load is taken to the next station.
18. Before clearing back section the Station Master and Guard should jointly check that complete load has arrived.

Note: If the engine of a passenger train is unable to haul the full load, it will not be detached but will remain coupled up to the train until an assisting engine arrives.

S.R. 4.48-1 The engine of a train carrying passengers must not be detached or the train divided in section except in an emergency, for testing a bridge or for isolating a burning coach or coaches on a train carrying passengers.

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Assistance to Disabled Engine: (SR 6.05 – 2)

1. When an engine is disabled, the Guard shall ascertain from the Loco Pilot if it is necessary to requisition a relief engine. Should the Loco Pilot expect to be able to put the engine in working order within 30 minutes, he shall inform the Guard.
2. If the time is likely to be exceeded, the Guard must send advice to the nearest station in accordance with S.R. 6.05-1 and call for relief engine.

3. After having asked for assisting engine, if subsequently the Loco Pilot is able to repair the damage and is in a position to restart the train, he will ask permission of the Section Controller / Station Master.
4. The Section Controller/ Station Master, in case assisting engine has not entered in the block section, will regulate the assisting engine and will advise the Loco Pilot to start his train supported by Train notice/Private number. Loco Pilot will work his train cautiously up to next block station.
5. Loco Pilot shall not restart his train unless he receives Train notice/Private number from Section Controller/Station Master. In such case he will wait till arrival of assisting engine.
6. If the engine of a passenger train fails in a section, a relief engine must be requisitioned. The train must then be worked forward with the assisting engine coupled up to the next block station ahead, where the Loco Pilot will decide whether he is in a position to haul the load forward alone with his engine or double headed with an assisting engine.

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Sending Assisting train into Obstructed Block Section

Sending Assisting train into Obstructed Block Section and clearing the same :(BWM 4.12)

a. If it is necessary to send an assisting train into obstructed block section to assist a disabled train, the SM will –
   1. Inform the SM at the other end of the section and SCOR.

2. Advise Guard and Loco Pilot of the assisting train of the circumstances;
3. Issue T/A 602 and T/511 if required.
4. Note the circumstances and time of departure of the train in the TSR, advise SM at the other end of the departure and obtain acknowledgement.

b. The SM at the other end of the section will note the circumstances under which an assisting train has been sent into the block section in his TSR.
c. On arrival of assisting train with disabled train at either end of the block section, the Guards of both trains will sign in the TSR or T/1410, certifying the complete arrival of their trains.
d. After confirmation from the Guards, the SM of either end will clear the block section under exchange of Private Numbers.
e. The first train entering the block section from either end must be brought to a stand and the SM shall instruct the Loco Pilot to proceed cautiously through the section by issuing Caution Order.

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Train Delayed in Block Section (GR-6.04, SR-6.04-1)

If a train carrying passengers does not arrive within 10 minutes or if goods train does not arrive within 20 minutes after allowing for its normal running time from the station in rear, the Station Master shall intimate action in the following manner when a train is delayed in the block section :-

1. The Station Master at the Station in advance shall immediately advise the Station in rear and Section Controller of this fact.

2. Arrange to send a railway employee into the block section to fetch information regarding the whereabouts of the train and in case of mishap, the nature of assistance required.
3. On a double line section if there is a tunnel and the train is delayed, the Station Master shall prevent any train from proceeding on its journey in the opposite direction until he has first ascertained that the line is clear. If there is no tunnel in the block section, the Station Master must stop the first train proceeding in the opposite direction and inform the Loco Pilot of the circumstance and instruct him to proceed cautiously.
4. The Guard of train carrying passengers which are provided with a set of portable field telephone, when delayed in block section over 10 minutes will also inform the controller on controlled section the cause and portable duration of the delay.
5. The Controller on receipt of such advise shall immediately warn the station where a Medical van or first aid chests are located so that they would be kept in readiness for dispatch to site of the accident on receipt of further information.

Working of Tower Wagon (GR-17.08, SR-17.08-1)

1. Whenever it's 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 in charge of the Tower Wagon shall advise the Station Master about the movement of Tower Wagon.
2. 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.

3. In case of an arranged OHE block, one or more Tower Wagons can be worked and follow one another. The Station Master, while authorizing the following Tower Wagon/Wagons into occupied affected OHE section, shall issue an "Authority to Proceed Without Line Clear" authority on the prescribed form (T/A-602) to pass the last stop signal at 'ON' and a caution order mentioning the site of work indicating the speed which under no circumstance, shall exceed 8KMPH. The first Tower Wagon to enter the section shall also not exceed the prescribed limit of 40 KMPH.
4. A Tower Wagon shall, however, not be permitted to enter the section following a train in Absolute Block Signalling Territory.
5. After completion of the work, the 'Official in charge 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.
6. Tower Wagons have a key role in the maintenance of OHE and for attending the break downs. 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.

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Working of Material Trains. (GR-4.62, SR-4.62-1)

Definition – Material Train means a departmental train intended solely or mainly for carriage of railway material when picked up or put down or for execution of works, either between stations or within station limits.

Ordering and Working –

1. A material train shall be worked only with permission of the Station Master on each side and in accordance with special instruction.

2. On receipt of advice from the engineering department, the Sr. Divisional Operating Manager will order the train by letter to all concerned detailing the sections over which the material train will work, the date on which it will commence working, the station at which it will stable and the Official who will be in-charge of the train.
3. The engineering department must gives adequate notice but not less than three days regarding the working of material train.
4. If the working of a material train is suspended for than a fort night or the section over which it is to work is altered, a fresh 'all concerned' letter or telegram must be issued.
5. Each material train must have at least one brake van in rear, and when available two brakevans, one in front and the other in rear.
6. The Engineering Supervisor in-charge of the material train must ensure that the rake is examined at least once in 15 days in case of air brake stock and once in 10 days in case of vacuum brake stock by Carriage and Wagon staff. The brake power certificate issued by C&W staff should be in possession of the Engineering Supervisor in-charge before the material train is allowed to proceed.
7. The responsibility that train is so examined shall devolve on the Engineering Supervisor in-charge of the material train.
8. A material train shall usually work between sunrise and sunset, On Mumbai - Kalyan section and in urgent

cases on other sections, the Division Railway Manager may authorise the working of material train after sunset.

9. When running between block stations with the engine leading, the speed of a material train must not exceed the prescribed speed of goods trains.
10. No unloading will be done while the train is in motion except from under order of the engineering Official in-charge and at a speed not exceeding 8 kmph.
11. When the engine is pushing the train or a placed in a emergency somewhere in the middle of the train, and the brake van is leading:-

a. The speed must not exceed 25 kmph. On the straight line, and 8 kmph. Over a turn out.
b. The Guard must travel in the leading brake van and must exhibit hand signals to the Loco Pilot.
c. The train crew must keep a good look-out especially in the direction in which the train is moving and must be prepared to stop short of any obstruction or level crossing.
d. When approaching turn-outs, the Guard must stop the train and satisfy himself that the points are correctly set and that all non-interlocked points are locked and manned.
e. When the engine is pushing the train and brake-van is not leading, the Guard must travel in the leading vehicle which is fitted with a vacuum/air brake valve or hand brake. If the leading vehicle is not so fitted, he will travel in the nearest vehicle thereto, so fitted. He must exhibit hand signals to the Loco Pilot.

12. A material train must not be divided outside station limit.

13. A material train should work on the proper road. If a material train has to push back to station, from where it has started, the rule for pushing back as given in SR-4.12-2 must be followed. In case a material train has to work in the block section in the rear, the line must be blocked back and the Loco Pilot must be given an authority on prescribed form for entering the section. At a station where daido's lock and block instrument are installed, the Loco Pilot shall be given the occupation key for entering the rear block section.
14. When a material train is working between stations, the Guard will in consultation with the engineering Official in-charge of the material train, depute adequate number of permanent competent engineering staff to protect the by means of banner flags as follows.

    The person or persons deputed for protecting the train will proceed to the rear of the train on the double line and both in rear and in front on single line, 600 meters on broad gauge and 400 meters on meters and narrow gauge and will place a banner flag across the track or in the case of cutting or other obstruction, at such other places not less than 600 meters on broad gauge and 400 meters on meter and narrow gauges so that the banner flag is plainly visible to Loco Pilots of approaching trains. The person deputed to protect the train must place two detonators. 10 meters apart near the banner flag. He must shift the banner flag and the detonators when necessary, as the train moves.

Stabling of Material Train (GR 4.64 SR 4.64-1)

1. A material train shall not be stabled on a running line at a station, except in unavoidable circumstances.
2. When a material train is stabled at a station, it shall be protected in the following manner and the Station Master shall ensure that -

a) Material train arrived complete in fouling mark and derailing switch.
b) Apply hand brake of all vehicles of material train. and Guard shall insure to apply hand brake of brakevan.
c) All necessary points have been set against the line on which the material train is stabled and such point have been secured with clamps or bolts and cotters and padlocks and key of such padlock are kept in his custody.
d) Lever/ button color, slide pin and button cap must placed pertaining to blocked line.
e) The Guard shall not relinquish charge until he has satisfied himself that the material train has been protected as prescribed in this rule.

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Working of Trolly (GR 15.18)

A vehicle, which can be lifted bodily Off the line by four men, shall be deemed a trolley.

