BASIC CONCEPTS

1) What are the **Special features of Railways** compared to other Transport system?

   i) Track Bound:

   a) Train is 'Track Bound'; it can move only along a fixed path made for it.

   b) Trains can cross or precede only at 'Stations' with 'Loop lines'.

   c) LP can accelerate, decelerate, start & stop the Train but he can not divert the Train from one Line to another.

   ii) Braking Distance:

   a) Braking Distance means the Distance required for any vehicle to stop after applying Brakes.

   b) It is directly proportionate to Load & Speed.

   c) It is more for Trains because of its 'Lengthy Formation', 'Trailing Load' & High Speed.

   iii) Right of Path:

   a) Railway has its own Right of Path.

   b) No road vehicle can come on its way except at places like Level Crossings.

2) What is a **Station**?

   i) It is a place on a line of Railway.

   ii) It is the place where

   a) Traffic is dealt with (or)

   b) An **Authority To Proceed (ATP)** is issued with.

3) How many types of **Stations** are there?

   Broadly, Stations are of TWO types:

   i) Block Station.

   ii) Non-Block Station.

S.No	Block Station	Non-Block Station
1)	Operating as well as Commercial activities take place.	Only Commercial activities take place.
2)	For a Train to leave the Station, '**Authority to Proceed' (ATP)** should be given.	For a Train to leave the Station, **ATP** shall not be given.
3)	Additional lines called 'Loop Lines' may be available.	Loop Lines are not available.

S.No	Block Station	Non-Block Station
4)	It is further classified into 'Three' categories: 'A' – Normally, these Stations are available in Ghat/Gradient section. 'B' – Majority of Stations in IR are Class 'B' Stations. 'C' – These Stations are for dividing a lengthy Block Section into Two.	It is 'D' class Station & further classified into 'Two' categories: 'Flag'/CNC: A Clerk in Charge (Railway Staff) is available for carrying out commercial activities. 'Halt': An Agent (Not a Railway Employee) is available for issuing of Tickets.

4) What is a '**Block Station**'?
   It is a Station from where Train cannot leave unless '**Authority To Proceed**' **(ATP)** is issued.

5) What is **ATP**?
   It is an Authority issued to LP of a Train, under the **System of Working**, to enter into a **Block Section**.

6) What is a '**Block Section**'?
   i) It is a portion of Running line in between Two Block Stations.
   ii) A Train cannot enter into Block Section unless it is issued with **ATP** at a Block Station at either end of Block Section.

7) What is '**System of Working**'?
   i) System of Working means **a Set of Rules** for safe working of Trains.
   ii) It shall be adopted for the time being on any portion of Railway.
   iii) On different portions of Railway, different systems may be in force.

8) **Why ATP** is issued for a Train to enter into Block Section?
   In normal condition, ATP ensures **only one Train is in the Block Section**.
   In abnormal conditions, ATP indicates the LP, the condition of the Block Section.

9) **How** 'only one Train in Block Section' is ensured by issuing 'ATP' in Normal conditions?
   ATP can be issued only after getting '**LINE CLEAR**' from Block Station at the other end.

10) What is **LINE CLEAR**?

It is the **permission** obtained from Block Station in Advance or permission given to the Block Station in Rear for starting a Train.

11) How Line Clear is obtained / given?

Line Clear is obtained / granted through Block Instrument / Track Circuit / Axle Counter.

12) What is **Block Instrument**?

It is an instrument that blocks the Section for only one Train.

13) What is **Track Circuit**?

It is an Electrical Circuit in which Rails form part.

It detects the presence of a vehicle on any portion of Track.

14) What is **Axle Counter**?

It is an Electrical device provided at two given points on the Track.

It detects whether the section between such two points is clear or occupied by counting of Axles in and out.

15) What are the **types of Block Instruments**?

There are Two Types 'Token' B.I & 'Tokenless' B.I.

16) What is **Last Stop Signal (LSS)**?

i) It is the Stop Signal which controls the entry of the Train into Block Section.
ii) It is interlocked with Block Instrument either Mechanically or Electrically.

17) What is **First Stop Signal (FSS)**?

i) A Stop Signal which comes first in the route of a Train at a Station when it is approaching that Station is called 'First Stop Signal'.
ii) It controls the entry of the Train into the Station.

18) What are the other **approved Means of Communication** for obtaining / granting Line Clear in case of failure of Block Instrument/Track Circuit/Axle Counter?

i) Direct Means:
   a) Telephone attached to the Block Instrument.
ii) Indirect Means:
   a) Station to Station Fixed Phones.
   b) Fixed phones such as Railway Auto Phone, BSNL Phone.
   c) Control Phone.
   d) VHF Sets (Not as the sole means of communication where Passenger Train runs).

19) What **types of ATPs** are there?

i) Tangible ATP - ATP from Token B.I
ii) Visible ATP - ATP from Tokenless B.I/Track Circuit/Axle Counter
iii) Written ATP - ATP during failure of B.I / T.C / A.C
And in Abnormal Circumstances.

20) What is '**Main Line**'?

i) It is the normally used for running through at a Station.
ii) It includes the line in available in between Stations.

21) What is '**Loop Line**'?

i) The lines taking off from Main Line at a Station are called Loop Lines.
ii) These lines are used for Crossing / Precedence.

22) What is '**Platform Line**'?

i) The line nearest to Platform is called Platform Line.
ii) It may be Main Line or Loop Line.

23) What is '**Running Line**'?

i) If a line is governed by one or more Signals for Reception / Despatch / Pass through of Trains, it is called 'Running Line'.
ii) It includes '**Connections**'.
iii) It also includes the line in available in between Stations.

24) What is '**Connections**'?

The **Points and Crossings** / other appliances used to connect a Running line with other lines is called 'Connections'.

25) What is **Facing Point & Trailing Point**?

i) Point is said to be Facing or Trailing according to direction of movement of a Train or Vehicles.
ii) If a Point, when operated, is capable of diverting a Train / Vehicles from the line on which it is running to anyother line, it is 'Facing Point'.

26) What is '**Direction of Traffic**'?

i) On Double lines, it is the Direction for which 'Line is Signalled'.
ii) On Single lines, it is the Direction established for the time being under the **System of working**, to allow **Train** to move in that direction.

27) What is a **'Train'**?
   i) Train means a vehicle which cannot be lifted off the Track readily.
   ii) It may be
      - An Engine, with or without vehicles attached.
      - A Self propelled vehicle, with or without a Trailer.

28) What is a **'Goods Train'**?
   i) It is a Train which carries only Goods or Animals.
   ii) It does not include 'Material Train'.

29) What is a **'Material Train'**?
   i) A Departmental Train carrying only Railway Material is called 'Material Train'.
   ii) Those Materials may be carried for execution of any work within 'Station Limits' or in between Stations.
   iii) It includes the Train returning after unloading of Railway Material.

30) What is a **'Passenger Train'**?
   i) It is a Train which carries only Passengers and Coaching Traffic.
   ii) It includes 'Troop Train'.

31) What is '**Running Train**'?
   i) It is a Train which has
      - been started with an ATP and
      - not completed its Journey.
   ii) If a Train enters the Block Section without ATP, it will be treated as 'Runaway Train'.

32) What is Level Crossing (**LC**) & **LC Gate**?
   i) LC means the place where Railway Track & Road intersect at same level.
   ii) LC Gate means a movable barrier used to close across the Road at LC.
   iii) LC Gate
      a) includes a Chain and
      b) not includes a Wicket or Turnstile used for Pedestrians.

33) Who is **Station Master**?

SM is a person on duty at a Station.

i) He is responsible for safe working of Traffic within Station Limits.

ii) He is person in charge for working of any Signals at his Station.

iii) He is responsible for safe working of Trains under the **System of Working**.

34) Who is **Controller** or **Section Controller**?

i) Controller is responsible for regulating the Traffic (like Crossing, Precedence, Ordering of Goods Train, etc) in a Section of a Railway.

ii) He is provided with Speech Communication System to contact SMs of all the Stations in the Section under his control.

35) Who is **Guard**?

i) A Railway Servant in charge of a Train is called 'Guard.

ii) It includes anyother Railway Servant who is performing the duties of Guard for the time being.

36) Who is **Loco Pilot**?

Loco Pilot means

i) an Engine Driver (or)

ii) a Competent Railway Servant incharge of driving a Train.

SAFETY RULES

Under Section 175 of The Railways Act, 1989 and by the terms of Employment, a Railway Servant has to obey the Safety Rules as follows:

1) General Rules.
2) Subsidiary Rules.
3) Special Instructions.
4) Approved Special Instructions.
5) Station Working Rules.
6) Departmental Circulars, Orders, etc.

I. GENERAL RULES (GRS):

1) GRS are framed by Railway Board on behalf of Government of India.
2) It is first issued in 1907 and then revised in 1929.
3) The current GRS is of 1976 edition and next revision is under process.
4) It contains the basic principles for Safe Train Operations.
5) GR should not be violated at any cost.
6) It is applicable for all the Zonal Railways.
7) It is printed in '**BOLD**' letters.
8) There are 344 Rules spread over 18 Chapters.
9) Rule No.:
   Number to the Left of the dot indicates Chapter No. and
   Number to the Right of the dot indicates Rule No.
10) The Chapters are as follows:

I	Preliminary
II	Rules Applying To Railway Servants Generally
III	Signals
IV	Working Of Trains Generally
V	Control And Working Of Stations
VI	Accidents And Unusual Occurrences
VII	Systems Of Working
VIII	The Absolute Block System
IX	The Automatic Block System
X	The Following Trains System
XI	The Pilot Guard System
XII	The Train-Staff And Ticket System
XIII	The One Train Only System
XIV	Block Working
XV	Permanent Way And Works
XVI	Level Crossings
XVII	Working Of Trains On Electrified Sections Of Railways
XVIII	Miscellaneous

II. SUBSIDIARY RULES (SR):

1) SRs are issued by Authorized Officer. For Southern Railway, COM is the Authorized Officer.
2) It explains or clarifies GRs according to local requirement.
3) It shall not be at variance with GR and not violate any GR.
4) It is applicable only to a particular Zone.
5) It is printed in 'smaller' letters below the GR.
6) Rule Number is same as that of GR to which it refers with a prefix 'SR'.
7) Correction to any SR shall be given only by Authorized Officer.
8) Certain SRs are common for all the Zones. These SRs are called Unified SR. Correction to Unified SR can be given only by RB.

III. SPECIAL INSTRUCTIONS:

1) Special Instructions are the Instructions
   - Issued by Authorized Officer
   - From time to time
   - With respect to a particular case or circumstance.
2) It may be

Applicable for	Example
Whole Zone	SR, Accident Manual, Block Working Manual
Division	Working Time Table
Section	Special Instructions for Automatic Block Section
Station	Special Instructions for Shunting in the face of approaching Train, Keeping the Signal posts on RHS, etc.
Train	Special Instructions for Vaigai Express given in MG
Signal	Special Instructions for IBSS

3) It is equally important as GR & SR.

IV. APPROVED SPECIAL INSTRUCTIONS:

1) Special Instructions approved of or prescribed by the Commissioner of Railway Safety (CRS) are called 'Approved Special Instructions'.
2) Some instances for which Approved Special Instructions sought are:
   - To allow alteration in Fixed Signals & Interlocking.
   - To reduce adequate distance, etc.
3) CRS:
   - Appointed under section 55 of the Railways Act, 1989.
   - For Southern Circle (Containing S.Rly & S.W.Rly), CRS Headquarters is at SBC.
   - Totally there are 9 CRSs and One Chief CRS (CCRS).
   - The Headquarters of CCRS is at Lucknow.
   - CRS comes under the Ministry of Civil Aviation.

V. STATION WORKING RULES

I. What is SWR?

1) SWR is the set of instructions for working of Trains at a **particular Station** and between Stations.
2) It should be read in conjunction with GR & SR and not to violate them.

II. PREPARATION:

It is prepared and issued by the **Office of the DRM**.

III. Signatories:

1) It is signed in all the pages by Sr.DOM/DOM, Sr.DSTE/DSTE and DSTE in charge of execution of the work.
2) For the Stations on Electrified Sections, Instructions pertaining to 25 KV Traction shall be provided as Appendix 'G' of SWR. It is signed by Sr.DOM/DOM and Sr.DEE/DEE/TRD.
3) SWR of **Special class** Stations shall have the approval of the **CRS**.

IV. CONTENTS:

1) Details about Station.
2) Permanent Way Lay out with Engineering details.
3) Rule Diagram with Signalling Details.
4) SWR has 7 Appendices.

V. Issuing of SWR:

SWRs of all the Stations shall be available at Crew / Guard Booking Depots.

VI. Correction / Review:

1) **Maximum 5** corrections are permitted to a SWR. If **6th** correction is required, a **fresh SWR** shall be issued.
2) SWR is valid for 5 years. Then it shall be reviewed.

VI. MISCELLANEOUS CIRCULARS:

S.No	Circular / Order	Issued by	Applicable to
1	Headquarters Safety Circular	CSO	Whole Zone
2	Divisional Safety Circular	Sr.DSO/DSO	Particular Division
3	Operating Circular	Sr.DOM/DOM	Particular Division
4	Joint Procedural Order (JPO)	More than one Department Officer at Zonal/Divisional level	Zone / Division
5	Standing Order Book (SOB)	Zonal/Divisional Officer Or SMR/SS at Station level Or Any Supervisory Official at their level	Zone / Division Station / Depot
6	General Order Book (GOB)	Supervisory Official	Particular Depot
7	Railway Gazette	RB	I.R

FIXED SIGNALS

1) It is installed at a **Fixed Location**.
2) It shall be placed on the **Left Hand Side** of the Line or above the Line.
    - It can be placed on the **Right Hand Side** of the Line also, if authorised under **Special Instructions**.

3) Fixed Signals shall be provided at all Stations except
    - At Stations between which Trains are worked under 'One Train only System'.
    - At Stations where provision of Fixed Signals is exempted by CRS.
4) A Fixed Signal shall be brought into use only after it has been passed by CRS.
5) **Aspect / Indication**:
    a) **Aspect**:
        i) Aspect means '**Appearance**' of the Signal as seen by the LP of an Approaching Train.
        ii) The Aspect anyone of the following 'Four':
            - Stop
            - Caution
            - Attention
            - Proceed
    b) **Indication**:
        Indication means '**Information**' or 'Meaning' conveyed by the Aspect of Signals.

6) A Fixed Signal may be a 'Two Aspect' Signal or a 'Multiple Aspect Signal'.
    a) '**Two Aspects**': It is a Signalling arrangement in which a Signal displays either one of Two Aspects at one time.
    b) '**Multiple Aspects**':
        i) It is a Signalling arrangement in which a Signal displays either one of Three or more Aspects at one time.
        ii) Aspect of every Stop Signal is prewarned by the Aspect of the previous Signal(s).
7) A Fixed Signal may be a
        a) Semaphore Type Signal or
        b) Colour Light Signal or
        c) Disc Type Signal.

8) **In Rear / In Advance**:

a) In Rear of a Signal:

i) It is the portion of the Track leading upto the Signal.

ii) Locopilot (LP) is said to be 'in rear of a Signal', till he has not passed it.

b) In Advance of a Signal:

i) It is the portion of the Track ahead of the Signal.

ii) LP is said to be 'in advance of a Signal' after he has passed the Signal.

iii) This portion is protected by the Signal.

9) '**On' & 'Off' Aspects**:

a) 'On' aspect means 'the most restrictive aspect of a Signal.

b) 'Off' aspect means 'any prescribed aspect other than the most restrictive aspect'.

10) **Semaphore Signals**:

i) The **Arm** of the Signal shall be placed on the **LHS** of the Signal post.

ii) It may work in Lower Quadrant or Upper Quadrant.

iii) In Two Aspect Lower Quadrant (TALQ) area, the Arm moves 45 to 60 below the Horizontal level in 'Off' position.

iv) In Multiple Aspect Upper Quadrant (MAUQ) area, the Arm moves 45 or 90 above the Horizontal level in 'Off' position.

v) **Shape**:

S.No	Signal Type	Shape
a)	Stop Signal	End of the Arm is Square ended
b)	Permissive Signal	End of the Arm is Fish Tailed
c)	Subsidiary Signal	Arm is Miniature in Size

vi) **Colour of the Arm**:

a) Front of the Arm:

- Same Colour as the Colour of the light during Night in 'On' position.
- Bar parallel to the end:
  - If Arm Colour is Red → Bar Colour is 'White'.
  - If Arm Colour is Yellow → Bar Colour is 'Black'.
  - If it is Calling-on Arm (White) → Bar Colour is 'Red'.

b) Back of the Arm:

- It is painted 'White' with a 'Black' Bar parallel to end.

vii) If a Ring is provided at the end, the Signal refers to the Goods line.

viii) Marker Plates may be provided below some of the Signals.

ix) Aspect may be

- Position of Arm - by Day.
- Position of Light or Lights - by Night.

11) **Colour light Signals**:
   i) It may have Two or Three or Four Aspects.
   ii) Marker Plates / Lights may be provided below some of the Signals.
   iii) Aspect shall be
      - Same by Day & Night.
      - Displayed by Fixed Light(s).

12) A Fixed Signal may be a Stop / Permissive / Subsidiary / Special Signal.
   - Stop Signal is a Signal which shows 'Stop' Aspect in its 'On' Aspect.
   - Permissive Signal is a Signal which
      - Shows 'Caution' or 'Attention' in its 'On' Aspect &
      - Prewarns about the next Signal.

DISTANT SIGNAL

1) It is a Permissive Signal in Multiple Aspect Area.
2) It is provided in rear of FSS (Home) or Intermediate Block Stop Signal (IBSS) or a Gate Stop Signal (GSS) at an adequate distance.
3) It prewarns LP about the aspect of the FSS/IBSS/GSS.
4) If it is placed at a distance of not less than 1000m in rear of FSS/IBSS/GSS, Passenger Warning Board can be dispensed with.
5) It may be a Semaphore or Colour light Signal.
6) Semaphore Distant:
   i) Arm is Fish tailed.
   ii) Front of the Arm is painted Yellow with Black bar.
   iii) In Attention Aspect, distance between Two Yellow lights shall be 1.5m.
7) Colour Light Distant:
   It is identified by 'P' Marker plate.
8) Aspects & Indications:

Aspect	How it 'appears'			Indication / Information
		Semaphore	**Colour light**	
On/ Caution	Day	Horizontal position of Arm	Yellow Light	Proceed with Caution & be prepared to Stop at next Stop Signal
	Night	Yellow Light	Yellow Light	
Off/ Attention	Day	Inclined position of Arm at 45° above Horizontal level	Two Yellow Light	Proceed with Caution & be prepared to pass next Stop Signal at restricted Speed
	Night	Two Yellow Lights	Two Yellow Light	
Off/ Proceed	Day	Inclined position of Arm 90° above Horizontal level	Green light	Proceed (If next Stop Signal is Home, Trai is received on Main line / Points ar set for Straight)
	Night	Green light	Green light	

9) Combination of Signals:

Under Approved Special Instructions, Colour light Distant Signal may be combined with LSS (of the Station in rear) or GSS.

i) LSS cum Distant:

a) It is a Stop Signal.
b) Normal Aspect is 'Stop'.
c) 'P' Marker shall not be provided.
d) It works as LSS of the Station till Line Clear is obtained.
e) After obtaining Line Clear, it works as Distant Signal for next Stop Signal.
f) It may have 3 or 4 Aspects.

ii) Gate cum Distant:

a) It is a Stop Signal.
b) Normal Aspect is 'Stop'.
c) 'P' Marker shall not be provided.
d) 'G' Marker may be provided as per the Rules for GSS.
e) It works as GSS till LC Gate is closed.
f) After closing the LC Gate, it works as Distant Signal for next Stop Signal.
g) It may have 3 or 4 Aspects.

10) Inner Distant:

i) If required, more than one Distant Signal may be provided in rear of FSS/IBSS/GSS.
ii) If so provided,
a) Outermost Signal is called 'Distant'.
b) The Signal in advance of Distant is called 'Inner Distant'.
iii) When Inner Distant is provided,
a) Normal Aspect of Distant is 'Attention'.
b) Distant is capable of showing Attention & Proceed only.
c) Distance between Distant & FSS/IBSS/GSS shall be not less than 2000m.
d) Goods Warning Board shall be dispensed with.
e) Inner Distant shall also be provided with 'P' Marker Plate.
f) Inner Distant 'Proceed' means Train is being run through on Main line.

HOME SIGNAL (Multiple Aspect)

1) It is the First Stop Signal in Multiple Aspect area.
2) It may be a Semaphore or Colour light Signal.
3) It is placed outside all connections on
   i) Single Line: At Not less than
      a) 300m from OMFP or
      b) 180m from Opposing Advanced Starter/Shunting Limit Board.
   ii) Double Lines: At Not less than 180 m from OMFP / BSLB.
4) It is interlocked with Points.
5) When taken 'off',
   i) It ensures correct setting & locking of Points.
   ii) It indicates the road of reception.
6) Semaphore type:
   i) Arm is Square ended.
   ii) Front of the Arm is painted Red with White Bar.
   iii) It may be Single Arm Home or provided on a Bridge / Gantry.
   iv) Single Arm Home:
      a) Speed over Facing Point on Main line shall not exceed 75 Kmph.
      b) Point Indicator is must.
   v) Bracket / Bridge:
      a) Main line Home
         - shall be on a higher level than Loop line Home.
         - is capable of showing Stop, Caution and Proceed Aspects.
      b) Loop line Home is capable of showing Stop & Caution Aspects only.
      c) Left extreme Signal refers to left extreme line and so on.
7) Colour light Home Signal is provided with suitable type of Route Indicator.
8) Aspects & Indications:

Aspect	**How it 'appears'**			**Indication / Information**
		Semaphore	**Colour light**	
On/ Stop	Day	Horizontal position of Arm	Red Light	Stop Dead
	Night	Red Light	Red Light	
Off/ Caution	Day	Inclined position of Arm at 45° above Horizontal level	Yellow Light	Proceed with Caution & be prepared to Stop at next Stop Signal
	Night	Yellow Light	Yellow Light	
Off/ Proceed	Day	Inclined position of Arm 90° above Horizontal level	Green light	Proceed
	Night	Green light	Green light	

ROUTING SIGNAL:

1) It is a Reception Stop Signal.
2) It may be Semaphore or Colour light Signal.
3) It may be provided both in Two Aspect and Multiple Aspect areas.
4) It shall be provided at Stations where Home Signal is unable to indicate the road of reception due to its inconvenient position.

STARTER

1) It is a Departure Stop Signal.
2) It controls the movement of Train leaving the Station.
3) It may be Semaphore or Colour light Signal.
4) If there is only one starting Signal, it is the Last Stop Signal (LSS) and is called 'Starter'.
5) If Advanced Starter is provided, Starter is not the LSS.
6) If Starter is LSS:
   i) It shall be provided outside all connections unless otherwise authorised under Approved Special Instructions.
   ii) Authority to Proceed shall be given to LP to pass this signal.
7) If Starter is not the LSS:
   i) It shall protect first Facing Points or Fouling Mark.
   ii) In Two Aspect Area, both Main line and Loop line Starters shall have Two Aspects – Stop & Proceed.
   iii) In Multiple Aspect Area,
      a) Main line Starter shall show Stop, Caution and Proceed aspects.
      b) Loop line Starter shall show Stop and Caution aspects only.

INTER STARTER (or) ROUTING STARTER

1) It is a Departure Stop Signal.
2) It controls the movement of Train leaving the Station.
3) It may be Semaphore or Colour light Signal.
4) At Stations where there is a diversion, it may be provided between Starter and Advanced Starter.

ADVANCED STARTER

1) It is a Departure Stop Signal.
2) It is the Last Stop Signal of a Station.
3) It controls the entry of Train into Block Section.
4) It may be a Semaphore or Colour light Signal.
5) It shall be placed outside all connections
   i) On Single line Multiple Aspect area: at Not less than
      - 120m from Outer Most Trailing Points or
      - 180m from opposing FSS.
   ii) On Double lines Multiple Aspect area: at Not less than
      - 120m from Starter.
6) LP shall be issued with Authority to Proceed to pass this Signal.
7) Slip siding Points may be interlocked with this Signal.

Calling-on Signal

1) It is a Subsidiary Signal.
2) Normally, it is placed below a Reception Stop Signal.
3) Under Approved Special Instructions, it can be placed below any Stop Signal, except LSS.
4) It may be a Semaphore or Colour light Signal.
5) Semaphore Type:
   i) Arm is short, square ended.
   ii) Front of the Arm is White with Red bar.
6) Colour light Calling-on signal shall have a 'C' Marker plate.
7) In 'On' aspect, Calling-on signal shows 'No light'.
8) Calling-on signal can be taken off during
   i) Failure of Stop Signal above it.
   ii) Reception of a Train on an Obstructed line.
9) If Stop Signal is at 'On', LP has to draw his Train upto the foot of the Signal. A Board to this effect is placed in rear of the Signal.
10) Aspects & Indications:

Aspect	**How it 'appears'**			**Indication/Information**
		Semaphore	**Colour light**	
On	Day	Horizontal position of Arm	No light	LP to obey the Aspect of the Stop Signal above it.
	Night	No light	No light	
Off	Day	Inclined position of Arm	Miniature Yellow light	Stop, draw ahead cautiously & be prepared to stop short of obstruction.
	Night	Miniature Yellow light	Miniature Yellow light	

Shunt Signal

1) It is a Subsidiary Signal.
2) It is used to control Shunt Movements.
3) It may be placed on a Separate Post or below a Stop Signal except FSS.
4) If Shunt Signal is placed below a Stop Signal, it shows 'No light' in 'On' position.
5) More than one Shunt Signal can be placed on a same post.
   If so, Top most Signal refers to the left extreme line and so on.
6) There are 'Three' types of Shunt Signals:
   i) Disc Type
   ii) Position light Type
   iii) Semaphore Type

i) Disc Type Shunt Signal:
   a) It is a White Disc with a Red bar.
   b) Aspects & Indications:

Aspect	How it 'appears'		Indication
On	Day	Horizontal position of Bar	Stop Dead
	Night	Miniature Red light	
Off/MA	Day	Raised position of Bar	Proceed with Caution for Shunting
	Night	Miniature Yellow light	

ii) Position light Type Shunt Signal:
   a) A painted arrow indicates the line for which the Shunt Signal refers.
   b) Aspects & Indications:

Aspect	How it 'appears'		Indication
On	Day/Night	Horizontal position of Two White lights	Stop Dead
Off	Day/Night	Inclined or Oblique position of Two White lights	Proceed with Caution for Shunting

iii) Semaphore Type Shunt Signal:
   a) It shall be provided under Special Instructions.
   b) It is a short square ended arm.
   c) Front of the arm is painted Red with White Bar.
   d) Aspects & Indications:

Aspect	How it 'appears'		Indication
On	Day	Horizontal position of Arm	Stop Dead
	Night	Miniature Red light	
Off/MA	Day	Raised position of Arm	Proceed with Caution for Shunting
	Night	Miniature Yellow light	

Co-Acting Signal

1) It is a Duplicate Signal.
2) It is provided, if the Main Signal Arm / Light is not visible continuously to LP till he passes it due to
    - Height of the Signal post
    - Presence of an over bridge or any obstacle, etc.
3) Both Signals (Main Signal & Co Acting Signal) are provided on a same post and operated by the same lever / knob / slide.
4) Either Main Arm/light or Co-Acting Arm/light shall be continuously visible to LP.

Repeating Signal

1) Repeating Signal may be provided in rear of a Fixed Signal, if it is not visible to LP at a required adequate distance due to curve or any reason.
2) It is not a Stop Signal.
3) It informs the Aspect of Fixed Signal in advance.
4) There are 'Three' types of Repeating Signals:

i) Banner Type:

a) It is available only in Two Aspect Semaphore area.
b) It is a Black fringed yellow Banner, pivoted in the middle.
c) Background is illuminated.
d) It is identified by 'R' Marker plate.

ii) Semaphore Type:

a) It is available only in Two Aspect Semaphore area.
b) It is square ended Arm.
c) Front of the Arm is painted Yellow with Black Bar.
d) It is identified by 'R' Marker plate.

iii) Colour light Type:

a) It is identified by 'R' Marker light.
b) Aspects & Indications:

Aspect	How it 'appears'		Indication
On	Day/Night	Yellow light	Signal which it repeats is at 'On'
Off	Day/Night	Green light	Signal which it repeats is at 'Off'

Gate Stop Signal (GSS)

1) Every LC Gate closing across the line shall be provided with GSS unless
   i) Exempted under Approved Special Instructions.
   ii) Interlocked with Station Signals.
2) GSS shall be placed in rear of LC at not less than
   - 180m in Multiple Aspect areas.
   - 400m in Two Aspect areas.
3) Normally, GSS shall have 'Stop' & 'Proceed' aspects only.
4) If it is combined with 'Distant' signal, it may have 'Caution' & 'Attention' aspects also.
5) When the Gate is 'open' for road traffic or GSS is failed, it shall show 'On' aspect. When the Gate is 'closed' against road traffic, it shall show 'Off' aspect.
6) After the Gateman takes 'off' GSS, LC Gate can not be opened for road traffic, unless it is put back to 'On'.
7) All GSSs shall be provided with 'G' Marker plate except in following cases:
   i) When there is a bridge between Gate and GSS.
   ii) When GSS controls the entry of Trains into Rail-cum-Road Bridge.
   iii) When GSS is protecting any Points.

Intermediate Block Stop Signal

1) It is the Home Signal provided at an Intermediate Block Post (IBP).
2) It is a 'C' Class Station available only in Double line.
3) It is identified by 'IB' Marker plate.
4) It divides the lengthy Block Section into two.
5) It controls the entry of the Train into Block Section between IBP and Block Station in advance.
6) It is remotely controlled by SM in rear.
7) Axle counters or Continuous Track Circuiting shall be provided between the LSS of the Station in rear and 400 m beyond the IBSS.
8) SM in rear shall
   i) take "off" the LSS, if the Track Indicator is showing 'White' and
   ii) take "off" IBSS after obtaining Line clear from the Station in advance.
9) SPT is provided below IBSS to contact SM in rear.
10) IBSS shall show either 'Stop' or 'Proceed' aspects only.
11) It shall assume 'Proceed' aspect only after Line Clear has been obtained from Block Station in advance.

NORMAL ASPECT OF SIGNALS

1) Except under Approved Special Instructions, Fixed signals shall always show their most restrictive aspect in their normal position.
2) Normal Aspect of an Automatic Stop signal is 'Proceed'. However, if next Signal is a Manual Stop Signal, Normal Aspect may be 'Caution' or 'Attention'.
3) LP must stop his Train at Stations where booked to stop irrespective of the Indication of the Signal immediately in advance.

Conditions for Taking 'off' Signals:

I. Home:

1) Home Signal can be taken 'off' only after ensuring the following:
   i) Line of Reception is free from obstruction
      a) On Double lines, upto an Adequate Distance from Starter;
      b) On Single line, upto an Adequate Distance from OMTP.
   ii) Points in the Route are correctly set and locked.
   iii) LC Gates, if any, are closed against the Road Traffic.
   iv) Conflicting Signals kept at 'on'.
   v) Conflicting Movements stopped.
2) Adequate Distance / Signal Over Lap (SOL):
   i) It shall be NLT 120M in Multiple Aspect Signalling.
   ii) It may be reduced under Approved Special Instructions.
   iii) It shall be mentioned in Station Working Rules.
   iv) Substitute for SOL:
      a) Sand Hump of Approved Design.
      b) Snag Dead End.
   v) Substitute for SOL under Approved Special Instructions:
      a) Derailing Switch.
      b) Over Run line.
3) If Train has been stopped at Home Signal:
   Line of Reception shall be clear
   a) in case of Double lines - upto Starter;
   b) in case of Single lines - upto OMTP (or)
      -upto Berthing Place (under Approved Special Instructions)

II. Calling-on Signal:

1) Calling-on Signal can be taken 'off' for a Train only after the Train has come to a stand at the Stop Signal below which Calling-on Signal is provided.
2) Points shall be correctly set & locked. Clamping & Padlocking is required only when the Points in Route are disconnected by issuing of S&T (T/351).

III. L.S.S / I.B.S.S:

Line Clear should have been obtained from Block Station in advance.

IV. G.S.S:

GSS can be taken 'off' only if
   i) LC is free from obstruction and
   ii) Gates of such LC are closed against the Road Traffic.

CLASSIFICATION OF STATIONS

1) "Station" means any place on a line of railway at which
   - Traffic is dealt with (or)
   - An Authority to Proceed is given under the System of Working.
2) Stations are broadly classified into TWO categories:
   i) Block Stations and
   ii) Non-Block Stations.
3) Block Station is a Station from which no Train can leave unless an Authority to Proceed is issued under the System of working to enter into the Block Section.
4) In Absolute Block System, Block Stations are classified into Class A, B and C.

Class 'A' Station:

i) Class 'A' Stations are suitable in Ghat Section.
ii) Line Clear can be given for a Train only when the Line of Reception is clear for
   - at least 400 metres beyond the Home Signal (or)
   - upto the Starter.
iii) It is provided with Two Aspect Signals. There is no Class 'A' Station with Multiple Aspect Signals.
iv) There is no Station Section.

Class 'B' Station:

i) Class 'B' Stations are suitable for Busy Stations, Junctions, etc.
ii) Majority of Stations in I.R are 'B' Class Stations.
iii) Line Clear may be given for a Train even before the line of reception is clear.
iv) Station Section is available according to the type and complement of Signals.

Class 'C' Station:

i) It is provided to divide a lengthy Block Section into TWO.
ii) 'C' Class Stations are of Two types:
   - Intermediate Block Hut – available both in Single Line & Double lines.
   - Intermediate Block Post – available only in Double lines.
iii) The Home Signal available on I.B.P is called Intermediate Block Stop Signal.
iv) Line Clear may be given for a Train, after the last preceding Train has passed complete at least 400 metres beyond the Home Signal / I.B.S.S and is continuing its journey.
v) There is no Station Section.

5) Non-Block Station:
   i) Located between two consecutive Block Stations.
   ii) Do not form the boundary of any Block Section.
   iii) Provided only for Commercial purposes.
   iv) After stopping, the Train can leave this Station without any A.T.P.
   v) Classified as class 'D' stations.
   vi) Further divided into 2 types:
      - Flag / CNC Station – A Railway Servant (Clerk in Charge) is available for issuing of Tickets, etc.
      - Halt Station – An Agent shall be available for issuing of Tickets.
   vii) Station Warning Boards shall be provided in rear of Class 'D' stations at a distance of 1000 / 1200 m on MG / BG Sections.

6) Special Class Station:
   i) A Station, which cannot be classified as 'A', 'B', 'C' or 'D', shall be classified as "Special" Class Station.
   ii) The Station Working Rules for a "Special" Class Station shall have the approval of CRS.
   iii) Stations in Automatic Block System are Special Class Stations.

MINIMUM EQUIPMENT OF FIXED SIGNALS				
Class	TWO ASPECT		MULTIPLE ASPECT	
	Single Line	Double line	Single Line	Double line
A	Warner, Home and Starter	Warner, Home and Starter	NIL	NIL
B	Outer and Home *	Outer, Home and Starter *	Distant, Home and Starter **	Distant, Home and Starter
C	Warner and Home	Warner and Home	Distant and Home	Distant and Home

Note:

1) * Warner also shall be provided if the Speed of the Train exceeds 50 Kmph in the Section.
2) ** Under Approved Special Instructions, Starter can be dispensed with on Single line, if the Speed of the Train does not exceed 50 Kmph in the Section.
3) Apart from above Signals, anyother additional Signal can also be provided at a Station according to the requirement.
4) Under Approved Special Instructions, all the Signals may be dispensed with or only one Stop Signal at either end may also be provided.

CATCH SIDING OR 'KOPCKE' SIDING

1) Catch siding may be provided when the Station Section is on the falling gradient Steeper than 1 in 80.
2) It is provided to catch a full Train or part of a Train which escapes from the adjacent Station / Block Section.
3) Catch siding protects Station Section.
4) The length of Catch Siding is equal to the length of the longest Goods Train of the Section.
5) Shunting/stabling of vehicles/wagons on Catch Siding is prohibited.
6) Normal setting of the Points shall be for Catch Siding only.
7) Catch Siding Points may be interlocked with FSS.
8) Catch siding points may be Spring loaded or not.
9) If it is spring loaded,
   i) Points need not be set for the movement in Trailing direction. Flanges of each pair of wheels shall set the Points.
   ii) Sign board 'A' shall be provided clear of the fouling mark to warn MTLY Drivers as MTLYs can not trail through these Points.
   iii) Sign board 'B' shall be provided 732 m away from the Points to warn LP not to back his Train as the Normal setting shall be for Catch Siding.
10) Catch Siding is also called as 'Kopcke Siding'.

SLIP SIDING

1) Slip Siding may be provided when the Block Section is on the falling gradient of Steeper than 1 in 100.
2) It is provided to prevent vehicles escaping from a Station into the Block Section.
3) Slip siding protects Block Section.
4) The length of Slip Siding shall be capable of holding few vehicles.
5) Shunting/stabling of vehicles/wagons on Slip Siding is prohibited.
6) Normal setting of the Points shall be for Slip Siding only.
7) Slip Siding Points may be interlocked with LSS.
8) Slip siding points may be spring loaded or not.
9) If it is spring loaded,
   i) Points need not be set for the movement in Trailing direction. Flanges of each pair of wheels shall set the Points.
   ii) Sign board 'A' shall be provided clear of the fouling mark to warn MTLY Drivers as MTLYs can not trail through these Points.

HAND SIGNALS

1) Hand Signals are given using
   i) Red or Green Flags during Day;
   ii) Tri Colour Hand Signal Lamp during Night.

2) Following are the different types of Hand Signals given on various occasions:
   i) Hand Signals similar to 'Indications' of Fixed Signals:
      a) Stop
      b) Proceed
      c) Proceed with Caution
   ii) Hand Signals given during Normal running of Trains:
      a) Starting
      b) All Right
      c) All Ready
      d) Complete Arrival
   iii) Hand Signals given during Unusual occurrences:
      a) Incomplete Arrival
      b) Parting
      c) Hot Axle
   iv) Hand Signals for Shunting:
      a) Move towards
      b) Move away
      c) Move slowly for Coupling.

3) Following Hand Signals are shown in **different manner during Day and Night**:
   i) Stop Hand Signal when Red Flag / Light not available.
   ii) All Right Hand Signal.
   iii) Complete Arrival Hand Signal.
   iv) Shunting Hand Signal – Move Slowly for Coupling.

4) Following Hand Signals have **alternative method** if Red Flag/Light or Green Flag is not available:
   i) Stop Hand Signal – both during Day/Night
   ii) Proceed Hand Signal – during Day
   iii) Proceed with Caution Hand Signal – during Day
   iv) Parting Hand Signal – during Day
   v) All Three Shunting Hand Signals – during Day.