Rules of working a Trolly - (SR 15.18-1)

1. A Trolly shall not, except in cases of emergency, be used for the carriage of permanent way or other heavy

material and when a trolly is so loaded, it shall be deemed, for purposes of these rules, to be a lorry.

2. All Officers and inspectors of the Engineering, S&T, Operating, Commercial, and OHE departments as may be required permitted to use trollies.
3. For use of trolly railway servant must in a possession of permit signed by the CE, CBE, CSO, CSTE, CSTE(CON.) , DRM ,Sr.DEN, Sr. DSTE.
4. The permit will only be issued after the person, in whose name this issued has been examined and declared to be conversant with the rules for running of trollies. The permit shall be valid for a period of one year from the date of issue. It shall therefore be renewed annually after the person holding it has been examined as mentioned above.
5. Each trolly have marked on it the Number, Designation, and code initials of the Headquarter, Station of the Officials, to whom it is allotted, painted in white letters conspicuously.
6. Trolly shall always be pushed and not pulled.
7. Any other unauthorized aid for their propulsion is strictly prohibited.
8. While passing level crossing, trolly staff should look out for road traffic.
9. The total number of persons including trolly men, which can be carried on a trolly, must not exceed 10.
10. When a trolly is run under block protection, it must be accompanied by not less than 4 trolly men.
11. When running without block protection a trolly must accompanied by 4 trolly men in addition to extra trolly men must be taken.
12. On electrified section, 5 trolly men must accompany a trolly.
13. During night, all trollies must work under block protection except in a grave emergency.

14. Whenever a trolly/motor trolly/lorry be placed on platform for being loaded on a train or for any other purpose, it should be placed parallel to the track, properly locked and in charge of a railway servant. It should be so placed as not to come in the way of passengers and railway staff.
15. Working of trolly -
    I. Without block protection
    II. With block protection

I. Working of Trolly without block protection -

1. When it is proposed to work a trolly outside station limits without block protection, the Official-in-charge of the trolly shall ascertain the where about of trains that he is likely to encounter on the section before he places the trolly on the line.
2. Where due to curves, Cutting, or gradient, a line clear view is not available for a distance of 1200 metres , the trolly must be protected in accordance with G.R 15.27 and 15.27-1.
3. Special precautions should be taken while working trollies without block protection due to sharp curves, cutting, tunnels etc.-

   a. The Officials in charge of the trolly shall advise in writing to the Station Master on duty, where he intends to place the trolly on line, specifying the period the trolly will work in the block section.
   b. The Station Master will advice the Official in charge of the trolly about the particulars of running trains and suggests after which train, trolly placed on line.
   c. The Station Master at the station at either end of the block section where the trolly is working, issue caution order to the Loco Pilot of all train proceeding

into the block section where the trolly is working until the trolly clears the Block section.

d. When trolly has cleared the block section and arrived station or in charge of trolly inform to Station Master that trolly removed from line, issue of Caution Order to Loco Pilot will be discontinued.

e. When two trollies are running together in the same direction, as far as possible, they shall be kept distance of one telegraph post.

II. Working of Trolly with block protection -

1. When working a trolly or before entering in block section in charge of trolly notify the Station Master where trolly will work and the duration of halt.
2. Station master advice other end's SM and take permission from SCOR for working of trolly. After getting permission from SCOR both sides SM exchange massage with P.No. SM of both end shall not enter any train in Block section until the in charge of trolly issue a massage of 'Trolly removed from track' with P.No.

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Motor Trolly –

It is also types of a trolly, which run on rail, attached with motor. It is used for inspection by Operating, S&T, Engineering, and OHE department.

Working of Motor Trolly -

1. Motor trolly must run under block protection and should be treated and signalled as a train. A Motor trolly is permitted to follow a train / motor trolly at

an adequate distance after advising the Station Master concerned.

2. When motor trolly follows a train or another motor trolly at minimum distance of 500 meter should be kept with the train or trolly to be followed.
3. A motor trolly must be manned by minimum 4 bodied trollymen.
4. On a motor trolly the total number of persons including trollymen must not exceed 7 in the case of 4 HP and 10 in case of 6 HP motor trolly.
5. When a motor trolly is running, there shall be at least 2 persons seated in front.
6. The speed of motor trollies while passing over points and crossings, Irrespective of whether the trolly is running on the straight or turnouts, shall not exceed 15 kmph. The station master of the station situated short of the place where spring points are located, shall issue Caution Order .
7. Working of motor trollies double line where Lock and Block instruments have been provided-

a. Line clear will obtain on block telephone without operation of block instrument.
b. T/369(3b) will issued to the In charge of Motor Trolly to pass last stop signal in the On position. The P.No. received from S.M. in advance will be recorded on T/369(3b) and it should be clearly endorse that line clear has been obtained. A manuscript memo given to in charge of Motor Trolly to enter the Block section.
c. If possible receiving station master will arrange for the reception signals to be taken ‘‘Off’ ’.On arrival

at the station in advance , the 'Official-in-charge of the motor trolly will deliver the authority to the station master with the endorsement that the motor trolly has arrived complete and sign with date and time on it. The authority must be retained by the Station Master at receiving end and pasted in station diary then section clear the block section supported by a Private Number.

d. To cancel line clear for a motor trolly, message will be exchanged between the Station Master with private number.

8. Working of motor trollies on single line sections where token less block instruments are provided.

a) Line clear will obtain on block telephone without the operation of block instruments.
b) Then he will prepare a manuscript authority to enter the block section in duplicate with private number obtained in the support of line clear. One copy of the same will be handed over to in charge of the motor trolly and T/369(3b) authority will be issued to pass the last stop signal at on position.
c) Reception signals to be taken Off at next station.
d) On arrival at the other end of the block section the in charge of the motor trolly hands over the authority to the station master with the endorsements 'the motor trolly has arrived complete'. station master pasted the same in his diary.
e) To cancel line clear for a motor trolly messages will be exchange between the Station Master with private number.

9. A motor trolly following a train or another motor trolly

a. A motor trolly may follow a train or another motor trolly only during day and clear visibility both single and double line sections with minimum distance of 500 meters.
b. A motor trolly following train or another motor trolly station master prepared motor trolly permit (T/1525) in duplicate one copy handed over to in charge and obtain signature on second copy.
c. The last stop signal shall not be taken 'Off' for following Motor Trolly an authority on form T/369(3b) to pass the same in the on position.
d. S.M. shall give departure signal when motor trolly entered in block section and inform of next SM about motor trolly following a train or another motor trolly. SM inform departure time of each trolly.
e. SM may receive the following motor trolly by taking 'Off' signals on an unoccupied line or take 'Off' the calling on signal or showing hand signal if motor trolly received on an occupied line.
f. SM should not clear block section until last motor trolly has arrived.
g. On arrival of last Motor Trolly SM shall inform to SM in rear arrival time of each Motor Trolly / Train with exchange of Private number. and recorded in the TSR of the both station.
h. .Where token instruments are in use the token received from the preceding train or motor trolly shall be kept in the safe custody of the station master on duty and inserted in the block instruments only after the arrival of the last following motor trolly.
i. If there is more than one motor trolly to follow a proceeding train or motor trolly the station master hand over motor trolly permit to each in charge of motor trolly and will add the words last motor trolly on the permit of last motor trolly.

j. Each in charge of a motor trolly will hand over the trolly permit to the station master on duty at the station in advance. The in charge of last motor trolly must sign in TSR.

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Working of Lorries –

1) Lorry shall normally be run during day time only.
2) When ever a lorry has to work with in station section the in charge of lorry will advice station master in writing specifying the period during which it will work. The station master on duty when granting line clear or authorizing the taking of signals will personally satisfy him self that the informed to in charge of the lorry and lorry does not fall the path of trains. Slide collars shall be used on those slides governing the home signals of the line on which a lorry would be working.
3) Two types of lorry working -
a) With block protection.
b) Without block protection.

A Lorry shall invariably be worked under block protection when –

1. It is necessary during an emergency to run it at night or when the visibility is restricted due to dust, storm, fog, rain or any other cause
2. It is loaded with rails or girders.
3. It is loaded with specially heavy materials which can not be readily unloaded.

4. When it is working in certain sections with heavy curves, cutting or on ghat sections.
5. A lorry may be worked without block protection when the in charge before putting a lorry on the line has ascertained from the station master on duty whether line clear can be obtained for the lorry without causing detention to a train if no detention would be caused, Line clear should be obtained. In charge of lorry after considering the urgency of work to be done should decide whether to place the trolly on the line or wait until line clear can be obtained for it.
6. Lorry may be worked without block protection following precautions should be taken by In charge of a Lorry.
   a. When intends to place the lorry on the line in mid-section. He shall issue a message on field telephone to station master indicating the exact kilometer. This message shall be supported by a private number.
   b. The station master who receives notice shall inform the in charge of the lorry about particulars of trains which are expected to run on the section and also the time at which the lorry can be placed on the line.
   c. When permission has been asked to keep the lorry on line from block sections the station master shall block the line and issue a message to the in charge shall be supported by a private number.
   d. The in charge of the lorry shall under no circumstances keep the lorry on the line unless he has obtained acknowledgement in writing from the station master of the station at which the lorry enters the section that he has advised the station

master concerned in regard to the issue of caution order.

e. When lorries follow one another, a minimum distance of 2 telegraph posts should be kept.

f. Lorry shall not be allowed to enter block section during ACF and TSL except grave emergency.

g. Material lorry to have it protected in accordance with the provision of GR 15.27and SR15.27-1.

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MONSOON PATROLLING (SR15.04-2)

1. Before rain patrol chart should be prepared by Engineering department and distribute to station master with instructions i.e. time of patrolling, book no. which kilometer patrolman should be exchange of book and scheduled timing of arrival and departure of patrolman.

2.Exact date of patrolling should be inform to station master by AEN/PWI.

3. Patrolman on his patrol book taken sign of station masters. During patrolling on scheduled time both the stations.

4. both the patrolman meet fixed spot in section and exchange on his book and returned to station master sign on his book.

5. Station master record in his diary name of patrolman, the actual time and scheduled time of his arrival and departure from the station.

6. If a patrolman on arrival at the end of the beat does not find the next patrolman. He must walk on until he meets him

7.If the patrolman does not meet opposite direction in whole section. Patrolman should go to next station and inform station masters and taken sign in his book. Station master inform other end station master and PWI. PWI will depute another patrolman

8. If a patrolman does not turn up with in 15 minutes of his scheduled arrival the station masters on duty will take the following action.

9.He must stop run through trains proceeding into the block section.

10. He must advice the station master at the other end of the section to take similar action and also advice controller.

11. He must issue a caution order to all trains proceeding into block section advising the Loco Pilot to be on the alert and specify a speed restriction of 40 km/h during the day when the visibility is clear and 15 km/h during the night or during the day when visibility is not clear

12. He shall also initiate action to ascertain the reason for the patrolman not turning up by either sending a Gangman or a Pointsman.

13. The caution order will be issued until the patrolman has arrived and reported that the line is safe for passage of trains.

Defective Permanent Way –(S.R.6.07-1)

If Loco pilot or Guard experiencing any abnormal condition in the track over which his train has passed and he considers that the portion of the track over which his train has passed is detrimental for safe running of subsequent trains will take action as under :-

1. Stop his train at next block station without clearing the block section, whistle frequently and inform the SM through available means of communication. In case of IBS and Automatic block territories, the loco pilot must inform the SM in rear and Loco pilot of trains already left station in rear through available means of communications to stop movement of trains.
2. A written memo indicating the details of the occurrence is given to SM by the Loco pilot.
3. The SM must issue a message to the SM of the other end, and Junior engineer/Section engineer (P.way), AEN, DEN,CHC and DOM.
4. Arrange to dispatch a Track maintenance Machine/Tower wagon/ Light Engine or in their absence a train accompanied by an engineering 'Official with a caution order to the effect to "Stop Dead". The engineering 'Official will inspect the track and shall allow the train to pass only after satisfying that the track is safe for the passage of train. Advice the condition of the track and any restriction of speed to be imposed to the SM personally or through written memo which may be sent through the Loco pilot. In the absence of

engineering Official the train will send with Caution Order(T/409) instructing Stop dead before the affected KM and after satisfying himself about the condition of track, pass over the track at 10 Kmph.

5. If he finds the line is unsafe to pass, he shall return to station in rear. If Loco pilot is not able to detect any defect in track, subsequent trains shall be dispatched with a speed 10 kmph over the affected track till the track is certified to be safe by engineering Officials.
6. If the Guard of any train experiences any abnormal occurrence in the track while working his train, he must inform the Loco pilot of his train through Walkie-talkie or other available means of communication after which the Loco pilot shall take action as mentioned above.

Failure of Rail/Welding - (SR15.17-1)

In the event of a rail/weld failure, the Keyman /Gangmate/ P.way Mistry or Cold weather Patrolman, shall after protecting the line, make necessary emergency repairs to the track and pass traffic at **20** kmph. The temporary/permanent repairs to track shall be done by Gangmate / P.way Mistry or Cold weather Patrolman, shall after protecting the line, make necessary emergency repairs to the track and pass traffic at **20** kmph. The temporary / permanent repairs to track shall be done by the P.W.I. as soon as possible and restored traffic at normal speed.

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TYPES OF MACHINE

1. TTM : Tie Tamping Machine.

2. DTS : Directed Track Maintenance.

3. DTS : Dynamic Track Stabilizers.

4. DGS : Dynamic Track Stabilizers.

5.	BCM	:	Ballast Cleaning Machine.
6.	BRM	:	Ballast Regulating Machine.
7.	FRM	:	Formation Rehabilitation Machine.
8.	CSM	:	Continuous Sleeper Maintenance.
9.	CSM	:	Continuous Action Tamping Maintenance.
10.	RGM	:	Rail Grinding Machine.
11.	SCM	:	Sleeper Changing Machine.
12.	HTM	:	Hydraulic tamping Machine.
13.	ALM	:	Automatic Lining Machine.
14.	PTM	:	Points Tamping Machine.
15.	STM	:	Switch Tamping Machine.
16.	SBS	:	Shoulder Ballast Screener.
17.	TRT	:	Track Relaying Train.
18.	UNIMAT:		Universal Tamping Machine.
19.	PQRS	:	Plasser Quick Relaying System.
20.	MFD	:	Maschinen Fabricen Deutschland.

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Working of Track maintenance machines

(G.R. 4.65)

1.On track maintenance machines are self propelled. . These shall be worked as a train.

2.In case of movement from one station to another station only one /coupled 'On track' Track maintenance machine may be allowed under one authority to proceed.

3. Machine shall work under the direct supervision of an engineering Official, not below the rank of Sectional Engineer / P.Way, who will be responsible for taking the traffic block and for protection of the lines while the work is in progress.
4. The Track Maintenance Machine working competency certificate to the Operator will be issued by Dy.CE(TM) / XEN(TM) and will be valid for 3 years.
5. The competency certificate regarding safety rules to the Operator will be issued by the Sr.DSO/DSO of the concerned division and will be valid for one year.
6. The Operators of the machines shall take initial training at ZRTI/BSL and refresher courses shall be once in three years.
7. No Track maintenance Machine shall be brought on a running line without the written permission (T/806) of the Station master.
8. The Track maintenance machines shall work under line block. The Jr. Engineer/Sr. Sectional Engineer(P.way) incharge of the machines shall give the requisition for block in detail to SM. The SM shall then contact the controller and SM shall return the original of the requisition with endorsing the duration of block permitted and other special instructions, if any.
9. Maximum permissible speed of machines should be approved by CRS. On point and crossing, the speed shall however, be restricted to 15 kmph.

Rules for operation :-

I. Single line section :

a. Work and proceed -

i) SM will obtain line clear from station in advance, take Off last stop signal, Token and permit will be issued by SM and signed by operator and handed over to JE / SE.

ii) On completion of the work, machine will be received by taking 'Off' reception signals. JE/SE will hand over the token and permit to SM. then only SM will clear back the section.

b. Work and Return – With Token Instrument :

SM will obtain line clear from station in advance, take 'Off' last stop signal, issue token and permit which will be signed by Operator and handed over to the JE/SE. On completion of work, the machine will be received by taking 'Off' reception signals. JE/SE shall hand over the token and permit to the SM and also issue a certificate to the SM that track is fit for train movement. Then only SM will normalize the block instrument.

c. Work and Return -Token less Block Instrument:-

SM will block back the section and take of the shunting key, issue a permit which will be signed by the Operator and hand over to the JE/SE. T/369(3b) will be issued for passing the last stop signal at danger.

On completion of the work, the machine will be received by taking 'Off' reception signals. JE/SE shall hand over the shunting key and permit to the SM. He will also issue a certificate to the SM that the track is fit for train movement. Then only SM will remove the Block Back.

II. On double line section :

a. Work and Proceed - (Via Right direction) –

i. SM will obtain line clear from station in advance, take 'Off' the last stop signal. Issue a permit which will be signed by Operator and hand over to JE/SE (P.Way)

ii. The machine will be received by taking 'Off' reception signals at next station.

iii. JE/SE will hand over permit to the SM and he also certify that track is safe for train movement. Then only the SM will clear back the section.

b. Work and Proceed - (Via wrong direction):-

i. SM will take the line clear from station in rear.

ii. SM will issue Paper line clear ticket and permit which will be signed by Operator and hand over to the JE/SE(P way). The machine shall be piloted out of the station.

iii. After completion of the work, the operator shall bring their machine to stop opposite the first stop signal pertaining to the right line or at the last stop signal to the wrong line whichever they come across first. A Railway servant in uniform will pilot the machine in to the station.

iv. JE/SE will hand over the paper line clear ticket / Permit to SM and also certify that the track is fit for train movement. Then only the SM will close the line.

c. Work and return :(via right direction) :-

i. SM will block forward the section, Permit and Shunting key (if any) will hand over to the JE/SE. Permit will be signed by Operator.

ii. SM will issue T/369(3b) for passing the last stop signal at danger. After completion of the work, the Operator shall bring the machine to stop opposite first stop signal pertaining to the right line or at the last stop signal

pertaining to the line on which they are running whichever comes across first.

iii. A Railway servant in uniform will pilot the machine into the station on a written authority.

iv. JE/SE will hand over the Permit to the SM and certify that Track is fit for train movement, then only, the SM will cancel block forward.

d. Work and return (via wrong direction) –

i. SM will block back the section and issue machine permit or Shunting Key if any to JE / SE and obtain signature of machine operator.

ii. SM shall be Issue pilot out memo.

iii. On completion of the work the machines will be received by taking 'Off' reception signal.

iv. JE/SE shall hand over the machine permit / shunting key if any, to the SM on duty. He will also issue a certificate that the track is fit for train movement, then only, the SM will remove block back.