5) Following Table shows how the above 13 Hand Signals are given during Day & Night.

S. No	HAND SIGNAL	DAY		NIGHT	
		Colour of Flag	Action	Colour of Light	Action
1	**STOP**	RED	Show	RED	Show
		--	Raise both Arms above Head	WHITE	Wave violently and horizontally across the body
2	**PROCEED**	GREEN	Hold steadily	GREEN	Hold steadily
		--	Raise one Arm above Head steadily	--	--
3	**PROCEED WITH CAUTION**	GREEN	Wave vertically Up & Down	GREEN	Wave vertically Up & Down
		--	Wave one Arm vertically Up & Down	--	--
4	**STARTING**	GREEN	Blow Whistle, Wave side to side above Head	GREEN	Blow Whistle, Wave side to side above Head
5	**ALL READY**	GREEN	Smartly wave side to side over the Head 3 times, pause, Smartly wave vertically Up & Down twice	GREEN	Smartly wave side to side over the Head 3 times, pause, Smartly wave vertically Up & Down twice
6	**ALL RIGHT**	GREEN	Hold out horizontally	GREEN	Wave Horizontally
7	**COMPLETE ARRIVAL**	--	Between Guard & SM: Wave Arm 4 times over the Head	WHITE	Between Guard & SM: Wave 4 times over the Head
8	**INCOMPLETE ARRIVAL**	RED	By SM to LP: Wave 4 times over the Head	RED	By SM to LP: Wave 4 times over the Head
9	**PARTING**	--	By Any Railway Servant: Shouting & Putting both Hands together overhead and separating them quickly.	WHITE	By Any Railway Servant: Wave vertically Up & Down as high as low as possible
		GREEN	Between Guard & LP: Wave vertically Up & Down as high as low as possible	WHITE	Between Guard & LP: Wave vertically Up & Down as high as low as possible
		--	Between Guard & LP: Move Arm vertically Up & Down as high as low as possible	--	--
10	**HOT AXLE**	RED	Wave in a Wide Arc manner from Left to Right across the Chest	RED	Wave in a Wide Arc manner from Left to Right across the Chest

S. No	SHUNTING HAND SIGNAL	DAY		NIGHT	
		Colour of Flag	Action	Colour of Light	Action
11	**Move away**	GREEN	Move slowly Up & Down	GREEN	Move slowly Up & Down
		--	Move Arm slowly Up & Down	--	--
12	**Move towards**	GREEN	Move side to side	GREEN	Move side to side
		--	Move Arm side to side	--	--
13	**Move slowly for Coupling**	RED & GREEN	Hold both Flags above Head, move towards and away from each other	GREEN	Hold above Head & Move by twisting the wrist
		--	Keep both Hands above Head, move towards and away from each other	--	--

I. Occasions under which PHS shall be given:

1) During Signal Failure, PHS shall be given at the foot of the following defective Signals:
   i) Starter.
   ii) Advanced Starter, if protecting any Point.
   iii) Shunt Signal.
   iv) GSS without 'G' Marker inside Station limit.
   v) Shunting Permitted Indicator.
   vi) Reception Stop Signal, if T/369(1) is issued.
2) During Fog Signalling on Single line, Fog Signal Man shall show PHS for the Train leaving the Station.
3) During Engine Pushing, Guard shall show continuous PHS to LP.
4) Guard shall show PHS to LP to permit to detach Train Engine.

II. Occasions under which Proceed with Caution HS shall be given:

1) Engineering Watchman shall show Proceed with Caution HS for a Train passing the Caution spot.
2) Gateman at LC shall show Proceed with Caution HS to LP when GSS with 'G' Marker is failed.

III. Occasions under which All Ready shall be given:

1) All Ready HS shall be exchanged between SM and Pointsman after setting & locking of Points.
2) It shall be exchanged between SM and Gateman after closure of LC Gate.
3) It shall be exchanged between Guard and LP before restarting a Train from Mid-section.

IV. All Right Signal:

1) All Right Hand Signal is exchanged to indicate that the Train is proceeding in a Safe manner.
2) It is given
   i) During Day – By Holding out a Green Flag horizontally.
   ii) During Night – By Waving a Green Light horizontally.
3) Occasions:
   i) It is exchanged between
      a) Station Staff and LP & Guard on both side of a run through Train.
      b) Guard & LP after the Train passes the Platform completely but before passing Station limit.
      c) Guard & LP after the Train passes the Platform completely of a 'D' Class Station.
      d) Guards of the Trains running in opposite directions on a Double line.
   ii) It is given by Guard and LP acknowledges with a Long Whistle after
      a) Restarting a Train from Mid-section.
      b) Passing safely over the summit of a Ghat.
      c) Last Vehicle passes the Caution Spot.
4) All the Cabins shall exchange 'All Right' signal with Guard & LP of all run through & stopping Trains.
5) If any Cabin is exempted in exchanging All Right Signals, the same shall be mentioned in SWR and also notified to Crew / Guard booking Depots.
6) If LP / Guard do not exchange All Right Signal with Station Staff, Train shall be treated as 'Run away Train' and shall be stopped at next Block Station to ascertain the cause.
7) In Token Territory, if LP receives Token but fails to exchange All Right Signal, a Warning Message shall be served at next Block Station through Token Pouch.
8) If LP does not get All Right Signal from Guard, he shall give Two Short Whistles. Even then if All Right Signal is not given by Guard, LP shall stop the Train to ascertain the cause.

FOG SIGNAL

I. General:

1) Detonator is known as 'Fog Signal'.
2) It is an 'Audible Signal'.
3) Detonator shall be fixed on the Rails with its Label facing upwards.
4) In mixed Gauge, Detonators shall be placed on the Common Gauge or one Rail of each Gauge.
5) When an Engine/Vehicle passes over it, it explodes with a loud noise attracting the attention of LP.

II. Supply of Detonators:

1) Ten Detonators shall be available in a Tin case.
2) One such case shall supplied to the following staff while on duty:
   i) Guard, LP, Gateman, Gang mate, Keyman, Patrolman, Bridge Watchman, Official in-charge of Trolley/Lorry/MTLY – For Protection.
   ii) SM, Cabin SM – For Fog Signalling.

III. Life of Detonators:

1) Life of Detonators shall be as follows:

Detonators manufactured	Normal Life	Maximum Life
Before 2010	7 years	10 years
During 2010 & thereafter	5 years	8 years

2) After the Normal Life, Two Detonators from each Batch/Lot shall be tested.
3) Tests shall be conducted by placing Detonator below an Empty Wagon moving at 8 to 10 Kmph.
4) No person shall be allowed to remain within 45m from Detonator.
5) If the result is satisfactory, Life shall be extended for one more year.
6) Such test shall be repeated every year and Life can be extended for a maximum of Three years.
7) So, Maximum Life = Normal Life + 3 Years.
8) If the result is not satisfactory, the whole Batch/Lot shall be withdrawn.
9) All such Time expired / Unserviceable Detonators shall be destroyed in the presence of Gazetted Officer / Sr. Supervisor as follows:
   i) By detonating under the Wagons during Shunting.
   ii) By burning them in Incinerator.
   iii) By soaking them in light Mineral Oil for 48 hours and throwing them, one by one, into Fire.
   iv) By throwing them into deep Sea.

IV. FOG SIGNALLING:

1) In Thick/Foggy/Tempestuous Weather when visibility is not clear, SM shall arrange for Fog Signalling to warn LP about the location of FSS.
2) To decide whether visibility is impaired or not, a Visibility Test Object (VTO) shall be provided at every Station.
3) **VTO** for a Station may be a
   i) Visibility Test Post **(VTP)**:
      a) It is painted Black & White alternatively.
      b) It is lighted during Night.
      c) It shall be located at NLT 180m from the Centre of SM's Office.
   ii) Semaphore Arm by Day.
   iii) Light / Back light of Semaphore Signal by Night.
   iv) Light of a Colour light Signal by Day/Night.
4) VTO of a Station shall be mentioned in **SWR**.
5) VTO Distance of 180m may be reduced by Railway Board.
6) When VTO is not visible to SM, he shall
   i) Arrange to light the Station Signals.
   ii) Send Fog Signal Men to either side with Hand Signals & Detonators for Fog Signalling.
7) Fog Signal Posts are erected at all Stations at 270m in rear of FSS.
8) Fog Signal Men shall
   i) Place Two Detonators on the Rails, 10m apart, opposite to Fog Signal Post.
   ii) Take stand at 45m away from the last Detonators.
9) When an approaching Train explode the Detonators, LP shall
   i) Control the Speed of the Train and
   ii) Look out for the Aspect of FSS.
10) Fog Signal Men shall show PHS to the LP of the Train leaving the Station.
11) Railway servants concerned with the use of Detonators shall be tested once in 3 Months on their knowledge of using Detonators.

12) Where Fog Signalling is 'Not Necessary':

i) In Sections where a reliable **Fog Safe Device** has been provided on Locos.

ii) In Sections where **Double Distant** signals are provided.

iii) Where **Speed** of the Section is **between 50 Kmph and 15 Kmph** (15 Kmph < Section Speed < 50 Kmph) and the First Signal of a Station is not a Stop Signal.

iv) Where Maximum **Speed** in the Station Section is **up to 15 Kmph** even if Pre-Warning Signal is not available, but a Warning Boards exists.

v) In **Automatic** Signalling territory.

vi) On **Gate Signal**.

vii) On **Departure Signal**.

viii) At the site(s) of **Temporary Speed restriction** imposed due to maintenance of Track / OHE / Signal.

13) Where Fog Signalling is 'Necessary':

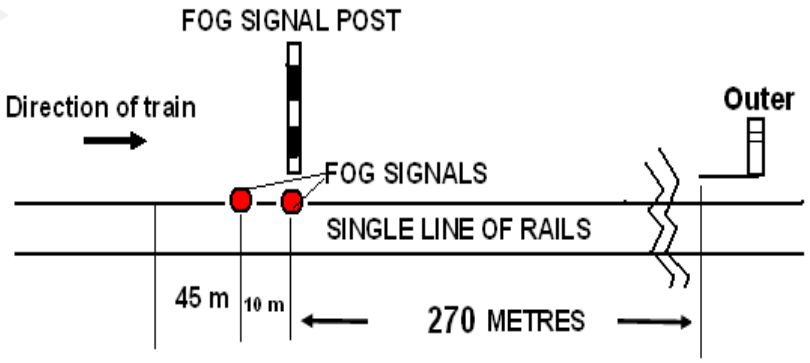
i) At 'A' class Stations - In rear of Home signal.

ii) At 'B' class Stations equipped with TALQ Signals – In rear of Outer signal.

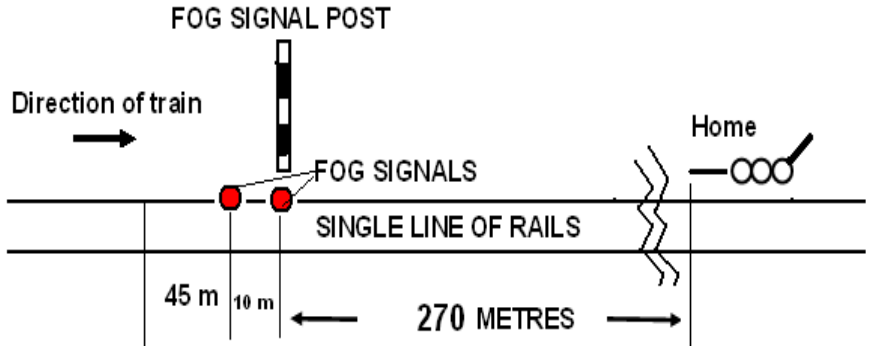
iii) In MACL area where Single Distant Signal is provided – In rear of Home signal.

POSITION OF FOG SIGNAL MAN

Two Aspect Lower Quadrant



Multiple Aspect Colour Light



V. Speed during Thick / Foggy Weather:

1) If LP feels that the visibility is obstructed due Fog, he shall run at a Speed at which he can control the Train to stop short of obstruction.
2) Also, he shall whistle frequently to warn the Gatemen and Road Users at LC Gates.
3) Absolute Block System:
   LP shall run at a Speed not exceeding 60 Kmph.
4) Automatic Block System:

Automatic Stop Signal passed at	Speed not to exceed
Proceed / Green	60 Kmph
Attention / Double Yellow	30 Kmph
Caution / Yellow	Restricted Speed so as to stop at next Stop Signal
Red / Stop	Walking Speed after following prescribed procedure

VI. PLACING OF DETONATORS IN CASE OF OBSTRUCTION:

1) Absolute Block System:

GR/SR 6.03 shall be followed.
Refer 'Protection Rules' of this Notes – Chapter No.

2) Automatic Block System:

GR/SR 9.10 shall be followed.
Refer 'Protection Rules' of this Notes – Chapter No.

VII. Duties of LP when his Train explodes Detonators:

LP shall

1) Whistle intermittently.
2) Reduce the Speed of the Train.
3) Proceed cautiously and be prepared to stop short of any obstruction.
4) Resume Normal Speed after proceeding 1.5 KMs from the place of exploding Detonators, if
   i) No further Detonator(s) exploded.
   ii) No Obstruction exists.
   iii) No Hand Danger Signal, Flasher light on Adjacent line seen.
5) Report the matter at the next Station.

WARNING SIGNALS

1) When it is necessary to protect an obstruction and there is a Train approaching, following Warning Signals shall be used to warn LP:
   i) During Day: **A Red Flag**.
   ii) During Night: **A Red Flashing Hand Signal Lamp**.
2) If Red Flashing Hand Signal Lamp is not available, a **Fusee** shall be used.
3) **Fusee:**
   i) It is a Visible Signal.
   ii) It is also called Flare Signal.
   iii) When lighted, it emits Red Flame for 7 minutes even in heavy Rain.
   iv) After lighting, it shall be placed at a suitable spot so that it shall be visible to LP.
   v) Supply of Fusee:
      a) D/L, Multiple Lines, Ghat, Sub-urban and Automatic Sections:
         - One Fusee shall be supplied to LP, Guard and Patrolman.
         - Three Fusees shall be supplied to Gateman.
      b) On Single Line Section: One Fusee shall be supplied to Gateman.
   vi) Life of Fusee:
      a) Normal life of Fusee is 7 years from the year of manufacture.
      b) One Fusee from the batch of a particular year shall then be tested.
      c) If result is not satisfactory, 2 more Fusees from same Batch shall be tested.
      d) If the result is satisfactory, Life can be extended for one more year.
      e) In this manner, Life can be extended to any number of years.
      f) Maximum Life of Fusee is therefore unlimited.
      g) If the result is not satisfactory even after testing Three Fusees, whole lot Fusees shall be withdrawn.
      h) Unserviceable Fusees shall be burnt in a Coal Fire, putting maximum three Fusees at a time.
   vii) Testing of knowledge of Staff concerned with usage of Fusee:
      Railway staff concerned with usage of Fusee shall be tested once in Three Months in their knowledge.
   viii) Duties of LP when he sees a Warning Signal:
      a) When a LP sees a Warning Signal / Lighted Fusee, he shall stop his Train immediately.
      b) LP shall then act
         - As per the advice of the person who has shown Warning Signal (or)
         - Based on the Obstruction noticed by him.
      c) If no further details exist at the location, LP shall wait as follows to ascertain the cause.
         - One Minute during Day.
         - Two Minutes during Night.
      d) If still no further details, LP shall
         - Proceed cautiously upto the next Block Station, keeping a sharp look out.
         - Report at the next Block Station.

BOARDS

S.No	Description	Station Warning Board
1)	Shape	It is a White Board with a Black Circle in the Middle.
2)	Where Provided?	It is provided in rear of Class 'D' Stations.
3)	Location	It is located at NLT 1000/1200m in MG/BG in rear of Class 'D' Stations.
4)	What it indicates?	In warns LP that he is approaching a Flag/Halt Station, particularly during Thick/Foggy weather.
5)	During Night	Need not be lit.

S.No	Description	Shunting Limit Board (SLB)
1)	Shape	It is a Yellow Board with a Black Cross, with words 'SHUNTING LIMIT' in Black Letters.
2)	Where Provided?	It is provided at Class 'B' Stations on Single line where Advanced Starters are not provided.
3)	Location	• It is located in 2A/MA Sections at o 400/180m from Opposing FSS (or) o 180/120m from OMFP. • It shall be facing the Station.
4)	What it indicates?	• It demarcates the Station Section & Block Section. • It warns the LP, the Limit for Shunting in the face of an approaching Train.
5)	During Night	A White light shall be lit, visible on both sides.

S.No	Description	Block Section Limit Board (BSLB)
1)	Shape	It is a Yellow Board with a Black Cross, with words 'BLOCK SECTION LIMIT' in Black Letters.
2)	Where Provided?	It is provided at Class 'B' Stations on Double line Multiple Aspect area where • There are no Points (or) • The Outer Most Points are 'Trailing'.
3)	Location	• It is located at NLT 180m from Opposing FSS. • It shall be facing the Station.
4)	What it indicates?	It demarcates the Block Section limit.
5)	During Night	A White light shall be lit, visible on both sides.

S.No	Description	Shunting Warning Board
1)	Shape	It is a Diagonal Board with alternate Yellow & Black.
2)	Where Provided?	It is provided at Class 'B' Stations on Single line where 'Shunting in the face of approaching Train is permitted'.
3)	Location	• It is located at NLT 545/670m in MG/BG in rear of FSS • It will be facing the Block Section.
4)	What it indicates?	It warns LP of an approaching Train that Shunting is permitted in the face of his Train.
5)	During Night	Need not be lit.

S.No	Description	Passenger Warning Board (PWB)
1)	Shape	It is a Rectangular Board painted alternative Yellow & Black.
2)	Where Provided?	It is provided in rear of FSS/IBSS/GSS.
3)	Location	It is located at NLT 1000m in rear of FSS/IBSS/GSS.
4)	What it indicates?	• It warns LP of a Passenger Train that he is approaching a Stop Signal. • If the LP could not get the Indication of the Stop Signal ahead, he shall control the Speed of the Train as if the Signal is at 'On'.
5)	During Night	Self Reflecting Sheets or Reflectors shall be provided.
6)	When dispensed with?	In Multiple Aspect area, if Distant Signal is provided at 1000m, PWB may be dispensed with.

S.No	Description	Goods Warning Board (GWB)
1)	Shape	It is a Rectangular Board painted Black with a Yellow Ring in the Centre, One Yellow line above & below the Ring.
2)	Where Provided?	It is provided in all BG Sections.
3)	Location	It is located at NLT 1400m in rear of FSS/IBSS/GSS.
4)	What it indicates?	• It warns LP of a Goods Train that he is approaching a Stop Signal. • If the LP could not get the Indication of the Stop Signal ahead, he shall control the Speed of the Train as if the Signal is at 'On'.
5)	During Night	Self Reflecting Sheets or Reflectors shall be provided.
6)	When dispensed with?	In Multiple Aspect area, if Inner Distant Signal is provided, GWB may be dispensed with.

S.No	Description	STOP Board
1)	Shape	It is a Rectangular Board painted Yellow with letters 'STOP' in Black.
2)	Where Provided?	i) It is provided for each line of a Goods Yard which has been declared as Terminal Yard. ii) It shall be provided at Regular Coaching Terminals also. iii)It may be provided in Temporary Coaching Terminals also, if further movement beyond the berthing place is possible. iv)At Double line Stations, 'Stop' Boards may be provided for all the lines in the 'Wrong' direction.
3)	Location	i) It may be located just ahead of Fouling Mark. If so, 'Signal Overlap' shall be reckoned from FM to Stop Board. ii) It may be located exactly at Fouling Mark. If so, SOL = Zero. iii)In any case, CRS approval should be obtained for reduction in SOL.
4)	What it indicates?	- LP to stop at this Board. - Speed of Incoming Train is restricted to 10 Kmph. - A Speed Indicator shall be fixed below the Home Signal.
5)	During Night	It shall be lit during night.

S.No	Description	'W' Board
1)	Shape	It is a Rectangular Board painted Yellow with a Letter 'W' in Black.
2)	Where Provided?	It is provided in rear of Curve, Cutting, Tunnels, etc where view of Track is obstructed.
3)	What it indicates?	LP shall whistle continuously from this Board till he gets the clear view of the Track.

S.No	Description	'W/L' Board
1)	Shape	It is a Rectangular Board painted Yellow with a Letter 'W/L' in Black.
2)	Where Provided?	It is provided in rear of i) All Unmanned LCs. ii) Manned LCs from where the view of the Track is not clear.
3)	Location	It is located at NLT 600m in rear of LCs.
4)	What it indicates?	LP shall whistle intermittently from this Board till he passes the relevant LC.

S.No	Description	'C' Board (Caution Indication Board)
1)	Shape	It is a Rectangular Board painted Yellow with a Letter 'C' in Black.
2)	Where Provided?	It is provided in rear of vulnerable places, bridges prone for damages. It is provided during Monsoon Season only.
3)	Location	It is located at NLT 600m in rear of such Vulnerable spots.
4)	What it indicates?	LP shall keep the Train under his control, be extra vigil and look out for any Hand Signal from Engineering Watchman.

S.No	Description	'T' Board (Termination Indication Board)
1)	Shape	It is a Rectangular Board painted Yellow with a Letter 'T' in Black.
2)	Where Provided?	It is provided in advance of vulnerable places, bridges prone for damages. It is provided during Monsoon Season only.
3)	Location	It is located at 600m in advance of such Vulnerable spots.
4)	What it indicates?	LP shall know that he has passed the Vulnerable spot safely.

S.No	Description	'S' Board
1)	Shape	It is a Circular Board painted Yellow with a Letter 'S' in Black.
2)	Where Provided?	It is provided at Outlying Sidings Points.
3)	Location	It is located in the facing direction. In addition, Engineering Indicators are also provided.
4)	What it indicates?	LP shall not exceed 50 Kmph over the facing points of the Outlying Sidings.
5)	When dispensed with?	If the Section Speed does not exceed 50 Kmph, 'S' Board and Engineering Indicators need not be provided.

S.No	Description	Sign Board 'A'
1)	Shape	It is a Rectangular Board painted Yellow with Letters '***Spring Loaded Points. No Backing. Motor Trolleys Beware***' in Black.
2)	Where Provided?	It is provided at Catch Sidings and Slip Sidings if the Points are Spring Loaded.
3)	Location	It is located clear of Fouling Mark of Spring Loaded Points.
4)	What it indicates?	i) It warns the LP not to back the Train. ii) It warns the Driver of MTLY about the presence of Spring loaded Points so that MTLY shall be • lifted off the Track till it passes the Point & • placed on the correct line to proceed further.

S.No	Description	Sign Board 'B'
1)	Shape	It is a Rectangular Board painted Yellow with Letters '***Spring Loaded Points behind. No Backing from here'*** in Black.
2)	Where Provided?	It is provided at Catch Sidings if the Points are Spring Loaded.
3)	Location	It is located at 732m ahead of Spring Loaded Points.
4)	What it indicates?	It warns the LP not to back the Train.

Miscellaneous Boards:

1) Whenever there is a change in the System of Working, Pattern of Working, etc, from a particular Station, Warning Boards shall be provided.
2) Such Boards shall be placed on the stem of FSS.
3) These Boards shall be Rectangular in Shape, Painted Yellow with Black Letters.
4) Few of such Boards are:
   i) Token Territory ahead
   ii) Tokenless Territory ahead
   iii) Automatic Block System ahead
   iv) Multiple Aspect Signalling ahead
   v) Semaphore Signals ahead
5) If there is a diversion at a Station and the Pattern of working changes towards only one particular direction, words in above Boards shall be suitably changed as follows:
   i) Token Territory towards _____ (Station Name)
   ii) Colour light Signalling towards _____ (Station Name).

INDICATORS

POINT INDICATOR

1) It is not a Signal. It is an appliance fitted to work in conjunction with Points.
2) It indicates the position in which Points are set.
3) It shall show the position of Point as follows:

Position of the Point	Day	Night
Set for Straight	White Disc	White Light
Set for Turnout	Knife Edge of the Disc	Green Light

4) In **P**etroleum & **O**ther inflammable **L**iquids (POL) dealing Yards, Luminous Strips shall be provided instead of K.Oil lamps.
5) Responsibilities of LP:
   i) At Non-Interlocked / Rudimentary Interlocked Stations:
   LP shall observe the Point Indicator at 'Trailing end' to ensure that the Point is correctly set for the line on which his Train is running.
   ii) At Interlocked Stations without Starters:
   LP shall observe the Point Indicator at 'Trailing end' to ensure that the Point is correctly set for the line from which his Train is being started.
   iii) At all Stations:
   LP shall observe the Point Indicator at both Facing & Trailing ends
      a) During failure of Signals.
      b) During Shunting Operations.

TRAP INDICATOR

1) It is not a Signal. It is an appliance fitted to work in conjunction with Trap.
2) It indicates the position in which Trap is set.
3) It shall show the position of Trap as follows:

Position of the Trap	Day	Night
Trap is Open	Red Disc	Red Light
Trap is Closed	Knife Edge of the Disc	Green Light

4) In **P**etroleum & **O**ther inflammable **L**iquids (POL) dealing Yards, Luminous Strips shall be provided instead of K.Oil lamps.
5) LP shall observe the Trap Indicator to ensure that the Trap is closed before any movement including Shunt movement.

SHUNTING PERMITTED INDICATOR

1) It is not a Signal. It is an appliance fitted to work in conjunction with a Stop Signal.
2) It indicates whether Shunting is permitted or not.
3) SPI is of Two types:
   I. Disc Type
   II. Colour light Type
4) Indications shall be as follows:

Indication	Disc Type		Colour light Type
	Day	Night	Day/ Night
Shunting is permitted	Yellow Cross on Black Disc	Yellow Cross lights	Yellow Cross lights
Shunting is not permitted	Knife edge of the Disc	No light	No light

5) LP shall observe the SPI to ensure whether Shunting is permitted before Shunt movement.

ROUTE INDICATOR

1) It is not a Signal. It is an appliance fitted to work in conjunction with a Stop Signal.
2) It indicates the Line of Reception / Despatch.
3) Route Indicator is of Three types:
   ii) Directional Type
   iii) Non-directional Type
   iv) LED Matrix cum Directional Type

I. Directional Type Route Indicator:
   1) Route is indicated by a 'Row of White lights'.
   2) No Route shall be shown if the Signal is taken 'off' for Main / Straight line.
   3) If Route is shown when the Signal is at 'On', the Signal shall be treated as defective.

II. Non-Directional Type Route Indicator:
   1) Route is indicated by a 'Number' or a 'Letter'.
   2) Route shall be shown even if the Signal is taken 'off' for Main / Straight line.
   3) It is of 3 Types:
      i) Multi Lamp Type
      ii) Stencil Type
      iii) Projector Type

4) It shall be treated as defective, if
    i) No Route is shown when the Signal is in 'Off' position.
    ii) Route is shown when the Signal is in 'On' position.
    iii) Incorrect Route is shown.

III. LED Matrix cum Directional Type Route Indicator:

1) It is a combination of both Directional & Non-directional type Route Indicators.
2) It is provided on Multiple Aspect Colour Light Territory, if more than Three Lines are available on either side or both sides of the Main Line.
3) Route is indicated by a 'Row of White lights' and a 'Number'/'Letter'.
4) No Route shall be shown if the Signal is taken 'off' for Main / Straight line.
5) It shall be treated as defective, if
    i) Only 'Row of White lights' is shown and 'Number'/'Letter' is not shown.
    ii) Route is shown when the Signal is in 'On' position.
    iii) Incorrect Route is shown.

SIGNAL FAILURES

A Signal shall be considered as failed when

1) It does not respond to its corresponding Lever / Knob / Slide.
2) Interlocking fails between that Signal and the following:
   a) Block Instrument
   b) Point(s)
   c) LC Gate
   d) Track Circuit
   e) Axle Counter, etc.

I. FSS fails in 'Off' Aspect:

1) SM shall advise Station in Rear to issue Caution Order to LP.
2) During Night, the defective Signal shall not be lit.
3) A Competent Railway Servant shall be deputed at the foot of the defective Signal with Hand Signals & Detonators.
4) SM shall fulfil the conditions for taking 'off' Reception Signal before granting Line Clear.
5) Competent Railway Servant shall show Stop Hand Signal to LP to stop the Train.
6) Train shall then be received by issuing T/369(3b) at the foot of the Defective Signal.
7) Advance Authority in T/369(1) shall not be issued at a Nominated Station in rear.

II. Signal Blank due to Power Failure:

1) SM shall advise Station in Rear to issue Caution Order to LP.
2) SM shall give Message to Controller, DEE, DSTE and DOM.
3) A Competent Railway Servant shall be deputed at the foot of the defective Signal with Hand Signals & Detonators.
4) He shall show Stop Hand Signal to LP to stop the Train.
5) Train shall then be received by issuing T/369(3b) at the foot of the Defective Signal.
6) Advance Authority in T/369(1) shall not be issued at a Nominated Station in rear.
7) When Power Supply is restored, SM shall give Message to all who have been advised earlier.

III. Reception Stop Signals failing in 'On' Aspect:

1) If a Multiple Aspect Home Signal fails, Distant also shall treated as failed.
2) If a Routing Signal fails, other Reception Signals interlocked with it shall also be treated as failed.
3) There are 'Four' Methods for reception of Trains during failure of Reception Stop Signals:
   i) By taking 'off' Calling-on Signal.
   ii) By issuing Message through Signal Post Telephone (SPT).
   iii) By issuing Form T/369(3b) at the foot of the Signal.
   iv) By issuing Form T/369(1) at a Nominated Station in rear.
4) In all methods, SM shall ensure that
   i) Reception Line is clear
      a) Upto Starter or Trailing Point in first 'Three' methods.
      b) Upto Signal Overlap in 4th method.
   ii) Points are correctly set & Facing Points are locked.
   iii) LC Gates, if any, are closed against the Road Traffic.
   iv) Conflicting Signals are kept at 'On'.

   Conflicting movements are stopped.

5) Taking 'off' Calling-on Signal:
   i) Train shall be stopped at FSS.
   ii) Points need not be clamped and padlocked. However, if T/351 is issued to S&T Official for Disconnection of any Points in the Route, such Points shall be clamped and padlocked.
   iii) Calling-on Signal shall be taken 'off' after ensuring that the Train has stopped.
   iv) LP shall obey the aspect of Calling-on Signal.
   v) LP shall proceed cautiously and be prepared to stop short of any obstruction.
   vi) Speed shall not exceed 15 Kmph.
   vii) If Calling-on Signal below a Home Signal is taken 'off' and a Routing Signal is available, LP shall proceed only upto Routing Signal. He shall move further only if
      a) Routing Signal is taken 'off' or
      b) Authorized by any of the prescribed method as above.

6) Issuing Message through SPT:
   i) Train shall be stopped at FSS.
   ii) SM shall issue a 'Message + PN' through SPT to LP.

iii) Message shall contain the following:
   a) Train Number & Description
   b) Signal Number(s) & Description
   c) Road Number on which Train is being received
   d) Speed (Not to exceed 15 Kmph or a lesser Speed as in SWR)
   e) Private Number

iv) SM shall record the Message in TSR, below the entry for the Train.

v) LP shall record the Message in his Rough Journal Book.

vi) LP shall treat the Message as Authority and pass the Signal at 'On'.

vii) Speed shall not exceed 15 Kmph.

viii) If more than one Reception Signal available and all failed, SM can authorize LP to pass all such Signals by issuing "Message + PN" on the SPT of 1st Signal itself. He shall clearly mention the Numbers & Descriptions of all Signals.

7) Issuing Form T/369(3b):

i) Train shall be stopped at FSS.

ii) Form T/369(3b) shall be prepared in Duplicate.

iii) It shall be delivered to LP through Competent Railway Servant at the foot of the defective Signal.

iv) LP shall acknowledge in Duplicate.

v) LP shall proceed cautiously at a Speed not exceeding 15 Kmph.

vi) If more than one Reception Signal available and all failed, SM shall clearly mention the Numbers & Descriptions of all the Signals.

vii) If Departure Signal(s) also failed, Train shall be stopped at the Station and separate T/369(3b) shall be issued.

8) Advance Authority in T/369(1):

i) In this Method, Train can be received without stopping the Train at FSS.

ii) SM shall advise the Nominated Station in rear. It shall be
   a) Last Stopping Station as in WTT - for Mail/Express Trains.
   b) Station in rear - for Booked Stopping Trains, Light Engine, Goods Train, Departmental & Special Trains.

iii) SM at Nominated Station in rear shall prepare Advance Authority in T/369(1) and hand over to LP, clearly mentioning the particulars about the defective Signal.

iv) SM of the Station where defective Signal is available shall fulfill the conditions for taking 'off' Reception Signal before granting Line Clear.

v) He shall depute a Competent Railway Servant to show 'Proceed Hand Signal' (PHS) at the foot of defective Signal.

vi) If the Train has been issued with T/369(1) and PHS is shown at the foot of the defective Signal, it can pass the Signal at 'On' without stopping.

vii) Speed shall not exceed 15 Kmph.

viii) If PHS is not shown, LP shall stop his Train.

ix) If the Signal is rectified after a Train has been started with T/369(1),

a) Train shall be stopped at FSS.

b) A Memo shall be delivered to LP to inform about restoration of Signal.

c) Then the Signal shall be taken 'off'.

x) Form T/369(1) shall **not be issued** in following cases:

a) If Calling-on Signal is provided.

b) If SPT is provided.

c) If Colour light Signals become blank due to Power failure.

d) In Automatic Double Line Section.

e) If all Home Signals not failed for all roads.

f) If FSS fails in 'Off' Aspect.

g) When LSS of the Station in rear is the FSS of the Station in advance.

IV. <u>Starter failing in 'On' Aspect:</u>

1) Train shall be stopped at the Station.

2) There are 'Two' Methods for despatch of Trains during failure of Starter:

i) By taking 'off' Calling-on Signal.

ii) By issuing Form T/369(3b) at the foot of the Signal.

3) In both methods, SM shall ensure that

i) Despatch Route is clear.

ii) Points are correctly set & Facing Points are locked

a) Either by Clamping & Padlocking

b) Or by using Cotter & Bolts.

iii) LC Gates, if any, are closed against the Road Traffic.

iv) Conflicting Signals are kept at 'On'.

v) Conflicting movements are stopped.

4) <u>Taking 'off' Calling-on Signal:</u>

i) Train shall be stopped at the foot of the Starter.

ii) Points need not be clamped and padlocked. However, if T/351 is issued to S&T Official for Disconnection of any Points in the Route, such Points shall be clamped and padlocked.

iii) Calling-on Signal shall be taken 'off'.

iv) LP shall obey the aspect of Calling-on Signal.

v) LP shall proceed cautiously and be prepared to stop short of any obstruction.

vi) Speed shall not exceed 15 Kmph.

5) Issuing Form T/369(3b) at the foot of the Signal:
   i) Train shall be stopped at the Station.
   ii) Form T/369(3b) shall be prepared in Duplicate.
   iii) It shall be delivered to LP through Competent Railway Servant at the foot of the defective Starter Signal.
   iv) Competent Railway Servant shall then show PHS.
   v) LP shall acknowledge in Duplicate.
   vi) LP shall proceed cautiously at a Speed not exceeding 15 Kmph.
   vii) In Tokenless territory, if Starter is LSS and it alone fails, an 'Endorsement+PN' shall be written in the Form to inform LP that "Line Clear has been obtained from Block Instrument".

V. Advanced Starter failing in 'On' Aspect:

1) Train shall be stopped at Station.
2) Form T/369(3b) shall be prepared in Duplicate.
3) It shall be delivered to LP through Competent Railway Servant alongwith 'Authority to Proceed', if any.
4) PHS also shall be given, if Advanced Starter is protecting any Points.
5) LP shall acknowledge in Duplicate.
6) LP shall proceed cautiously at a Speed not exceeding 15 Kmph and resume Normal Speed after the Last Vehicle clears the Points & Crossings.
7) In Tokenless territory, when Advanced Starter (LSS) alone fails, an 'Endorsement+PN' shall be written in the Form to inform LP that "Line Clear has been obtained from Block Instrument".
8) When following ATPs are issued, T/369(3b) shall also be issued separately:
   i) T.1408
   ii) CLCT (T/G.602, T/H.602)
9) When following ATPs are issued, separate T/369(3b) is not required to be issued to pass Advanced Starter/LSS at 'On':
   i) PLCT
   ii) T/A 602 to T/D 602
   iii) Stub Portion of T/609
   iv) T/B 912 & T/D 912.

VI. Shunt Signal, S.P.I Failure:

1) SM shall ensure the correct setting & locking of the Points over which Shunt movement is to be done.
2) T.370 shall be handed over to LP to pass the failed Shunt Signal/S.P.I at 'On'.
3) 'Proceed Hand Signal' (PHS) shall be given at the foot of the Shunt Signal.
4) In case of SPI failure, PHS shall be given at the foot of the Stop Signal with which SPI works.

VII. Absence of Fixed Signal (or) Aspect is misleading/imperfect:

1) LP shall act as if the Signal is showing its 'most restrictive aspect' when
   a) There is no Fixed Signal at a place where it shall normally be available;
   b) The light of the Signal is not burning;
   c) White light is shown in the place of a Colour light;
   d) The Aspect of Signal is misleading or imperfectly shown;
   e) More than one Aspect is displayed.

2) Semaphore Signals without Light:
   LP of the approaching Train shall
   i) Stop the Train.
   ii) Observe the Day Aspect.
   iii) Proceed at a restricted Speed upto Station, if it is clearly visible and is taken 'off'.
   iv) Obey all Intermediate Signals related to him, if any.
   v) Report the same to SM.

3) Colour light Distant Signal without light or with imperfect Aspect:
   LP shall
   i) Stop his Train.
   ii) Ensure that 'P' Marker is available.
   iii) Proceed cautiously and be prepared to stop at next Stop Signal.

4) Signals blank due to Power Failure in Colour light Signal Territory:
   Refer "**II**" above in this Chapter.

5) Colour light Signal 'Flickering' or 'Bobbing':
   i) **Flickering** means vibrating or unsteady illumination of 'any one particular Aspect'.
   ii) **Bobbing** means appearance & disappearance of 'different Aspects of a Signal'.
   iii) LP shall
      a) Stop the Train.
      b) Obey the Aspect which remains steady for atleast 60 seconds.
      c) Treat the Signal as defective if no Aspect remains steady for 60 seconds.

6) Colour light Signal showing More than One Aspect:
   i) In case of Manual Stop Signal, the Signal shall be treated as defective. Procedure for passing a Manual Stop Signal at 'On' shall be followed.
   ii) In case of Automatic Stop Signal, most restrictive Aspect of the Signal shall be obeyed. Procedure for passing an Automatic Stop Signal at 'On' shall be followed.

7) Semaphore Signal Arm is drooping:
   LP shall
   i) Stop the Train.
   ii) Give ___ ○○ whistle.
   iii) Treat the Signal as defective.

VIII. Passing IBSS at 'On':

1) If IBSS is at 'On', LP shall stop his Train in rear of the Signal.
2) If SPT is provided:
   i) LP shall contact SM of the "Station in Rear" over SPT.
   ii) If the IBSS is at 'On' due to occupation of preceding Train in the Block Section:
      a) SM shall inform the same & specify the probable time of clearing the Signal.
      b) If Signal continues to be at 'On' till the specified time, LP shall again contact the SM.
   iii) If IBSS is at 'On' due to failure:
      a) SM shall obtain Line Clear from Station in advance.
      b) He shall then authorize LP to pass IBSS at 'On' by giving a Message supported with a Private Number through SPT.
3) If SPT is Not provided (or) SPT failed:
   i) LP shall wait for 'FIVE' minutes.
   ii) He shall then proceed at a Cautious Speed & be prepared to stop short of any obstruction.
   iii) The Speed shall not exceed
      a) 15 Kmph, if the view ahead is clear.
      b) 8 Kmph, if the view ahead is not clear.
   iv) The Speed Restriction shall be exercised till the Train reaches the FSS of the Station in advance, even if the FSS and Intermediate G.S.S.s are in 'Off'.
   v) If LP sees a preceding Train / obstruction in the Block Section in advance, he shall maintain a Minimum Distance of 75m or one OHE span between his Train and preceding Train/obstruction.
   vi) If there is Flood, etc, after stopping at 75m / One OHE Span as above, LP may draw his Train still closer to the preceding Train / obstruction.
   vii) LP shall report the same to SM of the Station in advance.
4) On becoming aware that the IBSS is defective (due to failure of Block Instrument or Track Circuit or Axle Counter, etc or failure of Signal itself), SM shall
   i) Treat the entire Section (X-Y and Y-Z) as one Block Section.
   ii) Obtain Line Clear through Block Telephone or other approved Indirect Means.
   iii) Issue
      a) "Line Clear Ticket" as ATP for entire Section (X-Z).
      b) "T/369(3b)" for passing IBSS at 'ON'.

   LP shall pass the IBSS at 'On' at Normal Speed without stopping the Train.

IX. Passing GSS with 'G' Marker at 'On' Outside Station Limit:

1) LP shall
   i) Stop the Train in rear of the Signal;
   ii) Give one long continuous whistle;
   iii) Wait for
      a) One minute by Day and
      b) Two minutes by Night.
2) If the signal is still at 'ON', LP shall start the Train and pass the Signal cautiously.
3) If the Gateman is showing Hand Signals, LP shall pass the Gate also with a cautious Speed.
4) If the Gateman is not available:
   i) LP shall stop the Train 30 metres short of Level Crossing (LC).
   ii) ALP or Guard shall ensure the closure of LC Gate and show Hand Signal.
   iii) LP shall start the Train and pass the Gate with a cautious Speed.
   iv) Train shall be stopped again with last vehicle clearing the LC by 2 vehicles length.
   v) ALP or Guard shall open the Gate, board the Train.
   vi) Train shall be restarted.
   vii) LP & Guard shall report this at the next Block Station.
5) Same procedure shall be followed for passing a Gate-cum-Distant Signal with 'G' marker at 'ON'.

X. Passing GSS without 'G' Marker at 'On' Outside Station Limit:

1) LP shall
   i) Stop the Train in rear of the Signal.
   ii) Give one long continuous whistle.
2) If SPT is provided below the GSS:
   i) LP shall immediately contact the Gateman through SPT.
   ii) In case of GSS failure, Gateman shall close the Gate & give a "Private Number" (PN) to LP.
   iii) LP shall record the 'PN' in his Rough Journal Book.
   iv) Then LP shall pass the GSS and Gate with a cautious Speed.
3) If SPT is not provided or not working:
   i) LP shall wait for a reasonable time for the Gateman to come and pilot the Train.
   ii) If Gateman not turns up within a reasonable time, LP shall call the Guard to Engine by giving — — • • whistle.

iii) Guard shall
   a) consult LP;
   b) proceed to the LC Gate;
   c) ensure that the Gate is closed against road traffic; and
   d) show Hand Signal to the LP.

iv) LP shall
   a) start the Train;
   b) pass the GSS and Gate with a cautious Speed; and
   c) stop again with the last vehicle clearing the LC by 2 vehicles length.

v) Guard shall open the Gate, board the Train.

vi) Train shall be restarted.

4) LP & Guard shall report this at the next Block Station.

5) Same procedure shall be followed for passing a Gate-cum-Distant signal without 'G' marker at 'ON'.

XI. Passing GSS without 'G' Marker at 'On' Inside Station Limit:

1) LP shall
   i) stop the Train in rear of the Signal;
   ii) give a long continuous whistle; and
   iii) send Gateman or ALP to inform SM.
2) SM shall
   i) ensure that the LC Gate is closed against Road Traffic;
   ii) issue T.370 and
   iii) arrange to show 'PHS' at the foot of the GSS.
3) T.370 + PHS is the authority for the LP to pass the GSS at 'ON'.

XII. Starting from 'Beyond Starter':

1) If Train has to be started from beyond the Starter, SM shall
   i) ensure that the Despatch route is clear upto next Stop Signal;
   ii) take 'Off' Starter & Advanced Starter and
   iii) issue a "Written Memo" to LP authorizing him to start.
2) If Track Circuit prevents the SM to take 'off' Starter, SM shall personally verify that all the Points in the route are correctly set and Facing Points locked, before issuing 'Written Memo'.

XIII. Reception on Obstructed Road:

1) If possible, LP shall be informed through SM in rear.
2) SM shall ensure that
   i) Line of Reception is Clear upto the point of obstruction.
   ii) Points are correctly set and Facing Points locked.
   iii) LC Gates, if any, are closed against the Road Traffic.
   iv) No Conflicting Signal is taken 'OFF'.
   v) No Conflicting Movement is given.
3) Train shall be stopped at FSS.
4) Train can be received by anyone of the following three methods:
   i) By taking 'OFF' Calling on signal provided below the FSS.
   ii) By issuing a message with a P.N to LP through Signal Post Telephone (SPT).
   iii) By piloting on form T/509.

i) **Calling-On Signal Procedure:**
   a) LP shall observe the 'OFF' aspect of the Calling-on Signal.
   b) He shall draw ahead with Caution and be prepared stop short of any obstruction.
   c) Speed of Train shall not exceed 15 Kmph.
   d) Points in the route need not be clamped & padlocked unless the Points are disconnected by issuing of S&T (T/351).

ii) **SPT Procedure**:
   a) LP shall contact SM through SPT.
   b) SM shall give a Message with PN.
   c) LP shall record the 'Message + PN' in his Rough Journal Book.
   d) SM shall record the same in TSR, below the entry for the Train.
   e) 'Message + PN' authorizes the LP to pass the Reception Stop Signal(s) at 'ON'.
   f) Speed of Train shall not exceed 15 Kmph.

iii) **T/509 Procedure:**
   a) LP shall stop the Train at the foot of the FSS.
   b) A Competent railway servant shall
      - deliver T/509 to the LP and
      - pilot the Train by travelling on the Engine.
   c) Speed of Train shall not exceed 15 Kmph.

5) In all three methods above,
   i) Train shall be stopped at the Facing Points leading to the Reception Line until hand signaled.
   ii) A Stop Hand Signal is exhibited at 45 m short of the obstruction.

XIV. Reception on Non-Signalled Line:

1) The train shall be stopped at FSS.
2) SM shall ensure that
   i) Line of Reception is Clear.
   ii) Points are correctly set and Facing Points locked.
   iii) LC Gates, if any, are closed against the Road Traffic.
   iv) No Conflicting Signal is taken 'OFF'.
   v) No Conflicting Movement is given.
3) A Competent railway servant shall
   i) deliver a Written Memo as in SR 5.10(i) to the LP.
   ii) deliver a Caution Order also to the LP.
   iii) pilot the Train by travelling on the Engine.
4) Written Memo authorizes the LP to pass the Reception Stop Signal(s) at 'ON'.
5) Caution order restricts the Speed of Train to 15 Kmph.

XV. Despatch from Non-Signalled Line:

1) SM shall issue necessary ATP to LP.
2) SM shall ensure that
   i) The despatch route is clear;
   ii) Points are correct set and locked.
   iii) LC gates if any are closed.
3) SM shall then prepare T/511 in Duplicate & send it through a Competent Railway Servant.
4) Competent railway servant shall
   i) deliver T/511 to the LP and
   ii) pilot the Train by travelling on the Engine.
5) Train shall be piloted up to the last set of points on Non-Signalled/ Non-Running line.
6) Speed shall not exceed 15 Kmph.
7) If Line Clear is obtained through Block Instrument and LSS alone fails, an Endorsement shall be made on T/511 for the same.

XVI. Starting from a Line with 'Common Starter':

1) SM shall ensure that
   i) Points are correct set and locked.
   ii) LC gates, if any, are closed.
2) SM shall then
   i) issue necessary ATP to LP;
   ii) prepare T/512 in Duplicate &
   iii) send it through a Competent Railway Servant.
3) T/512 is the authority to start a Train from a group of lines provided with Common Starter.

XVII. Procedure to despatch a Train when there is no Departure Signal:

1) Starting Permit (T.310) authorizes the LP to start the Train from a particular line at a Station
   i) where there is separate Starter signal for each line;
   ii) where there is no separate Gate signal for each line interlocked with points;
2) For all Trains stopped & started for crossing/precedence at such Stations, SM shall
   i) issue necessary ATP to LP;
   ii) also issue Starting Permit (T.310) to LP.
3) T.310 is not required to be issued for run through Trains.
4) LP's acknowledgement shall be obtained in Duplicate copy except when Token is delivered opposite to SM's office.
5) LPs are personally responsible to ensure that they are in possession of 'T.310' in above cases.

XVIII. Putting back Signals to 'On':

1) Signal(s) taken 'off' for a Train shall not be put back to 'On' except to prevent an Accident.
2) If a Reception Signal is put back to 'On' before the arrival of the Train, Points in the route shall not be altered until the Train has come to a stand, except to prevent an Accident.
3) If a Starter and Advanced Starter taken 'off' for a departing Train (starting from the Station) are to be put back to 'On', the following precautions shall be taken:
   i) SM shall put back Starter & Advanced Starter to 'On'.
   ii) LP shall be advised by SM not to start the Train.
   Mode of communication may be through
      a) a secured means such as 'Mobile Train Radio Communication (MTRC) or
      b) a 'Written Memo' (if MTRC not available).
      In Southern Railway, SM shall advise LP through 'Written Memo'.
   iii) Until acknowledgement of LP is obtained, SM shall not alter the Route set for the Train.
   iv) If any Tangible Authority is given to LP, it shall be withdrawn.

XIX. Stoppage of Trains out of course:

Multiple Aspect Signalling Area:

i) If Starter is provided, it shall be kept at 'On'.
ii) If Starters are not provided,
   a) FSS shall be kept at 'ON'.
   b) After the Train stops at FSS, it shall be received into Station by taking 'off' the FSS.

AUTHORITIES to Pass SIGNAL at 'ON'

I. Reception:

SL NO	Signal Failed / Occasion	Authority	Remarks
1	Outer, Home, Routing	**T/369(3b)**	1) To be issued at the Foot of the Signal. 2) It is issued when a) There is no Calling-on Signal/Signal Post Telephone or b) Calling-on Signal/Signal Post Telephone also failed.
2	Reception on Non-Signalled or Non-Running Line	**Written Memo as in S.R.5.10(i)**	The Competent Railway Servant shall, after issuing this memo, **Pilot** the Train.
3	Reception on Obstructed Line	**T/509**	1) To be issued at the Foot of the Signal. 2) It is issued when a) There is no Calling-on Signal/Signal Post Telephone or b) Calling-on Signal/Signal Post Telephone also failed. 3) The Competent Railway Servant shall, after issuing this memo, **Pilot** the Train.
4	Advance Authority to Pass Reception Signal(s) at ON	**T/369(1)**	1) This is issued at a Nominated Station in Rear. 2) This is issued only when Calling-on Signal or SPT is not provided at the Station where Reception Signals failed.

II. Despatch:

S NO	Signal Failed / Occasion	Authority	Remarks
1	Starter (If it is not LSS)	**T/369(3b) + PHS**	T/369(3b) need not be issued while issuing the Following Authorities: a) T/A.602 b) T/B.602 c) T/C.602 d) T/D.602 e) Stub Portion of T/609
2	Advanced Starter	**T/369(3b)**	1) This shall be issued when Train is started with following Authorities: a) T.1408 b) CLCT c) Section Token 2) In Tokenless Territory, An Endorsement as given in Note.2 shall be made.
3	To start a Train from a Line with Common Starter	**T/512**	
4	Common Starter Fails	**T/369(3b) + T/512**	

III. Miscellaneous:

S NO	Signal Failed	Authority	Remarks
1	GSS without "G" Marker inside Station Limits	**T.370 + PHS**	PHS shall be shown by Gateman.
2	Shunting Permitted Indicator	**T.370 + PHS**	
3	Shunt Signal(s)	**T.370 + PHS**	

SYSTEM OF WORKING

1) System of Working means the System adopted for the time being for working of Trains on any portion of Railway.
2) It is required in Railways due to following **Reasons**:
   i) '**Track Bound**':
   Train is 'Track Bound' & it can move only along a fixed path made for it.
   A Train can overtake or cross with another Train only at places where additional Tracks (Loop Lines) are provided.
   ii) '**Right of Path**':
   Train has the 'Right of Path'.
   Other Transports like Roadways can not come in its path except at specified places like 'Level Crossings'.
3) The following **Factors** are considered for determining the System of Working:
   i) Safety.
   ii) Speed.
   iii) Traffic Density.
   iv) Geographical Conditions.
   v) Economic reasons.
4) System of Working is a set of Rules laid down for the Spacing of Successive Trains.
5) The Spacing between Successive Trains may be
   i) Time Interval.
   ii) Space Interval.
6) At present, most of Railways use 'Space Interval' Concept due to following demerits of Time Interval Concept:
   i) Succeeding Trains have to go at a lesser Speed as a Safety precaution as the '**Braking Distance**' of Trains is more due to its lengthy formation & Trailing load.
   ii) Traffic Intensity is restricted.
   iii) Possibility of Rear Collision can not be ruled out.
7) Systems of Working available in Indian Railway:
   i) Absolute Block System.
   ii) Automatic Block System.
   iii) Following Trains System.
   iv) Pilot Guard System.
   v) Train-staff and Ticket System.
   vi) One Train Only System.
8) Systems of Working available in Southern Railway:
   i) Absolute Block System.
   ii) Automatic Block System.

Essentials of the Absolute block system:

Essentials as in GRS:

(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 upto 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 upto 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) and (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 signalling or modified lower quadrant signalling.

Salient features of Absolute Block System:

1) For a Train to leave a Block Station, Line Clear shall be obtained from Station in Advance.

2) On Double Line, Line Clear shall be granted only if the Line is Clear of Trains

- Upto the "First Stop Signal + Adequate Distance" beyond it.

3) On Single Line, Line Clear shall be granted only if

i) Line is Clear of Trains upto the "First Stop Signal + Adequate Distance" beyond it.

ii) No Train is running towards the Station to which Line Clear is given.

4) Adequate Distance shall be

i) 400 metres in case of Two Aspect Signalling.

ii) 180 Metres in case of Multiple Aspect or Modified Lower Quadrant Signalling.

5) Adequate Distance can be reduced only under Approved Special Instructions.

VARIOUS AUTHORITIES TO PROCEED

SL No	OCCASION	SINGLE LINE		DOUBLE LINE
		TOKEN AREA	TOKENLESS AREA	
1	**Normal Authority**	Section Token	'OFF' Aspect of LSS	'OFF' Aspect of LSS
2	**Block Instrument Working but LSS alone fails:**			
a)	To start a Train from Running Line	Section Token + T/369(3b)	**T/369(3b)** + Endorsement + PN	**T/369(3b)** + Endorsement + PN
b)	To start a Train from Non – Running Line	Section Token + T/511	**T/511** + Endorsement + PN	**T/511** + Endorsement + PN
3	**Block Instrument Failure**	**LCT** T/C 1425 (Up) T/D 1425 (Down)	**LCT** T/C 1425 (Up) T/D 1425 (Down)	**LCT** T/C 1425 (Up) T/D 1425 (Down)
4	Relief Engine to Clear Parted /Divided Rear portion of a Goods Train from Block Section, when the Front Portion arrived with T/609	**"STUB PORTION OF T/609"**		
5	Circumstances mentioned in **SR 14.08 (i)**:	**T.1408**		
6	Relief Engine/Train to enter into Occupied Block Section	**"T/A 602"**		
7	Total Interruption of Communications **(T.I.C)** – Single Line:			
a)	For Opening Communication	**T/B 602**	**T/B 602**	--
b)	For Train Engine to return with or without a Train waiting at other end	**CLCT** T/G 602 (Up) T/H 602 (Down)	**CLCT** T/G 602 (Up) T/H 602 (Down)	--
c)	For waiting Train at the Station which opened Communication	**CLCT**	**CLCT**	--
d)	For Subsequent Trains	**CLCT**	**CLCT**	--
8	T.I.C – Double Line	--	--	**T/C 602**
9	Single Line Working On Double Line	--	--	**T/D 602**

NOTE:

1) When the LSS alone fails & Block Instrument is working, the **Endorsement** to be made in T/369(3b) is as follows:

   Last Stop Signal No._____ could not be taken 'OFF'. However, Line Clear has been obtained through Block Instrument / Track Circuit / Axle Counter from _____ station. You are authorized to pass the Last Stop Signal No._____ at 'ON' and treat this as an authority to proceed and enter the Block Section. Private Number received ___ (In fig) _____ (In Words).

2) When the LSS alone fails & Block Instrument is working, the **Endorsement** to be made in T/511 is as follows:

   "Line Clear has been obtained through the Block Instrument from _____ Station".

3) Line Clear for Subsequent Trains shall be Enquired/Granted on T/E.602 & T/F.602 as follows:

   For Trains running during

   b) Even flow: Through the Guard of the preceding Train.
   c) Uneven flow: Through the Vehicle/Engine sent for opening Communication.

4) Abbreviations Used:

   a) LSS : Last Stop Signal

   b) PN : Private Number

   c) LCT : Line Clear Ticket

   d) CLCT : Conditional Line Clear Ticket

   e) MTLY : Motor Trolley

Station Limit

Station Limit is the Portion of a Railway under the control of SM situated between Outermost Signals or as Prescribed by Special Instructions.

LINE CLEAR TICKET

1) Line Clear Ticket (**LCT**) is the Paper Authority to Proceed issued in following **Circumstances**:
   a) In Absolute Block System:
      i) When an Electrical Block Instrument is failed or suspended.
      ii) When there is no Electrical Block Instrument.
   b) In Automatic Block System:
      i) During Panel Failure (DoT established) in Single Line.
      ii) During Single Line working on Double Line for
         - 1st Train in Right Direction &
         - All Trains in Wrong Direction.

2) **Description on LCT**:
   i) LCT shall bear a **Serial Number**.
   ii) It is printed on a White Paper with **Blue Fonts**.
   iii) LCT for UP direction shall have a Water Mark Arrow pointing Upwards **[↑]**, in Form T/C.1425.
   iv) LCT for DOWN direction shall have a Water Mark Arrow pointing Downwards **[↓]**, in Form T/D.1425.
   v) LCT authorizes the LP to pass **'LSS at 'ON'**.

1) **Preparation of LCT**:
   i) LCT is prepared
      a) In Conjunction with T/A.1425.
      b) In Ink by SM & signed in full.
      c) In **Duplicate** under Carbon process.
      d) Without any alteration. If there is any alteration, it shall be cancelled & a fresh LCT shall be prepared.
   ii) **Station Stamp** of the LCT issuing Station shall be affixed.
   iii) The name of the **Station to which** Train is to proceed shall be written **in full** as per official spelling given in WTT.
   iv) **PN** shall be written in Words & Figures in LCT.
   v) When Line Clear is obtained through **Indirect means** after crosschecking PNs given for 3 preceding Trains, LP is authorised to run at Normal Speed. However, in **Twin Single Line**, the speed of **1st Train** is restricted to **25 KMPH**.

2) **Delivery of LCT**:
   i) LCT shall be served to LP personally by SM or through a Competent Railway Servant.
   ii) LP has to sign in full & write his name in Block letters in duplicate copy.

AUTHORITY TO PROCEED WITHOUT LINE CLEAR

I. **General**:

1) It is issued as ATP under Abnormal conditions in Form T.1408.
2) Up T.1408 is coloured 'Pink' with Black Fonts.
3) Down T.1408 is coloured 'White' with Black Fonts.
4) T.1408 can be manuscripted, if the Form is not available.

II. **Circumstances** under which T.1408 is issued (On both Single Line & Double Line):

1) When **L**CT / CLCT book(s) lost / exhausted.
2) When **A**ccident **R**elief **Train** (ART) to enter the Block Section already occupied by a Trolley on T/1518 – Caution Order Protection with **L**ine **C**lear **R**efusal **E**ndorsement.
3) When **S**M incapacitated.
4) When **Train** to enter the Block Section already occupied by a Trolley on T/1518- Caution Order Protection & Removal Advice not received even after Sunset.
5) When **PN** book is lost or exhausted.

III. **Preparation & Issue:**

1) T.1408 is prepared in Duplicate.
2) All columns shall be filled without any alteration.
   - If there is any alteration, it shall be cancelled & a fresh T.1408 shall be prepared.
   - If the cancelled T.1408 is already detached, it shall be pasted at the back of Duplicate copy.
3) If PN could not be obtained, the words "NOT OBTAINED" shall be written against the column for PN.
4) Original is handed over to LP after getting Signature in Duplicate.
5) LP shall sign in full after checking the correctness of T.1408.
6) Guard shall also sign in Duplicate copy.
7) The Reason for which T.1408 is issued & the Condition of Block Section shall be clearly mentioned in T.1408.
8) When SM incapacitated, Guard shall
   i) Ensure that the Block Section is clear.
   ii) Consult Controller.
   iii) Communicate with SM at other end & get a PN.
   iv) Prepare T.1408 & handover Original to LP duly getting signature in duplicate.
   v) Issue Authority to Pass Signal at 'ON'.
   vi) Issue Caution Order after referring Caution Order Register.
   vii) Make a Red Ink entry for the Train in TSR.
   viii) If it is Token area, preserve incoming Token & hand over it to SM at the Station in advance.

V. **Precautions:**

1) **Speed**:

Section	Day - Clear Weather	Night, Day – Weather not Clear
Single Line	15 Kmph	10 Kmph
Double Line	25 Kmph	10 Kmph

2) During Thick/Foggy/Tempestuous Weather/Dust Storm,
   i) To proceed at Walking Speed.
   ii) To whistle repeatedly.
   iii) To be preceded by
      a) 2 men with Hand Signals & Detonators on Single Line.
      b) 1 man with Hand Signals on Double Line.
3) Before entering Tunnel, Train shall be piloted by a Railway Servant with Hand Signals & Detonators.
4) During Head light failure, Train shall be piloted by a Railway Servant with Hand Signals showing Red towards Front.
5) LP shall keep sharp look out & be prepared to stop short of any obstruction.

VI. **Reception at next Station:**

1) LP shall stop at FSS of the next Station, give long continuous whistle.
2) If no one turns up from Station for 10 minutes, ALP shall be sent to Station.
3) Train can be received on Signals.

VII. **Normal Working:**

If Cause for issuing of T.1408 no longer exists, Normal working can be resumed.

VIII. **Reporting:**

A Special Report shall be sent to DRM with respect to the Circumstance under which T.1408 was issued.

SENDING RELIEF ENGINE / TRAIN INTO OCCUPIED BLOCK SECTION

I. General:

1) When the Block Section is obstructed due to any reason, any number of Relief Trains/Engine may be sent into that section as required, on the Authority T/A.602.
2) T/A.602 is applicable for both Single Line / Double Line Up & Down Directions.
3) It is prepared in Triplicate.
4) It is printed on a White Paper with Red Fonts.
5) It contains
    i) Block Ticket to Proceed without Line Clear.
    ii) Authority to pass Despatch Signal(s) at 'ON' at a speed not exceeding 15 Kmph.
    iii) Caution Order.

II. Circumstances under which T/A.602 is issued (On both Single Line & Double Line):

1) Relief Train / Engine into Block Section during Accidents.
2) Relief Engine into Block Section when an Engine is failed or unable to haul.
3) Relief Engine to clear Parted Rear portion, if front portion arrived without T/609 or if it is started from Station in Rear.
4) A Train accompanied by an Engineering Official (Not below the rank of Trackman) into Block Section obstructed due to Rail Fracture/Weld Failure.
5) Material Train(s)/TMMs to enter into Block Section during Line Block.

III. Preparation:

1) All columns shall be filled without any alteration.
    - If there is any alteration, it shall be cancelled & a fresh T/A.602 shall be prepared.
    - If the cancelled T/A.602 is already detached, it shall be pasted at the back of Triplicate copy.
2) Following items shall be mentioned in T/A 602:
    i) Location of obstruction / Engine / BV / First Vehicle / Last Vehicle.
    ii) Station at which the Train should clear.
    iii) PN obtained from SM at other end.
3) Original is handed over to LP & Duplicate is handed over to Guard.
4) LP & Guard shall sign in full after checking the correctness of T/A.602 in the Record Copy.

IV. Precautions on Run:

1) **Speed:**

On both Single Line & Double Line, Speed shall not exceed

- **15 Kmph** – During Day - Clear Weather.
- **10 Kmph** – During Night, Day - Weather not clear.

Any other Caution in force shall also be followed.

2) During Thick/Foggy/Tempestuous Weather/Dust Storm,
   i) To proceed at Walking Speed.
   ii) To whistle repeatedly.
   iii) To be preceded by
      - 2 men with Hand Signals & Detonators on Single Line.
      - 1 man with Hand Signals on Double Line.
3) Before entering Tunnel, Train shall be piloted by a Rly Servant with Hand Signals & Detonators.
4) During Head light failure, Train shall be piloted by a Rly Servant with Hand Signals showing Red towards Front.
5) LP shall keep sharp look out & be prepared to stop short of any obstruction.

V. Reception at next Station:

1) LP shall stop at FSS of the next Station, give long continuous whistle.
2) If no one turns up from Station for 10 minutes, ALP shall be sent to Station.
3) Train can be received on Signals.
4) Guard (LP if there is no Guard) shall sign in the Remarks Column of TSR.

VI. Normal Working:

When Cause for issuing of T/A.602 no longer exists, Normal working can be resumed.

VII. Reporting:

A Special Report shall be sent to DRM with respect to the Circumstance under which T/A.602 was issued.

TOTAL INTERRUPTION OF COMMUNICATIONS ON SINGLE LINE

1) When line clear cannot be obtained by any one of the following **means of Communications** in the order of Preference stated below, it is said to be TIC.
   i) Block instruments / track circuit / axle counters.
   ii) Telephones attached to block instruments.
   iii) Station to station fixed telephones, wherever available.
   iv) Fixed telephone such as Railway Auto Phones and BSNL phones.
   v) Control telephones.
   vi) V.H.F sets under special instructions.
2) The Train shall be **stopped**. LP and Guard shall be **advised** of the circumstances.
3) SM, who has a Train to despatch, shall **open communication** by sending any one of the vehicles in the following order:
   i) Light engine.
   ii) Train engine.
   iii) Motor trolley/tower wagon accompanied by a Guard/off duty SM.
   iv) Trolley/cycle trolley/moped trolley accompanied by a Guard or off duty SM.
   v) Diesel car/Rail motorcar/E.M.U empty rake.
4) **T/B 602** is the Authority for Opening Communication. The Form has Red colour Font.
5) SM shall prepare **T/B 602** in Duplicate and handover the Original to the LP/Driver/Motorman/Guard and get acknowledgement.
6) **T/B 602 contains:**
   i) Authority to proceed without line clear.
   ii) Authority to pass despatch signal/s at 'ON'.
   iii) Caution Order
      a) For restricting the speed to
         - **15 KMPH** during day view ahead is clear.
         - **10 KMPH** during night or view ahead is not clear.
      b) To observe Caution while approaching LC gates and
      c) Any other caution available in the Block Section.
   iv) Line clear Enquiry Message.
   v) Conditional Line Clear Message with PN.
7) After sending the vehicle to open communication, SM shall not obstruct the line beyond the **outermost facing points** until the return of the vehicle.
8) LP shall switch on **Flasher Light** while on run and stop at the FSS and warn the SM by sounding a long continuous whistle or sending a man, if necessary.
9) SM shall receive the Engine(s) by **taking 'OFF' the signals** or otherwise.
10) LP shall **handover T/B 602** to the SM of the receiving end.
11) Based on the Conditional Line Clear Message for the Vehicle to return with or without a Train attached, SM shall prepare **CLCT** (T/G 602 or T/H 602*),* as the case may be.
12) SM shall also prepare Conditional Line Clear Message in **T/F 602** (for the Enquiry) and handover to the LP/driver.

13) On the **return** journey the Engine shall run at **normal speed**.

14) LP shall **stop at the FSS** and Engine can be received by taking 'OFF' the signals.

15) In case of a Light Engine or an Engine and Brakevan, there is no need for opening communication. SM shall handover T/B 602 duly scoring out items (iv) and (v).

16) On getting Conditional Line Clear Message (T/F 602) from the LP/driver, SM shall prepare **CLCT** *(T/G 602 or T/H602)* and start the waiting Train.

17) If two vehicles **meet in the mid-section:**
   i) LPs/drivers shall decide to which station to proceed based on the following factors:
      - Importance of the Train waiting.
      - Distance to travel.
      - Gradients to be encountered.
      - Presence of catch siding etc.
   ii) If possible, the Engines shall be coupled.
   iii) Otherwise, they shall follow each other at a safe speed and adequate distance apart.
   iv) In case of an Engine returning without reaching the other Station, the LP/driver shall handover T/B 602 to the SM, who shall cancel it.

18) When a Train cannot proceed, or detained in Mid-Section or at Signals for more than 10 minutes, it shall be protected by placing **one detonator at 250 m**etres and **two detonators**, 10 m. apart, at **500 m**etres.

19) In case of **even flow of Trains**, T/E 602 and T/F 602 for each succeeding Train may be sent through the Guard of the preceding Train.

20) In case of **uneven flow of Trains**, 'Line Clear' shall be asked for all the Trains in T/E 602 when opening Communication for the First Train.

21) <u>In case of uneven flow</u> –
   i) CLCT shall be issued as Authority to proceed for each Train.
   ii) Subsequent Trains may be started after at 30 minutes Time Interval.
   iii) In the CLCT, SM shall mention about the following Train & the last preceding Train.
   iv) First Train shall run at Normal Speed.
   v) The Speed of Second and Subsequent Trains is restricted to –
      - **25 KMPH** during day, view clear
      - **10 KMPH** during night or day, view not clear
   vi) During Uneven Flow, no Train shall be backed.
   vii) In unavoidable circumstances, before backing, LP and Guard shall decide the place upto which the Train is to be backed and arrange protection in rear of the place, as above.

22) Trains shall continue to work like this **until S & T officials restore** communication.

23) If any one of means of communication is restored, SMs shall ensure the clearance of Block Section by exchanging **messages with PN on T/I 602** and then only resume normal working.

24) TI shall submit special **report to DRM/T** within **7 days** of the resumption of communication.

TOTAL INTERRUPTION OF COMMUNICATIONS ON DOUBLE LINE

1) When line clear cannot be obtained by any one of the following **means of Communications** in the order of Preference stated below, it is said to be TIC.
   i) Block instruments / track circuit / axle counters.
   ii) Telephones attached to block instruments.
   iii) Station to station fixed telephones, wherever available.
   iv) Fixed telephone such as Railway Auto Phones and BSNL phones.
   v) Control telephones.
   vi) V.H.F sets under special instructions.
2) The Train shall be **stopped**. LP and Guard shall be **advised** of the circumstances.
3) **T/C 602** is the Authority to Proceed for All Trains during T.I.C on Double line. The Form has Red Colour Fonts.
4) SM shall prepare **T/C 602** in duplicate and handover to the LP under acknowledgement.
5) It contains
   i) Authority to Proceed without Line Clear.
   ii) Authority to pass Departure Signal(s) at 'ON'.
   iii) Caution order restricting the speed to
      - 25 KMPH during Day - view clear.
      - 10 KMPH during Night or Day - view not clear.
      - Walking speed during Thick / Foggy weather.
6) All Fixed Signals except LSS can be taken off for Despatch of Trains.
7) On run, LP shall keep a sharp lookout and use engine whistle freely.
8) Before entering a Tunnel,
   i) It shall be ensured that it is clear.
   ii) If there is any doubt, Train shall be piloted by a Railway employee.
   iii) All the lights shall be lit.
9) At Station in Advance, LP shall
   i) Stop the Train at the FSS.
   ii) Sound long continuous whistle.
   iii) Send ALP to Station, if no one turns up from the station within 10 minutes.
10) Train can be received by taking 'OFF' the signals. FSS shall be taken off only after the Train has stopped at Signal.
11) On arrival, LP shall hand over T/C.602 to SM.
12) Subsequent Trains:
   i) Following Train can be started with T/C 602 after a time interval of **30 minutes**.
   ii) A clear time interval of 30 minutes shall be maintained between successive Trains.
13) Entry for all Trains shall be made in **TSR** in **Red Ink** at both Stations.

14) Protection:

When a Train cannot proceed or detained at Signals for more than 10 minutes, it shall be protected by placing

i) One detonator at 250m and
ii) Two detonators, 10m apart, at 500m.

15) Backing:

i) Train shall not be backed during TIC on Double Line.
ii) If it is unavoidable, before backing, LP and guard shall
   a) Decide the place up to which Train is to be backed;
   b) Arrange Protection in rear of such place as above.

16) Restoration:

i) Trains shall be worked in this manner, until S&T officials restore Communication.
ii) If any one of means of communication is restored, SMs shall ensure the clearance of Block Section by exchanging messages with **PN** on **T/I 602** and then only resume normal working.

17) Reporting:

TI shall submit special report to DRM/T within 7 days of resumption of communication.

SINGLE LINE WORKING ON DOUBLE LINE

1) Whenever one line is obstructed due to an Accident / Obstruction on a Double Line section, Traffic may temporarily be dealt on the other line.
2) SM at one end of the affected section may introduce Temporary Single Line after
   i) ensuring that the proposed line is free from obstruction.
   ii) Consulting Section Controller & SM at other end.
3) In case of doubt, S/L working shall be introduced only after getting a Certificate from JE/PW that the proposed line is free from obstruction.
4) Single Line working shall be introduced **between** the **nearest stations** provided with **cross over points** between the 'up' and 'down' lines.
5) **Class 'C' station,** if any, available between the above 2 Stations, shall be treated as **closed**.
6) SMs shall exchange Messages supported with **PN.**
7) Line Clear shall be obtained through approved means other than Block Instrument.
8) **T/D 602** is issued as Authority to proceed.
9) It is prepared in 'Triplicate' and has Red Colour Fonts.
10) **It contains**:
   i) Line clear ticket.
   ii) Authority to pass Despatch Signal(s) at 'ON'.
   iii) Authorities to pass signals of the Station(s) closed.
   iv) Caution Order regarding:
      a) Proposed Line on which Train is to Run.
      b) Location of the obstruction.
      c) Speed of First Train shall not exceed 25 Kmph.
      d) LP to inform Gatemen/ Gang men enroute about S/L working.
      e) Any other Caution available in the Block Section.

11) **Right direction:**
   i) Despatch: All Signals except LSS can be taken 'Off'.
   ii) Reception: At next Station, Train can be received on Signals.

12) **Wrong Direction:**

i) Despatch:

a) T/511 shall be issued along with T/D.602.

b) Train shall be piloted out of the Station.

ii) On Run:

a) LP shall switch on **Flasher Light**.

b) If LP has **not switched on** Flasher Light, Train shall be **stopped** by Gang men / Gate men / Station staff.

iii) Reception:

a) At next Station, LP shall stop at

- The foot of LSS of same Line or
- Opposite to FSS of the adjacent Line

Whichever comes first.

b) Train shall be piloted on Written Memo as in SR 5.10 (i).

13)**Resumption of Normal Working**:

i) On receipt of written certificate from the Engineering official that the obstructed track is free and safe for the passage of Trains, SM shall

a) Consult Section Controller & decide the Train after which Normal Working shall be introduced.

b) Issue message to other Station(s) under exchange of PN.

ii) The LP of the First Train shall inform all Gatemen and Gang men about the resumption of Normal Working.

14)**Reporting**:

TI shall submit a report to DRM within 7 days of the resumption of normal working.

TRAIN DIVIDING

1) If the Train has to be stopped in Midsection due to

- Accident or
- Inability to haul the whole Train Forward,

LP shall

i) Apprise the Guard by giving ___. ___. Whistle.

ii) Try to bring his Train to a Stop at a Level portion unless it is unsafe.

2) Guard shall protect the Train in Rear by placing Detonators as follows:

i) 1 Detonator at 500/600 m in MG/BG.

ii) 3 detonators at 100/1200 m in MG/BG, 10m apart.

iii) Depute a Competent Railway Servant, if available, to show Hand Danger Signal in Rear of 3 Detonators.

3) Guard shall then proceed to Engine on Left Hand Side of the Train as from BV.

4) LP shall also proceed on LHS of the Train to meet the Guard.

5) If they decide to detach Engine with or without a portion of Train,

i) Guard shall first secure the Rear portion by applying Hand Brakes as follows:

Gradient	Hand Brakes to be applied
1 in 400 or Flatter	BV + 12 Vehicles (6 from Engine & 6 from BV)
Steeper than 1 in 400	BV + All Vehicles

ii) In addition, 2 Wooden Wedges also shall be placed at either end below the last pair Wheels to arrest the movement.

6) After protection & securing of Rear portion, Guard shall

i) Prepare a Written permission on Form T/609 in Duplicate.

ii) Mention clearly the Last Vehicle Number of the Front portion.

iii) Obtain the Token from LP, if it is Token Area and Sign for the same in his Rough Journal Book.

iv) Keep the Token till all vehicles clear the Section.

v) Hand over the Original to LP, getting Signature in Duplicate.

vi) Send a Written Report as required in Form ACC-3.

7) Tail Board / Tail Lamp shall not be fixed on the Last Vehicle of Front Portion.

8) At Night / Thick/Foggy weather, as soon as the Front Portion is drawn ahead, Guard shall

i) Protect the Train in Front also.

ii) Fix a Red Light on the Leading Vehicle of Rear portion of the Train.

9) On his way, LP shall warn Gatemen of Level Crossings, if any, to be prepared for unusual & in case of Double Line for Wrong Line movement.