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ACCIDENT

Definition : For the purpose of Railway working, accident is an occurrence in the course of working of Railway which does or may affect the safety of the railway, its engine, rolling stock, permanent way and works, fixed installations, passengers or servant which affect the safety of others or which does or may cause delay to train or loss to the

railway property. For statistical purposes accident has been classified in categories from A to R excluding I and O.

Classification of Accidents: (AM 117 –124)
Accidents are classified under following heads -

1. Train Accidents
2. Yard Accidents
3. Indicative Accidents
4. Equipments Failures
5. Unusual Incidents.

1. Train Accidents – Train accidents is an accident that involve a train. Train accidents are further divided as –
a. Consequential Train Accidents – Include train accidents having serious repercussion in terms of either one or many or all the following –

- Loss of human life
- Human injury
- Loss of Railway property
- Interruption of Rail traffic.
- Train accident under following classification will be termed as consequential train accident.

Collision	All cases under category A1 to A4
Fire	All cases under category B1 to B4
Level crossing	All cases under category C1 to C4
Derailment	All cases under category D1 to D4
Miscellaneous	All cases under category E1

b. Other Train Accidents.- All other accidents which are not covered under the definition of consequential train accident are to be treated as other train accident.

2. Yard Accidents: All accidents that take place in a yard and does not involve a train are termed as yard accident. These include accidents falling under category A-5,B-7,C-9 and D-6.

3. Indicative accidents: In real term they are not accidents but are serious potential hazards and include all cases of train passing signal at danger, averted collision, breach of block rule coming under classification F,G and H.

a. Averted collision – An averted collision is a circumstance under which but for the vigilance shown by any person or persons, a collision could have occurred, either in the block section or within the station limits between two trains or between a train and an obstruction.

Provided further that such an occurrence may not be treated as an "Averted Accident"

i) If, outside the station limits, the distance between the two trains or the train and the obstruction at the time the train or trains have finally come to a stop, is 400 meters or more.

ii.) If, within the station limits, there is an intervening stop signal at danger governing the moving train, and compliance by the moving train with the indication conveyed by the stop signal averted the collision between the trains or between the train and the obstruction.

b. Breach of Block rules- When a train inters a block section without any "Authority to proceed" or with an improper authority to proceed, or is received on a blocked line not constituting an averted collision, or when it enters or is received on a wrong line at a station or a Catch / Slip siding or sand hump, it constitutes breach of Block Rules.

c. Signal passed at danger- Passenger train passed signal at danger without proper authority (H-1) and other train passed signal at danger without proper authority (H-2)

4. Equipment failure –Failure of railway equipment i.e. Engine, rolling stock, permanent way, OHE, signal and telecommunication (J,K,L,M)

5. Unusual Incident –These include cases related to law and order but not resulting in train accidents and other incidents under classification N, P,Q and R

Reportable train accident- (AM-106)

All accident falling under the purview of section 113 of railway act 1989 are termed as reportable train accident and include following -

1. Any accident attended with loss of human life, or with grievous hurt.
2. Any collision between trains of which one is a train carrying passengers or
3. The derailment of any train carrying passenger, or of any part of such train, or
4. Accident which are attended with loss of human life in passenger trains involving train wrecking or attempted train wrecking , cased of running over obstruction placed on the line, of passenger falling out of train or of fires in trains, or grievous hurt as defined in the Indian Penal Code , or serious damage to railway property of the value exceeding rupees 25 Lakhs which have not actually occur which by the nature of the accident might reasonably have been expected to occur and also cased interruption of any important through line of communications for at least 24 hours.

Means to report of an accident –AM 201

Every Railway servant shall report with least possible delay every "Accident" or "Unusual Occurrence " in the course

of working the Railway which may come to his notice, to the nearest station master or section in charge through the following any possible means-

1. PFT/EFT/Walkie-Talkie / VHF set /Mobile phone
2. Gate Telephone.
3. By stopping train/loco/trolly or other vehicle passing on adjacent line.
4. BSNL/MTNL Telephone
5. By sending message through a railway servant to the nearest SM.
6. Sending the light engine of the train before detaching the engine ,SR 6.09-1 should be followed, however in case of suspected sabotage, engine etc should not be disturbed ,or
7. By road transport if available.

SERIOUS ACCIDENT (AM 105)

a) Accident to a train carrying passengers which is attended with –

i. Loss of life **or**
ii. With grievous hurt (as per section 320 of IPC) to a passenger in the train, **or**
iii. With serious damage to railway property of the value exceeding Rs. 2 Crores. **and**

b) Any other accidents which in the opinion of the Chief Commissioner of Railway Safety or CRS require the holding of an inquiry by the CRS shall also be deemed to be a serious accident.

However the following shall be **excluded -**

(a) Cases of trespassers run over and injured or killed through their own carelessness or of passengers injured or killed through their own carelessness, and

(b) Cases involving persons being Railway servant or holding valid passes / ticket or otherwise who are killed or grievously injured while traveling outside the rolling stock of a passenger train such as on foot board or roof or buffer but excluding the inside of vestibules between coaches, or run over to a Level Crossing or elsewhere on the Railway track by a train , and

(c) Level crossing accident where no passenger or Railway servant is killed or grievously hurt unless the Chief Commissioner of Railway Safety or Commissioner of Railway Safety is of the opinion that the accident requires the holding of an inquiry by the Commissioner of Railway Safety.

DISASTER MANAGEMENT

After accident cope the situation the steps taken by Rail administration called "Disaster Management"

The top priority of Railway to provide accident free, safe journey. For which continuous effort are carrying on. New technology has been introduced in Railway. Effort are taken to less dependence on human being and system made such type that human failure does not made any unusual.

The best training has been given to employee and how to stress free this also describe by training. But there are always chances of accident and to cope the situation of the system called" Disaster Management".

In every 150 to 200 k.m. Accident relief train and Medical relief train provided and staffs are made available round the clock. Target time for dispatched also fixed. Each train movement Rail employee trained in First Aid.

First aid available with Station Master and Guard, Phone no. of local administrative Offices, hospitals and their name displayed for quick information and assistance.

Object of Disaster Management (AM - 301)

1. Protection of adjacent running line.
2. Protect ion of the site of accident.
3. Save life and alleviate suffering.
4. Protect property including mails.
5. Provide succor and help the passengers at the site of the accident.
6. Transportation of stranded passengers.
7. Preservation of clue and ascertain the cause of the accident.
8. Restore through communication.

Hooter code

Hooter will blow to inform about accident to all concerned on those station where Accident relief train and Medical relief van is available.

Each hooter will blow for 45 second and the time interval between the hooter codes will keep 5 seconds for clear understanding.

The meaning of hooter code is as under –

Two Hooter	-	ART / Road mobile ART required at home station.
Three Hooter	-	ART / Road mobile ART required at outside the Home station.
Four Hooter	-	ART / Road mobile ART and MRV required at Home station.
Five Hooter	-	ART / Road mobile ART and MRV required at Outside the home station.

One long Hooter (90 second) - For Cancellation of Medical Van and Breakdown train.

Note - Each hooter code will be repeated **twice** with an interval of **five** minutes.

Target time for turning out the Breakdown trains.

ART During day. - 30 minutes.
During night. - 45 minutes.

Note : The time is reckoned from the time of ordering to the time of leaving the shed.

Target time for turning out the Medical Van.

MRV In case of Double exit siding - 15 minutes.
In case of Single exit siding - 20 minutes.

Note: The time is reckoned from the time of ordering to the time of dispatch.

General Instructions :

1. Accident relief train run on priority, giving precedence of all trains.
2. MRV should be preceding over Relief train.
3. MRV and ART should be dispatched on their schedule time.
4. Relief train should not be delayed for Guard, the breakdown incharge will carry the train and Guard will send by following means.

Duty of Station master after accident (AM 311)

If an accident comes to the notice to the Station Master, he shall immediately -

1. Ensure that no other train enters the affected section. On Double line he must lock the commutator of the block instrument controlling the affected section in 'Train on Line' position.
2. Advise the controller of the accident, indicating the nature of medical and other assistance required. If the section is not controlled or if the control phone is out of order, the DOM or the CHC must be advised on the public phone or by other means available. The Station Master of adjacent station and other major station should also be advised accordingly.
3. Take action to protect and safe Guard Railway and public property.
4. Collect medical aid, if required, locally from the nearest hospitals, dispensaries and doctors. In order to convey medical help to the site of the accident, trolleys may be sent out and train engines utilized or outside conveyance requisitioned, if necessary .In this connection, he must requisition help from the local police and Magistrate.
5. Report the accident to all concerned as prescribed in rules.
6. Call all the 'Off' duty staff and allot them specific duties for relief and rescue.
7. Arrange to provide all sort of assistance to the affected passengers such as catering, drinking water, issue of complimentary passes, free messages to relatives etc.
8. Open information counter and booth for giving information to the public regarding name of the injured / dead passenger and regulation /diversion of the train etc. STD booth

located at stations /adjacent areas should be utilized for giving relevant information.

9. Arrange for whatever assistance is required in connection with clearing arrangements, transshipment etc. and provide lights, refreshments, manual help and any other requirements which can be procure within his resources.
10. Arrange for the section to be cleared of unaffected vehicles as early as possible, but if the accident is attributed to sabotage or suspected sabotage he shall not do so, but wait for instructions from the Officer in charge at site.
11. Remain on-duty taking orders from the control and the Officer in charge of break down operations till the accident is cleared or he is replaced by a competent person.

*****

Duties of Loco Pilot and Assistant Loco Pilot in case of an Accident (AM 307)

At the time of accident the Loco Pilot and Assistant Loco Pilot must immediately -

1. Switch on the flasher light of the engine and switch 'Off' the head light of the engine.
2. Sound short whistle frequently to warn the Loco Pilot of an approaching train.
3. Arrange to protect the adjacent line and then the same line in accordance with GR 6.03 and SR 6.03-1. Information should be exchanged with Guard on Walkie Talkie set or other means available.
4. Arrange to advise control and adjacent stations about the accident by available means.
5. Take such technical precautions as may be necessary or as prescribed by special instructions to make the train safe.

6.Render all possible Assistance to Guard particularly, in the assessment of damage to rolling stock and or locomotive and the nature of assistance required.

*****

Duties of Guard in case of accident (AM 306)

At the time of accident the Guard of the train must immediately -

1. Note the time, date and Kilometer of accident.
2. Ensure protection of the adjacent line/lines and then protect the same line in accordance with GR6.03 and SR6.03-1 .Taking the assistance of any qualified staff, such as, assistant Guard, Assistant Loco Pilot, Gangman, Gatemen etc.
3. Make a quick survey of the casualties, injuries and damage to the rolling stock and assistance required at the site of accidents and advice nearest SM or controller.
4. Render first aid to injured persons and take action to save lives with the assistance of the Railway staff, Doctors, and /or volunteers on the train or near the site of accident and make entry in the Guard journal.
5. Convey information through the quickest possible means giving details of the accident and the nature of assistance required to the controller/ Station either side as mentioned in Para 201of the Accident Manual. In case the train engine disabled is to be detached, the provision of SR 6.09-1 must be complied with before detaching the engine.
6. Arrange to shift the seriously injured passengers through road transport with local help to nearest hospitals whenever possible.

7. Arrange to tea, water and refreshment to the injured with the help of ticket checking staff and other commercial staff available.
8. Preserve and safe - Guard all clues of probable cause of accident.
9. Arrange protection of belonging of passenger and railway property with the help of RPF / GRP and other volunteers.
10. Post a Railway Servant to man the field telephone to ensure regular flow of information to the Control till arrival of ART and remain in general charge till replaced by a senior Railway Official.

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Block Instrument Bell code

BWM-4.01, GR-14.05)

Sr.	INDICATION	CODE	HOW SIGNALLED	HOW ACKNOWLEDGED
1	Call Attention or Attend telephone	0	One Beat	One Beat
2	Is line Clear or Line Clear Enquiry	00	Two Beats	Two Beats

3	(a) Train Entering Block Section (b)Block Back / Block Forward	000	Three Beats	Three Beats
4	(a) Train Out Of Block Section (b)Obstruction removed (c)Block Back Clear on double line	0000	Four Beats	Four Beats
5	(a) Cancel Last Signal (b)Signal given in error	00000	Five Beats	Five Beats
6	(a) Obstruction Danger Signal (General)	000000	Six Beats	Six Beats
	(b) Stop & Examine Train	000000-0	Six Pause One Beat	Six Pause One Beat
	(c) Train Passed Without Tail Board / Tail Lamp	000000-00	Six Pause Two Beats	Six Pause Two Beats
	(d) Train Divided	000000-000	Six Pause Three Beats	Six Pause Three Beats
	(e) Vehicles running away in wrong direction	000000-0000	Six Pause Four Beats	Six Pause Four Beats
	(f) Vehicles running away in right direction	000000-00000	Six Pause Five Beats	Six Pause Five Beats
7	Testing	00000000 00000000	Sixteen Beats	Sixteen Beats

Note-

a. 'o' Indicates a Stroke or a beat and indicates ' - ' a pause.
b. No bell signal other than those prescribed in this rule shall be used. A chart showing the code of bell signals is to be hung up in each 'Office or cabin in which block instrument are placed.
c. Each beat must be given slowly and distinctly. In giving bell signal the bell plunger must be held firmly in for a second at each beat otherwise the signal may be lost or be indistinct. Consecutive beat must be given slowly and distinctly. Each pause must occupy the time of two beats of the bell code.
d. Exchange of bell codes under above numbers 3 and 4 are not required in a section provided with block proving axle counter or track circuit having complete

track circuiting of station yard excluding non running lines on ether end.

Acknowledgement of signals-

a) Each signal received shall be acknowledged by the sending its authorized acknowledgement.
b) No signal shall be acknowledged until it is clearly understood.
c) A signal shall not be deemed to be complete until it is acknowledged.
d) If the station to which a signal is sent does not reply, the signal shall be repeated at intervals of not less than 20 seconds twice or thrice and thereafter controller shall be advised.
e) If a signal is not acknowledged immediately a note to this effect and the time the signal was sent must be made in the remarks column of train signal register.

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Duties of Station Master in case of Vehicles escaping from Station (G.R. 6.11, S.R.6.11-1) -

1. In the event of vehicle escaping from a station, the station master must take action -

a) Immediately advice to the station in the direction in which the vehicle has escaped by sending six pause

four bell code (6-4) for wrong direction in double line and single line. On double line if vehicle is escaped in right direction station master gave six pause five beat (6-5).

b) Advice the station in which vehicles has escaped on the telephone if escaping vehicles contains passengers, this information must also be given.
c) The controller also must be advised immediately by the SM.
d) Put back all signals to 'ON'. Stop any train proceeding in that direction.
e) On a double line section if the vehicle has escaped on the wrong road stopped train proceeding in that direction on the right road, until it has been ascertained that the escaped vehicle is not fouling the adjacent road.

2. The SM who Received six pause four or six pause five beat he must –
   a. Acknowledged the block beats.
   b. Must immediately place all signals at 'ON' to stop any train proceeding in the direction from which the vehicle has escaped, until it has been ascertained that the road is clear.
   c. If there is an approaching train in the section in front of the runaway vehicle, he should admit the train in front immediately, if a line is clear, and then take steps to stop or divert the runaway vehicle.
   d. He must also take such measure as may be most expedient under the circumstances for stopping the escaping vehicle by covering the rails heavily with earth or small stones for as great a distance as possible or turning the runaway vehicle into a clear loop or siding or derailing it by placing a sleeper in its path.

e. As far as possible the vehicle containing passenger should not be derailed or turned in to a derailing siding. If the block section is cleared and the line is not a falling gradient, the vehicle may be allowed to run through the station and vehicle running away signal must be given to the station ahead.

f. If a portion of a train or a brakevan has runaway, the station master must place 3 detonators on the track and waving green hand signal during day and white light during night to attract the attention of the Guard.

3. The Station masters at the both ends of the section will depute competent railway servants to make a search for the vehicle and after it is ascertained that the vehicle has come to a stand and has been secured, send assistance into the section to bring the vehicle.

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Engine whistle code – S.R. 4.50-1

Sr. No	Code of	Indication

	Engine whistle	
1.	**0**	**a) Before starting-** i) Indication to Loco Pilot of assisting/banking engine that the Loco Pilot of leading engine is ready to start. ii) Acknowledgement by the Loco Pilot of assisting/banking engine to leading engine. iii) Engine ready to leave loco yard or after completing loco work. iv) Engine ready to go to loco yard.
		b) On run- i) Assistance of other engine not required. ii) Acknowledgement of Loco Pilot of assisting/banking engine that assistance stopped.
2.	**00**	a. Call for Guard's signal.
		b. Signals not exchanged by Guard
		c. Signals not exchanged by Station staff.
3.	**- 0**	a. Guard to release brakes.
		b. Before starting engine or train from station/mid section.
		c. Main line clear after backing into siding.
4.	**000**	a. Guard to apply brakes.
		b. Train is out of control, Guard to assist.
5.	**0000**	a. Train can not proceed on account of accident/failures, obstruction or other exceptional cause.
		b. Protect train in rear.
6.	**- - 00**	Call for Guard to come to engine.
7.	**0 - 0**	a. Token not received. b. Token missed.
		c. With wrong "authority to proceed."
		d. Passing stop signal at 'ON' on proper authority.

8.	-	a. Before starting- Vacuum/Air pressure recreated on Ghat section, remove sprag.
		b. Passing an Automatic stop signal.
		c. Passing an Intermediate block stop signal at 'ON' when telephone provided on signal posts is out of order and Loco Pilot is thus unable to contact to station in rear.
		d. On run- Acknowledgement of Guard's signal.
9.	——— (continuous)	a. Approaching tunnel or area of restricted visibility or curves or cutting or site of accident.
		b. Recall railway servant protecting train in rear.
		c. Material train ready to leave.
		d. Running through a station.
		e. Approaching a stop signal at 'ON'.
		f. Detained at a stop signal.
		g. When a consequence of Fog, storm or any Other reason the view of signal is obstructed.
		h. When noticed train stopped in mid-section / staff working on adjacent track.
10.	**- 0 - 0**	a. Train parting.
		b. Train arriving incomplete.
11	**0 0 -**	a. Alarm chain pulled.
		b. Insufficient vacuum/air pressure in engine.
		c. Guard apply vacuum/air brake.
		d. Inter communication apparatus used.
12	**- -**	Raise Pantograph. To be acknowledged by the other engine.
13	**- 0 -**	Lower Pantograph to be acknowledged by the other engine.
14	**- 0 0**	a. Signal arm lowered but light extinguished.
		b. Signal arm improperly/insufficiently taken 'Off'
		c. Defective signal.
15	- - -	Fouling mark not cleared.
		a. Apprehension of danger.