10) LP of the Front Portion of the Train shall

   i) Stop his Train at Outer Most Facing Point of the Station in advance,

   ii) Give ___. ___. Whistle to indicate Incomplete Arrival.

11) SM shall acknowledge by waving a Red Flag by day & Red Hand Signal Lamp by night 4 times over the Head, side to side.

12) LP shall then bring his Train into Station.

13) On arrival, LP shall handover the T/609 to SM.

14) SM shall ensure the Complete Arrival of Front portion.

15) SM shall not give 'Train out of Block Section' Signal to Station in Rear.

16) He shall then prepare 'STUB Portion' of T/609 & handover to LP of the Relief Engine to be sent for clearing the Rear portion.

17) Red Ink entry for the Relief Engine shall be made in TSR & Pro Number of T/609 shall be mentioned in Remarks column.

18) Speed of Relief Engine shall not exceed

   i) 15 Kmph during Day, View Clear.

   ii) 10 Kmph during Night, Day-View not Clear.

19) LP of the Relief Engine shall stop when the Rear portion is sighted & proceed further on Hand Signals from Guard for attaching.

20) After the rear portion has been brought out of section and the Section is clear, Guard shall

   i) Handover the Tangible Authority, if any.

   ii) Prepare a Certificate for 'Section Clear' & handover to SM under acknowledgement.

21) If there is more than 1 split, same procedure shall be followed to clear each portion.

22) If the Train stopped without clearing the Station Limit & Dividing is required,

   i) Guard shall inform SM.

   ii) Train shall be backed clear of Block Section.

   iii) If it is not possible, provisions of T/609 shall be strictly followed only with SM's permission.

   iv) Both SMs shall make Red Ink entries.

23) If Engine of Passenger Train is unable to haul the load,

   i) Engine shall not be detached.

   ii) Controller / Nearest SM shall be informed for Relief LE.

TRAIN PARTING

1) Any Railway Servant noticing a Train Parting shall draw the attention of Guard & LP by
   i) Shouting and
   ii) Showing Hand Signal as below:
      - Day – Keeping both hands above head together and separating them quickly.
      - Night – Waving a White light vertically Up & Down as high as low as possible.
2) On run, LP shall look back immediately if he suspects Train Parting due to
   i) Lightness in Pull
   ii) Sudden acceleration
   iii) Drop in Pressure, etc.
3) After knowing that his Train has parted, LP shall
   i) Not stop the front portion till he confirms the stoppage of rear portion to prevent collision between 2 portions.
   ii) Give ___ o ___ o Whistle.
4) After knowing that his Train has parted, Guard shall
   i) Take all efforts to stop the rear portion.
   ii) Apply Hand Brake of BV.
5) Guard & LP shall exchange Parting Hand Signal as follows:
   - Day - Waving a Green Flag/Arm vertically Up & Down as high as low as possible.
   - Night - Waving a White light vertically Up & Down as high as low as possible.
6) If a Banking Engine is attached in rear, LP of Banking Engine shall
   i) Apply brakes to stop the rear portion.
   ii) Give ___ o ___ o Whistle to warn the Leading Locopilot.
7) If rear portion is stopped,
   i) It shall be protected as in GR/SR 6.03.
   ii) It shall be secured as follows:
      a) 2 Wooden wedges shall be kept below the last pair of wheels at either end.
      b) Apply Hand Brakes as below:
         - BV + 12 Vehicles – if Gradient is 1 in 400 or Flatter.
         - BV + All Vehicles – if Gradient is Steeper than 1 in 400.
8) If rear portion is stopped within sight,
   i) If possible, both portions shall be coupled on getting Hand signal from Guard.
   ii) It is the joint responsibility of Guard & LP to ensure through Pipe Connection.
   iii) If it is not possible to couple, Train Dividing procedure (GR/SR 6.09) shall be followed.

9) If LP arrives with front portion before the rear portion stops,
    i) LP shall
        a) Stop without clearing Block Section.
        b) Give ___ o ___ o Whistle.
        c) Not hand over the Tangible Authority, if any, till the Last Vehicle clears the section.
    ii) SM shall
        a) Acknowledge Train arriving incomplete by waving Red Flag/Light above the head, side to side, 4 times.
        b) Send Relief Engine on T/A.602, after ensuring that the rear portion stopped.
        c) Wait for "Running Time of Slowest Goods Train + 30 Minutes" for sending Relief Engine, if there is no information about rear portion.
10) On clearance of rear portion, Guard shall give a Certificate that Block Section is clear of all vehicles.
11) After Train Parting & clearance of all Vehicles, SM shall issue a Caution Order to the LP of the 1st Train entering the affected Block Section to observe the condition of the Track.
12) LP shall report at the next Station about the condition of Track such as misalignment or distortion, etc.

SHUNTING

I. Definition:

Shunting means

- The movement of
  - Vehicle(s) with Engine or without Engine OR
  - Any Engine OR
  - Any Self Propelled Vehicle
- For the purpose of
  - Attaching
  - Detaching
  - Transfer
  - Anyother purpose.

II. Types of Shunting:

- Engine Shunting
- Loose Shunting
- Fly / Hump Shunting
- Hand Shunting

A) Engine Shunting:

i) Control of Shunting:

Engine Shunting shall be controlled by

1) Fixed Signals:
   a) Signals that can be used for Shunting:
      i) Starter, if it is not LSS and not interlocked with Advanced Starter.
      ii) Shunt Signals – 3 Types: Disc Type, Semaphore Type & Position Light Type.
      iii) GSS inside Station Limit.
      iv) Shunting Permitted Indicator – 2 Types: Disc Type & Colour Light Type.
   b) Signals not to be used for Shunting:
      i) Outer
      ii) Home
      iii) LSS
2) Hand Signals:
   a) Move away
   b) Move towards
   c) Move slowly for Coupling
3) Verbal Instructions.

ii) Responsibilities of Staff:

1) LP shall not entirely depend on Signals but always be Vigilant & Cautious.
2) LP shall stop immediately if conflicting Signals are shown.
3) Person in charge of Points or Series of Points is responsible for correct setting and locking of Points.
4) LP shall observe Point & Trap Indicators, wherever provided.
5) Speed of Engine Shunting shall not exceed 15 Kmph except otherwise authorised by Special Instructions.
6) When Loco is moved from Loco Shed to Traffic Yard, Speed shall not exceed 10 Kmph.
7) If a Shunting Engine / Train Engine is moved on to a line occupied by a Train, LP shall
   a) Stop at 20m away from the Formation.
   b) Move forward cautiously on Hand Signals from Shunting Staff / Guard.
8) No Engine shall be allowed on any running line occupied by a Passenger Train except the Train Engine/Shunting Engine requiring Shunting on that Train.

iii) Supervision of Shunting:

1) Shunting connected with his Train shall be supervised by the Guard at
   a) Stations where separate Shunting Staff are not available.
   b) All Stations if the Shunting involves
      - Full Train Shunting (Guard to travel by BV).
      - Stabling of Material Trains.
2) If separate Shunting Staff available at a Station, they shall supervise the Shunting.
3) If no separate Shunting Staff or Guard available, Shunting shall be supervised by SM.
4) Vehicles containing Passengers shall not be moved without instructions from SM.

iv) Shunting on Gradients:

1) Engine Shunting on gradients shall be performed after taking the following precautions to prevent Vehicles escaping:
   a) Sufficient number of Hand Brakes shall be put on.
   b) Sprags shall be used to arrest Speed.
   c) Points shall be set for Slip Siding, if available.
2) If shunting is performed on a line neither isolated nor provided with Slip Siding, Engine shall be on falling side of the Gradient.
3) Following Gradients are considered as Steep Gradient for Shunting:
   a) For Plain / Conventional Bearing Vehicles : 1 in 260 or Steeper.
   b) For Roller Bearing Vehicles : 1 in 400 or Steeper.

v) SHUNTING AUTHORITIES:

SINGLE LINE - TOKEN AREA			
S.No	**Area of Shunting**	**Written Authority**	**Tangible Authority**
1	Within Station Section	T/806	--
2	Beyond Station Section upto FSS	T/806	Shunt Metal Token (S.M.T)
3	Beyond Station Section upto FSS, if S.M.T is lost	T/806 + Endorsement	--
4	Beyond FSS (Block Back)	T/806	Section Token
5	Block Back during failure of Block Instrument	T/806 + PLCT	--
6	Shunting in the face of approaching Train	T/806	--

SINGLE LINE - TOKENLESS AREA			
S.No	**Area of Shunting**	**Written Authority**	**Tangible Authority**
1	Beyond Starter upto FSS	T/806	Shunt Key
2	Beyond FSS (Block Back)	T/806 + PN	Shunt Key
3	If it is unable to extract Shunt Key due to Block Failure or any reason	T/806 + Endorsement + PN	--
4	Shunting in the face of approaching Train	T/806	Home Key
5	If it is unable to extract Home Key	T/806 + Endorsement + PN	--

DOUBLE LINE			
S.No	**Area of Shunting**	**Written Authority**	**Tangible Authority**
1	Within Station Section	T/806	--
2	In rear of OMFP/BSLB (Block Back)	T/806 + PN	--
3	Block Back during failure of Block Instrument	T/806 + Endorsement + PN	--
4	In advance of LSS (Block Forward)	T/806	LSS Key (Shunt Key)
5	If it is unable to extract LSS Key	T/806 + Endorsement + PN	--

Note:

The issue of Form T/806 is not necessary for performing shunting up to Advanced Starter/Shunting Limit board when such shunting is done by taking 'OFF' Shunt signals.

B) Loose Shunting:

1) Loose Shunting means Vehicles being pushed by an Engine and allowed to run forward unattached on to a particular line.
2) If Loose Shunting is performed on a Gradient of 'Steeper than 1 in 600':
   i) Only one Bogie or Two Units shall be loose shunted at a time.
   ii) Hand Brakes shall be examined before performing Loose Shunting.
   iii) Loose shunted wagon shall be manned by a Railway Servant for applying Hand Brakes if required.
   iv) To prevent loose shunted wagons escaping, an Engine in Steam or Six wagons with a BV shall be kept on the line.
3) Vehicles NOT to be Loose Shunting:
   i) Vehicles containing Passengers, Workers.
   ii) Other Coaching Vehicles (like VPU, VPH, etc).
   iii) Wagons loaded with
      a) Live Stock
      b) Fragile Goods
      c) Heavy Machinery
      d) ISMD Consignments
      e) Dangerous Goods
      f) Explosives
   iv) Other Wagons:
      a) Petrol & Oil Tank Wagons.
      b) Special Type Wagons (like BFK, BRH, BOB, etc).
      c) Wagons with Defective Hand Brakes.
   v) Dead Engine.
   vi) Tower Wagon, Track Maintenance Machine, etc.

C) Fly/Hump Shunting:

1) Fly Shunting means Vehicles being pushed by an Engine and sent to different lines by smartly operating the Points.
2) It is permitted only in Hump Yards.

D) Hand Shunting:

1) Hand Shunting is strictly prohibited in following cases:
   i) Vehicles containing Passengers.
   ii) If Gradient is 1 in 400 or Steeper.
2) Within Station Section:
   i) Lay out of the Yard should permit.
   ii) Station Section should be on a Gradient of Flatter than 1 in 400.
   iii) Only one Bogie or Two Units shall be hand shunted at a time.
   iv) Hand shunted wagon shall be manned by a Railway Servant for applying Hand Brakes if required.
   v) SM/Authorised Railway servant shall supervise.
   vi) Speed should not exceed 5 Kmph.
3) Outside Station Section:
   i) Only one Bogie or Two Units shall be hand shunted at a time.
   ii) Hand shunted wagon shall be manned by a Railway Servant for applying Hand Brakes if required.
   iii) Four persons per Unit shall accompany.
   iv) Authorised Railway servant shall supervise.
   v) Speed should not exceed 5 Kmph.

SECURING OF VEHICLES

(Based on GR/SR 4.48, 5.23,6.05 & RB Circular No. 2012/Safety (A&R)/19/1 dt. 24.02.12)

S.No	Occasion→	Stabled at Station	
	Conditions↓	Load + Loco	Load only
1	Placing Wooden Wedges / Sprags	2 at either end - Below the outer most pair of wheels	2 at either end - Below the outer most pair of wheels
2	Safety Chain & Padlocking	1 at either end	1 at either end
3	Hand Brakes - No. of Vehicles	6 at either end • Guard to supervise. • If no Guard, SM to supervise.	6 at either end • Guard to supervise. • If no Guard, SM to supervise.
4	Loco Brakes	• LP/ALP to apply o SA-9 & A-9 Brakes o Hand Brake o Parking Brake (if any) • LP not to leave Loco unless he has o Received a 'Written Authority' from SM o Applying HBs as above o Placed Wooden Wedges	--
5	Formation	• To be coupled together. • If split is required, each split shall be secured as above.	• To be coupled together. • If split is required, each split shall be secured as above.
6	Isolation of Stabled/ Blocked Line	• Points must be set, Clamped & padlocked against the line & Towards Dead end / Trap, etc	• Points must be set, Clamped & padlocked against the line & Towards Dead end / Trap, etc
7	Special Stabling Register maintained at Station	Guard & LP to sign the Register before they leave the Station.	--
8	Information to Controller	To be given supported by a PN	To be given supported by a PN
9	If Gradient is Steeper than 1 in 400	1. Additional Precautions Prescribed by CRS. 2. Same are mentioned in SWR. 3. Vehicles shall be uncoupled only after applying HBs & Keeping Wooden Wedges as above. 4. Line must be isolated from other Running Lines.	

SECURING OF VEHICLES

(Based on GR/SR 4.48, 5.23 & RB Circular No. 2012/Safety (A&R)/19/1 dt. 24.02.12)

S.No	Occasion→	Stalled in Block Section	
	Conditions↓	Passenger	Goods
1	Wooden Wedges / Sprags	2 at either end- Below the outer most pair of wheels	2 at either end - Below the outer most pair of wheels
2	Safety Chain & Padlocking	--	--
3	Hand Brakes - No. of Vehicles	SLR	6 at either end. • ALP from Engine. • Guard from BV. • If no Guard, ALP from BV also.
4	Loco Brakes	• LP/ALP to apply ○ SA-9 & A-9 Brakes ○ Hand Brake ○ Parking Brake (if any)	• LP/ALP to apply ○ SA-9 & A-9 Brakes ○ Hand Brake ○ Parking Brake (if any)
5	**If Gradient is** **1 in 260 or Steeper** Hand Brakes – No. of Vehicles	SLR	• 1/3 of Wagons **[or]** 10 from Engine + 5 from BV whichever is more & also • HB of BV
6	**Dividing of Formation** or **Detaching of Loco**	**NOT PERMITTED** Except on following occasions: 1. To Test the condition of a Bridge. 2. To Detach vehicle on Fire. 3. To convey Serious Accident Message.	**1 in 400 or Flatter:** BV + 12 Vehicles **Steeper than 1 in 400** BV + All Vehicles
7	Information to Controller	Convey through Portable Telephone	Convey through Portable Telephone

PROTECTION

1) When a Train is stopped in the Block Section due to any reason and unable to proceed further, LP shall
   i) Give 'FOUR' Short Whistles. (o o o o)
   ii) In Double/Multiple lines, Switch on 'Flasher Light' immediately & Switch off Head Light.
   iii) Inform Guard through Walkie-Talkie or available means.
   iv) Show Red Flag/Light during Day/Night moved Up & Down till acknowledged by Guard.
2) Guard shall
   i) Immediately exhibit Hand Danger Signal towards rear.
   ii) Ensure whether Tail Board/Tail Lamp is intact.
   iii) Switch on 'Flasher Light', if available in Brake Van.
3) Train shall be protected by Guard & Train Crew as follows:
   i) Single Line:
      a) LP/ALP shall go for Protection in front or send a Competent person like Gangman/Keyman, if available.
      b) Guard shall go for Protection in rear or send a Competent person.
      c) Detonators shall be placed in front & rear as follows:
         - ONE Detonator at 500/600m in MG/BG.
         - THREE Detonators, 10m apart, at 1000/1200m in MG/BG.
      d) Hand Danger Signal shall be shown at 45m away from the last Detonator to warn the approaching Train.
      e) If Guard has succeeded in sending a Competent person to protect in rear, he shall go to front to consult with LP.
      f) If no Competent person available, Guard shall
         - Protect in rear.
         - Then consult with LP.
         - Return to rear to show Hand Danger Signal.
   ii) Double Line:
      a) LP/ALP/Competent person shall go for Protection of adjacent line in front.
      b) Guard shall proceed towards front watching the Train carefully.
      c) If any Competent person available, he shall be sent to rear for Protection of same line on which Train is standing.
      d) Guard shall assist/ensure the Protection of adjacent line in front.
      e) Detonators shall be placed as follows:
         - ONE Detonator at 500/600m in MG/BG.
         - THREE Detonators, 10m apart, at 1000/1200m in MG/BG.

f) After Protection of adjacent line & consulting LP, Guard shall proceed to rear to protect the Train in same manner, if no person is sent already.
g) If assistance is asked, LP/ALP/Competent person shall also protect the line in front on which Train is standing, in same manner.
h) If adjacent line is found free from obstruction, the Protection can be removed except if it is desired to stop the Train on adjacent line to get any assistance.

iii) Twin Single Line:

a) LP/ALP/Competent person shall go for Protection of adjacent line in front.
b) Guard/Competent person shall go for Protection of adjacent line in rear.
c) Guard shall then proceed towards front watching the Train carefully.
d) After ensuring that the adjacent line is protected in front, he shall go for protection of the line in rear on which Train is standing, if no person has been sent already.
e) Detonators shall be placed as follows:
    - ONE Detonator at 500/600m in MG/BG.
    - THREE Detonators, 10m apart, at 1000/1200m in MG/BG.
f) If adjacent line is found free from obstruction, the Protection can be removed except if it is desired to stop the Train on adjacent line to get any assistance.

4) If any Train be seen approaching while proceeding for Protection,
   i) Warning Signals shall be used to stop the Train.
   ii) Detonator shall be placed as far away as possible.
5) While proceeding for Protection in rear, Guard shall
   i) During Day, fix a Red Flag on a Side Lamp Bracket which can be seen well by LP.
   ii) During Night, reverse the Side Lamp to show Red towards LP.
6) When Train is ready to start & recalled, Guard shall leave the 'Three' Detonators and pick up the Intermediate Detonator on his way back.
7) Train can be started after the Guard gives All Ready & Starting Hand Signals.

8) Train shall be protected within the Time mentioned as below, if it is unable to proceed further:

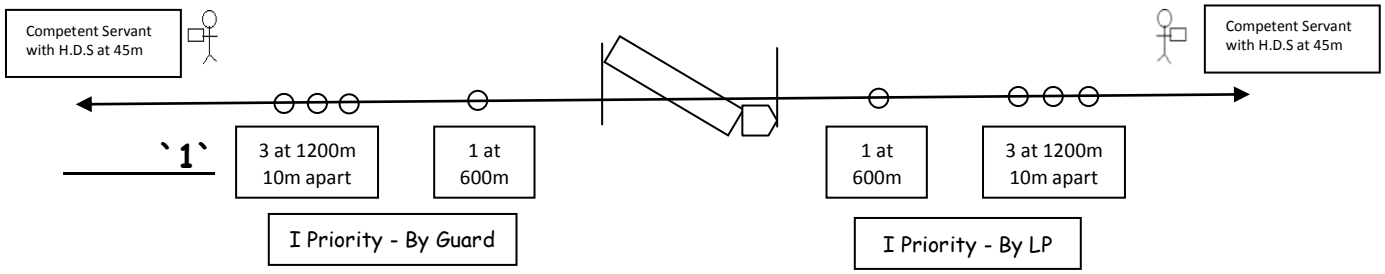
S.No	**Occasion**	**When to be protected**
1	Train stops due to **Accident**.	'Immediately'.
2	Train stops due to **Failure, Obstruction or anyother reason**.	If detention likely to exceed 15 Minutes.
3	Train **held up at FSS**.	When the Stoppage exceeds 15 Minutes.
4	Train stops due to **any reason during T.I.C**.	'Immediately'.
5	Train **held up at Signal during T.I.C**.	When the Stoppage likely to exceed 10 Minutes.
6	Train stops due to **any reason in Automatic Territory**.	'Immediately'.

9) During T.I.C on Single Line or Double Line, Train shall be protected by placing Detonators as follows:
   i) One Detonator at 250 m.
   ii) Two Detonators, 10 m apart, at 500 m.

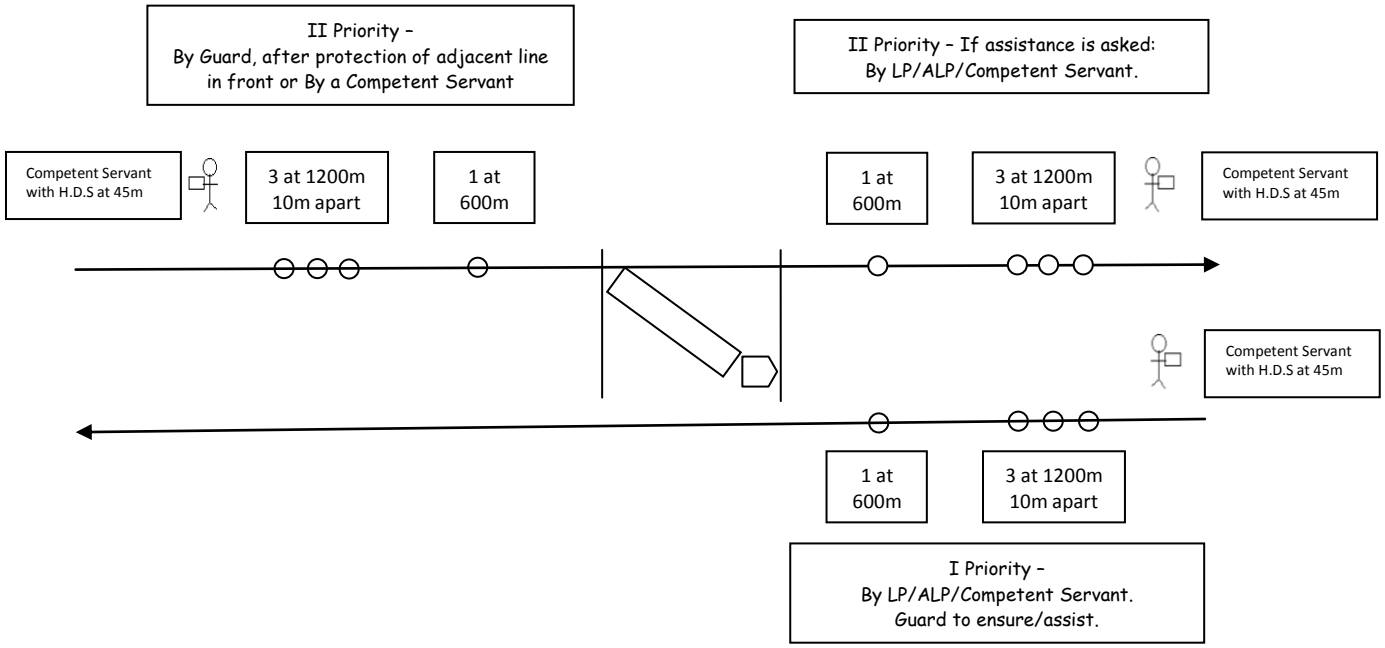
10) **In Automatic Territory:**
   i) If the Train stops in an Automatic Block Signalling Section due to any reason, the Train shall be protected **immediately**.
   ii) All the procedures for Protection are same as those for Absolute Block Section except the following:
      a) Occupied Line:
         - If the Train or Part of the Train is on Rails:
            - One Detonator at 90 m.
            - Two Detonators, 10 m apart, at 180 m.
         - If the Train or Part of the Train is NOT on Rails or anyother obstruction:
            - One Detonator at 500/600 m in MG/BG.
            - Three Detonators, 10 m apart, at 1000/1200 m in MG/BG.
      b) Adjacent Line:
            - One Detonator at 500/600 m in MG/BG.
            - Three Detonators, 10 m apart, at 1000/1200 m in MG/BG.

V. Absolute Block System - BG:

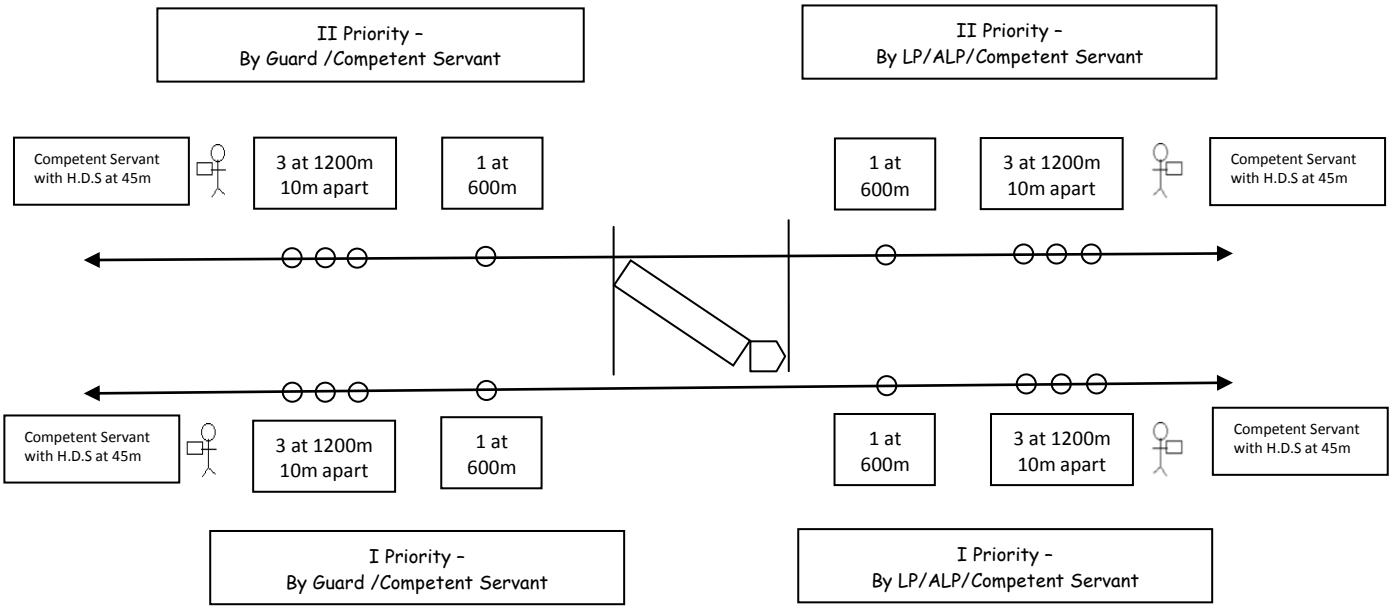
1. Single Line:



2. Double Line:



3. Twin Single Line:

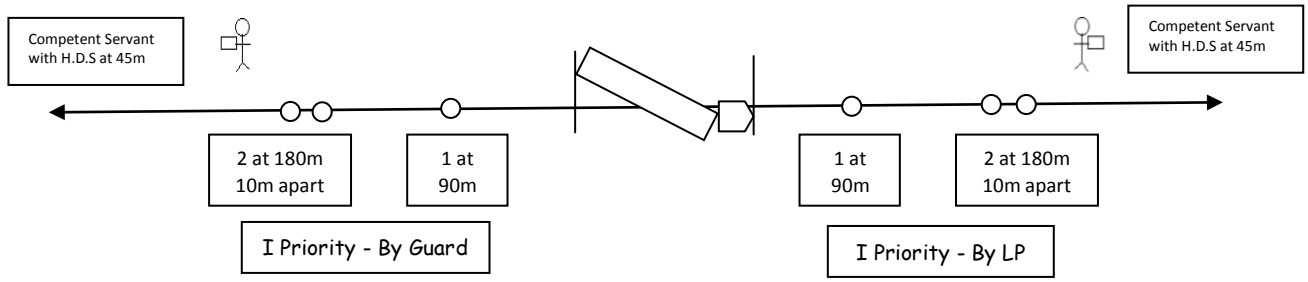


Note:

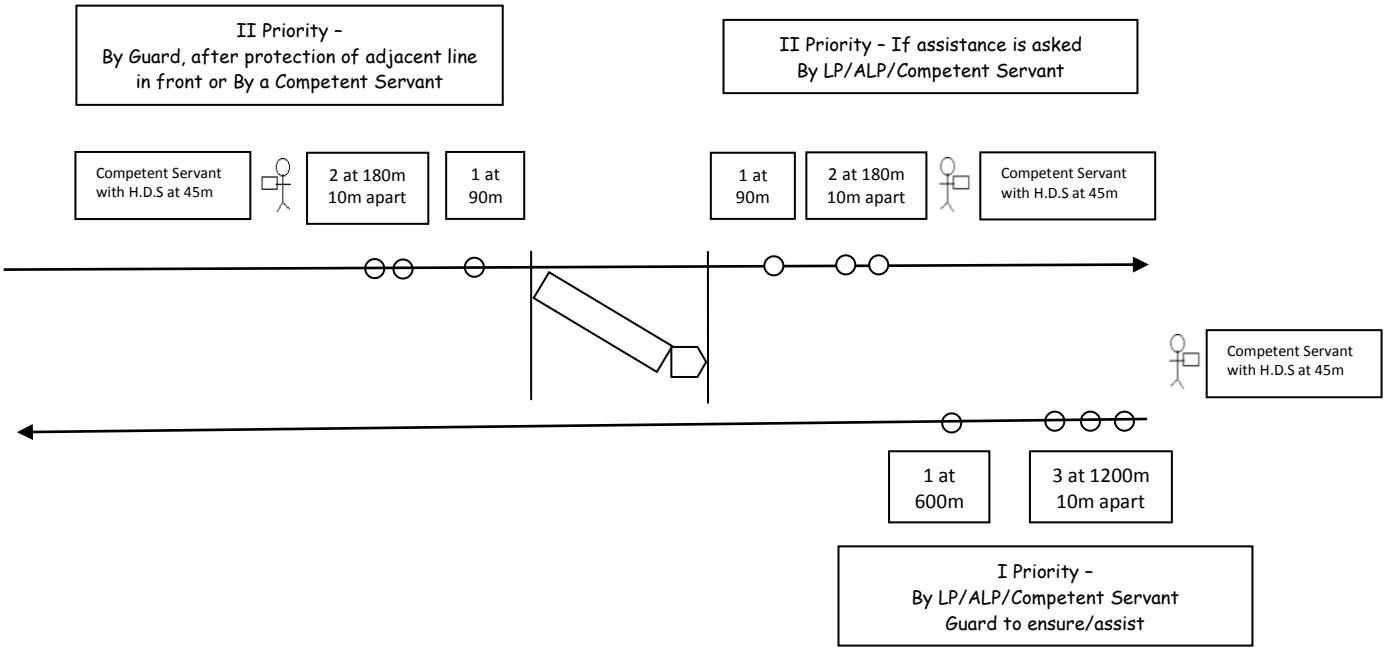
1) In MG, 1st Detonator shall be placed at 500m & Three Detonators shall be placed 10m apart, at 1000m.
2) If a Train is already approaching on Double/Multiple line, Warning Signals shall be used to stop the Train.

VI. Automatic Block System - BG:

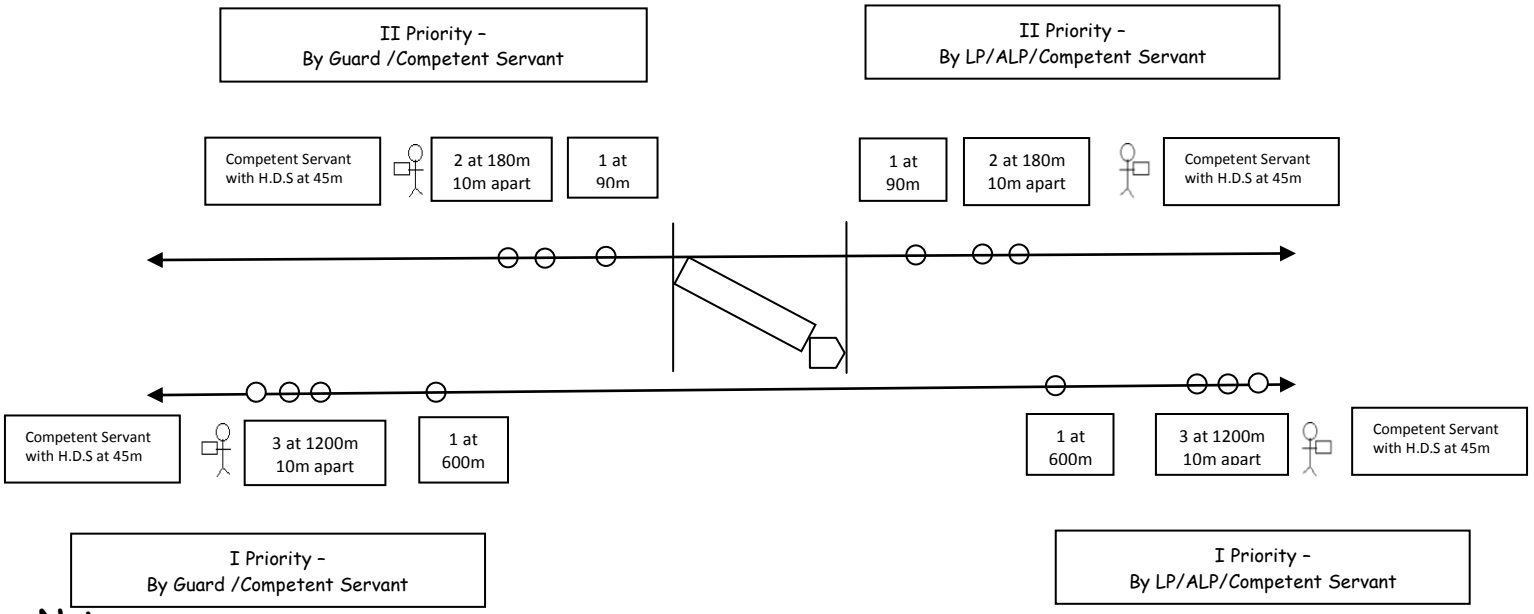
1. Single Line:



2. Double Line:



3. Twin Single Line:



Note:

1) In MG, 1st Detonator shall be placed at 500m & Three Detonators shall be placed 10m apart, at 1000m.
2) If a Train is already approaching on Double/Multiple line, Warning Signals shall be used to stop the Train.

Train held up at FSS

1) LP shall give one Long Continuous Whistle to draw the attention of the SM.
2) Guard shall check immediately whether Tail Board/Tail Lamp is fixed in rear correctly and keep sharp look out in rear.
3) If SPT is provided, LP shall contact SM through SPT immediately.
4) If SPT is not provided:
   i) LP shall wait for 5 Minutes.
   ii) If FSS is still not taken off without any cause, LP shall give __ __ o o Whistle to call the Guard.
5) Guard shall consult with LP & send ALP to the Station/Cabin to inform SM.
6) After inform SM, the person can remain at Station/Cabin, if Signal shall be taken 'off' without delay.
7) If Train has to be detained at FSS for a considerable period, SM shall send a Written Memo with reason for delay through ALP.
8) ALP shall handover the memo to LP.
9) LP shall initial it & pass it to Guard.
10) Guard shall retain the memo.
11) If it is LE, LP shall retain the memo.
12) Whenever SM issues such memo, Guard & LP shall send a Special Report alongwith CTR.
13) If the stoppage exceeds 15 minutes, Guard shall protect the Train in rear as per GR/SR 6.03.
14) If it is LE, LP shall protect as per GR/S 6.03.
15) In the meantime, if Signal is taken off or LP has been served with proper authority to pass Signal at 'On', LP shall
   i) Give one long continuous Whistle to call Guard.
   ii) Exchange Hand Signal with Guard before restarting the Train.

Train Stopped in Block Section

1) If the Train is stalled in the Mid-section due to Accident or any reason and unable to proceed further, LP shall give 0 0 0 0 Whistle.
2) Guard shall
   i) Ensure that the Tail Board/Lamp is fixed in rear of Last Vehicle properly.
   ii) Protect the Train in rear as per GR/SR 6.03.

3) Guard and Locopilot shall secure the Train as follows:
   i) LP shall apply Loco Brakes (A9, SA9 & Hand/Parking Brakes).
   ii) Two Wooden Wedges/Sprags shall be placed below the outermost pair of wheels at either end.
   iii) In case of Coaching Train, Hand Brakes of SLR shall be applied.
   iv) In case of Goods Train, Hand Brakes of 6 vehicles shall be applied at either end in addition to BV.
   v) If the Gradient is 1 in 260 or steeper, in addition to SLR/BV, Hand Brakes shall be applied as follows in case of Goods Trains:
      10 Wagons from Train Engine and 5 Wagons inside BV (OR)
      1/3 of Wagons in the Train whichever is more.
4) <u>If detaching of Train Engine or Dividing of Train is required:</u>
   i) <u>Passenger Trains:</u>
      b) Detaching of Engine / Dividing is not permitted except in following cases:
         - To test the condition of a Bridge.
         - To detach vehicle on Fire.
         - To convey Serious Accident Message
      b) The Engine shall be attached within 45 minutes from the time of detaching.
   ii) <u>Goods Trains:</u>
      Hand Brakes shall be applied as follows before detaching the Engine:
      a) If Gradient is 1 in 400 or Flatter: BV + 12 Vehicles.
      b) If Gradient is Steeper than 1 in 400: BV + All Vehicles.
5) <u>Before Restarting the Train:</u>
   i) LP shall create Vacuum/Air pressure and destroy.
   ii) Wooden Wedges/Sprags shall be removed.
   iii) Hand Brakes shall be released.
   iv) Vacuum/Air Brakes shall be released.
   v) Guard & LP shall exchange 'All Ready' Hand Signal.
   vi) Guard shall then give 'Starting' Hand Signal.
6) <u>After starting the Train:</u>
   i) Guard shall give 'All Right' hand signal.
   ii) LP shall acknowledge with a Long Whistle.
7) In the above Rules,
   i) LP/ALP is responsible for application / release of Hand Brakes of Wagons next to Engine.
   ii) Guard is responsible for application / release of Hand Brakes of Wagons inside the BV.

ENGINE PUSHING

1) An Engine can push outside the Station Limit only under Special Instructions.
2) However, this is not applicable in following cases:
   i) Train's Leading Vehicle equipped with Driving Apparatus.
   ii) Train is assisted by an Engine attached in rear.
   iii) A 'Patrol' or 'Search light Special' with one or more vehicles in front of the Engine. (Permitted to run at a maximum speed of 40 Kmph.)
3) It is permitted in the following cases:
   i) Regular working with ascending Trains on MTP-UAM section.
   ii) Regular working of Material Trains.
   iii) Unexpected Circumstances like
      a) Engine unable to haul.
      b) Train unable to proceed due to obstruction, etc.
   iv) Emergency Working like sending
      a) Relief Trains.
      b) Special Trains to clear stranded Passengers from Accident Spot, etc.
   v) Anyother Special Circumstances, under Special Instructions.
4) Whenever Engine is Pushing a Train:
   i) Train shall be fitted with continuous Vacuum/Air brake, except in emergency.
   ii) The leading vehicle shall be provided with Head light & Marker lights, except in emergency.
   iii) Tail Board / Tail Lamp shall be fixed on the Engine or the rear most vehicle, if any.
   iv) Guard shall travel in leading vehicle, if it is fitted with a Vacuum Brake Valve or Hand Brake.
   v) If the leading vehicle is not fitted so, Guard shall travel in the nearest vehicle so fitted.
   vi) Guard shall show a continuous PHS to LP.
   vii) In the absence of PHS, LP shall stop the Train immediately.
   viii) Speed of the Train shall not exceed
      a) 15 Kmph, if the Guard travels in leading Vehicle.
      b) 10 Kmph, if the Guard travels in any vehicle other than leading vehicle.
      c) Walking Speed in Thick/Foggy weather. Guard shall pilot the Train, walking in front at 600/500m in BG/MG.
   ix) Reception at Station:
      a) Single Line:
         - Train shall stop at FSS.
         - Guard shall inform SM through SPT or in person.
         - Signals can be taken 'off'.
      b) Double Line:
         - Train shall stop at the foot of LSS of same line or opposite to FSS of adjacent line.
         - Guard shall inform SM & return to Train.
         - 'Written Memo + Caution Order' shall be issued to LP & Train shall be piloted into Station.

Goods Train without BV / Guard / BV & Guard

1) Every Train shall be provided with a Guard except
   i) If exempted under Special Instructions.
   ii) In an Emergency.
2) Guard of a running Train shall travel by Brake Van except
   i) If exempted under Special Instructions.
   ii) In an Emergency.
3) In emergency, Goods Train can work without Guard/BV with DRM's permission upto next Station where Guard/BV can be provided.
4) In case of Accident, a Train can work without Guard/BV with DRM's permission upto nearest Block Station.
5) If Guard is not available, his duties shall devolve on Loco Pilot.
6) If there is unavoidable necessity, Short distance Pilot Trains/Goods Trains are permitted to run without Guard/BV with Safety precautions as follows:

   i) <u>When there is no BV:</u>
      a) Train shall be fully Vacuum / Air Braked & so certified by TXR.
      b) If TXR is not available, Guard & LP shall ensure availability of adequate Brake Power before starting.
      c) Tail Board / Tail Lamp shall be fixed on the Last Vehicle.
      d) Guard shall travel by Engine.
      e) Painted number of the Last Vehicle shall be intimated by SM to Controller.
      f) SMs of every Station shall convey this number to SM in advance while applying for Line Clear.
      g) When the Train stops at a Station, SM shall verify the Last Vehicle Number & convey the same to Controller.
      h) Train shall run at Normal Speed.

   ii) <u>When there is no Guard:</u>
      a) Train shall be fully Vacuum / Air Braked & so certified by TXR.
      b) LP shall be advised through a Caution Order specifying non-provision of Guard and to carry out duties of Guard.
      c) Tail Board / Tail Lamp shall be fixed on the Last Vehicle.
      d) If possible, ALP shall travel by BV.
      e) Train shall run at a Speed not exceeding
         - 25 Kmph during day.
         - 15 Kmph during night.

iii) When there is no Guard/BV:

a) Train shall be fully Vacuum / Air Braked & so certified by TXR.
b) LP shall be advised through a Caution Order specifying non-provision of Guard and to carry out duties of Guard.
c) Tail Board / Tail Lamp shall be fixed on the Last Vehicle.
d) Painted number of the Last Vehicle shall be intimated by SM to Controller.
e) SMs of every Station shall convey this number to SM in advance while applying for Line Clear.
f) When the Train stops at a Station, SM shall verify the Last Vehicle Number & convey the same to Controller.
g) Train shall run at a Speed not exceeding
    - 25 Kmph during day.
    - 15 Kmph during night.

ISOLATION

1) "Isolation" means an arrangement to protect a Line from the danger of obstruction from other connected line(s)
   i) by setting of Points (or)
   ii) other approved means.
2) Need for Isolation: Isolation is provided to
   i) Ensure Safety;
   ii) Increase Speed over facing points on Main line;
   (Speed over Facing Point on Main line can exceed 50 Kmph only if Main line is isolated from other lines.)
   iii) Allow Simultaneous movements.
3) Devices used for Isolation:
   I 'Not a substitute for Signal Overlap':
      1) Scotch Block
      2) Haye's Derail
      3) Trap Switch
   II 'Substitute for Signal Overlap' under Approved Special Instructions:
      1) Derailing Switch
      2) Over Run Line
   III 'Substitute for Signal Overlap':
      1) Sand Hump
      2) Snag Dead End
4) SCOTCH BLOCK:
   i) It is a wooden piece and painted red.
   ii) It shall be placed across the rail and secured with a chain.
   iii) If any vehicle moves over the Scotch Block, it will derail.
   iv) Normally, Scotch Block is used to isolate a Non-Running line from other Non-Running lines.
5) HAYE'S DERAIL:
   i) It is an iron piece, painted red.
   ii) By operating a lever, this can be placed 'on' and 'off' the Rail.
   iii) If any vehicle moves over the Haye's derail, it will derail.
   iv) Normally, Haye's derail is used to isolate a Non-Running line from other Non-Running lines.

6) TRAP POINT WITH A SINGLE SWITCH:
   i) A single switch is provided.
   ii) In normal position, Trap Switch shall be set in 'open' condition.
   iii) If any vehicle moves over the Trap in 'open' condition, it will derail.
   iv) Normally Trap switch is provided to isolate
      a) Running line from Non-Running line (or)
      b) Main line from the Loop line.
7) DERAILING SWITCH:
   i) It is a pair of Points leading to a Short Dead End.
   ii) Normal setting of Points is for the Derailing Switch.
   iii) This is used to isolate Main line from Loop line.
   iv) This is an efficient substitute for Signal Over Lap (SOL) under Approved Special Instructions.
8) OVER RUN LINE:
   i) It is an extended portion of the Track.
   ii) Normal setting of Points is for the Over Run Line.
   iii) This is used to isolate Main line from Loop line(s).
   iv) Length of ORL shall be equal to the length of SOL.
   v) This is an efficient substitute for Signal Over Lap (SOL) under Approved Special Instructions.
   vi) It should not be obstructed under any circumstance.
9) SAND HUMP:
   i) It is an extended portion of the Track, with Sand at the end.
   ii) Normal setting of Points is for the Sand Hump.
   iii) This is used to isolate Main line from Loop line(s).
   iv) This is an efficient substitute for Signal Over Lap (SOL).
   v) It should not be obstructed under any circumstance.
10) SNAG DEAD END:
   i) It is an extended portion of the Track, with an Erected Obstruction at the end.
   ii) Normal setting of Points is for the Snag Dead End.
   iii) This is used to isolate Main line from Loop line(s).
   iv) This is an efficient substitute for Signal Over Lap (SOL).
   v) It should not be obstructed under any circumstance.

INTERLOCKING

I. Definition:

Interlocking is

- An arrangement of Signals, Points & other appliances
  - Interconnected by Mechanical/Electrical/Electro-Mechanical Locking &
  - Operated from a Lever frame / Panel / RRI / SSI in a proper sequence
- To ensure Safety.

II. Need for Interlocking:

1) To eliminate dependency on human element.
2) To increase Speed.
3) To ensure Safety.

III. Essentials:

1) Signal can not be taken off
   a) Without correct setting & locking of Points.
   b) Without closing the LC Gate, etc.
2) After taking 'off' signal,
   a) Points can not be altered.
   b) LC Gates can not be opened, etc.
3) Conflicting Signals can not be taken 'off'.
4) Conflicting movements can not be given.

IV. Types of Interlocking:

1) Mechanical Interlocking.
   Eg: Operation of Points & Signals through Lever Frames.
2) Electrical Interlocking.
   Eg: Operation of Points & Signals through a Normal Panel (or) RRI Panel.
3) Electronic Interlocking.
   Eg: Operation of Points & Signals through SSI Panel.

V. Interlocking may be between:

1) Signal & Signal(s) [Eg: - Outer & Home, Starter & LSS, etc].
2) Point & Point(s) [Eg: - Loop line Points can be altered only if Main line Point is set for Turn out].
3) Signal & Point(s).
4) Signal & LC Gate(s).
5) Signal & Block Instrument.
6) Signal & Track Circuit.
7) Signal & Slide.
8) Lever & Lever.

VI. Other Terms connected with Interlocking:

1) Partial Interlocking:
   Home Signal is interlocked with Facing End Points only &
   Trailing End Points are not detected.

2) Fully Interlocked:
   Home Signal is interlocked with both Facing End & Trailing end Points.
3) Direct Interlocking:
   Points & Signals are controlled from One Location.
4) Indirect Interlocking:
   Points & Signals are controlled from Different Locations.

5) Rudimentary Interlocking:
   i) Home Signal is interlocked with Facing end Points.
   ii) A Single Arm Home & Outer are provided in each direction.
   iii) Point Indicators are to be provided.
   iv) Speed over facing point shall not exceed 15 Kmph.

6) Non-Interlocked Station:
   i) There will be no Interlocking between Signals & Points.
   ii) **O**uter **M**ost **F**acing **P**oint [OMFP] shall be manned.
   iii) A Competent Railway Servant shall show PHS, if there is no Point Indicator.
   iv) LP shall not pass OMFP if there is no
      a) Point Indicator or
      b) PHS at OMFP.
   v) Speed over facing point shall not exceed 15 Kmph.

7) Standards of Interlocking:

S.No	Description	I	II	III	IR	IIR	IIIR	IV
1	Isolation	Optional	Compulsory	Compulsory	Optional	Compulsory	Compulsory	Compulsory
2	Speed over Facing Point on Main Line	50	75	MPS	50	110	140	160
3	Interlocking: Partial or Fully	Partial or Fully	Fully	Fully	Partial or Fully	Fully	Fully	Fully
4	Interlocking: Direct or Indirect	Direct or Indirect	Direct or Indirect	Direct	Direct or Indirect	Direct	Direct	Direct
5	Signalling	2A / MA	2A / MA	2A / MA	2A / MA	2A / MA	MA	MA

Data Logger

1) It is Micro Processor based Acquisition System.
2) It is provided at Stations with Panel Interlocking / RRI / SSI and in Automatic Sections.
3) Data Loggers at various Stations are connected to a Centralized System through OFC/Micro waves.
4) It records the changes in Relay Status and Voltage.

5) It generates reports on
   i) Aspects of a Signal,
   ii) Status of Track Circuit,
   iii) Position of Points,
   iv) Closure of LC, etc.
6) These Reports can be obtained for any Station for any point of Time.
7) Advantages:

i) Condition of Signals, Points, Track Circuit, LCs, etc can be ascertained at any time.
ii) Speed of the Train can be ascertained.
iii) Malfunctioning of any Signalling Gear can be detected.
iv) Wrong Operation of Points and Signals by Panel Operator can be detected.
v) It helps as a Technical Aid to Accident Enquiry Committee in ascertaining the Status of Signals, Points, etc at the time of Accident.

MAXIMUM PERMISSIBLE SPEED

1) MPS is fixed by CRS.
2) It is fixed for
   i) Every Section.
   ii) All types of Locos.
3) It is mentioned in Working Time Table.
4) Speed of a Train can not exceed MPS at any time.
5) If MPS of a Loco attached to a Train and the MPS of the Section are not same, the Train shall run at MPS of the Loco or MPS of the Section whichever is less.
6) LPs of Mail / Express Trains shall run at MPS, even if the Train is running to Time.
7) Minimum Permissible Running Time (MPRT) between Two Stations is calculated based on MPS.

BOOKED SPEED

1) Booked Speed is fixed by COM.
2) It is fixed for every Train.
3) Normally, it is 10% lesser than the MPS.
4) LPs of Passenger Trains are required to run at Booked Speed.
5) If the Train is running Late, LP can exceed Booked Speed and run at MPS.
6) So, it provides Marginal Allowance for LP to make up Time when running late.
7) Normal Running Time (NRT) between Two Stations is calculated based on Booked Speed.

MINIMUM PERMISSIBLE RUNNING TIME (MPRT)

1) MPRT is the time taken by a Train between 2 Stations, when it is running at MPS.
2) The following also shall be taken in account for calculating MPRT for a Train:
   i) Type of Loco
   ii) Load of the Train
   iii) Time required to negotiate Gradients
   iv) Time required to for Permanent Speed Restrictions
   v) Time required for Acceleration / Deceleration, etc.

Speedometer

1) Coaching Locos should not turn out from Loco Shed with defective Speedometer.
2) If it becomes defective on run, the Train shall run at a Speed prescribed under Special Instructions.
3) In such case, LPs shall run at a speed 10% less than the Permissible Speed.
4) LP shall estimate the speed of the Train with the help of
   i) Watch,
   ii) KM Posts &
   iii) Inter Station Running Time given in WTT.

Speed over Facing Points:

1) The Speed at which Train has to pass over the Facing Points at a Station is called 'Speed over Facing Points'.
2) Speed of Trains over Facing Points at a Non-Interlocked & Rudimentary Interlocked Stations shall not exceed 15 Kmph.
3) Speed over Interlocked Facing Points:
   i) On Main Line:
      a) It depends on the Standard of Interlocking at a Station.
      b) It is laid down in WTT for every Station.
      c) If the Main Line is not isolated, the Speed shall not exceed
         - 50 Kmph or
         - Such lesser Speed as prescribed under Approved Special Instructions.
      d) Standards of Interlocking & Speed:

Standard	Speed over Facing Point in Kmph
I	50
II	75
III	MPS
I R	50
II R	110
III R	140
IV	160

   ii) On Turnouts & Cross overs:
      a) Speed over Turnouts & Cross overs shall not exceed 15 Kmph.
      b) It can be increased only under Approved Special Instructions.
      c) If Thick Webbed Switches are provided, Speed can be increased to 30 Kmph.
      d) 1 in 8 ½ Turnout:
         - No Train shall be allowed to run through.
         - Speed is restricted to 10 Kmph.

Working Time Table (WTT)

1) WTT is a Special Instruction.
2) It is published every year on July 1st.
3) It issued for each Division separately.
4) It is issued for the exclusive use of Railway Staff.
5) Copies of WTT are supplied to all the staff connected with Train working like LPs, Guards, SMs, Controllers, etc.
6) It gives the Inter Station Running Time for each Train in all the Sections of a Division.
7) Departure Time mentioned in WTT may be same as Advertised Time (Time given in Public Time Table) or a later Time. So, if the Train is ready to start in all respects, it can be started even before the Time mentioned in WTT. But it can not be started before Advertised Time.
8) WTT also contains various information as below for the guidance of Railway Staff:
   i) Classification of Stations.
   ii) Standards of Interlocking.
   iii) Facilities available at all Stations in the Division.
   iv) Notice Stations.
   v) Level Crossings & their Locations.
   vi) Maximum Permissible Speed (MPS) for each Section and different types of Locos.
   vii) Permanent Speed Restriction Locations.
   viii) Traffic and Engineering allowances for each Train.
   ix) Maximum Permissible Loads in each Section.
   x) Inter Station Running Time for Goods Trains.
   xi) List of Fixed Structures in the Section.
   xii) Any other Special Features in the Section.

Head Light & Marker Lights

1) Every Engine shall have an Electric Head light of approved Design and Two White Marker Lights.
2) Every Shunting Engine shall have the Electric Head light of approved Design and Two Red Marker Lights in front and rear.
3) Head light shall of the Loco shall be switched on
   i) During Night.
   ii) During Thick or Foggy Weather.
   iii) While entering into Tunnels.
4) It shall be provided with a Switch to dim the light.
5) LP shall dim the Head light
   i) When the Train remains stationery at the Station.
   ii) When the Train approaches another Train from opposite direction in an adjacent line.
   iii) On approaching Home Signal / OMFP till the Train passes Home Signal / OMFP.
   iv) To avoid dazzling /Cattle.
   v) To pick up the Aspect of a Signal(s).
6) <u>During Head light failure:</u>
   i) Two White Marker lights shall be kept lit.
   ii) The Speed of the Train shall not exceed 40 Kmph or Severest Temporary Speed Restriction in the Block Section whichever is less.
   iii) If the Train is working on T.1408 or T/A 602 or T/B 602 or T/C 602, Train shall proceed at Walking Speed, duly piloted by a Railway servant on foot.

Side Lights

1) Side lights are provided on both sides of the Last Vehicle in Coaching Trains.
2) It can be dispensed with in case of
   i) EMU Trains.
   ii) Goods Trains.
3) It shall be lit during
   i) Night.
   ii) Thick or Foggy Weather.
4) It shows
   i) White towards Front &
   ii) Red towards Rear.

5) On run during Night:
   i) LP shall frequently look back and see that atleast one of the Side lights is burning.
   ii) If not, LP shall give Two Short Whistles.
   iii) Guard shall show 'PHS' to LP.
   iv) Guard shall then show frequently a White light to LP till any one of the Side lights is restored.
   v) LP shall give one Long Continuous Whistle & continue the Journey.
   vi) If LP does not get 'PHS', he shall treat the Train as 'parted' and act accordingly.

6) If Vehicles attached in rear of SLR:
   i) Side lights of rear most vehicle shall be switched on.
   ii) If the rear most vehicle has no Side lights, Side lights of next rear vehicle shall be switched on.
   iii) If no vehicle in rear of SLR has Side lights:
      a) Side lights of SLR shall be switched on.
      b) Guard shall frequently look back to ensure that the Train is Complete.

7) Reversing of Side lights:
   Side lights shall be reversed (To show Red towards Front & White towards Rear) on following occasions:
   i) While proceeding for Protection.
   ii) For attracting the attention of LP.
   iii) During Precedence:
      a) The Side light adjacent to the Line on which Train is expected to come shall be reversed.
      b) The Side light on other side shall be kept in Normal Position.
      c) After precedence, the reversed Side lights also shall be brought to Normal position.

Tail Board / Tail Lamp

1) Tail Board/Tail Lamp of approved design shall be affixed in rear of the Last Vehicle of every Train to indicate that it is 'Complete'.
2) During Day:
   Tail board shall be
   i) A Disc, painted Red with letters 'LV' in White OR
   ii) An Unlit Tail Lamp, painted Red OR
   iii) A Red flag (only in emergency) if 'LV' Board not available, with permission of DRM.

3) <u>During Night, Thick/Foggy Weather</u>:
   Tail Lamp shall be a Red Flashing Light.
4) No Train shall be allowed to enter Block Section unless it is provided with Tail Board/Tail Lamp as above except EMU Trains.
5) For EMU Trains, a Turnover Tail Board, painted White with a Red Cross shall be fixed during Day.
6) If any vehicle is attached in rear of BV/SLR, Guard shall ensure that Tail Board / Tail Lamp are removed/switched off in BV/SLR and fixed in rear of the rear most Vehicle.
7) If an Engine or Damaged Vehicle is attached in rear of a Train, it shall be treated as the Last Vehicle for the purpose of this Rule.
8) <u>If a Train pass through a Station without Tail Board/Tail Lamp:</u>
   i) SM shall advice the Station in advance to stop the Train and ascertain the cause.
   ii) He shall withhold 'closing of Block section in rear'.
   iii) However, if BPAC is available & working, SM need not withhold 'closing of Block section in rear' but he shall advice Station in advance.

Flasher Light

1) Flasher Light is provided on every Loco, adjacent to Head Light.
2) When switched on, it shows a Flashing Yellow Light.
3) It is switched on to attract the attention of LP running in the opposite direction on adjacent lines of Double/Multiple Line Sections.
4) When the LP of a Train on adjacent line sees the Flasher Light, he shall
   i) Stop immediately.
   ii) Ascertain the cause.
   iii) Ensure that the line on which he has to proceed is free from obstruction.
   iv) Resume the Journey.
5) LP of a Train shall switch on Flasher Light
   i) When he experiences Sudden Jerk, Heavy Lurch, etc.
   ii) When the Vacuum / Air Pressure drops.
   iii) When the Train is stopped due to Accident, Failure, Obstruction or any reason.
   iv) When the Engine is proceeding on T/B 602 to open communication during T.I.C on Single Line.
   v) When the Train is proceeding on Wrong Line during Single Line Working on Double Line. (If not, Train shall be stopped by GK/Gangmen/Station Staff.)
6) Guard can also make use of Flasher Light, if it is provided in Brake Van.
7) Flasher Light can be switched on inside Station Limits also, if necessary.

CAUTION ORDER

I. What is Caution Order:

Caution Order is

- A precautionary warning
- Given in writing
- By SM
- To LP & Guard
- To exercise a Special Caution or
- To observe a Speed Restriction on run
- Whenever any danger to Safety of Train is apprehended.

II. Kinds of Caution Order:

There are 4 types of Caution Orders as follows:

- T/409 - Caution Order
- T/A 409 - 'NIL' Caution Order
- T/B 409 - Reminder Caution Order
- T/C 409 - 'Trolley on Line' Caution Order

T/409:

1) It is a Printed Form with **Green Fonts**.
2) It is a **serially numbered** bound book.
3) It shall be printed in **Bilingual** – English & Hindi / Regional Language.
4) It **contains** the following details:
   i) Station Name, Date
   ii) Train No. & Description
   iii) Number of Cautions
   iv) Between Stations & KM
   v) Speed
   vi) Location of Indicators
   vii) Reason for Cautions
   viii) Signature of SM with Station Stamp, Time & Date
   ix) Acknowledgement of GLP in Record Foil.
5) **Preparation**:
   i) It is prepared in **Triplicate** & issued as follows:
      - Original to LP
      - Duplicate to Guard &
      - 3rd Copy as Record Foil.
   ii) **Station Name** should be filled in full without using Station Codes.

iii) If **more than 1 Foil** is to be used, those shall be serially numbered.

iv) Caution in force shall be written in **Geographical Order** upto next Notice Station.

v) Caution Order shall be prepared for **each Train** separately.

vi) It may be **Typed / Printed / Cyclo styled** at Specific Stations / for Specific Trains.

- Details of such Stations / Trains shall be mentioned in **WTT**.
- Provision for the same shall be permitted through the **SWR** of such Stations.

vii) Progressive number of Caution Order shall be recorded in Remarks Column of the TSR against the entry for each Train.

viii) It shall be prepared without any error / mistake.

ix) It shall always be signed in full with Date & Time.

T/A 409:

1) 'NIL' Caution Order is also a Printed Form with Green Fonts.
2) It is issued when there is no Caution upto next Notice Station.

T/B 409:

1) Reminder Caution Order is also a Printed Form with Green Fonts.
2) The contents are similar to that of Caution Order (T/409).
3) It is issued by the SM of the Block Station immediately in rear of the affected Block Section.
4) It shall be issued for
   i) Stopping Trains.
   ii) Trains stopped out of course.
   iii) Runthrough Trains in Token Area, through the Pouch.
5) T/B 409shall not be issued in Sub-urban sections under Special Instructions.
6) Issue of T/B 409 may be dispensed with if SM is able to ensure through Walkie-Talkie that the LP is advised by Notice Station about the Caution in Force in the Block Section ahead.

T/C 409:

1) It is a Printed Form coloured Green.
2) The words 'Trolley on Line' is printed in Red.
3) It is prepared in Foil / Counter Foil method.
4) It is issued for all Trains when Trolley is working on T/1518 with Caution Order Protection.
5) LP shall acknowledge in Counter foil.
6) LP shall
   i) keep a sharp look out for the Trolley
   ii) be prepared to stop short of obstruction &
   iii) Use Engine whistle freely.

III. Issue of Caution Order:

1) No Train shall be allowed to enter the affected Block Section unless it is issued with Caution Order at the Stations at either end or at Notice Station.
2) Runthrough Trains shall be stopped out of course for issue of Caution Order till it is being issued by Notice Station.
3) C.O need not be given for Permanent Speed Restrictions.
4) **Notice Station**:
   i) For the purpose of issuing Caution Order, a list of Stations given in WTT designated as Notice Stations.
   ii) Normally, a Train starting Station or a Junction Station where all Trains stop shall be the Notice Station.
   iii) Notice Stations for Passenger Trains, Super Fast Trains & Goods Trains need not be same.
   iv) SM of the Notice Station, who receives Caution message, shall
      b) Ensure that no Train shall be allowed to leave his Station without T/409 or T/A 409.
      c) Advise the SM in rear of affected Block Section, 1st Train from which Caution Order is being issued.
      d) Mention in C.O, the Notice Station upto which Caution is issued.
   v) GLP shall not start the Train unless they have received T/409 or T/A 409.
5) If a Train originates from a Station other than a Notice Station:
   i) SM of such Station shall collect information about Cautions upto next Notice Station in advance & issue Caution accordingly.
   ii) If it is not possible to collect information, he shall start the Train with C.O upto next Station. A written advice shall be given to LP to stop at next Station to collect C.O for further journey.
6) In case of Crew change enroute, the GLP shall take over all the Caution Orders from Outgoing Crew under acknowledgement.
7) It is the responsibility of LP of Assisting / Banking Engine attached enroute to collect information about Caution from GLP.
8) In case of Multiple Engines, SM shall give a copy of C.O to the LP of additional Engines also.
9) If Power Block availed by OHE staff, Caution Order shall be issued to the Trains hauled by Diesel Locos.
10) Local / Sub-Urban Trains:
   i) Caution Order shall be given to GLPs only at such Stations mentioned in WTT.
   ii) It is issued for several Up & Down trips unless there is a sudden imposition of a Caution.
   iii) It may be **Typed / Printed / Cyclo styled** covering entire section.

IV. Service of Caution Order:

1) Caution Order shall be issued to GLP either personally or through a Competent Railway Servant, obtaining signature in full in Record copy.
2) If more than 1 foil is issued, signature shall be obtained in each record foil.
3) If LP is unable to understand, SM has to explain about the Cautions.

V. Miscellaneous:

1) The Cautions in force shall be maintained in
   i) Caution Order Message Register and
   ii) Caution Order Register.
2) The Cautions in force shall be brought forward at 00' hrs of every Monday in Geographical Order.
3) The Record foil of Caution Order shall be preserved for 12 months from date of issue.

I	**Caution Order Circumstances Requiring Speed Restrictions** [S.R.4.09 (i)]	
	OCCASIONS	**SPEED in KMPH**
A	**ENGINEERING:**	
1	Engineering **works** or repairs on the track	As advised by the Engineering Official.
2	Whenever Loco Pilots report about **Slack** or **Rough** Running or Heavy **lurch** or Any abnormal condition in the track.	Not to exceed **10 KMPH**
3	When **RAIL FRACTURE / WELD FAILURE / FISH PLATE BROKEN** is reported and attended temporarily	Not to exceed **20 KMPH** (When certified fit by Trackman/Keyman/Engineering Gateman) **30 KMPH** (When certified fit by JE/P.Way)
4	When any **Patrolman** does not report within 15 minutes of his scheduled arrival.	**40 KMPH** during day when visibility is clear & **15 KMPH** during night & day when visibility is poor.
B	**S &T:**	
5	During the period of **overhauling** of Signalling gears.	**15 KMPH** at the station.
6	Whenever a Train is piloted into the station on a written authority to enter a **Non-Signalled**/Non-running line.	Not to exceed **15 KMPH** Or lesser speed given in SWR.
7	On Twin Single Line sections when line clear is obtained through **Indirect Means** of communication duly cross checking the PNs given for the preceding 3 Trains.	Not to exceed **25 KMPH** over the entire section for the **first Train.**
C	**UNUSUAL OCCURRENCES/EVENTS:**	
8	When there is an **OHE break down** on double/multiple line section – **1st Train on adjacent line**.	**20 KMPH** by day & **10 KMPH** by night.
9	During temporary **Single Line working on a Double Line** section worked under the Automatic Block System.	**25 KMPH** For **All** Trains running in the **wrong** direction & **First** Train running in the **right** direction.
10	Whenever **Engine Pushing** a Train.	Not to exceed **15 KMPH** if the Guard traveling in the leading vehicle& **10 KMPH** if the Guard traveling in any other vehicle.
11	Pilots / Goods Trains **without Guard or Guard and Brake-vans**.	Not to exceed **25 KMPH** by day & **15 KMPH** by night.
12	When **Goods** stock is **attached to Passenger** Trains.	Not to exceed **75 KMPH** on BG & **50/40 KMPH** on MG.
D	**NATURAL CALAMITIES:**	
13	When **unsafe condition of the bunds** of tanks or rivers is reported.	**15 KMPH** -Day, Clear weather & **10 KMPH** -Night /View not clear.
14	When water reaches **danger level mark** at bridges.	**15 KMPH** -Day, Clear weather & **10 KMPH** -Night /View not clear.
15	When Sabotage is suspected – For LE/Tower Wagon/TMM proceeding to inspect the Track	**15 KMPH** -Day, Clear weather & **10 KMPH** -Night /View not clear.

II	**Caution Order Circumstances Requiring Special Precautions [S.R.4.09 (i)]**
A	**ENGINEERING:**
15	When there is **no response** from the **Gateman of a Non-Interlocked Level Crossing Gate** (outside the FSS of the station).
16	When **Emergency Patrol** is put on.
17	For the **LAST TRAIN** mentioned in the **LINE BLOCK** order to enter the Block Section.
18	For Traffic Train to enter a Block Section **after the expiry of Line Block period** when the Line Block "Removal Advice" or "Extension Advice" has not been received from the engineering official-in-charge.
19	When **Trolley is on line** under caution order protection on form T/ 1518.
B	**S&T:**
20	When a **token** of the Block Section is handed over to **S&T Official** in connection with the work at the **outlying siding points**.
21	When **spring loaded points** lie against the path of a **Motor Trolley** in the trailing direction.
22	When **Warner or Distant or First Stop signal** becomes **defective** in the **OFF** position.
23	Before Despatching a Train to a Station where the **Colour light signals** are not burning due to **power failure**.
24	When there is a **change in the complement of signals** or where signals are newly erected or resited. [Issued for TEN Days]
25	When Engineering **Gate Signal** is reported as **defective**.
C	**ELECTRIFIED SECTION:**
26	When Trains hauled by Steam/**Diesel Locos** enter the section during **Power Block** period.
27	When **Temporary Neutral Section** is provided.
28	When **Emergency Feeding Arrangements** introduced due to failure of OHE power supply.
D	**UNUSUAL OCCURRENCES/EVENTS:**
29	When there is a **doubt or suspicion** from the condition of a run through Train that the Block Section in rear might have been obstructed or affected during the passage of Train.
30	When **Trains delayed unusually**, running on double/multiple line sections.
31	When a Train has to be started **after Train Parting** and the clearance of obstruction.
32	When the Station Master is sending **6-2 bell code signal** on double/multiple line sections.
E	**MISCELLANEOUS:**
33	Whenever **Alarm chain apparatus** is blanked off on a coach/compartment of a Train.
34	Any other condition or circumstances which may require the issue of a caution order or caution order issued under local or special instructions.

LINE BLOCK

LINE BLOCK means totally **obstructing a portion of the running line** outside station limits for a considerable duration **for engineering works** so that Traffic Trains can not enter into such Block Section.

I. Procedure for applying Line Block:

1) An application shall be sent by the Engineering official not below the rank of a JE/P.Way to the DRM at least 24 hours in advance of imposing Line Block.
2) DRM will give permission through a message to SMs of either end with a copy to Engineering Official.
3) The Engineering Official shall be advised about the Line Block Order by the SM.

II. Imposition of Line Block:

1) The Train mentioned in the LB order shall be stopped out of course.
2) When the Train is ready for despatch, SM shall prepare a Last Train Certificate (LTC) in duplicate.
3) LTC shall be addressed to none.
4) The LTC shall be handed over to the Guard of the Train who will deliver
   i) One copy to the Engineering officials under acknowledgment in duplicate copy &
   ii) Duplicate copy to SM at other end of the Block Section under acknowledgment.
5) The SM shall also issue a Caution Order to the LP to stop the Train.
   i) At work spot on getting hand danger signal form the Engineering Official for the Guard to deliver the LTC and
   ii) At the Station in advance for the Guard to hand over the other copy to the SM.

III. Serving the Certificate:

1) The Trains shall be stopped at the work spot on getting stop hand signals from the engineering officials.
2) Guard will deliver
   a) 1 copy of Certificate to the engineering official getting his signature in duplicate.
   b) Duplicate copy to the SM at the other end getting acknowledgement in his Rough Journal Book.
3) When no STOP hand signal is given at the work spot,
   a) Train can proceed without stopping and
   b) On arrival at next station, Guard to handover both the copies of the LTC to the SM under acknowledgment.
4) It is the responsibility of the Engineering official to be in possession of LTC before commencing the LB work.
5) If the LB work is on a gradient, he shall ensure that the Train has cleared the Block Section through portable telephone.

6) If portable telephone is not available, he has to wait for
    a) 10 minutes + Running time in case of a passenger carrying Train and
    b) 15 minutes + Running time in case of goods Train

   after the Train passes work spot.

IV. Allowing Trains during Line Block period:

1) During LB, no traffic Train shall be allowed under any circumstances.
2) Any number of Material Trains, MTLYs, Cranes, etc may be allowed.
3) Such Trains shall be sent on ATP of T/A 602.

V. Removal of Line Block:

1) When the work is completed, the Engineering officials shall send the LB Removal Advice to the SM immediately.
2) When an Extension of LB period is needed, the Engineering officials shall give a LB Extension Advise through a messenger to the SM.
3) On getting the message, the SM shall advise the SM at the other end.
4) No Traffic Train shall be allowed into the Block Section during Extension Period also.
5) If there is no Removal Advice or Extension advice received from the Engineering Officials even after the expiry of the permitted period & a Traffic Train is ready to despatch, it can be started as usual on normal ATP with a Caution Order containing the LB particulars.
6) All such Trains shall proceed cautiously in the section.

VI. Line Block on Double Line:

1) When both the lines are to be obstructed, SM shall ensure that no Train is occupying or ready to enter the adjacent line before permitting the last Train mentioned in the LB order.
2) When LB is required to be imposed on one line only without obstructing the other line, it may be done so and S/L working on D/L may be introduced on the other line if it is free from obstruction.
3) The procedure for Imposing LB on a D/L is same as that for S/L.
4) The Last Train Certificate shall be carried by the last Train running between the two Stations.
5) A Caution Order about the LB shall be given to the Trains running on the adjacent lines to observe special caution and reduce the speed as necessary. Caution order shall be issued for the adjacent line with different gauge also.

WORKS OF SHORT DURATION

1) Work of Short Duration means
   - Any Engineering Work
   - Commenced and Completed between Sunrise and Sunset
   - And no imposition of speed restrictions thereafter.

2) Works of Short Duration Inside Station Limits:
   (i) JE/P.Way shall give a request to SM.
   (ii) SM shall consult SCOR & permit.
   (iii) The concerned line shall be isolated by setting and locking the points against the line and the padlock key shall be handed over to JE/P.Way.
   (iv) If the line cannot be isolated, the work spot shall be protected by Detonators, Banner Flag and Hand Signals.
   (v) On completion of the work, JE/P.Way shall advice SM and return the padlock key.

3) Works of Short Duration Outside Station Limits:
   (i) JE/P.Way shall advise the SM.
   (ii) SM shall advise other end SM, SCOR and SM at Notice Station to issue Caution Order.
   (iii) Work spot shall be protected
      i. On S/L on both directions and
      ii. On D/L as per DOT.
   (iv) Protection:
      i. 1 Flagman with Hand Danger Signal at 30 m from Work Spot.
      ii. Banner Flag and a Flagman with Hand Danger Signal at 500/600 m in MG/BG from Work Spot.
      iii. 3 Detonators, 10 m apart, at 1000/1200 m in MG/BG from Work Spot.
      iv. A Flagman with Hand Danger Signal at 45 m from last Detonator.
   (v) Train Passing the Work Spot:
      i. LP shall stop at the Hand Danger Signal.
      ii. Flagman shall remove 3 detonators and allow the Train with Proceed with Caution Hand Signal.
      iii. After the passage of the Train, Detonators shall be replaced.
      iv. LP shall stop at Banner Flag.
      v. Flagman shall remove Banner Flag on getting PHS from the Flagman near to the Work Spot and show Proceed with Caution Hand Signal.
      vi. After the passage of the Train, Banner Flag shall be fixed again.
      vii. LP shall pass the Work Spot at a Speed as given in the Caution Order.

WORKS OF LONG DURATION

1) Work of Long Duration means
   - Any Engineering Work
   - Extends for few days and
   - Speed Restrictions continue to be in force.

2) Works of Long Duration with Imposition of Speed Restrictions:
   Temporary Engineering Indicators shall be provided to protect the Work Spot as follows.

   b) Caution Indicator at 1000/1200 m in rear of Work Spot in MG/BG.
   c) Speed Indicator at 30 m in rear of Work Spot, indicating the Speed at which the Train has to proceed.
   d) Termination Indicator in advance of Work Spot at a distance equal to the length of longest Goods Train in the Section.

3) Works of Long Duration requiring 'Stop-Dead' at Work Spot:
   (i) Temporary Engineering Indicators shall be provided to protect the Work Spot as follows.
      a) Caution Indicator at 1000/1200 m in rear of Work Spot in MG/BG.
      b) Stop Indicator at 30 m in rear of Work Spot.
      c) Termination Indicator in advance of Work Spot at a distance equal to the length of longest Goods Train in the Section.

   (ii) Train Passing:
      a) LP shall stop the Train.
      b) Engineering Watchman shall give ER – 7 Book.
      c) LP shall fill Date, Train Number & affix his signature and return the book to Watchman.
      d) The watchman shall exhibit a "Proceed with Caution" Hand Signal.
      e) LP shall restart and proceed cautiously at a speed not exceeding 10 KMPH.

4) During Night, Engineering Indicators
   - Shall be lit, if those are of Non-Reflective Type.
   - Need not be lit, if those are of Reflective Type.

5) SM on either end / Notice Station shall issue Caution Order for all Trains.

Banner Flag

1) Banner Flag is a Temporary Fixed Signal.
2) It is a Red Cloth of "150cms x 45cms".
3) It is fixed on Poles of Height 1.5 m.
4) It shall be used only during Day.
5) It is used to protect the following:
   i) Works of Short Duration.
   ii) Works involving Rail Renewal, Points and Crossings Renewal, Increasing Sleeper Density, etc.
   iii) Lorry with Heavy Material in Block Section.
   iv) Lorry at a Station when remains stationary for more than 15 minutes.
   v) OHE Ladder Trolley working.
   vi) Anyother circumstances under which the Spot/Object requires to be protected.

Engineering Indicators

1) Engineering Indicators are provided for Permanent Speed Restrictions (PSR) and Temporary Speed Restrictions.
2) These are provided to protect the Works of Long Duration.