16	0000000000 **(Frequently)**	b. Danger signal to the Loco Pilot of an approaching train whose path is fouled or obstructed for any reason.
		c. While working on a Single line section during total failure of communication or when single line working is introduced on a double line section.
		d. Moving in wrong direction on a double line or against the signalled direction in the Automatic block signalling territory.
17	- - - - - - - Intermittent	Approaching level crossing

Action to be taken in case of whistle failure - SR 4.50-2

1) Failure of Whistle of an engine at originating station, the engine should be treated as failed and another engine should be provided.
2) If the defect develops enroute, the Loco Pilot should stop at first approaching station and should inform the SM about the defect.
3) The SM, on getting information from the Loco Pilot, will advise controller / TLC and will arrange relief Loco.
4) If the same Loco is allowed to work by TLC / Power Controller due to non availability of relief Loco, the Loco Pilot will observe a speed restriction of 25 kmph if view ahead is clear and a speed restriction of 8 kmph when view ahead is not clear.
5) In such cases defective locomotive should be changed at first available opportunity.

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Working of train without brake van

GR 4.23,SR 4.23-1

1. No train shall be allowed to enter a block section, unless one or more brake van, except in emergency or provided for under special instructions.
2. This rule does not apply to railcar, light engine or couple light engine.
3. The following goods train may run without brake-van.
   a. Colliery Pilot.
   b. Goods Pilot. (Between yard and siding).
   c. Goods shuttle with the permission of COM.
4. Procedure for running goods train without brakevan :-
   a. In emergency with the permission of Sr.DOM / DOM.
   b. Such train may be run in controlled section only. During all communication failed running of without brakevan is prohibited.
   c. No damaged vehicle should be attached to such train.

Working Procedure -

1. The Guard shall travel on the engine, while running through a station the green hand signal shall be exchanged on station side by the Guard and on the other side by the Assistant Loco Pilot. They shall look back and ensure that the train is following in a safe manner.
2. The train shall be provided with continuous vacuum / air pressure from the engine to rear most vehicles and with adequate brake power. The TXR must mention in the BPC the No. and description of the last vehicle.
3. If there is no provision of clamp for Tail lamp/Tail board on last vehicle such movement should not be permitted.
4. The Guard of the train traveling on the engine should look back frequently while on run.

5. There is no speed restriction when train is running without brakevan, it shall be run with normal speed of goods train.
6. Before starting a train without brakevan the station master of originating station must intimate to the SCOR on duty the last vehicle no under exchange of private number. In automatic signal territory SCOR will inform SM of the station which is nominated to exchange hand signals.
7. While asking line clear for such train SM shall specifically mention that the train for which line clear is being asked is running without brakevan.
8. The Station master before clearing back the section must verify that the train has passed safely with TL/TB. In case, the train is stopped at station for precedence, crossing or due to any other reason, SM shall send the Train Intact Register (T- 1410) in advance to the Guard, who will certify the complete arrival of train.
9. The duties of the Guard which can be performed on by his presence in brake van like applying hand brakes during parting, exchanging hand signal with the Loco Pilot etc. will not applicable in this condition.
10. A register should be maintained in Control 'Office showing the trains run without brakevan and Sr.DOM/DOM should sign in the register in token of his permission to run the train without brakevan.
11. Train may be permitted to run without brakevan only in emergent circumstances and a goods brakevan must be attached at the first possible opportunity.

Personal store of Guard and Loco Pilot

Personal store of Guard (GR 4.19, SR 4.19-1)

1. Rule Book (G&SR/ Guard's Hand Book, Accident Manual, Working Time-Table) with latest correction slips.
2. Guard Memo Book.
3. Detonators (10)
4. Two Red and One Green flags mounted of sticks.
5. Pad- Locks and their keys as prescribed.
6. Rubber Washer (03).
7. Parcel Loading Pamphlet.
8. Flasher Tail Lamp/ Tail Lamp/ Tail Board of approved size.
9. Vacuums/ Air pressure gauge with adapters.
10. LED based flashing tri colour hand signal lamp.

Passenger train Guards shall also have with them the following additional articles:

1. Carriage key
2. Complaint Book.
3. A torch with cells.
4. A light weight first aid box.
5. Key for resetting ACP valve for air brake coaches.

Brake van stores: (SR 4.19-2)

1. Two break vans side lamp complete.
2. Two wedges in each brake van.
3. Two chemical fire extinguishers in good order.
4. One portable field telephone with instructions for use.
5. Emergency lighting equipment (ETL box)

Note : The Station Manager of a Station where Guards are stationed must check their personal stores once in three months.

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Loco Pilot's Personal Store (SR 4.19-3)

1. Rule Book (G&SR/ Loco Pilot Hand Book, Accident Manual, Working Time-Table) with latest correction slips.
2. Safety Pamphlet.
3. 10 Detonators in a case.
4. 02 Red and 01 Green flag mounted on sticks.
5. Two hand signal lamps with red and green slides.
6. Loco Pilot Memo Book (T/245 B)
7. ACP Resetting key.
8. Head Light and Cab light bulb (extra).
9. LED based flashing try colour hand signal lamp.
10. Trouble shooting guide.(for Diesel Loco Pilot only).
11. Trouble shooting directory. (for AC Loco Pilot only).
12. Speed Calculator. (if provided under special instructions).
13. Light Weight Compact Portable Telephone. (Electrified sections).

Note:

1. Wrist Watch, a pair of spectacles (if prescribed by Doctor) also are necessary.
2. On diesel loco two fire extinguishers and in DC/AC Locos two fire extinguishers in each of the two driving cabs must be provided.
3. In addition to above one EFT / PFT, mobile radio set, four wooden wedges, one spare hose pipe for vacuum brake train and one spare feed pipe / brake pipe for air braked trains should also be provided.

4. Loco foreman / supervisor in charge of Loco shed will check each Loco Pilot stores once in three months.

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Train stalled on gradient (SR 6.04-2)

1. Loco Pilot should immediately put on the flasher light.
2. Loco Pilot should apply loco brakes in addition to the application of train brake and train brakes must not be released.
3. Loco Pilot should not normally leave locomotive. If required to leave in an emergency, he will ensure that Assistant Loco Pilot is present on the locomotive.
4. When the train is not likely to start within 15 minutes,

Loco Pilot should-

   a. Apply locomotive hand brakes.
   b. Direct assistant Loco Pilot to pin down the hand brakes of 10 wagons in case of 4 wheeler or 5 wagons in case of 8 wheeler load behind the loco and put wedges under the loco wheels.
   c. Draw the attention of Guard by sounding 3 short whistles for applying brake followed by 4 short whistles for protection in rear.
   d. Direct Assistant Loco Pilot in single line section for protection of train in front.

5. **The Guard** of the train will apply hand brake of brakevan and pin down hand brakes of 10 wagons in case of 4 wheeler load or 5 wagons in case of 8 wheeler load. In case of passenger carrying trains he will also put wooden wedges under the wheels of two coaches nearer to the brakevan. After that, he will protect the train in rear.
6. Guard, after protecting the train in rear, should consult the Loco Pilot for further action.
7. The following procedure should be adopted to restart the train –

(a) Loco Pilot to recreate adequate vacuum air/pressure gradually.
(b) Release train brakes fully with loco brake `ON'.
(c) Notch up the loco by a few notches in forward direction in case of up gradient or reverse direction in case of down gradient.
(d) Release the hand brakes of wagons and remove wooden wedges both in front and rear.
(e) Guard to release hand brake of his brakevan.
(f) Exchange `All right 'hand signal with Guard.
(g) Release hand brake of locomotive.
(h) Gradually release loco brake and start.
(i) Re-check brake power at first opportunity.

8. 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 the similar action in regard to the wagons inside the brakevan.
9. Considering the condition of brake power on the train, the Loco Pilot may take additional precautions during the stoppage of his train on section steeper than 1 in 400 to avoid run away.

Note : On the ghat section locomotive must not be detached from trains between stations. (SR 4.48-1)

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Protection rules (G.R 6.03& S.R 6.03-1)

1. When a train comes to a stop in block section on account of an accident or any other cause, which is not immediately obvious, and the Loco Pilot finds that his train cannot proceed, he shall immediately switch On the flasher light, if provided on his engine keeping the head light Off to attract the attention of a train approaching form the opposite direction and sound four short sharp whistles (OOOO) repeatedly to apprise the Guard of his inability to proceed and display a red flag by day and red light by night. The Guard on hearing the Loco Pilot's whistle shall acknowledge it by waving a red hand signal up and down. The Loco Pilot will acknowledge the Guard's signal by a long whistle. The Guard shall then fix a red flag by day to the side lamp bracket or on the handle of the door or at such a place on the brake van which can easily be seen by the Loco Pilot and at night reverse the side lamps of his brake van, where provided, to show red towards the Loco Pilot. The Guard shall also ensure that during day the tail board is in position and at night the tail lamp and the side lamps where provided, are burning brightly.
2. When the Loco Pilot of an approaching train sees the light of the flasher or danger hand signal, he shall at once take action to stop his train short of obstruction just as he would act when he sees a danger hand signal or hears the distressed whistle code of another engine or explodes a detonator and render all possible assistance to the affected train. He will continue his journey at normal speed only after ascertaining that the line on which he is to proceeding is free from any obstruction. If however, he finds that the line on

which he is to proceed is obstructed the Loco Pilot and Guard of the train will protect their train in accordance with GR 6.03. The Loco Pilot of the train proceeding on the adjacent track must stop at the next station and report the occurrence immediately and the assistance required.