I. Caution Indicator:

1) It is Rectangular in Shape, Fish Tailed at one end and Conical at other end.
2) It is painted Yellow with a Black Patch at the Centre.
3) It is provided at NLT 1000/1200m in rear of
   i) Long Duration Work Spot and
   ii) PSR Locations.
4) On approaching this, LP shall reduce the Speed as necessary and be prepared for Speed/Stop Indicators in advance.
5) During Night:
   i) If it is Reflective Type, it need not be lit.
   ii) If it is Non-Reflective Type, it shall show TWO Horizontal White Lights.

II. Speed Indicator:

1) It is Triangular in Shape.
2) It is painted Yellow with a Number in Black.
3) It is provided at NLT 30m in rear of
   i) Long Duration Work Spot and
   ii) PSR Locations.
4) From this Indicator, LP shall proceed at the Speed mentioned on it and in Caution Order.
5) During Night:
   i)If it is Reflective Type, it need not be lit.
   ii)If it is Non-Reflective Type, it shall be lit.

III. Stop Indicator:

9) It is Rectangular in shape.
10) It is painted Red with White Bars near both ends.
11) It is provided at NLT 30m in rear of Work Spot.
12) LP shall
    i) Stop at this Indicator;
    ii) Fill the Date, Time, Train details in ER-7 Book given by Engineering Watchman and sign.
    iii) Pass the Work Spot at 10 Kmph on getting 'Proceed with Caution' Hand Signal from Engineering Watchman.
13) During Night:
    i) If it is Reflective Type, it need not be lit.
    ii) If it is Non-Reflective Type, it shall show TWO Horizontal Red Lights.

IV. Termination Indicator:

1) It is Circular in Shape.
2) It is painted Yellow with Letter 'T' in Black.
3) It is provided in advance of Work Spot at a distance equal to the length of Longest Goods Train in the Section.
4) After the Engine passes this Indicator, LP can resume Normal Speed.
5) During Night:
    i) If it is Reflective Type, it need not be lit.
    ii) If it is Non-Reflective Type, it shall be lit.
6) Separate Termination Indicators for Passenger and Goods Trains also may be provided. If so provided, it shall have the Letters 'T/P' and 'T/G' respectively.

Permanent Speed Restrictions

1) These Speed Restrictions are imposed at the Locations with Weak Permanent Way, Weak Soil, Curves and certain Bridges.
2) These Locations are mentioned in Working Time Table.
3) Hence, Caution Orders shall not be issued for the PSR.
4) Engineering Indicators are provided to protect the locations, but they need not be lit during Night.
5) Time lost on this account is included in the Running Time.

MATERIAL TRAIN

1) For Material Train working, prior permission shall be obtained from DRM by the official concerned.
2) DRM shall advise all concerned the following details:
   - Nature of work
   - Duration
   - Location
   - Station at which Material Train to be stabled, etc.
3) In emergency, on request by Engineering Official, SM can also order Material Train.
4) Material Train can be worked in Block Section on any one of the following methods:

S.No	Method	Authority / A.T.P	
		Normal	**During Failure**
1)	Work on Line	Normal A.T.P	PLCT
2)	Block Back		
	a) Double line	T/806 + PN	T/806+Endorsement+PN
	b) Single line Tokenless	T/806 + Shunt Key + PN	T/806+Endorsement+PN
	c) Single line Token	T/806 + Section Token	T/806 + PLCT
3)	Block Forward		
	a) Double line	T/806 + LSS Key	T/806+Endorsement+PN
4)	During Line Block (Both S/L & D/L)	T/A.602	

5) Alongwith A.T.P, a Written Memo, countersigned by Guard, shall be handed over to LP, mentioning the Station & Time at which the Material Train has to clear.
6) Normally, it shall be marshalled as Engine at one end and BV at the other end to ensure adequate Brake Power in rear in case of Parting.
7) Speed in the Block Section shall not exceed 75 Kmph.
8) Level Crossings:
   - LCs shall be closed for Material Train movement.
   - LP has to ensure the closure of LC before passing the same.

At Interlocked LCs	LP to obey GSS
At Non-Interlocked LCs	LP shall stop at 30m short of LC, ensure LC i closed and then pass the LC.
At Interlocked LCs during wrong direction movement on Double line	

9) Precautions during work:
   i) Guard and LP are responsible for protecting the Train. They can get assistance from P.Way Gang for the same.
   ii) While working on a Gradient of 1 in 50 or Steeper, Engine should e on the Down Hill of the Gradient.
   iii) Women Labours shall be employed for only for Loading and not for Unloading.

10)Pushing of Material Train:

i) Pushing of Material Train on a Down Gradient of Steeper than 1 in 100 is prohibited.
ii) If BV is leading & Guard travels by BV, Speed shall not exceed 15/10 Kmph in Straight / Turnout.
iii) If BV is not leading, Speed shall not exceed 10 Kmph.
iv) Guard shall show continuous PHS to LP, if not, LP shall stop the Train at once.
v) Reception at a Station:
   a) If Signal is not taken 'off':
      - Guard shall proceed to Station, showing Stop Hand Signal.
      - He shall inform SM & return to the Train.
   b) Train can be received by taking 'off' Signals.
   c) On Double line, if Material Train approaches a Station in wrong direction:
      - LP shall stop at LSS of the same line or FSS of the adjacent line whichever comes first.
      - Guard shall proceed to Station, showing Stop Hand Signal.
      - Train shall be piloted into the Station by issuing of a 'Written Memo'.

11) Dividing of Material Train:

i) Dividing of MT is not permitted outside Station Limit except in emergency.
ii) If MT is divided:
   - It shall be done under the personal supervision of the Engineering Official, not below the rank of JE/PW.
   - Before dividing, Guard shall place 'Wooden Wedges' and apply Hand Brakes of 'BV + Sufficient Number of Wagons'.
   - LP shall not detach Engine, until PHS given by Guard.
   - Guard shall ensure that all the Labours have detrained before permitting to detach.
iii) Dividing of MT is not permitted, if the Gradient is 1 in 100 or Steeper.

12)Night Working:

i) Except in emergencies, MT with Labours is not permitted to work between 'Sunset to Sunrise'.
ii) In emergencies, following precautions shall be taken:
   a) DRM's permission is required.
   b) Work spot is to be lit.
   c) 2nd Class Accommodation for Labours shall be provided in the Train.
   d) Guard has to ensure that Labours do not travel by Wagons.

13)Stabling of Material Train:

i) MT shall not be stabled at a Station with Single Loop Line and no siding, unless permitted by DRM.

ii) MT shall not be stabled on a Running line except in emergency.

iii) Stabling at a Station:

Guard and SM are jointly responsible to ensure that

a) Vehicles of MT are properly secured and not fouling any Points & Crossings.

b) Points shall be set against the line, secured with Clamps/Cotter & Bolts and padlocked.

c) Keys shall be kept under SM's personal custody.

d) Two Wooden Wedges shall be placed below the last pair of Wheels.

e) Wheels shall be locked with One Safety Chain at either end.

f) Hand Brakes of BV + 6 Vehicles at either end shall be applied.

iv) Stabling Outside Station Limit:

Guard shall ensure the above.

14)TXR Examination:

i) Wagons of MT shall be sent to their Base Depot atleast once in a Month.

ii) After examining intensively, BPC shall be issued.

iii) BPC is valid for 30 days from the date of issue.

iv) Engineering Official is responsible to ensure that the Wagons are moved to Base Depot before the expiry of BPC.

v) Brake Power percentage shall be NLT 90% at originating point and 70% enroute. If it falls below 70%, Rake shall be sent to Base Depot.

vi) If BPC becomes invalid due to any reason, Rake shall be sent to Base Depot on GDR check.

CAUSE WAY

i. It is a Vulnerable place where the Water is likely to flow above the Track during monsoon season.
ii. Hence, Two Engineering Watchmen shall be posted during monsoon season round the clock.
iii. Indication posts of 1.2 m height, painted alternatively Black and White and guidance Flat Bars shall be placed at Causeways.
iv. Height of the Flat Bar above Rail level shall be
    i) 0 cms for Electric Multiple Unit Trains.
    ii) 4 cms for Diesel and Electric Locos.
v. When Water does not overflow the Ballast level:
    i) LP of a Train may pass the Causeway cautiously.
    ii) LP shall stop the Train at the next Block Station to give Message to SM.
vi. When Water rises above Ballast level but is below Rail level:
    i) LP shall stop the Train.
    ii) If it is safe, Two Engineering Watchmen shall pilot the Train, walking in front.
vii. When the Water rises above Rail level but below the Flat Bar level:
    i) LP shall stop the Train.
    ii) JE / P.Way shall inspect the Track.
    iii) If it is safe, he shall
        a) issue a Certificate to the LP.
        b) pilot the Train by walking in front of the Train.
    iv) LP shall restart & follow at Walking Speed, if the Flood Level Limitation of his Loco permits.
viii. When Water rises above Flat Bar level:
    i) Train should not be allowed over the Causeway.
    ii) Guard and LP shall protect the Train as per rule 6.03.

PATROLLING

I. When to be Patrolled?

The portion of a Railway Lines shall be Patrolled whenever it is likely to be endangered by abnormal conditions such as

- Heavy Rains
- Breaches
- Floods
- Storms
- Civil Disturbances, etc.

II. Types of Patrolling:

a) Monsoon / Night Patrolling.
b) Emergency Patrolling.
c) Security Patrolling.
d) Hot Weather Patrolling.

a) Monsoon / Night Patrolling:

1) Based on the Forecast of Meteorological Department, DEN will introduce Night Patrolling.
2) SMs throughout the Section shall be advised.
3) Patrolling shall be discontinued if permitted by AEN.

b) Emergency Patrolling:

1) If there is Abnormal Rainfall, sudden Cloud Burst or Storm, Emergency Patrolling shall be introduced for Day & Night by DEN / AEN / JE/PW / Gangmate.
2) When introduced, SMs shall issue Caution Orders for all Trains.

c) Security Patrolling:

1) If any Civil Disturbance is expected or due to any reason, DEN shall introduce Security Patrolling.
2) The intensity of Patrolling will be directed as per Security Instructions issued from time to time.

d) Hot Weather Patrolling:

1) Hot Weather Patrolling shall be introduced when Rail Temperature goes beyond Threshold value (Varies from Section to Section) + Certain Level.
2) It shall be introduces in the Sections with Continuous / Long Welded Rails.

III. Speed Restriction:

- If Patrolman not arrives within 15" of Scheduled arrival, SMs shall issue Caution Order for all Trains restricting the Speed as follows for entire Block Section:

  Day – 40 Kmph
  Night – 15 Kmph

Combined Train Report (CTR)

3) CTR is the Official log of Train Movements.
4) It is prepared
   i) By the Guard
   ii) In Form No. T.72 or A/R 90.
5) It is prepared in Four Copies under Carbon process.
6) Before commencing the Journey, Signature of SM shall be obtained.
7) At the end of the Journey, three copies shall be handed over to LP duly getting Signature in 4th Copy.
8) Separate CTR shall be prepared for each Train.
9) If more than one CTR is prepared for a Train because of Crew/Guard Change or any reason, Cross reference of previous CTR shall be made.
10) It gives all the information about the Train in a Tabular Form from Starting Station to Destination like
   i) Train No., Loco No., From –To Stations, Names of LP & Guard, etc.
   ii) Stage wise Scheduled Arrival & Departure timings.
   iii) Stage wise Actual Arrival & Departure timings.
   iv) Detention to Train at Stations enroute with reasons.
   v) Any irregularities occurred in the course of the Journey.
11) Hence it can be called as the Mirror of the performance of a Train.
12) It is the base document for calculating the several Statistics:

Vehicle Guidance (VG)

1) VG is prepared
   i) In Duplicate under Carbon process
   ii) By Trains Clerk at the Originating Station.
2) It is handed over to Guard of the Train.
3) At Destination, it is handed over to Trains Clerk by the Guard.
4) It contains the following details:
   i) Train No.
   ii) Loco No.
   iii) Name of Train.
   iv) Names of LP & Guard.
   v) From & To Station.
   vi) Shunting enroute, if any.
   vii) Particulars of Coaches/Wagons like
      - Vehicle No.
      - Owning Railway.
      - Empty or Load.
      - Tare & Gross Weight.
      - Commodity, etc.
5) It can be prepared & print out can be taken through
   i) FOIS – for a Goods Train.
   ii) ICMS – for a Passenger Carrying Train.

Rough Journal Book (RJB)

1) It is base document for the preparation of CTR.
2) It is one the personal equipments of the LP & Guard.
3) It is in a Book form.
4) All the details about Train working are recorded in this book.
5) It contains following details about each Train worked by the Guard:
   i) Date
   ii) Train Name & No.
   iii) Loco No., Shed.
   iv) From & To Station.
   v) Names of LP, ALP & Guard.
   vi) Tare & Gross Weight of Train.
   vii) No. of vehicles.
   viii) Actual & Scheduled Arrival & Departure Timings at every Station including the Runthrough Time.
   ix) Detention details with reasons.
   x) BV Equipments.
   xi) Special occurrences, if any.
6) RJB shall be preserved for a considerable period for future reference.

Road Learning

2) Before working independently over a Section, LP/ALP shall take a minimum of THREE Trips for learning the Road
   - Separately for Up and Down Directions &
   - Atleast One Trip by Night.
3) In a busy / difficult section, such Road Learning Trip can be increased with the approval of DRM.
4) If a LP/ALP has not worked over a Section for more than Three Months, he shall again have the Road Learning as below:

Duration of Absence	Number of Trips	
	Plain Section	Ghat / Automatic Section
3 to 6 Months	1	3
6 Months to 2 Years	2	3
> 2 Years	3	3

5) Crew Booking Points and the Base Depot shall maintain a record to ensure that all the LPs/ALPs are given Road Learning in all the Sections.
6) Before taking Duty over a Section, LP/ALP shall certify that his/her previous Trip in the Section was within 3 Months.

PERSONAL EQUIPMENTS OF LOCO PILOT

Personal Equipments of Loco Pilot while on duty as prescribed in GR/SR 4.19 are:

Personal Equipment (For all LPs)

I Books & Forms:

1. GRS Book
2. Accident Manual
3. Block Working Manual
4. Operating Manual
5. BPC Rule Book
6. Working Time Table
7. Rough Journal Book

II Safety Equipments:

1. One Green & One Red Flag
2. One Hand Signal Lamp
3. 10 Detonators in a Tin Case
4. One Fusee

III Other Equipments:

1. Watch
2. Walkie-Talkie
3. Two pairs of Specs (with Names engraved)
4. Torch
5. Electric Head light Bulb & Cab light Bulb – One each
6. Water Gauge Glasses of different sizes with Dexine Rubber Washers

For Electrical Loco Pilots, the following additional items shall be provided:

Additional Equipments (For Electrical LPs)

1. 25 KV A/c Traction Manual
2. Insulated Screw Driver
3. Insulated Plier
4. RE Telephone
5. One PN Book

For Electrical Assistant Loco Pilots, the following items shall be provided:

Personal Equipments (For Electrical ALPs)

1. Working Time Table
2. Rough Journal Book
3. Personal Log Book
4. Red & Green Flags
5. One Tri Colour Torch light

For EMU Motorman, the following additional items shall be provided:

Additional Equipments (For Motorman of EMU)

1 Reverser Key
2 BL Key
3 BIV Key
4 EMU Cab Door Key
5 Crocodile Clip
6 EMU Trouble Shooting Directory

RIDING ON ENGINE OR EMU

6) Railway Staff who may travel on the Engine or EMU Cab are as follows:
   i) Inspecting officials / Staff on duty authorised
      a) by a 'Special Pass or Permit'.
      b) specially in any GR/SR.
      c) under DRM's Instructions.
   ii) Officer on duty.
   iii) Traffic Staff carrying out Shunting Operations.
   iv) LP/ALPs learning road under the Authority.
   v) Authorised Fitters and Charge Men of the Workshop on a Trail Engine subject to a Maximum of Four.
7) Other than Engine Crew, Maximum Two persons as above shall be allowed to travel on the Engine/Cab. A Competent Authority may specifically permit more persons.
8) On EMU, other than the Motorman or the Guard, only Two persons are authorised to travel in the Cab with Special Permits issued by the Competent Authority.
9) An 'off' duty Locopilot is not permitted to enter the Engine/Driving Compartment.

MANNING AN ENGINE

6) No Engine shall be in motion on a Running line, unless it is manned by LP and ALP.
7) It may be exempted under Special Instructions as follows:
   i) Shunting Engines at Stations / Yards shall be worked only LP (Shunting) without ALP.
   ii) Engines in Loco Yards can be moved by LP or any Authorized Person without ALP.
   iii) If ALP is holding a Certificate issued by a Competent Authority, he can be utilized to move Engines in Loco Yards.

8) Shunting Jurisdiction:
   i) LP/Shunting is permitted to perform Shunting inside Station Limits.
   ii) LP/Shunting, who holds a Certificate of Competency as LPs, is permitted to work Trains outside Station Limits also.
9) If LP becomes incapacitated while on Run in Block Section:
   i) If ALP is duly qualified:
      He shall work the Train up to the next Station cautiously.
   ii) If the ALP is not duly qualified:
      a) ALP shall bring the Train to a stop;
      b) He shall send a Message to the nearest SM;
      c) Guard shall assist ALP in this regard.

LP NOT TO LEAVE ENGINE WHEN ON DUTY

1) LP shall not leave his Locomotive/self-propelled vehicle either at a Station or on a Running line.
2) If there is absolute necessity, LP may leave the Loco after placing the ALP in charge of the Locomotive.
3) If it is manned by LP alone, he may leave it in emergency, provided he has
   i) locked the cabs;
   ii) kept the vehicle in low Gear with the Ignition Switch in 'Off' position;
   iii) Screwed down and locked the Hand Brake.

DRIVING AN ELECTRIC ENGINE OR ELECTRIC TRAIN

1) Except exempted by GR/SR, LP shall be in the Leading Driving Compartment in case of Electric Trains (Whether in Motion or Standing).
2) While shunting from one line to another or in Siding, LP need not change the ends.
3) While shunting on to another Train or upto Buffer Stop, LP shall always travel by Leading Cab & drive forward.
4) If the Driving Apparatus in Leading Cab failed in EMU:
   i) Guard shall travel on the leading cab;
   ii) He shall be responsible for
      a) Conveying necessary Signals to LP;
      b) Sounding Horn / Whistle;
      c) Applying Brakes in emergency; and
      d) Stopping the Train at Signals, Stations and short of Obstructions.
   iii) Train shall be driven from the 'nearest Driving Compartment' by the Motorman.
   iv) Speed shall not exceed 30 Kmph.
   v) If the Brake Equipment is inoperative from the leading Cab, Speed shall not exceed 15 Kmph.

5) If the leading Driving Cab failed in Electric Loco:
   i) Loco shall be driven by ALP from the Rear Cab, if he is duly qualified.
   ii) LP shall
      a) remain in the Leading Cab and
      b) be responsible for the correct operation of Train.
   iii) Speed shall not exceed 40 Kmph.
   iv) If the Brake Equipment is inoperative from the Leading Cab, Speed shall not exceed 15 Kmph.

Duties of LP - Fouling Mark

1) When the LP finds that his Engine has not cleared the Fouling Mark, he shall
   i) Switch on Flasher Light.
   ii) Call the attention of the SM by giving THREE Long Whistles (— — —).
   iii) Send ALP to advise the SM.
   iv) Exhibit Stop Hand Signal to prevent any movement on the fouled line.
   v) Give frequent Short Whistles to warn the LP of approaching Train.
2) When a Goods Train is stopped at a Station, LP shall draw his Train upto
   i) Starter [or]
   ii) Fouling Mark [or]
   iii) 'STOP' Board

   so as to enable the Last Vehicle stands clear of Rear Fouling Mark.

Duties of LP if Goods Home is taken 'off' for a Passenger carrying Train:

1) LP shall
   i) Stop short of the Goods Home signal and
   ii) Inform the Guard.
   iii) Send ALP to the Station to inform the SM.
2) SM shall
   i) Put back the Goods Home signal to 'ON'
   ii) Issue a Memo to LP (countersigned by the Guard) to authorise LP to enter into Station observing the "OFF" aspect of the Passenger Home signal.
   iii) Take 'OFF' the Passenger Home signal.
3) Guard shall send a Special Report to DOM along with CTR.
4) A Goods Train may be received either on a Coaching line or a Goods line according to Operational Convenience.

Duties of LP while passing Permanent Way Gangs / Manned LCs

1) LP/ALP shall see whether any Danger Hand signal is being exhibited by Gangmen or Gatemen.
2) If any Danger Signal is being exhibited by them, LP shall take necessary action.

Duties of LP before starting a Train

1) Before commencing the Journey, LP shall ensure that
   i) Engine is in proper working order.
   ii) Coupling between the Engine and the Train is properly secured.
   iii) Head light and Marker lights are in good working order.
2) Before starting the Train, LP shall satisfy himself that
   i) ATP has been issued.
   ii) Correct Fixed Signal(s) taken 'OFF'.
   iii) Hand Signals are given, where required.
   iv) Line before him is clear of Visible Obstructions.
   v) Guard has given 'Starting Signal'.
3) LP shall also
   i) Examine the Notices/Documents issued for his guidance.
   ii) Inform the Guard through walkie-talkie about Train Documents handed over to him. (Guard shall note down the same in the CTR).
4) No Passenger or Mixed Train shall be despatched from a Station before the Advertised Time.

Attracting the Attention OF LP

1) Guard shall attract the attention of the LP
   i) If any Danger is expected to the Train [or]
   ii) If it necessary to stop the Train.
2) Guard shall attract the attention of the LP by
   i) Informing through Walkie-Talkie [or]
   ii) Reducing the Vacuum/Air Pressure [or]
   iii) Applying Hand Brake sharply and releasing it suddenly [or]
   iv) Reversing the Side Lamps to show Red towards the Engine.
3) While reducing Vacuum / Air Pressure:
   i) Guard shall reduce the
      a) Vacuum by 12 to 18 CMs.
      b) Air Pressure by 0.5 to 0.8 Kg/Cm^2.
   ii) Whenever LP notices reduction of Vacuum / Air Pressure, he shall bring the Train to a stop on suitable spot if possible.
   iii) LP shall also give • • — and repeat it until the Guard shows the Red Flag/Red Light.

Duties of LP when he is unable to control his Train

1) LP shall give • • • whistles, if his Train is running out of control.
2) Guard shall apply the Hand Brake of BV.
3) If Hand brakes are to be released, LP shall give — • whistle.
4) Guard shall not apply Hand Brake to steady the Train unless LP gives • • • whistles.

WHISTLE CODES

S.No	Whistle code	Indication
1	•	(a) Before starting: i) Indication to LP of assisting/banking Engine that LP of leading Engine is ready to start. ii) Acknowledgement by the LP of assisting/banking Engine to leading Engine. (b) On run: i) Assistance of other Engine not required. ii) Acknowledgment of LP of other Engine that assistance stopped. (c) Engine ready to leave loco yard or ready to go to loco yard.
2	• •	i) Call for Guard's signal. ii) Signals not exchanged by Guard. iii) Signals not exchanged by Station Staff.
3	• • •	i) Guard to apply brakes. ii) Train is out of control, Guard to assist.
4	— •	i) Guard to release brakes. ii) Before starting Engine/Train from Station/Mid-section. iii) Main line clear after backing into Siding.
5	• • • •	i) Train cannot proceed on account of accident, failure, obstruction or other exceptional cause. ii) Protect train in rear.
6	• — •	i) Token not received. ii) Token missed. iii) With wrong "ATP". iv) Passing Stop Signal at 'On' on proper authority.
7	• • —	i) Alarm chain pulled. ii) Insufficient vacuum/air-pressure in Engine. iii) Guard applies vacuum/air brake.
8	— • •	i) Signal arm lowered but light extinguished. ii) Signal arm improperly/insufficiently taken 'Off'. iii) Defective signal.
9	——— (Long)	i) Before starting: Vacuum recreated on Ghat section, remove Sprags. ii) Passing Automatic Stop signal at 'ON'. iii) Passing IBSS at 'ON'. iv) On run: Acknowledgement of Guard's signal.

S.No	Whistle code	Indication
10	▬▬▬▬ (Continuous)	i) Approaching Tunnel / area of restricted visibility / curves / cutting / site of accident. ii) Recall Railway Servant protecting Train in rear. iii) Material train ready to leave. iv) Running through a Station. v) Approaching a Stop signal at 'ON'. vi) View of the Signal is obstructed due to Fog, Storm etc. vii) Detained at a Stop signal.
11	▬ ▬ ● ●	Calling Guard to come to Engine.
12	▬ ▬ ▬	Fouling mark not cleared.
13	▬ ● ▬ ●	i) Train Parting. ii) Train arriving incomplete.
14	▬ ▬	Raise pantograph. To be acknowledged by the other Engine.
15	▬ ● ▬	Lower pantograph. To be acknowledged by the other Engine.
16	●●●●●●●●● (Frequently)	i) Apprehension of danger. ii) Danger signal to the LP of an approaching train whose path is fouled or obstructed for any reason. iii) TIC on a Single line. iv) Single line working is introduced on D/L. v) Moving against DOT in Automatic Block signaling territory.
17	▬ ▬ ▬ ▬ (Intermittently)	Approaching a level crossing.

BELL CODES

The following Bell signals are prescribed for use between the Motormen/LP and Guards on suburban Electrified sections:

S.No	Bell Code	Indication	Acknowledgement
1	o	Stop train	o
2	o o	Start train	o o
3	o o o	Guard required by the LP	o o o
4	o o o o	Protect Train in rear	o o o o
5	o **pause** o	Zone of Speed Restriction over. Resume prescribed Speed.	o **pause** o
6	oo **pause** oo	Passing Automatic Stop Signal at 'ON'.	oo **pause** oo
7	o o o pause o o o	Motorman not to exceed prescribed speed	o o o pause o o o

o = **One Ring.**

NEUTRAL SECTION:

1) It is a Short Section of Insulated and Dead Over Head Equipment.
2) It separates the areas fed by adjacent Sub-Stations or Feeding Posts.
   i.e It separates Two Phases of Electricity.
3) Warning Boards shall be fixed at a distance of 500 metres and 250 metres in rear of the Neutral Section.
4) Similarly, Boards shall be provided to indicate the Location at which Power shall be switched 'off' and 'on'.
5) ALPs shall call out these Boards and LPs shall repeat the same.
6) LP shall negotiate the Neutral Section by Switching 'off' & again switching 'on' Power.
7) To avoid stalling, LP shall approach the Neutral Section at Speed of not less than 30 Kmph.

TEMPORARY NEUTRAL SECTION:

1) Temporary Neutral Section may be provided due to
   i) Speed Restrictions of less than 30 Kmph being imposed within 'one KM' on either side of the Neutral Section.
   ii) Emergency Feeding Arranged due to Sub-Station Failures, etc.
2) If Temporary Neutral Section is continued for more than 24 hours,
   i) Warning boards shall be fixed at a distance of 500 metres and 250 metres respectively in rear of the Temporary Neutral Section.
   ii) Boards shall be provided to indicate the Location at which Power shall be switched 'off' and 'on'
3) All LPs shall be issued Caution Orders at Notice station/Station in Rear indicating the Location at which Pantographs are to be lowered and raised.
4) LPs shall negotiate the Temporary Neutral Section by
   i) Lowering and Raising the Pantographs.
   ii) Maintaining a Speed of Not Less Than 30 Kmph to avoid stalling.

I. Programmed Speed Restrictions of less than 30 Kmph at Neutral Sections:

1) If a Speed Restriction of less than 30 Kmph is to be imposed within one KM on either side of the Neutral Section:
   i) DEN shall advise DEE/TRD for energizing the Neutral Section temporarily.
   ii) OHE official shall
      a) energize the Neutral Section;
      b) provide Temporary Neutral Section; and
      c) advice SM, TPC and Controller.

2) SMs at Notice Station/Stations at either end shall issue Caution Orders to LPs of all Electric trains/EMU.
3) Caution Order informs the LP
   i) to pass the Neutral Section on Power and
   ii) to lower and raise pantographs at the Temporary Neutral Section.

II. Emergency Speed Restrictions of less than 30 Kmph at Neutral Sections:

1) If an Emergency Speed Restrictions of less than 30 Kmph is to be imposed within one KM on either side of the Neutral Section:
   i) Engineering staff shall immediately arrange to protect the affected Section on either side.
   ii) Any approaching Train shall be stopped short of Neutral Section.
2) JE/P.Way shall also inform the nearest SM regarding imposition of Speed Restriction.
3) SM shall advise the other end SM, Controller and TPC.
4) Controller and SM shall not permit the entry of any Electric Train/EMU.
5) TPC shall make immediate arrangements for
   i) energizing the Neutral Section and
   ii) provision of a Temporary Neutral Section.
6) OHE official shall issue a C.O to the LP of the Train stopped short of the Neutral Section.
7) SMs at Notice station/Stations at either end shall issue Caution Orders to LPs of all Electric Trains /EMU.
8) Caution Order informs the LP
   i) to pass Neutral Section on Power and
   ii) to lower and raise Pantographs at Temporary Neutral Section.

POWER BLOCK:

1) Power Block means "Blocking of a Section of line only to Electric Traffic.
2) It is usually accomplished by switching off Power to the Section concerned.
3) There are four kinds of Power Block:
   i) Programmed Power Block
   ii) Emergency Power Block
   iii) Emergency Power Block for Electric Loco LPs
   iv) Local Power Block.

I. PROGRAMMED POWER BLOCK:

1) A weekly Program of Power Blocks for OHE maintenance shall be given by the DEE/TRD in consultation with the DOM.
2) DEE/TRD shall circulate this Program to all concerned.
3) OHE official shall request TPC for Power Block according to this Program furnishing necessary details like.
   i) Location
   ii) Nature of Work
   iii) Duration
4) TPC shall request Controller for programmed Power Block in Form **ETR 1**.
5) Controller shall ensure that
   i) There is no Train in the Section concerned and
   ii) Advise SMs at either end under exchange of **PN**.
6) SMs shall immediately take protective measures as given in SWR.
7) Controller shall then inform the TPC in Form **ETR 1** that Power Block may be imposed.
8) TPC shall then
   i) Switch off Power and
   ii) Grant Power Block to OHE official in Form **ETR 2**.
9) During the period of Power Block, Trains hauled by
   i) **Diesel** Locos may be permitted to enter the Section with a **Caution Order**.
   ii) **Electric** Locos shall not be allowed.
10) After completion of work, OHE official inform the TPC about Cancellation of the Power Block in Form **ETR 2**.
11) TPC shall then
   i) Energize the Section and
   ii) Inform Controller in Form **ETR 1**.
12) Controller shall inform SMs concerned with exchange of **PN**.

<table>
<tr><td rowspan="3">TPC</td><td>1 →</td><td rowspan="3">ETR 1</td><td>1 →</td><td rowspan="3">Controller</td></tr>
<tr><td>← 2</td><td>← 2</td></tr>
<tr><td>5 →</td><td>5 →</td></tr>
<tr><td rowspan="2">TPC</td><td>3 →</td><td rowspan="2">ETR 2</td><td>3 →</td><td rowspan="2">OHE Official</td></tr>
<tr><td>← 4</td><td>← 4</td></tr>
</table>

II. EMERGENCY POWER BLOCK:

1) If TPC receives Information about any Unusual Occurrence on OHE or Accident, he shall switch off Power to the affected Section, if required.
2) TPC shall advise Controller.
3) Controller shall advise SMs concerned with exchange of **PN**.
4) SMs shall take preventive measures as mentioned in SWR.
5) OHE official (not below the rank of Skilled Artisan) shall
   i) First inspect the site and
   ii) Then request TPC for an Emergency Power Block.
6) If the TPC has already switched "off" Power, Emergency Power Block shall be granted immediately.
7) If not, Emergency Power Block shall be granted only after following the 'Programmed Power Block Procedure' except that
   - TPC shall not wait for the clearance of all Trains from the affected Section.
8) During Emergency Power Block, Non-Electric Trains shall not be allowed without the permission of the TPC.
9) Procedure for cancelling of Emergency PB is same as that for cancelling of Programmed PB.

III. EMERGENCY POWER BLOCK FOR ELECTRIC LOCO LPS:

1) LP shall obtain Emergency Power Block from TPC for inspecting and securing Roof Equipment including Pantograph.
2) TPC shall
   i) Switch off Power supply and
   ii) Inform Controller in Form **ETR 1** duly exchanging **PN**.
3) Controller shall inform the SMs concerned to take protective measures as per SWR.
4) TPC shall grant Emergency Power Block to LP under exchange of **PN**.
5) On completion of work, LP shall issue a Message to TPC supported by a **PN**.
6) TPC shall then
   i) Energize the Section;
   ii) Inform the LP and
   iii) Inform the Controller in Form **ETR 1**.
7) Controller shall inform the SMs concerned with exchange of **PN**.

IV. LOCAL POWER BLOCK:

1) Local Power Block means 'manually isolating Power Supply for Sidings' by OHE Official, when required.
2) OHE Official shall
   i) Inform TPC &
   ii) Advise SM in Form **ETR 4**.
3) SM shall take necessary precautions as given in SWR.
4) On completion of work, OHE official shall
   i) Re-energize the line;
   ii) Advise SM in Form **ETR 4**; also
   iii) Inform TPC.

PERMIT TO WORK (ETR 3):

1) No work shall be done by any Railway Staff within **TWO** metres from the live parts of OHE.
2) If any work is to be done within **TWO** metres from the live parts of OHE, concerned Department Official shall request TRD official to issue **ETR 3**.
3) **ETR 3** is called "Permit to Work".
4) OHE official shall
   i) Obtain Power Block from TPC (on ETR 2) and
   ii) Issue Form **ETR 3** to the Person in-charge of the work.
5) OHE official shall be present at the work-spot throughout.
6) On completion of work, person in-charge of work shall
   i) Cancel **ETR 3** and
   ii) Return it to the OHE official.
7) OHE official shall advise TPC for cancellation of Power Block after ensuring that ETR 3 has been returned.

TOWER WAGON:

1) For all purposes, Tower Wagon shall be treated as Light Engine.
2) It is used for
   i) Maintenance of OHE.
   ii) Attending Failure on OHE.
3) Preference shall be given for Tower Wagon Movement if
   i) It is proceeding to attend Failures / Breakdowns;
   ii) Official-in-charge gives it so in writing.
4) Maximum Speed:
   i) 4 Wheeler Tower Wagon - 40 Kmph.
   ii) 8 Wheeler BG Tower Wagon - 100 Kmph.

AUTOMATIC BLOCK SYSTEM

FIXED SIGNALS

1) In Automatic Territory, only Multiple Aspect Colour Light Signals are available.
2) It shall have any one of three or four aspects as follows:
    - 'Stop', 'Caution' and 'Proceed' aspects – in 3 Aspect Signals.
    - 'Stop', 'Caution', 'Attention' and 'Proceed' – in 4 Aspect Signals.
3) It may be anyone of following types:
    i) Automatic Stop Signal.
    ii) Semi-Automatic Stop Signal.
    iii) Manual Stop Signal.

I. AUTOMATIC STOP SIGNAL:

1) It works automatically and it is not operated manually.
2) It is controlled automatically by passage of Train into / through / out of Block Signalling Section.
3) It is identified by 'A' Marker plate (Letter 'A' in Black on a White Disc).
4) Normal aspect of the Signal is
    i) 'Proceed' - if next Signal is also an Automatic Stop Signal.
    ii) 'Caution' - if next Signal is Manual Stop Signal.
5) It automatically assumes
    i) 'On' – as soon as the Train passes it.
    ii) 'Off- when the Train passes next Stop Signal + Adequate Distance.
6) It shall be provided
    i) Normally, in between Stations.
    ii) At Stations, where there are no Points.
7) LP may pass this Signal at 'ON' without any authority duly following the prescribed procedure.

II. SEMI-AUTOMATIC STOP SIGNAL:

1) It is capable of being operated as
    i) Automatic Stop Signal.
    ii) Manual Stop Signal.
2) It is identified by 'A' Marker light.
3) It is of 'Three' types:
    i) Semi-Automatic Stop Signals protecting Points.
    ii) Semi-Automatic Gate Stop Signal (protecting LC Gates).
    iii) Modified Semi-Automatic Signal.

i)SEMI AUTOMATIC STOP SIGNAL PROTECTING POINTS:

1) It is provided in Double line Section at a Station on
   i) Reception side.
   ii) Main line of Despatch side.
2) "King Knob" is provided to change the mode of the Signal into Automatic / Manual.
3) If the King Knob is in 'Reverse' position:
   i) It works as an Automatic stop signal.
   ii) 'A' Marker light is lit.
   iii) Points are set for Main line. It can not be altered.
   iv) Rules applicable for Automatic Stop Signal shall be followed.
4) If the King Knob is in 'Normal' position:
   i) It works as a Manual Stop Signal.
   ii) 'A' Marker light is extinguished.
   iii) Points can be set for Main line or Loop line.
   iv) Rules applicable for Manual Stop Signal shall be followed.

ii)SEMI-AUTOMATIC GATE STOP SIGNAL:

1) It protects LC Gate.
2) It is controlled by
   i) Position of LC.
   ii) Condition of Block Signalling Section ahead.
3) It is identified by 'A' Marker light and 'G' Marker plate.
4) It may have 3 positions as follows:
   i) 'A' Marker is lit & Signal is at 'Off':
      a) Gate is closed.
      b) 'Relevant Signalling Section + Adequate Distance' is clear.
      c) LP shall follow the Rules applicable for Automatic Stop Signal.
   ii) 'A' Marker is lit & Signal is at 'On':
      a) Gate is closed.
      b) 'Relevant Signalling Section + Adequate Distance' is occupied / failed.
      c) LP shall follow the Rules applicable for passing Automatic Stop Signal at 'On'.
   iii) 'A' Marker is not lit & Signal is at 'On':
      a) Gate is in open condition.
      b) LP shall follow the Rules applicable for passing Gate Stop Signal with 'G' Marker at 'On'.
      c) After passing LC Gate, LP shall follow the Rules applicable for passing Automatic Stop Signal at 'On'.

iii)MODIFIED SEMI-AUTOMATIC STOP SIGNAL:

1) One of the Automatic stop signals between two stations in each direction may be converted as "**Modified Semi-Automatic Stop Signal (MSASS)**", under Special Instructions.
2) MSASS shall be interlocked with
   i) The Signal of the Station ahead and
   ii) Advanced starter of the Station in rear.
3) It shall be controlled by the SM of the Station in advance.
4) It has Two Modes:
   i) Normal Mode / Automatic Mode.
   ii) Modified Semi-Automatic Mode.
5) Mode Indications shall be available at both the end Stations.
6) In normal conditions,
   i) Midsection MSASS shall work as a normal Automatic Stop Signal.
   ii) 'A' Marker light shall be lit.
7) In abnormal conditions like Thick / Foggy Weather impairing visibility,
   i) SM in advance shall extinguish the 'A' marker in MSASS, as per Special Instructions.
   ii) Immediately, 'A' marker light shall get extinguished in
      a) Advanced Starter of the Station in rear and
      b) Home Signal of the Station in advance.
   iii) Advanced Starter at Station in rear shall assume 'Off' aspect/be taken 'Off' only if the line is clear up to the Midsection MSASS + Adequate Distance.
   iv) Midsection MSASS shall assume 'Off' aspect/be taken 'Off' only if the line is clear up to Home Signal + Adequate Distance.
   v) Adequate Distance mentioned above shall be NLT
      a) 120 m in Automatic Double line Sections.
      b) 180 m in Automatic Single line Sections.