3. The flasher light shall be switched ``Off'' only when the Loco Pilot finds that his train is in a position to proceed or after he has ascertained that the adjacent line is free from obstruction and it is not necessary to stop any approaching train to obtain assistance. In case the flasher light not provided or it fails the head light may be switched 'On" and 'Off' repeatedly.
4. EMU trains – The EMU trains have been provided with electric bell signals between Motorman and Guard and also blinker lights. In case EMU trains come to a stop on account of an accident or any other cause which is not immediately obvious and the train cannot proceed, the Motorman shall immediately switch On the blinker light and also apprise the Guard of his inability to proceed by sounding 4 rings in the bell signals which shall be acknowledged by the Guard by 4 rings then the Guard shall switch On the blinker light and protect the train as prescribed in 6.03 or GR 9.10-1 as case may be. In case of failure of the bell code the horn and also the hand signals should be used.
5. When the train is able to go forward the Loco Pilot will sound one continuous long whistle to recall the Guard or the person, deputed to protect the train in rear, who will immediately return leaving the three detonators on the line and picking up the intermediate detonator.

6. If the train has also been protected in front, the Loco Pilot will, when the train goes forward endeavour to stop short of detonators and pick up the three detonators.
7. In the case of light engine or couple light engines the Loco Pilot or both the Loco Pilots are responsible for the protection.

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Traction Subsidiary Rules

Formation of Electrical Multiple Unit: The suburban trains run in Mumbai Division are of 9/12 coaches. There will be 3 units in the rake of 9 coaches and 4 units in the rake of 12 coaches. Each unit consists of 3 coaches.

76 C Coach – Driving Trailer
70 B Coach – Motor Coach
72 A Coach – Non-Driving Trailer

Multiple Units is of 9 coaches.

Mumbai end Kalyan end

C	B C	A (Coaches)	A	B	C	A	B
76	70 76	72	72	70	76	72	70

'A' Jumper – A jumper is for Guard remote control. This is for switching 'ON' /'OFF' the light, fan, passenger alarm buzzer, signal Bell No. 1 and light selection of train.

'B' Jumper – Panto up and down, compressor set and trip, MG set and trip and remote control of EPE brake.

'C' Jumper – This is for jumper motor coach operation, signal bell number 2, overload reset, ACC reset and control selection.

'D' Jumper - This jumper is in between unit and is connected from motor coach to driving trailer and non driving trailer. With the help of this jumper MG or battery (KETL) power driving is sent to the non driving trailer

from motor coach which is essential form running master controller EP brake and lights and fans of three coaches.

'E' Jumper - This is an additional jumper provided in ICF stock and new Jessop 260 etc. it is a train light jumper. The LS light is used to indicate the coach pointing towards Mumbai and Kalyan and the wire use in HT failure indication line goes through it.

Motor Coach:- A Motor coach is a self propelled coach. In every motor coach four traction motor should be provided. Three (3) motor coaches are provided in nine (9) coaches' rakes and for (4) motor coaches are provided in 12 coaches rakes. There is also a driving cab provided in a motor coach. In this machine were provided for the running of train which has now removed. In one motor coach (1) generator is available which can supply 110 Low voltages D.C. If a motor generator fails the supply can be done using another motor generator selector supply from an another motor coach.

Dead Men's Handle:- It is a safety device, motor be always kept pressed by motor man and reserve handle should be kept in forward position. It in the running train motorman become in capacitates then the train stops automatically. If the dead men's handle is bad or not working, or cock No. 3 has been isolated then the motorman should stop the train and call the Guard in front and order him to travel in driving cab. This is because if the motorman becomes incapable during driving the train then Guard master can switch 'Off' the control and put on the emergency brakes and make the train stand and the train would not be run further until a new motor has been arrived.

Brake Continuity Test: - This is a very important test, which has to be carried out by the Motorman and Guard, while rake is to taken out from stabling siding or from car shed.

Procedure Of BCT:-

1. MR pressure of 5.6 Kg/cm2 changes up to 7.03Kg/cm2 in the cab of motorman the motorman should open ICS brake pipe, change it and when the BP pressure is 4.6 Kg/cm2 then he should give 00-00-00 bell code to Guard.
2. Guard in his cab will see emergency group and if BP shows 4.6 Kgcm2 then he will give 00-00-00 bell code & will verify it.
3. Guard with his cab will turn BP to zero and give the motorman a bell of 0-0-0.
4. After receiving the bell from Guard if the BP pressure becomes 4.6Kg/cm2 then the motormen will give a 0-0-0 bell signal and will verify it.
5. Motorman on receiving 0-0-0 bell the Guard will normal the emergency brake handle.
6. If in a motorman's cab the BP gets again changed to 4.6 Kg/cm2 then motorman will give the Guard a 0-00-0 bell signal and if Guard in his cab als has a pressure of 4.6 Kg/cm2 he would give 0-00-0 bell and it would be verified.
7. And hence the motorman will enquire about dead men's handle and is going to change the brake position from handle number 2 up top a pressure of 1.8 Kg/cm2 in his cab then he is going to send 0-000-0 bell code. When Guard sees 1.8 Kg/cm2 pressure then he gives 0-000-0 bell code & verifies that whether EP brake is getting applied from the first to the last coach. From the above checking it is verified that sufficient pressure is present in every coach & auto brake is working, hence forth Guard is

going to release his hand brake 00-0-00 bell code to motorman & Motormen will release hand brake & will release hand brake & will give its acceptance.

8. From above verification Guard is going to enter above details in the defect card & is going to write BCT has been done perfectly & will open hand brake.

Mansoon Precautions:-

S.N.	Water Level	Action to be Taken
1	Water level being less than that of rail level	Speed of EMU is normal
2	Water level being more then 4 inch(100MM) or more than rail level.	EMU should be stopped.
3	If water level is more than 4 inch by rail level or 5 inch(When rake is standing)	When water level is less than 4 inch then EMU can run with a minimum speed of 8 KMPH. And water level is less than rail level, the speed of EMU is normal.
4	Water level being more than 5 inch or more(When rake is standing)	EMU rake marund & it should not work with its self power. And if the water level goes down then with the help of other rake & engine it would be brought under car shed.
5	Water level is 11 inch or more than that(When rake is in standing)	Pantograph should be lowered, all assets (instrument)should be switched 'Off', rake should be considered as marund &

		when the water level goes down then all instrument should be brought under car shed & examined.

Note: - (1) On Masjid platform for Kalyan up routes line & on Mumbai for down trains white lights have been provided, If the water level is 4 inch or more then the white light gets lightened & gives direction.

(2) If EMU rake is standing & water level is 4 inch or is going to get more then the train should be taken away from this area using all the possible means.

(3) As the water level gets to 4 inch or less than that before making the train runs with its normal speed (all the conditions should be checked carefully).

Action to be taken on EMU by ACP:-

(i) During authorized stop when ACP happens on EMU then Motormen & Guard are going to hear an alarm buzzer in their cab's then motorman has to 'Off' the master control handle & make the switch into 'Off' position & he should give 000-00-00 bell code & should reduce the speed of the train up to 20 KMPH.

(ii) When the Guard receives this kind of signal he is going to look back in both the directions & will check if any accident has happened or not, If Guard founds any accident has happened he's going to give one 0 bell code & will apply the emergency brake & then he will give 000 bell code to Motorman & will call him.

(iii) If any severe accident is not found then the train should be taken to next near by station, & to get the attention of people working on station, he should give small – small - large whistles.

(iv) After reaching the station with the help of people working on station the ACP Disk is to be moved in normal position and in the coach where ACP has happened & should enquire about the incident.

(v) If the ACP in EMU happens in Pune - Lonavala section then the train should be halted by the motorman & the further action should be taken.

Action to be taken if a person gets run over HITS or else falls down from running train.

a. Motorman will apply emergency brake & will stop the train and he will give OOO bell code & will call the Guard in front.
b. Guard is going to reply by OOO bell code & then he will on both the blinker lights & with the first aid box he will move forward.
c. If the parson is still alive then first aid should be given to him & will carry him to the next station master. Guard will give a written memo having full details of the accident to the station master.
d. If the person who met with the accident is dead than only that part of body which is covering the railway track should be moved so that the track are available for train. If any gateman is nearby then the Guard is going to inform him to take the care of dead body and on the arrival of next station he is going to give full details of the accident to the station master.

Making the train stable and taking it out from stabling siding.

1) **Stabling: -** Following care should be taken by Guard while making the train stable in stabling siding.
    a. The whole train has moved in stabling siding the following side is clear.
    b. Tail lamp/ tail board is clearly visible
    c. Fan of the train and cab is kept closed.
    d. Hand brake should be applied.
    e. Shutter of the cab should be kept closed.
    f. If any defects is should be noted in defect card.

2. **Start the train-**

Following assurance should be taken by Guard before start the train –

a) To take unit number and line no. after sign on duty.
b) Before going in cab it should be assured MR/BP pipe and Jumper are connected.
c) All coaches are cleaned.
d) Ensure that light and fan are properly working after coming in cab.
e) Destination board should be changed. Tail lamp/board should be affixed.
f) Brake continuity test should be done.

Action to be taken when fire on train-

1. Whenever the Guard notices fire, or smoke on his train or if it is brought to his notice by passenger, he should apply emergency brake, stop the train and call the Motorman by giving the required beats.
2. He should put the blinker light on and immediately protect the opposite line so as to save the passenger from being run over by a fast approaching train.

3. Guard will go by taking his Minimax and help the Motorman to extinguish the fire.
4. If the fire is out of control he will soon inform SM/SCOR and demand the Fire brigade.
5. Train will not be departed until fire is not completely extinguished.

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SOME IMPORTANT TSR

1. **TSR 45-** Not more than 4 authorized person at any one time including the Motorman / Guard are permitted to travel in an Electric Engine or Multiple Unit Cab, while the train is in service.

2. **TSR 68-** When DMH is defective, train will be stopped immediately and to call Guard to travel in Driving cab. Traffic control should also be informed. If defects persist then authorised extra person should be appointed to start the train or it should be removed from service.

3. **TSR 94 -** Guard must have thorough knowledge of the traction subsidiary rule applicable to the Suburban services as well as General rule and regulation.

4. **TSR 122-** In the event of the driving apparatus in the leading driving compartment becoming defective or in the event of it being necessary for the Loco Pilot to drive from rear cab for any other reason whatsoever the Guard will station himself in the leading cab, sound the horn as

necessary and operate the Loco Pilot's brake handle for operation of brake as require and stop at the next station. Such time speed will not exceed 16 KMPH.

5. **TSR 127 –** Coupling assisting train jumpers not to be inserted if failure is to electrical trouble.

6. **TSR 144-** It is the duty of the train driver to ascertain that the second driver is acquainted with the contains of all Caution Orders, and special instructions etc, which he may receive while working the train.

7. **TSR 96 –** Guard must not leave their trains until relieved, except as instructed in this rules or in the general rules and regulations.

8. **TSR 99 -** The Guard will when practicable perform the duty required of the Driver in the general rules and regulations. He must do all in his power to assist the driver in case of difficulty.

9. **TSR 101-** Guard must assist the driver as required in the supervision of the station staff in coupling and uncoupling units.

10. **TSR 106-** Guard must be familiar with rules in connection with bell signalling. (See TSR 71)

11. **TSR 107-** If it should be necessary for Guard to stop the train in an emergency as provided for elsewhere he should apply emergency brakes

and simultaneously give one signal bell to the driver.

12. **TSR 108-** It is the duty of Guards to change the destination indicators and exhibit tail board in the rear of the trains.

13. **TSR 71 - Signal bell code**

Motorman will give the following bell signal and Guard will acknowledge-

Sr No.	Signal Bell code	Description	Acknowledge by Guard
1	0	Signal is ON or train unable to start	Acknowledge
	0	When working as per TSR 122, stop the train	Acknowledge and do action
2	00	Signal is 'OFF' or train ready to start	Ensure that signal is 'OFF' than Acknowledge
	00	Running through from station	To see time table and Acknowledge
3	000	When Motorman required Guard	Acknowledge and will go the Motorman
4	00-00	When automatic signal is ON or when semiautomatic signal is ON and A marker	Ensure the condition of start and Acknowledge

		illuminate	
5	000-00-00	When ACP	Acknowledge and take action
6	000-000-0	When calling on signal is 'OFF'	Ensure and Acknowledge
7	000-000-000	When requirement of TSRT	Acknowledge and arrange to call TSRT
8	0000	Proceed for protection	Acknowledge and protect
9	00000	Call sweeper	Acknowledge and blow two short whistles frequently. At CSTM station switch on the head light
10	0000-00	When receive an authority to pass the signal at ON	Ensure and Acknowledge
11	0000-0000	When gate signal is On(with G board) and A marker is extinguished Or AG marker of semiautomatic signal is illuminate	Ensure and Acknowledge
12	0-0-0	To talk on telephone to Guard.	Acknowledge and talk on telephone
13	00-0-0	Apply hand break and place wooden wedges.	Acknowledge and take action

14	00-0-00	Release hand break and remove wooden wedges	Acknowledge and take action
15	000000000	When own life is in danger due to public violence, stone throwing etc	Acknowledge and take action to protect the motorman

Personal stores of suburban Guard

1. G &SR with all correction slip (hand book)
2. TSR book
3. Accident Manual
4. Working Time Table
5. 10 Detonator
6. Two red and one green flags mounted on sticks
7. LED based tri colour flashing torch.
8. First aid box
9. Detail book
10. Mouth Whistle
11. Carriage key
12. Reliable Watch
13. Memo book T 13 / B

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Abbreviations

1.	AAWS	:	Advance Approach Warning System.
2.	ARME	:	Accident Relief Medical Equipment(Van).
3.	AWS	:	Auxiliary Warning System.
4.	ACD	:	Anti Collision Device
5.	BPAC	:	Block Proving by Axle Counter.
6.	BPC	:	Brake Power Certificate.
7.	CBC	:	Central Buffer Coupler.
8.	CCRS	:	Chief Commissioner of Railway Safety.
9.	CFTM	:	Chief Freight Transportation Manager.
10.	CLW	:	Chittaranjan Locomotives Works,
11.	COA	:	Control Office Application.
12.	CMPE	:	Chief Motive Power Engineer.
13.	COIS	:	Coaching Operation Information System.
14.	COM	:	Chief Operation Manager.
15.	CPRO	:	Chief Public Relation Officer.
16.	CPTM	:	Chief Passenger Transportation Manager.
17.	CRB	:	Chairman of Railway Board.
18.	CRS	:	Commissioner of Railway Safety.
19.	CRT	:	Container Rail Terminal.
20.	CSO	:	Chief Safety Officer.
21.	CTM (P)	:	Chief Transportation Manager (Petroleum)
22.	CTPM	:	Chief Transportation Planning Manager.
23.	CTWM	:	Chief Tank Wagon Manager.
24.	CMS	:	Crew Management System
25.	DEMU	:	Diesel Electrical Multiple Unit.
26.	DFCCIL	:	Dedicated Freight Corridor Corporation of India Limited.
27.	DAR	:	Discipline and Appeal Rules.
28.	DEMU	:	Diesel Electrical Multiple Unit.
29.	DLW	:	Diesel Locomotive Works, Varanasi.
30.	DMRC	:	Delhi Metro Rail Corporation.
31.	DPC	:	Departmental Promotional Committee.
32.	DSC	:	Double Stack Container.
33.	DWSO	:	Divisional Work Study Officer.
34.	EOTT	:	End of Train Telemetry.
35.	FA & CAO:		Finance Adviser & Chief Accounts Officer.
36.	FOIS	:	Freight Operation Information System.

37.	RMS	:	Rake Management System
38.	TMS	:	Terminal Management System
39.	HOER	:	Hours of Employment Regulation.
40.	ICMS	:	Integrated Coach Management System.
41.	IRCTC	:	Indian Railway Catering and Tourism Corporation ltd.
42.	ISMD	:	Infringing Standard Moving Dimensions.
43.	IVRS	:	Interactive Voice Response System.
44.	ITES	:	Integrated Telephone Enquiry System.
45.	LVCD	:	Last Vehicle Checked Device.
46.	MAUQ	:	Multi-Aspect Upper Quadrant.
47.	MEMU	:	Mainline Electrical Multiple Unit.
48.	MSD	:	Minimum Sighting Distance.
49.	NDMA	:	National Disaster Management Association.
50.	ODC	:	Over Dimensional Consignment.
51.	PAM	:	Punctuality Analysis Module
52.	PEASD	:	Passenger Emergency Alarm Signal Device.
53.	POMKA	:	Portable Medical Kit for Accident.
54.	RLDA	:	Railway Land Development Authority.
55.	RMS	:	Rake Management System.
56.	ROSHAN	:	Rolling Stock Health Analyst.
57.	SDGM	:	Senior Deputy General Manager.
58.	SGE	:	Siemens and General Electrical Railway Signal Company Ltd.
59.	SMARTS	:	Singular Modular Advance Railway Ticketing System.
60.	SPAD	:	Signal Passed AT Danger.
61.	SPARME	:	Self Propelled Accident Relief Medical Equipment.
62.	SPART	:	Self-Propelled Accident Relief Trains.
63.	SPURT	:	Self Propelled Ultrasonic Rail Testing Car.
64.	SSD	:	Speed Sensing Device.
65.	SSDAC	:	Solid State Digital Axle Counter.
66.	SWR	:	Station Working Rule.
67.	SWRD	:	Station Working Rule Diagram.
68.	TALQ	:	Two-Aspect Lower Quadrant.
69.	TAWD	:	Train Actuated Warning Device.
70.	WILD	:	Wheel Impact Load Detector.

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