III. **MANUAL STOP SIGNAL:**

1) It is operated manually.
2) No distinguishing Marker plate or Marker light shall be provided.
3) Normal Aspect shall be 'Stop'.
4) It shall assume 'Off' aspect only when
   i) SM operates it and
   ii) 'Relevant Signaling Section + Adequate Distance' is clear.
5) It shall assume 'ON' aspect as soon as the Train passes it.
6) LP shall not pass this Signal at 'ON' without prescribed authority.

Salient features of Automatic Block System – Double lines
(Essentials in simple terms)

On the Automatic Block System - Double lines,

1) Line between Two adjacent Block Stations shall be provided with Continuous Track Circuiting or Axle Counters.
2) If required, it may be divided into a series of Automatic Block Signalling Sections.
3) Automatic Block Signalling Section is the portion of the running line between two consecutive Stop signals.
4) Entry into such Signalling Section is governed by a Stop Signal.
5) Track Circuits or Axle Counters shall control the Stop Signal in such a way that the Signal shall automatically assume
   i) "On" aspect, as soon as it is passed by the Train.
   ii) "Off" aspect, only if the line is clear upto the next Stop Signal in advance + an Adequate distance beyond it.
6) The Adequate distance
   i) shall be NLT 120 Metres.
   ii) may be reduced by CRS.

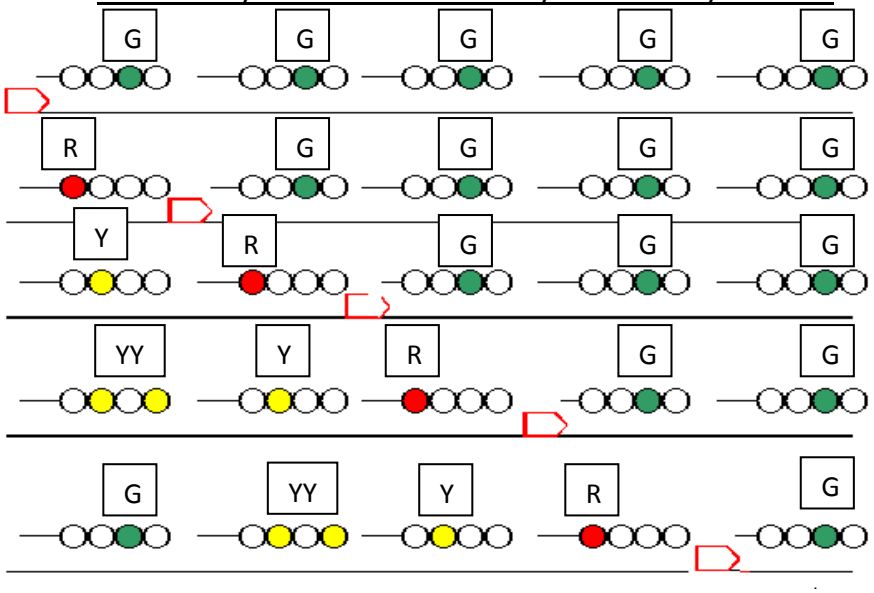
Salient features of Automatic Block System – Single line
(Essentials in simple terms)

On the Automatic Block System - Single line,

1) Line between Two adjacent Block Stations shall be provided with Continuous Track Circuiting or Axle Counters.
2) If required, it may be divided into a series of Automatic Block Signalling Sections.
3) Train shall be started from one Block Station to another only after establishing the Direction Of Traffic (DOT).
4) DOT shall be established only after obtaining Line Clear from the Block Station in advance.
5) Line Clear shall be given by a Station only if the line is clear upto its FSS + an Adequate distance beyond it.
6) After establishing DOT:
    i) All Stop Signals against the DOT shall be at "On".
    ii) Movement of Trains into each Automatic Block Signalling Section shall be controlled by the concerned Automatic/Semi Automatic/Manual Stop Signal.
    iii) An Automatic Stop signal shall automatically assume
        a) "On" aspect, as soon as it is passed by the Train.
        b) "Off" aspect, only if the line is clear upto
            - next Stop Signal, if it is Automatic Stop Signal.
            - next Stop Signal + an Adequate distance, if it is Manual Stop Signal.
7) The Adequate distance
    - shall be NLT 180 Metres.
    - may be reduced by CRS.

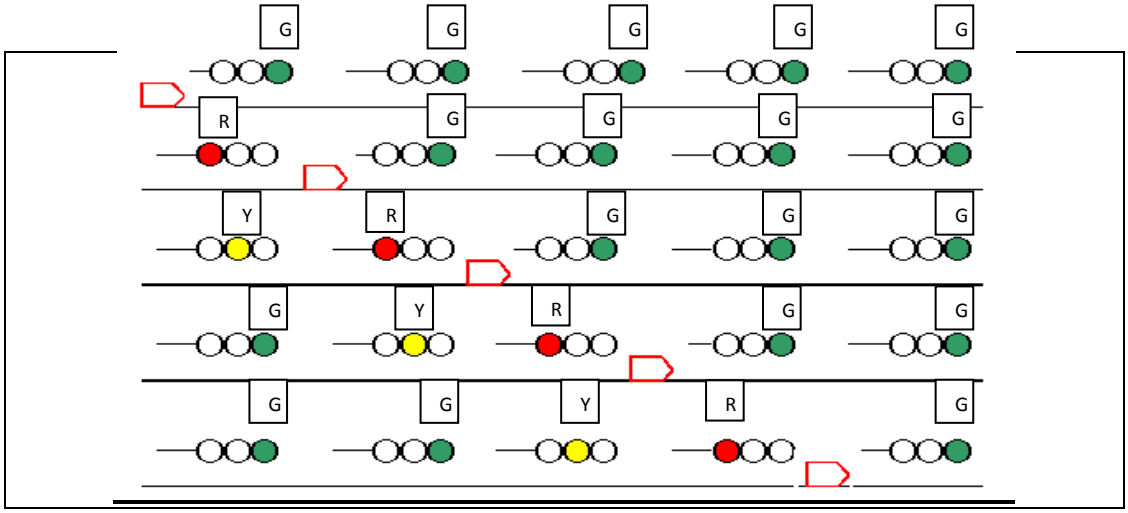
SEQUENCE OF ASPECTS BEHIND THE TRAIN IN 4 ASPECT AUTOMATIC SIGNALLING TERRITORIES

G – Green, YY – Double Yellow, Y – Yellow, R – Red



SEQUENCE OF ASPECTS BEHIND THE TRAIN IN 3 ASPECT AUTOMATIC SIGNALLING TERRITORIES

G – Green, Y – Yellow, R – Red



I. Duties of LP when an Automatic Stop Signal is at 'ON':

1) 'ON' position of an Automatic Stop Signal may be due to following reasons in the Automatic Signalling Section ahead:
   i) Presence of a Train / Obstruction (Vehicles) [or]
   ii) Any other cause (like Rail Fracture/Weld Failure, Track Circuit Failure, etc).
2) Automatic Stop Signal shall be treated to be at 'On' when the Signal
   i) Shows 'Stop' Aspect.
   ii) Shows No Light.
   iii) Shows more than One Aspect.
   iv) Flickers / Bobs.
3) Motorman/LP shall
   i) Stop the Train in rear of the Signal.
   ii) Ensure 'A' Marker plate or light is available.
   iii) Wait for ONE minute by DAY / TWO minutes by NIGHT.
   iv) Give TWO pause TWO rings in case of EMU.
   v) Exchange Hand Signal with Guard & give a long whistle in case of AC/ Diesel Loco hauled Trains.
4) When the Train is stopped, Guard shall
   i) Show Stop Hand Signal to rear.
   ii) Ensure that the Tail Board/Tail lamp is intact.
   iii) Acknowledge TWO pause TWO rings in case of EMU.
   iv) Exchange Hand Signal with LP in case of AC/ Diesel Loco hauled Trains.
5) If the Signal is Flickering / Bobbing, LP shall obey the Aspect which remains steady for 60 seconds.
6) LP / Motorman shall
   i) Pass the Signal at a Cautious Speed of
      a) 15 Kmph - if view ahead is clear.
      b) Walking Speed + Piloting by ALP/Guard - if view ahead is not clear due to Curve/Fog/Rain/Dust Storm, etc.
   ii) Maintain such Speed till he reaches the foot of the next Stop Signal.
   iii) Maintain a distance from Preceding Train / Obstruction as follows:
      a) 75m / 1 OHE Span - if it is EMU Train.
      b) 150m / 2 OHE Span - if it is A/c / Diesel Loco hauled Train.
      c) Reasonable distance - in Thick / Foggy weather so as to observe Flashing Tail lamp of Train ahead.
7) If LP / Motorman exceeds the prescribed Speed, Guard shall
   i) Give THREE pause THREE rings - in case of EMU.
   ii) Try to attract the attention of LP as in GR/SR 4.45 - for all Trains.
8) LP / Motorman shall report at next stopping Station.

II. Duties of LP when a Semi- Automatic Gate Stop Signal is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) If 'A' Marker light is lit:
   LP / Motorman shall follow the Rules for passing Automatic Stop Signals at 'On'.
3) If 'A' Marker light is not lit:
   i) LP / Motorman shall comply with the Rules for passing GSS with 'G' Marker at 'On'.
   ii) After passing the Signal & LC Gate, LP / Motorman shall follow the Rules for passing Automatic Stop Signals at 'On'.

III. Duties of LP when a Semi- Automatic Stop Signal on Reception side is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) If 'A' Marker light is lit:
   LP / Motorman shall follow the Rules for passing Automatic Stop Signals at 'On'.
3) If 'A' Marker light is not lit:
   i) LP / Motorman shall pass the Signal only on getting anyone of the prescribed Authority as follows:
      a) 'Off' Aspect of Calling-on Signal.
      b) "Message + PN" through SPT.
      c) T/369(3b) at the foot of the Signal.
   ii) Speed & precautions as prescribed for passing Automatic Stop Signals shall be followed.
   iii) Issuing of T/369(1) is prohibited.

IV. Duties of LP when a Semi- Automatic Stop Signal on Despatch side is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) If 'A' Marker light is lit:
   LP / Motorman shall follow the Rules for passing Automatic Stop Signals at 'On'.
3) If 'A' Marker light is not lit:
   i) LP / Motorman shall pass the Signal only on getting anyone of the prescribed Authority as follows:
      a) 'Off' Aspect of Calling-on Signal.
      b) T/369(3b) + PHS at the foot of the Signal.
   ii) Speed & precautions as prescribed for passing Automatic Stop Signals shall be followed.

V. Duties of LP when a Modified Semi- Automatic Stop Signal is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) If LP / Motorman can contact SM in advance:
   i) LP / Motorman can contact SM in advance through 'Approved Means of Communication'.
   ii) SM shall
      a) Fulfill the conditions.
      b) Authorize the LP to pass the Signal at 'On'.
   iii) Special Instructions shall be issued for the Procedure, Means of Communication, etc.
3) If LP / Motorman is unable contact SM in advance:
   LP / Motorman shall
   i) Wait for 5 minutes.
   ii) Proceed cautiously & be prepared to stop short of any obstruction.
   iii) Not exceed 10 Kmph Speed upto the foot of next Stop Signal.
   iv) Report at the next Station.

VI. Duties of LP when a Manual Stop Signal on Reception side is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) LP / Motorman shall pass the Signal only on getting anyone of the prescribed Authority as follows:
   i) 'Off' Aspect of Calling-on Signal.
   ii) "Message + PN" through SPT.
   iii) T/369(3b) at the foot of the Signal.
3) Speed & precautions as prescribed for passing Automatic Stop Signals shall be followed.
4) Issuing of T/369(1) is prohibited.

VII. Duties of LP when a Manual Stop Signal on Despatch side is at 'ON':

1) LP / Motorman shall stop in rear of the Signal.
2) LP / Motorman shall pass the Signal only on getting anyone of the prescribed Authority as follows:
   i) 'Off' Aspect of Calling-on Signal.
   ii) T/369(3b) + PHS at the foot of the Signal.
3) Speed & precautions as prescribed for passing Automatic Stop Signals shall be followed.

Minimum Equipments of Signals – S/L:

I. Manual stop signals:
   1) Home
   2) Starter

II. An Automatic stop signal in rear of the Home signal.

III. Under Approved Special Instructions, Automatic Stop Signal may be dispensed with.

IV. In addition to above, such other Fixed Signals as may be necessary may be provided.

Conditions for taking 'off' Signals & Establishing DOT – S/L:

1) DOT can be established only if the line is clear upto
   - Home Signal (FSS) of Station in advance + Adequate Distance of NLT 180 metres.
2) LSS can be taken 'OFF' only if
   i) DOT is established and
   ii) Line is clear up to
      - Next Automatic Stop Signal/Manual Stop Signal + 180 m
3) Home Signal can be taken 'OFF' only if the line is clear upto
   - Starter + 120 m.

AUTHORITY TO PROCEED UNDER AUTOMATIC BLOCK SYSTEM

I	SINGLE LINE	
1	Normal Working	'Off' Aspect of LSS
2	LSS alone fails (DOT established)	Prescribed Memo + PN
3	Panel Failed	PLCT + Prescribed Memo
4	Relief Train into **obstructed Block Section** (or) Material/Departmental Train during **Line Block**	T/A.602
5	Relief Engine to clear Rear Portion during **Train Parting / Dividing** (if Front portion arrives with T/609)	Stub Portion of T/609
6	**Total Interruption of Communication**	
a)	• For opening Communication	T/B.602
b)	• For Subsequent Trains	CLCT (T/G.602-Up, T/H.602-Down)

II	DOUBLE LINE	
1	Normal Working	Off' Aspect of Semi Automatic/ Manual Stop Signal
2	When Semi Automatic / Manual Stop Signal alone fails	'Off' aspect of Calling-on Signal (or) T/369(3b) + PHS
3	**Prolonged** failure of Signals but Communication available	T/D.912
4	**Both** Signals & Communication fail **(T.I.C)**	T/B.912
5	Relief Train into **obstructed Block Section** (or) Material/Departmental Train during **Line Block**	T/C.912*
6	**Single Line Working on Double line**	
a)	For each 1st Train in Right Direction	PLCT
b)	For Subsequent Trains in Right Direction	Signals
c)	For all Trains in Wrong Direction	PLCT*

*** Note:**

Alongwith ATP, T/A.912 shall also be issued.

FAILURE OF ALL SIGNALS WHEN COMMUNICATIONS ARE AVAILABLE

1) Officials of Signalling Department shall inform all concerned.
2) Trains shall be worked between the Stations equipped with either Manual or Semi-Automatic Stop Signals.
3) These Stations shall be specified in SWR.
4) Only one Train shall be allowed between these Stations.
5) SM shall obtain Line Clear from SM in advance through the Approved means of communications.
6) SM in advance shall not give Line Clear unless
   i) Line is clear for atleast 180 m beyond Starter and
   ii) Points are correctly set and locked for the Line of Reception.
7) SM shall issue T/D 912 to the Loco Pilot / Motor Man of each Train with a copy to the Guard of the Train.
8) T/D 912 serves as
   i) Authority to Proceed.
   ii) Authority to Pass Departure Stop Signal, Intervening Automatic/Semi-Automatic Stop Signals.
   iii) Caution Order restricting the Speed to 25Kmph.
9) SM shall also furnish the following particulars in the Form T/D 912:
   i) Distinguishing Number of Signals to be passed at 'ON'.
   ii) The Signal at which the LP / Motorman to Stop at the Station in advance.
   iii) Private Number obtained from SM in advance in words & in figures.
10) LP / Motorman shall observe the Proceed Hand Signal before passing Departure Signal as well as Level Crossing Gates.
11) LP / Motorman shall stop the Train at the Signal mentioned in the Form.
12) Train shall be piloted into the Station on T/369(3b).
13) Clearance of Section by each Train shall be intimated to the Station in rear under a Private Number.
14) Controller shall be advised of all Train movements.
15) As soon as Signals are restored, normal working of Trains may be resumed after exchanging of 'Messages with Private Number' as an assurance that the Block Section is clear.
16) Traffic Inspector shall scrutinize all records and submit a Report to DRM/T within 7 days of the resumption of normal working.

FAILURE OF ALL SIGNALS WHEN COMMUNICATIONS ARE NOT AVAILABLE

1) During failure of all the Signals and Approved Means of Communications, Trains shall be worked between the Stations equipped with either Manual or Semi-Automatic Stop Signals.
2) These Stations shall be specified in SWR.
3) Locopilot/Motorman and Guard of the Train shall be advised of the circumstances by the SM.
4) Authority to Proceed without Line Clear in Form T/B 912 shall be issued to the Locopilot duly obtaining the signature of the Locopilot & Guard.
5) T/B 912 contains:
   i) Authority to Proceed without Line Clear.
   ii) Authority to Pass Manual/Semi-Automatic/Automatic Stop Signals in 'ON' position.
   iii) Caution Order for observing Speed Restriction.
6) SM shall also furnish the following particulars in the Form T/B 912:
   i) Information about the Line on which to Proceed (Up/Down).
   ii) Particulars of the Last Train with the Time of departure.
   iii) Reason for issuing this Authority.
7) The Locopilot / Motorman shall
   i) Observe PHS before passing Departure Stop Signal.
   ii) Observe Hand Signals before passing LC Gates.
8) The speed of the Train shall not exceed
   i) 25 Kmph over Straight with clear view.
   ii) 10 Kmph when view ahead is not clear.
   iii) 15 Kmph over Facing Points.
9) Where view ahead is not clear, if required, the ALP / Guard shall pilot the Train on foot and the Locopilot shall use the Engine Whistle freely.
10) The Locopilot / Motorman shall stop outside the FSS and give one Long Whistle.
11) SM shall arrange to pilot the Train into the Station on T/369(3b).
12) Subsequent Trains shall be started on T/B 912 with a clear interval of 15 minutes between TWO Trains.
13) LPs of all Trains shall handover T/B 912 to the SM of the Nominated Station at the end of the Section.
14) Trains shall be worked under this procedure till either Signals or Communications are restored.
15) If the Signals are restored, normal working of Trains shall be resumed.

16)If the Signals are not restored but Communication is restored, Trains shall be worked by obtaining Line Clear.

17)T.I shall submit a Report along with T/B 912 to DRM/T within 7 days of the resumption of normal working.

SINGLE LINE WORKING ON DOUBLE LINE IN AUTOMATIC BLOCK SYSTEM

1) Single line working on Double line shall be introduced by a SM
   i) On receipt of reliable information that the other line is free and
   ii) Also in consultation with Controller and SM at the other end.
2) Line Clear shall be obtained / given through Approved Electrical Communication Instruments.
3) Line Clear shall not be asked or granted unless the Two SMs have assured under exchange of Private Numbers that the Section is clear.
4) Trains in the Right Direction:
   i) For each 1st Train in the Right direction, the following documents shall be issued after obtaining Line Clear:
      a) Line Clear Ticket [T/C 1425 or T/D 1425].
      b) T/369(3b) + PHS.
      c) Caution Order restricting the Speed to 25 Kmph.
   ii) On arrival of the 1st Train, the subsequent Trains may be allowed to follow each other on Signals. Transaction for subsequent Trains shall be done under the exchange of Private Numbers.
   iii) Train shall be received on Signals.
5) Trains in the Wrong Direction:
   i) Line clear shall be obtained for each Train.
   ii) For granting Line Clear, the Line shall be clear for atleast 180m beyond the LSS of the same Line or FSS of the adjacent Line whichever comes earlier.
   iii) Only one Train shall be in the Section at a time.
   iv) The following documents shall be issued to the Locopilot / Motorman of each Train:
      a) Line Clear Ticket [T/C 1425 or T/D 1425].
      b) T/511 for starting from Non-Signalled line. Train shall be piloted by a competent Railway servant outside all Points & Connections.
      c) T/A 912 to pass Non-governing Manual/Semi-Automatic/Automatic Stop Signals.
      d) Caution Order restricting the Speed to 25 Kmph.

v) While running in the Wrong Direction, the Locopilot shall
   a) Switch on Flasher lights.
   b) Ascertain that the LC Gates are locked and Hand Signals are given by the Gatemen.
   c) Give frequent short Whistles.
   d) Stop opposite to FSS of the adjacent Line/LSS of the same Line whichever comes first and give one long continuous Whistle.

vi) The Train shall be received on the 'Written Authority' duly piloted by a competent Railway Servant.

6) Caution Order shall contain following details:
   i) The Line on which the Train is to run.
   ii) The Location of obstruction.
   iii) Any other Speed restriction imposed.
   iv) Instruction to consider Automatic Stop Signals in the Wrong Direction as out of use.
7) An endorsement shall be made on the Caution Order given to the Locopilot of the 1st Train in the Wrong Direction to stop and inform all Gatemen and Gangmen about the introduction of Single Line Working.
8) After the removal of the obstruction and Track becomes free, Normal working shall be resumed
   i) Under exchange of Private Numbers with other end SM and
   ii) In consultation with Controller.
9) An entry shall be made in TSR of all Stations with timings about
   i) Suspension of Double line working.
   ii) Introduction of Single line working &
   iii) Resumption of Normal working.
10) Traffic Inspector shall scrutinize all records and submit a Report to DRM/T within 7 days of the resumption of normal working.

SENDING RELIEF ENGINE/TRAIN INTO AN OBSTRUCTED SECTION

1) Any number of Relief Engines/Trains can be allowed to enter the obstructed block section from either end with Form T/C 912 in case of any Accident.
2) During Line Block, any number of Departmental Trains can be allowed to enter the obstructed Block Section on T/C 912.
3) SM shall prepare T/C 912 in duplicate and hand over to LP.
4) Guard's signature also shall be obtained on the duplicate copy.
5) T/C 912 contains
   i) Authority to proceed without Line Clear.
   ii) Caution Order restricting the Speed to
      a) 25 Kmph over straight when view ahead is clear.
      b) 10 Kmph when the view ahead is not clear due to curve, rain fog etc.
      c) 15 Kmph over facing points
6) Along with T/C 912, T/A 912 is also issued to pass the signal/s concerned.
7) LP shall proceed up to the location and guided by the instructions of competent authority at site.
8) LP shall
   i) keep a sharp look out and use engine whistle freely.
   ii) be prepared to stop short of any obstruction.
9) Train shall be piloted through a Tunnel.
10) LP shall stop his Train at the FSS or LSS pertaining to the wrong line of the next Station.
11) Right direction Trains shall be received into the station by taking ÓFF' signals.
12) Wrong direction Trains shall be received on the Non-Signalled line by piloting on Written memo + C.O.
13) On arrival at a station, Guard shall sign in 'remarks' column of TSR. In case of Light Engine, LP shall sign.
14) LP shall hand over T/C 912 to SM.
15) TI shall submit his report to DRM/T within 7 days after the resumption of normal working.

COMPETENCY CERTIFICATE

[To work in Automatic Territory]

1) Principal/ZRTI/TPJ shall issue the Competency Certificate to the LPs, Motormen and Guards.
2) LPs, Motormen and Guards shall not be allowed to work in Automatic Territory unless they are in possession of Competency Certificate.
3) It shall be renewed by TI/LI every 6 months.
4) If the Original Competency Certificate is lost, Principal/ZRTI/TPJ shall issue a Duplicate Competency Certificate.
5) Meanwhile, Sr.DOM/DOM shall issue a Provisional Competency Certificate which is valid for 10 days.

SHUNTING IN AUTOMATIC AREA DOUBLE LINE

1) **Written Memo** is Authority for Shunting
   i) Inside the first Signalling Section
   ii) Beyond the first Signalling Section
   iii) Against DOT
2) For forward movement, following Signals can be taken 'off':
   i) Manual Stop Signal
   ii) Semi-Automatic Stop Signal governing despatch
   iii) Shunt Signal
3) For the return movement,
   i) Shunt Signals shall be taken 'OFF'.
   ii) If not available, Hand Signals shall be shown.

SHUNTING IN AUTOMATIC AREA SINGLE LINE

1) **Written memo + Shunt key** is the Authority for Shunting beyond the LSS upto
   i) next Automatic Stop Signal (or)
   ii) Semi-Automatic Gate Stop Signal (or)
   iii) Home signal in advance.
2) For forward movement, Shunt Signals shall be cleared.
3) For the return movement,
   i) Shunt Signals shall be taken 'OFF'.
   ii) If not available, Hand Signals shall be shown.
4) If Shunt key is removed,
   i) DOT cannot be altered and
   ii) LSS cannot be cleared.
5) On completion of shunting, LP shall handover the Written Memo & Shunt key to SM.
6) Shunting in the face of approaching Train is prohibited.

MOVEMENT AGAINST DIRECTION OF TRAFFIC

1) Generally, it is not permitted in Automatic area.
2) In unavoidable circumstances, Train shall be moved against DOT as follows:
   i) LP shall contact the Controller through TPC on the field telephone.
   ii) Controller shall advise the Station in rear under exchange of PN.
   iii) SM in rear shall
      a) not permit any further Train and
      b) advise the SM in advance.
   iv) Controller shall issue a "Numbered Message with PN" to the LP.
   v) LP shall
      a) record it in Rough Journal Book and
      b) get the signature of Guard.
   vi) Guard shall
      a) travel in the leading vehicle and
      b) show a continuous 'PHS' to LP.
   vii) Speed shall not exceed 10 Kmph.
3) If the following Train(s) have already entered behind the Train, all the Trains shall be backed by following the above procedure.
4) <u>If Controller cannot be contacted:</u>
   i) Nearest SM shall be advised by sending ALP/GD.
   ii) Train shall be backed only after getting a message from the SM with Signature & Seal.
5) <u>Reception during Backing:</u>
   i) On Single line, Train shall be received by taking 'OFF' the Home signal.
   ii) On Double lines, Train shall be
      a) Stopped at
         - Manual/Semi Automatic Despatch Stop Signal of the same line [or]
         - Opposite to the Automatic/Semi Automatic Reception Stop Signal of the other line whichever comes first and
      b) Piloted into the Station.

ACCIDENTS

Accident:

Accident

- An occurrence in the course of Railway working
- Either Affecting the Safety of
  - Railway's Assets
  - Passengers
  - Railway Servants or
  - others
- Or Causing
  - Delay to Train.
  - Loss to the Railway.

Serious Accident:

An Accident is said to be 'Serious Accident', if

1) Such Accident happens to a Passenger Carrying Train involving
   i) Loss of Life to Passenger(s) of the Train.
   ii) Grievous Hurt to Passenger(s) of the Train.
   iii) Serious Damage to Railway Property of value exceeding Rs.2 Crores.
   (OR)
   Such Accident requires Enquiry by CRS.
2) Exemptions:
   i) Trespassers/Passengers run over and injured/killed by their own carelessness.
   ii) Railway Servants killed / grievously injured by their own carelessness.
   iii) LC Accident where no Passenger or Railway Servant killed / grievously hurt.

Serious Interruption to Traffic:

If the Traffic on an important line/route is likely to be interrupted for 24 hours or more, it is called Serious Interruption to Traffic.

Simple Injury:

1) A person is considered to have incurred 'Simple Injury' if he is unable to do his normal activities for **48 hours**.
2) A Railway Servant is considered to have incurred 'Simple Injury' if he is unable to return to duty for **48 hours**.

Grievous Hurt:

1) Injuries as defined in Section 320 of Indian Penal Code (I.P.C) are considered as Grievous Hurt.
2) The list is as follows:
    A. **E**masculation
    B. Permanently losing the sight of either **Eye**.
    C. Permanently losing the hearing of either **Ear**.
    D. **Privation** of any **Member** or **Joint**.
    E. **Destruction** / Permanent impairing of **Member** or **Joint**.
    F. **Fracture** / Dislocation of a **Bone / Tooth**.
    G. Any Hurt that
        i. Endangers Life [or]
        ii. Causes severe **Body Pain** for **20 days** [or]
        iii. Causes him unable to do his normal activities for 20 days.

Threshold Value:

1) Threshold Value is the Minimum value beyond which the Accident will be treated as having Serious Repercussion.
2) Threshold value based on Railway **Property Loss** is fixed at Rs. **ONE LAKH**.
3) Threshold value based on Interruption to Traffic is mentioned **in Hours** for different **BG Routes** as follows:

Type of Interruption	A, B, C or D-Spl	D, E-Spl	E
Total	3	4	6
[OR]			
Total + Partial	6	8	12

i) Routes are classified into A, B, C, etc based on the Speed, Traffic Density, etc.
ii) Eg for Total Interruption: Both Up & Down lines are interrupted in a Double line Section.
iii) Eg for Partial Interruption: Only one line is interrupted in a Double line Section. Other line is free for Traffic.
iv) Duration is calculated from the Time of Accident to Time of starting a Commercial Train into the affected Section.
v) If there is no Commercial Train for 30 minutes, COM has to certify.

ACCIDENT CLASSIFICATION

1) According to KUNZRU Committee, Accidents are of **TWO** types:
   i) **Consequential Accidents**:
      These are the Accidents resulting in Loss of
      - Life
      - Limb
      - Property

      Ex: - Collision, Derailment, LC Accidents, Fire on Trains, etc.
   ii) **Indicative Accidents:**
      These are the Accidents
      - Not resulting in Casualties
      - Indicating Unsafe Acts/Conditions
      - Occurring due to
        - Careless working of Railway Staff [or]
        - Defective Railway Equipment.

      Ex: - Averted Collision, Breach of Block Rules, SPAD.

2) In Railways, Accidents are classified into **FIVE** major heads:
   i) **Train Accidents:**
      It can be further classified into **TWO** types:
      a) **Consequential Train Accidents:**
         It includes Train Accidents having '**Serious Repercussion**' in terms of
         - Loss of Human Life
         - Human Injury
         - Loss to Railway Property

      b) **Other Train Accidents:**
         Train Accidents not covered under Consequential Train Accidents are treated as 'Other Train Accidents'.
   ii) **Yard Accidents:**
      a) Takes placed in a Yard.
      b) Not involves a Train.
   iii) **Indicative Accidents**
   iv) **Equipment Failure:**
      It includes failure of
      a) Rolling Stock
      b) Permanent Way
      c) Overhead Equipments
      d) S&T Equipments
   v) **Unusual Incidents:**
      It includes
      - cases related to Law & Order
      - not resulting in Train Accidents.

3) Based The Railways Act and SIKRI Committee Report, Accidents are classified into 16 Classes for Statistical purposes (From A to R, except I & O).

They are as follows:

Class	Type
A	**Collision**
B	**Fire / Explosion in Trains**
C	**LC Accidents** – Train running into Road Traffic / Road Traffic running into Train
D	**Derailment**
E	**Other Train Accidents** – Train running against any obstruction / Fixed Structure other than LC
F	**Averted Collision**
G	**Breach of Block Rules** – Train entering Block Section without/improper ATP, Train received on Blocked line/wrong line/Sand Hump, etc.
H	**SPAD** – Signal Passed At Danger
J	Failure of **Engine & Rolling Stock**
K	Failure of **Permanent Way** – Weld Failure/Rail Fracture, Slack/Rough running experienced by LP, etc.
L	Failure of **Electrical Equipments** – Failure of OHE, Pantograph entanglement, etc.
M	Failure of **Signalling & Telecommunication** – Signal/Point/Block Instrument/Track Circuit/Panel/RRI Failures, etc.
N	**Train Wrecking** – Sabotage/Causing damage to Train/Track, etc.
P	**Casualties** – Person(s) falling out of a Train, run over/knocked down by a Train, etc.
Q	**Other Incidents** – Death/Murder/Suicide in a Train/Railway Premises, Robbery, Blockade to Train services due to Agitation/ Fire in Railway Premises, etc.
R	**Miscellaneous** – Vehicles running away, Cattle run over, Flood, Breaches, Land slide, etc.

4) The above 16 Classes are further divided into 84 Sub Classifications covered under 5 Heads as below:

Class	Major Heads → / Accident ⇩	Train Accident		Yard Accident	Indicative	Equipment Failure	Unusual Incidents	Total
		Consequential	Other					
I & II. Train /Yard Accident:								
A	Collision	A1-A4	--	A5	--	--	--	5
B	Fire / Explosion	B1-B4	B5,B6	B7	--	--	--	7
C	LC Accidents	C1-C4	C5-C8	C9	--	--	--	9
D	Derailment	D1-D4	D5	D6	--	--	--	6
E	Other Train Accidents	E1	E2	--	--	--	--	2
Sub-Total (A-E)		**17**	**8**	**4**	**--**			**29**
III. Indicative:								
F	Averted Collision	--	--	--	F1-F4	--	--	4
G	Breach of Block Rules	--	--	--	G1-G4	--	--	4
H	SPAD	--	--	--	H1,H2	--	--	2
Sub-Total (F-H)		**--**			**10**	**--**		**10**
IV. Equipment Failure:								
J	Engine & Rolling Stock	--	--	--	--	J1-J10	--	10
K	Permanent Way	--	--	--	--	K1-K7	--	7
L	Electrical Equipments	--	--	--	--	L1-L4	--	4
M	S&T	--	--	--	--	M1-M7	--	7
Sub-Total(J-M)						**28**		**28**
V. Unusual Incidents:								
N	Train Wrecking	--	--	--	--	--	N1-N3	3
P	Casualties	--	--	--	--	--	P1-P3	3
Q	Other Incidents	--	--	--	--	--	Q1-Q6	6
R	Miscellaneous	--	--	--	--	--	R1-R5	5
Sub-Total (N-R)							**17**	**17**
Grand Total		**17**	**8**	**4**	**10**	**28**	**17**	**84**
		29						**84**

Break Down SPECIAL (BD Special)

1) BD Special is a Formation consisting
   i) Mechanical Tool Vans, Hydraulic Jack & Crane.
   ii) Engineering Tool Vans.
2) It is stabled at a convenient Station so that in case of an Accident, it can be easily moved to Accident Site.
3) SM of the Station where BD Special is stabled shall sound the Siren on getting information about an Accident from the LP and Guard / Controller.
4) From the time of sounding the Siren, BD special shall be turned out within
   i) 30 minutes during 6.00 to 18.00 hours.
   ii) 45 minutes during 18.00 to 6.00 hours.

Accident Relief Medical Equipment (ARME)

1) ARME is of 2 types – Scale I & Scale II.
2) Scale I: Medical Equipments are stored in Medical Relief Vans (MRV).
3) Scale II: Medical Equipments are stored in Boxes, kept in Special Rooms on the Platform.

4) **Medical Relief Van (MRV Special):**
   i) From the time of sounding the Siren, BD special shall be turned out within
      a) 20 minutes - if stabled on a Double exit siding or at a Terminal Station.
      b) 25 minutes - if stabled on a Single exit siding.
   ii) MRV shall not be started without Para Medical Staff.

5) **SPART:**
   i) It is **S**elf **P**ropelled **A**ccident **R**elief **T**rain.
   ii) It contains
      a) 3 Coaches including A/c Operation Theatre facility &
      b) Tool Vans with Hydraulic Rerailing Equipment.
   iii) In S.Rly, it is available in MAS & SRR.

TRAINS UNUSUALLY DELAYED

1) SM shall advise the other end SM and Controller when a Train does not arrive within
   i) 10 minutes + Running time, if it is Passenger carrying Train [or]
   ii) 20 minutes + Running time, if it is Goods Train.
2) Both SMs shall send Station Staff into the Block Section to know the whereabouts of the Delayed Train.
3) SM shall issue a C.O to LP of a Train running on the adjacent line on Double/Multiple line section.
4) Controller shall alert the stations where BD Special, MRV Special and Medical Chests are available.
5) If a Passenger carrying Train is delayed in mid-section for more than 10 minutes, Guard shall inform the Controller through Portable/ R.E telephone.

Duties of LP in case of a Serious Accident

In case of a Serious Accidents, LP has to
   i) Protect the Train / Obstruction.
   ii) Report the Accident to All concerned.
   iii) Arrange for Assistance of Passengers.

I. PROTECTION:

1) Switch on Flasher light and Switch off Head light.
2) Inform Guard by
   i) Giving FOUR Short Whistles;
   ii) Communicating through Walkie-talkie;
   iii) Exchanging Hand Danger Signal.
3) Protect the Train / Obstruction in front using Detonators, Warning signals and Hand Danger Signals:
   i) Place ONE Detonator at 500/600m and THREE detonators (10 m apart) at 1000/1200m on MG/BG.
   ii) Take stand 45 m away from the Last Detonator and show Hand Danger Signal.
   iii) Protect the Adjacent line first on Double/Multiple lines as per the Direction of Traffic.
   iv) If a Train is already approaching & there is no time to place the Detonators, Show Red Flag / Red Flashing Hand Signal lamp.
   v) If Red Flashing Hand Signal lamp is not provided, light the FUSEE immediately.
   vi) After lighting the FUSEE, Detonator also shall be placed as far away as possible.
4) Also secure the Train by
   i) keeping the Wooden Wedges at either end &
   ii) applying Loco Brakes, Hand Brakes of Wagons, BV/SLR according to Gradient.

II. REPORTING:

1) Inform the Controller through
   i) CUG Cell Phone.
   ii) Portable/ R.E Telephone with all necessary particulars as in ACC 3 like
      a) Date and Time of Accident
      b) Location in KM (in terms of Hectometer Post)
      c) Nature of Accident
      d) Cause, if known
      e) Assistance required.
2) If CUG/Portable/R.E Telephone is not provided or not working, advise the nearest SM giving all details as in ACC 3 through
   i) Walkie-Talkie
   ii) Nearby LC Gate phone
   iii) GLP of Train running on Adjacent line
   iv) ALP/Guard/Messenger sent by foot or Road conveyance
3) In the absence of all the facilities above, LP may proceed to nearest Station by detaching the Engine, if immediate Medical Assistance is required for Passengers. In such case, TE shall be attached within 45 minutes.

III. ASSISTANCE:

1) If it is a Passenger carrying Train,
   i) Save lives of passengers.
   ii) Give first aid to passengers.
   iii) Co-ordinate the Railway men travelling by that Train (both On & Off duty) and Volunteers from Passengers to give all possible assistance to the needy Passengers.
   iv) Protect the Public and Railway Property, Mail Bags.
2) Preserve the clues, if any.
3) Note down the timings all the Activities on a Log Book.
4) Do not leave the spot until properly relieved.

Duties of a LP when FIRE is noticed on a TRAIN

1) LP shall stop the Train immediately on noticing Fire on his Train.
2) If it is Passenger carrying Train:
   i) Save life of Passenger.
   ii) Render First Aid to injured Passengers.
   iii) Save Mail Bags.
   iv) Switch 'off' Electrical Supply by removing Battery Fuse/Dynamo Fuse.
3) If it is Goods Train:
   i) Open the Doors of the Wagon.
   ii) Save Materials as far as possible.
   iii) Throw Sand / Earth to put out Fire.
4) If any Water Sources available nearby and if it is Safe, Train shall be drawn ahead cautiously to such spot.
5) If it is not Safe to move, Burning Coach/Wagon shall be isolated as below:
   i) Uncouple the Burning Vehicle in rear.
   ii) Draw forward.
   iii) Uncouple the Burning Vehicle in front.
   iv) Draw forward.
   v) Secure the divided portions by placing Wooden Wedges & applying Hand Brakes.
6) Protect the Train as per GR/SR 6.03/9.10.
7) Extinguish the Fire with suitable Fire Extinguisher.
8) If it is not possible to put out Fire, allow it to burn out itself.
9) Fire on Train is reported under Class 'B'.

AVERTED COLLISION

1) If a Collision 'between Two Trains' or 'between a Train and an Obstruction' is prevented because of the Vigilance shown by any Person(s), such occurrence is called Averted Collision.
2) It will not be treated as an Averted Collision in the following cases:
   i) **Outside Station limits:**
      If the distance 'between Two Trains' or 'between a Train and an Obstruction' is 400 metres or more.
   ii) **Inside Station limits:** If
      - There is an Intervening Stop Signal at Danger governing the Moving Train &
      - LP of moving Train has complied with the Indication conveyed by that Stop Signal.
3) Averted Collision is classified under Class '**F**'.

Class 'G' Accident: Breach of Block Rules:

Train entering Block Section without Authority to Proceed:

1) If LP realises that he has entered a Block Section without ATP or with improper ATP, he shall immediately stop the Train.
2) Train shall be
   i) treated as an obstruction and
   ii) protected on both sides.
3) Guard, or in his absence, LP shall
   i) report the matter to the nearest SM by sending the ALP [or]
   ii) advise the controller through the Portable Telephone who shall advise the nearest SM.
4) SM shall
   i) advise the other end SM.
   ii) suspend the Block Instrument working.
   iii) prepare a "Restarting memo with a PN" and
   iv) send it to LP through ALP/Station Staff.
5) Guard shall
   i) initial the Restarting Memo and
   ii) pass it to LP.
6) LP shall
   i) restart the Train.
   ii) proceed towards the Station mentioned in the memo.
   iii) stop the Train at the FSS.
7) Train shall be received into Station by
   i) Issuing a "Message + PN" to LP through SPT [or]
   ii) Issuing T/369-(3b) to LP at the foot of the FSS.
8) Accident shall be reported under Class 'G'.

Class 'H' Accident: (SPAD):

Train passing Stop Signal/s at 'ON' without proper Authority:

I. Inside Station Limits:

1) If LP has passed a Station Stop Signal at Danger - partly or completely - without proper Authority and come to a stop,
   i) Guard shall inform SM.
   ii) SM shall proceed to the spot.
   iii) In the presence of LP & Guard, SM shall
      a) Examine Brake Blocks of first few vehicles (Whether Hot/Warm/Cold).
      b) Measure the Distance overshot (In terms of Rail length or Vehicle length).
      c) Record the results in Station Diary.
      d) Get the Signatures of LP and Guard.
2) **Reception Signals passed at 'ON':**
   i) If everything is safe, SM shall issue "Restarting Memo" (countersigned by the Guard) to LP.
   ii) Reception Stop Signal(s) in advance, if any, can be taken 'OFF'.
   iii) If not, Train shall be piloted by a Railway Servant by traveling on the Engine.
   iv) Accident shall be reported under Class 'H'.
3) **Despatch Signal – Starter passed at 'ON':**
   i) SM shall issue "Restarting Memo" (countersigned by the Guard) to LP.
   ii) Despatch Stop Signal(s) in advance, if any, can be taken 'OFF'.
   iii) Accident shall be reported under Class 'H'.
4) **Despatch Signal – Advanced Starter passed at 'ON':**
   i) SM shall issue "Restarting Memo" (countersigned by the Guard) to LP to back the Train.
   ii) LP shall back the Train clear off the Block Section.
   iii) SM shall
      a) suspend the B.I working and
      b) issue PLCT as ATP to LP.
   iv) Accident shall be reported under Class 'G'.
5) The above procedures shall be followed if the LP passed a Stop Signal at 'ON' without proper authority due to the Signal assuming Danger Aspect in the face of an Approaching Train.

II. Outside Station Limits:

1) If LP has passed the following Signals / Indicators without proper Authority [or] without following the prescribed procedure and come to a Stop, Guard shall take action as above:
   i) GSS
   ii) IBSS
   iii) Automatic Stop Signal
   iv) Stop Indicator
   v) Banner Flag
2) Guard shall
   i) Examine Brake Blocks
   ii) Measure the distance overshot
   iii) Record the results in CTR and
   iv) Report the Accident under Class 'H' to all concerned.

ENGINE FAILURE

1) An Engine shall be treated as failed
   i) If it is unable to work its booked Train with the prescribed load from Start to Destination [or]
   ii) If it causes a delay of
      a) 30 minutes or more in case of Passenger carrying Train
      b) 60 minutes or more in case of Other Trains

      due to following reasons:
      - Defective Design
      - Defective Material
      - Bad workmanship in shed/workshop
      - Mismanagement by Crew
      - Bad Fuel.
2) In case of Engine Failure, LP shall advise nearest SM through Guard of the Train.
3) SM shall issue 'All concerned' Message.
4) Engine Failure is classified under Class 'J'.
   i) J1 – Engine of Passenger carrying Train fails.
   ii) J2 – Other Train Engine / Light Engine fails.

HOT AXLE

1) Hot axle on a Train formation is indicative of an 'Impending Derailment'.
   i.e Hot Axle may lead to Derailment at any time and hence treated as an Accident Situation.
2) Symptoms of Hot Axle are
   i) Emission of Smoke / Flame from the Axle Box.
   ii) Splashing of Grease around Axle Box.
   iii) Smell of Burning Grease.
   iv) Peeling of Paint around axle box.
   v) Unusual metallic Sound.
   vi) Skidding of Wheels, etc.
3) If Hot Axle is noticed by any Railway staff, he shall show 'Hot axle' hand signal as follows:
   "Waving a RED Flag/Light in a Wide Arc manner from Left to Right across the Chest".
4) If LP not notices the Hot Axle Hand Signal given by Station Staff, SM shall put back the LSS to Danger.
5) If the Train has already passed the LSS, SM shall inform Gate Man of LC, if any, to show 'Hot axle' Hand Signal to stop Train.
6) In electrified area,
   i) SM shall inform the TPC to switch off power supply and inform Controller.
   ii) If there is no Tension in OHE for 3 minutes, LP & Guard shall check the Formation.
7) If the Train could not be stopped, SM shall inform the SM in advance.
8) At Station in advance:
   i) Train shall be stopped at FSS.
   ii) SM shall inform LP the by issuing of a Memo.
   iii) LP & Guard shall check the particular vehicle.
   iv) If it is safe, Train shall be received on the Main line.
   v) Speed shall not exceed 5 KMPH.
   vi) If Main line is occupied, Train shall be received on the first unavoidable turnout.
9) **If Hot Axle is noticed on the run by LP & Guard:**
   i) Train shall be stopped immediately.
   ii) Vehicle shall be examined by the LP & Guard.
   iii) If it is safe, Block Section shall be cleared.
   iv) Speed shall not exceed 5 Kmph.
10) Hot Axle shall be classified under Class 'J'.

Slack/Rough running, Heavy Lurch experienced by LP/Guard

1) If LP experiences Slack/Rough running, Heavy Lurch, etc (Sudden, Unsteady Movement either forward or sideways) he shall
   i) note down the Location in terms of Hectometer;
   ii) stop the Train at next Block Station without clearing the Block Section &
   iii) inform the SM through available means not to allow next Train into that Block Section.
   iv) stop at a convenient place and give a 'Written Advice' to SM.
2) In case of Automatic area & IBSS, LP shall inform the SM & the LP of the Train already entered into Block Section from Station in rear.
3) SM shall advise other end SM, Section Controller, JE/P.Way & DOM.
4) <u>If Engineering Staff Available:</u>
   i) Engineering Official shall be sent by TMM/Tower Wagon/LE to inspect the Track.
   ii) If TMM/Tower Wagon/LE is not available, the Train accompanied by Engineering Official shall be sent with a Caution Order.
   iii) Train shall stop short of the suspected Spot.
   iv) Engineering Official shall inspect the Track & certify if it is safe.
   v) Train shall pass the spot at a Speed as specified by Engineering Official.
   vi) He shall advise the SM about the condition of the Track & Speed Restriction, if any, personally [or] through a Written Memo sent through LP.
5) <u>If Engineering Staff Not Available:</u>
   i) 1st Train after getting Message shall be despatched with a Caution Order.
   ii) LP shall
      a) stop short of the suspected Spot.
      b) inspect the Track.
      c) pass the Spot at a Speed not exceeding 10 Kmph, if it is Safe.
      d) return to the starting Station, if it is not Safe.
   iii) If the LP of 1st Train not finds anything Unsafe:
      a) Subsequent Trains shall be issued with a Caution Order.
      b) LPs shall observe a Speed of not exceeding 10 Kmph over the suspected portion.
      c) Speed Restriction of 10 Kmph shall be in force till Engineering Officials certify the Track fit for higher Speed.
6) If the Guard experiences Slack/Rough running, Heavy Lurch, etc:
   i) Guard shall inform the LP.
   ii) If Guard is unable to contact LP, he shall try to stop Train & inform LP.
   iii) LP shall take action as above.
7) It is classified under Accident Class 'K-4'.

Sabotage / Suspected Sabotage

1) If any information is received by SM about
   - Sabotage/likely Sabotage,
   - Bomb Blast,
   - Explosion, etc

   to
   - Track
   - Bridges
   - Fixed Installations, etc

   SM shall
   i) Stop the Train movements into
      a) affected Block Section on both S/L & D/L and
      b) adjacent lines in Double/Multiple lines.
   ii) Consult Controller & other end SM.
   iii) Send TMM/Tower Wagon/LE accompanied by an Engineering Official with a Caution Order.
2) If the Track is Safe for passage of Trains, Engineering Official advise SM personally or through a Written Memo sent through LP/Operator of TMM/Tower Wagon/LE.

Unsafe Condition on or near the Adjacent Track

1) If LP/Guard notices anything unsafe on or near the Adjacent Track, LP shall
   i) switch on Flasher Light immediately.
   ii) inform nearest SM & Controller.
   iii) stop the Train.
   iv) then protect the Adjacent line.
   v) proceed cautiously to next Station with Flasher Light in 'on' position.
   vi) be prepared to stop a Train running on Adjacent line.
   vii) stop at next Station.
   viii) report the occurrence to SM through a Written Advice.
2) SM shall take steps as in the case of receiving 'Message about Slack/Rough running'.

1) If information about Rail Fracture / Weld Failure has been received, Message shall be given to JE/SSE/P.Way of the section concerned for attending the failure.
2) Rail Fracture / Weld Failure shall be treated as an Obstruction and no Train shall be allowed to enter the Block Section.
3) If there is a Train to despatch and an Engineering Official not below the rank of Track man is available to proceed to failure spot to attend failure,
   i) Train shall be started on T/A.602, accompanied with Engineering Official, travelling by Engine.
   ii) LP shall stop in rear of failure spot.
   iii) After attending the failure, Engineering Official shall issue a 'Fit Certificate'.
   iv) LP shall further be guided by the Engineering Official.
4) If Rail Fracture / Weld Failure has been attended temporarily, Train shall be started on Normal ATP with a Speed Restriction as follows:
   i) If attended by Trackman/Keyman/Engineering Gateman- Not exceeding 20 Kmph.
   ii) If attended by JE/P.Way - Not exceeding 30 Kmph.

Action to be taken when a person knocked down by a Train:

V. When life not extinct (Person found alive):

1) When a Railway Employee finds an injured person on or near the Track, he shall
   i) Render First Aid or arrange medical help as early as possible.
   ii) Inform the Police through the nearest Station Master or any other person in the vicinity.
2) When a person run over or knocked down is found by the staff of the same Train / subsequent Train:
   i) Render First Aid (By Guard or a Doctor if available in the Train).
   ii) Transport the person with the least possible delay to the nearest Station where the Medical Aid shall be arranged.
   iii) Record the Dying Declaration, if the condition of the person is found to be dangerous (By Guard or any Railway Servant who finds the injured person).
   iv) Record the particulars such as
      a) Name
      b) Father's Name
      c) Caste
      d) Residence
      e) How he happened to be on the line and how got injured.

v) The Statement should be signed by
   a) Guard or other Railway Employee who recorded it and
   b) Some other responsible Witness.

vi) It shall be handed over to the Station Master of the nearest Station in the direction of the run.

vii) Also, he shall submit a Memo, showing Time and Place of occurrence.

viii) SM shall transmit the same to the Police authorities.

VI. <u>When life is extinct (Person not alive):</u>

1) When a dead body is found on or near the Track by any Railway Servant, the evidence shall be kept intact, specially the fingerprints.
2) Handling of the dead body by many people should be avoided.
3) Dead body should not be removed until the arrival of the Police.
4) However, the body may be removed from the lines for the movement of subsequent Trains, but in doing so, the movement should be the minimum required.
5) The body may be left in charge of Village Officer or any responsible person in the vicinity.
6) If no responsible person is available at the site where the body is found, it shall be taken to the nearest Gate Lodge in the direction of the movement of the Train.
7) If there is no Gate Lodge, it shall be handed over to the Station Master of the next Station.
8) In all cases, a Written Memo giving the following particulars shall be made out by the Guard, or if there is no Guard, by the Loco Pilot:
   i) Time and Place the body was detected.
   ii) Position of the body in relation to the Tracks.
   iii) Blood stains on ballast or Engine & extent of the injuries.
   iv) Prima facie cause for death – whether inflicted by Train or otherwise.
   v) Position of any clothing found on or near the rails.
9) This Memo should also contain the Name of the informant, his father's Name and address.
10) The Memo should be handed over to the Person to whom the body is handed over for onward transmission to the Police authorities.

When a Train stopped owing to a Person falling out of the Train:

1) If the Person is alive, Guard shall
   i) Render First Aid.
   ii) Transport the person to the nearest Station where medical facility is available.
   iii) Obtain Dying Declaration, if the person is in dangerous condition.
   iv) Handover to the SM of nearest Station in the direction of run.
2) If the Person is not alive, Guard shall
   i) Keep evidence intact.
   ii) Prevent handling of Dead body by too many people.
   iii) Keep the body clear of Track for further movement of Trains.
   iv) Hand over the body to Village Officer or a responsible person in the vicinity.
   v) If no responsible person found nearby, handover the body at nearest Gate lodge or at next Station in the direction of run alongwith a Written Memo with all relevant details.
3) Guard & Locopilot shall make a full report in ACC 4 to the DRM within 24 hours of the Accident with following particulars:
   i) KM at which the passenger fell or person was knocked down.
   ii) Was the Train stopped after
      a) Accident noticed by the Guard/Loco Pilot or
      b) The Alarm chain is pulled.
   iii) Was the Train backed to the Accident Spot?
   iv) How the Injured Person was disposed off?
   v) Further information in the case of a Passenger falling out:
      a) Name, Age, Sex and Address of the Passenger.
      b) Particulars of the Ticket held.
      c) If it is Child, also the Name, Relationship and Address of the Guardian at the time.
      d) Where was the Person/Child seated or standing at the time last seen by fellow Passengers?
      e) Coach details and position from the Engine.
      f) Condition of doors, door handles, shutters, safety catch and window fastening in the carriage.
      g) Was there a Government Railway Police official on the Train?
      h) Brief Statement of the Injured Person.

MARSHALLING ORDER

Marshalling means

- An arrangement of Vehicles
- In prescribed order
- To ensure
    - Safety
    - Convenience to Passengers
    - Operating Convenience
    - General Appearance

Marshalling of Mail/Express Trains:

1) Mail/Express Trains shall be provided only with Bogie Stock (8 Wheelers).
2) Also, it shall consist fully Air Brake/ Vacuum Brake Stock.
3) Anti Telescopic Coach (ATC) / Steel Bodied (SB) SLRs shall be marshalled at either end.
4) Brake ('R') / Luggage portion of SLR shall be
    i) Trailing outermost in rear &
    ii) Facing the Engine in front.
5) TWO ATC/SB coaches shall be marshalled inside the SLR at either end.
6) In rear of SLR, Maximum Two coaches (ATC/SB) can be attached.
7) In addition to Two ATC/SB Coaches, ONE Inspection Car can be attached in rear, if
    i) It is fitted with Hand Brakes &
    ii) The Brakes are in good working condition.
8) Other Coaching Vehicles like VP, LR, etc shall be marshalled
    i) As Operationally convenient
    ii) Preferably as outermost vehicle.
9) Reserved Bogies, VIP Saloons, etc shall be treated as other Passenger Coaches and marshalled accordingly.

Marshalling of Passenger Trains:

1) ATC/SB SLRs shall be utilized in the following order of preference:
    i) Mail/Express Trains.
    ii) Main Line Passenger Trains.
    iii) Branch Line Passenger Trains.
2) Main Line Passenger Trains shall be marshalled as like Mail/Express Trains.
3) In case of shortage of SLRs, any other suitable Coaching Vehicle / VPU may be provided with its Doors in locked condition.
4) Two ATC/SB Coaches should be marshalled inside SLRs at both ends.

5) Short Service Trains:
   i) Three Coaches in front and rear of the SLR is permitted.
   ii) Atleast Two Coaches at either side shall be ATC/SB.
   iii) An Inspection Carriage also may be attached as fourth Trailing Coach on such Trains.
6) Sectional/Through Service Coaches:
   If it is ATC/SB, it may be marshalled as operationally convenient.
7) POH/Sick Coaches returning to Shops:
   i) If these are returned to Shops for Major Repairs and attached to Passenger Trains, such Coaches should be properly locked and windows secured to prevent entry of any Passenger into these coaches.
   ii) In that case, it can be attached next to the Train Engine or rearmost.
   iii) If it is not possible to lock these Coaches, these shall be treated like other Passenger Coaches.

Marshalling of Mixed Trains:

1) Classifying a Passenger Train as Mixed Train needs COM's authorization.
2) In Mixed Train, Coaches shall remain in one Block & so the Wagons. If deviation is required, COM's approval shall be obtained.
3) Normally, Goods Wagons shall be attached next to Engine & Passenger Coaches are marshalled in rear.
4) Wagons loaded with Explosives, Dangerous, Inflammable Goods shall be marshalled in rear of Passenger Coaches.
5) In Mixed Train, 2 Bogies can be attached in rear of SLR.
6) When Goods Stock is attached to BG Passenger Train, Speed shall not exceed 75 Kmph.

Marshalling of Goods Trains:

1) Through Loads shall be formed together.
2) Larger Lead Loads shall be marshalled in rear of Shorter Lead Loads.
3) Goods Train having shunting enroute shall be marshalled in Geographical Order from Engine.
4) If both Loaded & Empty Wagons are to be attached in a Train, Loaded Wagon shall be marshalled in one Block next to Engine.
5) In rear of BV, 2 Bogies may be attached.
6) Not more than 2 Wagons with inoperative Brake Cylinders shall be attached at a stretch in a Train.
7) Atleast 2 Wagons next to Engine & 4 Wagons in front of Rear BV shall be with effective Brake Power.
8) 4 Wheeler shall not be marshalled in between 8 Wheelers. This is not applicable to Banking Engines.

9) Miscellaneous:

Load	No. of Support Wagons from				Remarks
	Loco	BV	Passenger Coach	Others	
Live Stock	As far away as possible / Atleast 4 Bogies	--	--	--	--
Explosives	1	3	3	3 from LPG	7)To be grouped together. 8)Maximum: • 10 Wagons in Goods Train. • 3 Wagons in Mixed Train.
LPG (Liquefied Petroleum Gas)	2	2	2	3 from Explosives	--
POL (Petroleum & Other inflammable Liquids)	1	1	Class 'A'- 3 Class 'B'- 1	3 from Dangerous Goods & inflammable Solids	Class 'A' – Petrol Class 'B' – K.Oil, Furnace Oil, Diesel Oil
Inflammable Solids	1	1	1	--	--

Note: Any number of Wagons may be loaded with all other commodities above except 'Explosives'.

Marshalling of Damaged Vehicles:

1) Only One Damaged Vehicle shall be attached.
2) It shall be marshalled in rear of rear most BV.
3) It shall be certified 'Fit to Run' by TXR.
4) C&W Fitter has to accompany the vehicle.
5) It is permitted to run only during day.
6) It shall be detached at a convenient Station before 18 hours.
7) In following sections, Damaged Vehicle shall be conveyed through Trucks:
   i) Shencottah – Punalur.
   ii) Subrahmanya road- Hassan.

Marshalling of Cranes:

1) Traveling Crane shall be attached to a Train with the Certification of Parent Depot Official.
2) Crane shall be attached next in front of BV.
3) If attached in a Mixed Train with Goods Wagons marshaled next to Engine, the Crane shall be marshaled immediately in rear of the Goods Wagons.
4) Crane shall be attached with Jib trailing and rested on a Dummy Truck.
5) While proceeding to the Accident spot, it shall be attached next to Engine with Jib leading.
6) Speed of the Train shall not exceed 50 Kmph on BG. (40 Kmph on MG).

Marshalling of Dead Engine:

1) 'Fit to Run' Certificate shall be issued by SSE/Mech / LI / PRC.
2) Brakes should be synchronized with Working Loco(s).
3) Escorting:
   i) Not required if
      a) Attached next to Train Engine and
      b) Brakes are fully operational.
   ii) Dead Engine should be manned if
      a) Attached in rear of BV [or]
      b) Brakes/Under Gear Components are defective.
4) Passenger Trains:
   i) One Dead Engine can be attached with Mail/Express Trains, Super Fast Trains.
   ii) Dead Loco can not be attached with Shatabdi & Rajdhani Trains.

   Conditions:
   iii) MPS of the Train shall not be less than the MPS of Dead Loco. If it MPS of Dead Loco is lesser, that lesser Speed shall be adhered for the Train.
   iv) Brakes are operational & Brake Power of the Train is 100%.
   v) Under gear Components are not defective.
5) Dead Electric Engine by Non-Electrified Section:
   i) It shall be ensured that Dead Electrical Loco is not infringing the maximum moving dimension.
   ii) If it is infringing, Dead Engine shall be treated as ODC.
6) Movement of Multiple Locos:
   i) Multiple Locos at a stretch are permitted as follows:

Multiple Locos		Passenger/Mail/Exp	Goods Train
Working	Dead		
1	1	Permitted	Permitted
2	1	Permitted	Permitted
1	2	Not Permitted	Permitted
2	2	Not Permitted	Permitted
1 or 2	1 (Defective Brake)*	Not Permitted	Permitted
1 or 2	2 (Defective Brake)	Not Permitted	Not Permitted

   * To be manned.

   ii) Conditions:
      a) Double / Triple Heads are permitted in the Section.
      b) Brakes of Dead Locos are operational.
      c) Dead Locos are worked to clear the Block Section & taken to Destination due to Failure/Break Down.
      d) Overall Train length not exceeds the Standard CSR length.
   iii) On Sections where Double / Triple Heads are not permitted, 6 Vehicles support shall be given between Locos.

ISMD / ODC

(Infringement of Standard Moving Dimension / Over Dimensional Consignment)

1) If the Consignments loaded upon a Wagon would infringe the Max Standard Moving Dimension at any point on its entire route, it is called ODC/ISMD Load.
2) It shall be registered for booking only with Prior Sanction.
3) There are 3 Classes – A, B & C, based on Gross Clearance & Net Clearance.
4) Gross Clearance means the Clearance on Rest from the fixed structure.
5) Net Clearance means the Clearance on Run from the fixed structure.
6) Classes of ODC & Precautions:

S.No	Description	A	B	C
i)	Gross Clearance	≥9"	<9" upto 6"	<6"
ii)	Net Clearance	≥6"	<6" upto 3"	<3"
iii)	Sanctioning Authority	Within Division-**DRM** Inter Division-**COM**	Within Division-**DRM** Inter Division-**COM**	**CRS**
iv)	Speed	75 Kmph	40/25 Kmph (BG/MG)	25 Kmph
v)	Day / Night	Day or Night	Day or Night	Day only
vi)	Escort	--	TXR/PWI/TI/ Special Guard	SSE(C&W), SSE(P.Way),TI

7) **On Electrified Sections:**

Clearance from Contact Wire	Speed
≥ 390 mm	No Speed Restriction
Between 390 mm & 340 mm	15 Kmph
≤ 340 mm upto 100 mm	15 Kmph, OHE switched 'off'
< 100 mm	Not Permitted

8) Dummy Truck:

If the Loads are projecting 45.7 cms in MG & beyond Buffer Castings in BG, Dummy Trucks shall be used.

9) General:

i) ODC shall be attached next to Train Engine.
ii) It shall be run through at a Station on a line nominated in SWR.
iii) If the Nominated line is Platform Line, Speed shall not exceed 5 Kmph.
iv) It shall be run only on an Authorized Route. Over carrying/Diversion is not permitted.

Long Haul Trains

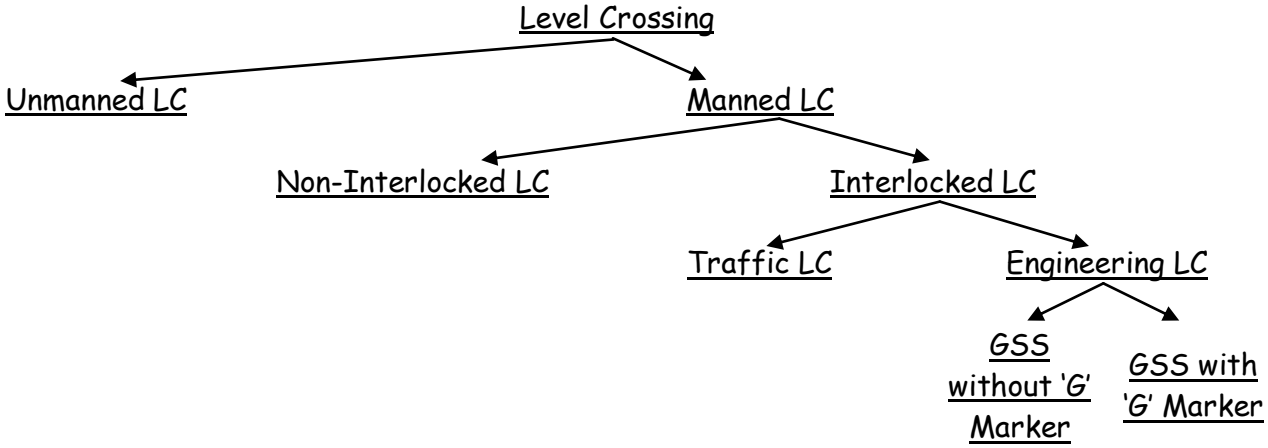
1) Long Haul Train with a composition more than the Standard Formation is called 'Python' Train in Southern Railway.
2) With the Train Name, the Word 'Python' shall be added as the Suffix.
   Eg: - KOK'N' Python Goods.
3) It may be a Combination of BOX'N'/BCN/Container/Steel Rakes as follows:
   i) TWO Loaded Rakes
   ii) TWO Empty Rakes
   iii) ONE Load & ONE Empty Rakes (Load in front).
4) Normally, it shall be run through at all Stations. In emergency, it may be split with precautions for Crossing/Precedence.
5) It can run at a Speed as applicable to other Freight Trains in the Section. However, if Tonnage exceeds 9000 Tonnes, Speed is restricted to 60 Kmph.
6) Loco:
   i) Single or Multiple Loco in good condition shall be in the front.
   ii) Another Single or Multiple Loco shall be in the Middle.
   iii) Both Loco consists (Front & Middle) shall be manned.
   iv) Whenever required, Middle Loco LP shall assist the Leading Loco LP for better hauling.
7) BV:
   i) One 8 Wheeler BV (BVZI) shall be in the Middle & One BV in last.
   ii) One Guard each shall travel by Middle & Last BVs.
   iii) If only 4 Wheeler BVs available, both shall be attached in rear.
   iv) Guard at Last BV shall communicate through Walkie-Talkie to LP about the Clearance of
      a) Cross overs
      b) Caution Spot, etc.
8) BPC:
   i) Individual BPCs for both Trains shall be given to respective LPs.
   ii) In addition, a 'Cover BPC' shall be given to Leading Loco LP.
   iii) In Cover BPC, following shall be mentioned:
      a) Brake Power of Individual Rakes
      b) BP available at Leading Loco (Min. 5 Kg/Cm^2)
      c) BP available at Last V (Min. 4.7 Kg/Cm^2)
9) Miscellaneous:
   i) Pre-tested Walkie-Talkie shall be used.
   ii) Signals shall be kept cleared in advance to avoid unnecessary Stoppage, Train Parting, etc.

ANEMOMETER

1) Anemometer is used to measure Wind Velocity.
2) It is provided at the SM's office to indicate the Wind Velocity at a particular Bridge/Vulnerable place in the Block Section.
3) If Wind Velocity exceeds 41 Knots an hour or 72 Kmph, SM shall NOT
   i) Allow any Train into the Block Section and
   ii) Grant Line Clear to Station in rear for any Train.
4) **If a Train is held up in a Cyclone/Storm/Strong Wind in the Block Section:**
   i) LP shall control the speed of the Train.
   ii) He shall stop the Train at a convenient place avoiding Sharp Curves, high Embankment & Bridges.
   iii) LP and Guard with the cooperation of other Railway Staff in the Train shall ensure that Doors and Windows of the Coaches are kept open to allow free passage of the Wind.
5) If the Wind weakens and it is safe, LP shall restart the Train in consultation with Guard.

Level Crossings

1) LC means the place where Railway Track & Road intersect at same level.
2) LC Gate
   i) Means a movable barrier used to close across the Road at LC.
   ii) Includes a Chain and
   iii) Not includes a Wicket or Turnstile used for Pedestrians.
3) **Kinds of LC:**



Unmanned LC:

i) Gate keeper is not available.
ii) Before passing LC, Road Users have to ensure that no Train is approaching.
iii) Warning Boards about the approach of Unmanned LCs are provided for Road Users.
iv) 'W/L' Board is provided at NLT 600m in rear of Unmanned LCs to warn LPs.
v) LPs have to Whistle intermittently till they pass the LC.

Non-Interlocked LC

i) Not protected by Signals.
ii) Normally kept 'closed' against Road Traffic.
iii) Opened for allowing Road Traffic after
   a) getting SM's permission by exchange of PN &
   b) placing the Banner Flag across the Track
      - Either side on S/L
      - Towards DOT on D/L.
iv) If TVU > 20,000 [or] Number of Trains in 24 hours < 14, DRM may allow the LC to be kept 'open' for Road Traffic with the approval of COM & PCE.
v) In all cases, before allowing the Train into Block Section,
   a) SM shall inform Train No., Description, Probable Time, Direction and also give a PN to the Gate keeper.
   b) After ensuring the closure of LC, Gate keeper shall also issue a PN to SM.
vi) If there is no response from Gate keeper, Caution Order shall be given to the LP to observe Special Caution at LC.

Traffic LC:

i) Located inside the outermost Stop Signals of a Station.
ii) Interlocked with Station Signals.
iii) Information about Train movements shall be given to GK by SM.

Engineering Interlocked LC:

i) Located outside the outermost Stop Signals of a Station.
ii) Interlocked with Gate Stop Signals.
iii) Information about Train movements shall be given to GK by SM.
iv) If there is no response from GK,
    a) Run through Trains need not be stopped for issuing of Caution Order.
    b) LP shall follow the Procedures for passing GSS at 'On'.
v) If a LP notices the GSS Defective, he shall report at next Station, stopping the Train out of course.
vi) After becoming aware of the defective GSS, subsequent Trains shall be issued with Caution Order.

4) Classification of LC:

i) Based on TVU, LC shall be classified as Special, A, B1, B2, C & D Classes.
ii) Special, A & B1 classes shall be Interlocked LCs.
iii) B2 class shall be a Non-Interlocked LC.
iv) C class may be a Non-Interlocked LC or Unmanned LC.
v) D class is 'Cattle Cross'.

5) Manning of LC:

An 'Unmanned LC' shall be manned in following cases:

i) If TVU > 3000 [or]
ii) If TVU > 2500 & Visibility for Road Users is < 800m [or]
iii) If 3 Accidents happened in last 3 years [or]
iv) LC lies in Rajdhani / Shatabdi Route [or]
v) If State Govt agrees to close another nearby Unmanned LC [or]
vi) Under Special approval of GM.

6) Duties of GK & LP During the passage of a Train at LC:

i) GK shall
    a) Attentively observe the Train.
    b) Keep the Red & Green Flags furled in Right & Left hands during Day.
    c) Keep the Hand Signal with White light pointing towards him.
    d) Show Danger / Hot Axle Hand Signal on respective occasion to stop the Train.
ii) LP shall
    a) Ensure that the Gate is closed & GK is attending the Train.
    b) Look back after passing the LC to see whether GK is showing Danger Hand Signal.

Crew Management in IR

1) Crew Management is a Vital Function in Train Operation in IR.
2) Crew, which includes LP, ALP & Guard, are booked at various Crew Booking Lobbies / Depot across the Country.
3) Crew requirement of a Division is calculated & reviewed every 6 months after considering the following factors:
   i) Crew Links of Mail/Express/Passenger Trains.
   ii) Power Plan signed by DOM/DME for Goods Trains.
   iii) Requirement of Leave / Trainee Reserves, Rest Givers.
   iv) Requirement for other operations like Shunting, etc.
4) Crew Link:
   i) Prepared by CPRC & Verified by Personnel Branch.
   ii) Factors to be considered:
      a) Optimum utilization of Crew.
      b) All the Crew covers all the Sections in their link to avoid repeated Road learning.
      c) Late running of Trains due to failure not to affect the link.
   iii) HOER:
      a) Max Duty hours in a Trip not to exceed 10 hours.
      b) Duty Hours in a Fortnight not to exceed 104 hours.
      c) Minimum Rests in Month:
         - 5 Rests of 22 hours [or]
         - 4 Rests of 30 hours.
      d) Out Station Rest:

Duty Hours in Last Trip	Minimum Rest Hours
≤ 5	Duty Hours + 1 hour
< 8	6
≥ 8	8

      e) Home Station Rest:

Duty Hours in Last Trip	Minimum Rest Hours
< 8	12
≥ 8	16

CREW MANAGEMENT SYSTEM (CMS):

1) IR has developed a 24x7 Crew Management System (CMS) for managing its Crew effectively.
2) Crew Booking Lobbies all over the IR are being interlinked through CMS in a Phased manner.
3) Data base of all the LPs, ALPs & Guards in the Division / Railway are maintained by CMS.
   i) Already, Data base of 90,000 Crew have been covered by CMS.
   ii) 30,000 Crew are being booked daily through CMS.
4) Highlights:
   i) User friendly Application Software.
   ii) Crew Links, HOER, etc are taken care by the System.
   iii) Crew position – On duty, Under Rest, Available for duty, etc are readily available on Real Time basis for effective Planning.
5) Benefits:
   i) Enables Optimum & Effective utilization of Crew.
   ii) Enables Paperless Lobby through
      a) Calling of Crew through SMS.
      b) Circulating SOB, Circulars through SMS.
   iii) Ensures Safety:
      a) Breathalyzer Test is conducted without manual intervention.
      b) Bio-metric Sign 'On' & Sing 'Off' is done through Kiosks in Lobbies.

SIGHTING COMMITTEE

1) The Sighting Committee consists of Traffic Inspector, Loco Inspector and JE/S&T.
2) Every newly erected/resited Signal on a Section shall be inspected by the Sighting Committee.
3) Sighting Committee shall ensure that the Signal is correctly placed and focused.
4) The visibility of Signals in a Section shall be jointly inspected by the Sighting Committee both by day and night at least once in every Quarter.
5) Joint report shall be submitted to D.S.O, D.M.E & D.S.T.E.
6) Whenever there is a change in the complement of Signalling at a Station or on a Section or whenever signals are newly erected or resited, a Caution Order shall be issued to LPs for a period of 10 days.

Freight Operations Information System (FOIS)

1) It is an 'On-line Real Time Information System' of I.R.
2) Customers can assess this system to know the current status of their consignments in Transit.
3) Sub-systems of FOIS:
    i) Rake Management System (RMS).
    ii) Terminal Management System (TMS).
4) RMS: It involves computerization of Operating Functions relating to Yard and Freight Train Operations.
5) TMS: It involves computerization of Commercial Activities.
6) There are Two types of Terminals:
    i) Data Entry Terminal:
        - Various events are fed into FOIS.
        - Enquiries can also be made.
        - Eg: All Goods Terminals.
    ii) Enquiry Terminal:
        - Only enquiries can be made.
        - Eg: Customer Terminals.
7) **Advantages:**
    i) Provides continuous Cargo visibility to Customers.
    ii) Makes the System Transparent.
    iii) Optimizing Asset Utilization.
        Eg: Reduction in LE running, Empty movement, etc.
    iv) Computerized Good Shed Operations and Accounting Systems.
    v) Serves as a Managerial Tool by generating lot of Reports.
8) Recently developed FOIS based 'Terminal Pipeline Management System' (TPMS) gives the congestion Status of every Goods Terminal. Permission for loading to a particular Terminal is given at Divisional/Zonal/Board level based on the Congestion Status of the Terminal.

Integrated Coaching Management System (ICMS)

1) ICMS has Four Modules:
   i) Punctuality Analysis Module (PAM).
   ii) Coaching Operations Information System (COIS).
   iii) Coaching Maintenance Module (CMM).
   iv) Time Table Module (TT Module).
2) PAM:
   i) It captures Train timings with causes of detention at
      - Originating Station
      - Terminating Station
      - Interchange Points
   ii) It is useful in Post facto analysis of Punctuality Loss.
3) COIS:
   i) It captures events on Coaches / Rakes.
   ii) It generates Reports for Management of Coaching Stock.
4) CMM:
   i) It captures Depot Activities with respect to Coaching maintenance.
   ii) It is useful in Manpower and Material Management.
5) TT Module:
   i) It simulates
      - Suitable timing for all Trains.
      - Best available path for all Trains.
      - Optimum utilization of Rake link.
   ii) It generates Time Table related Documents.
6) COIS Data Entry Module:
   i) It is a support Module of ICMS.
   ii) It maintains Database of all Informations.