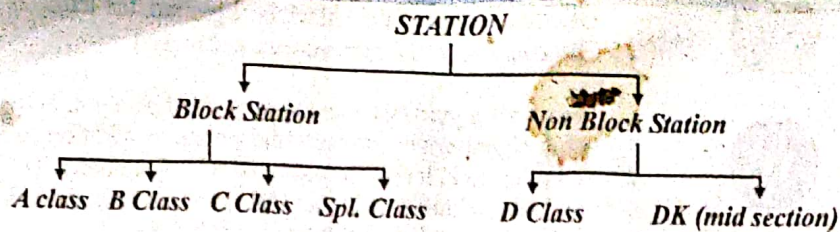


(1)

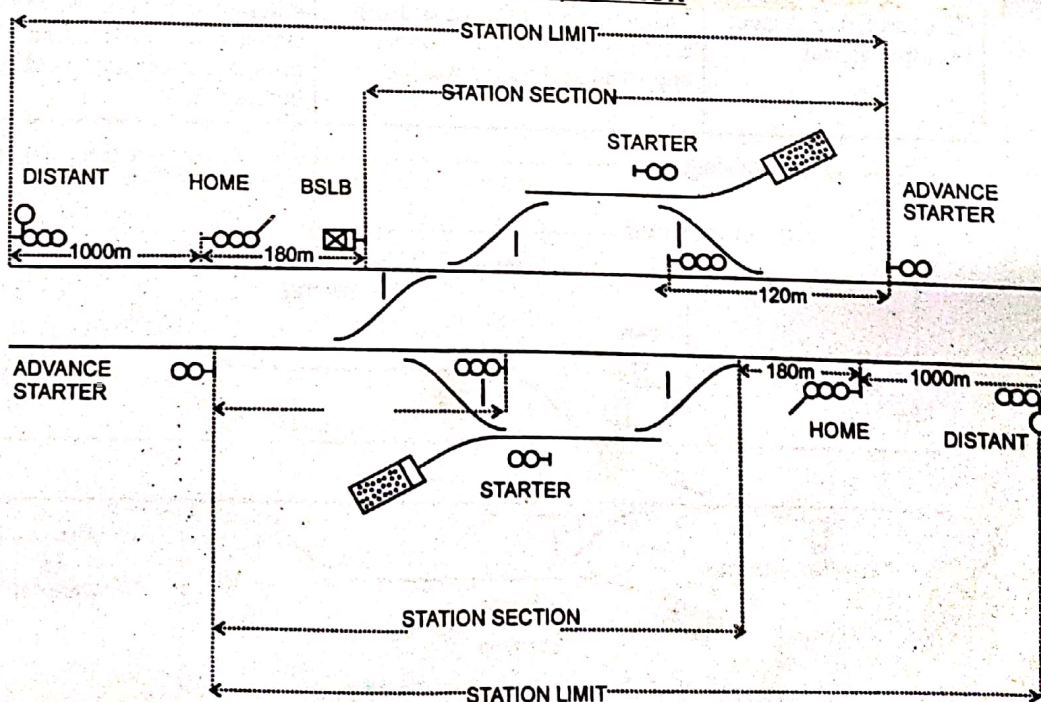
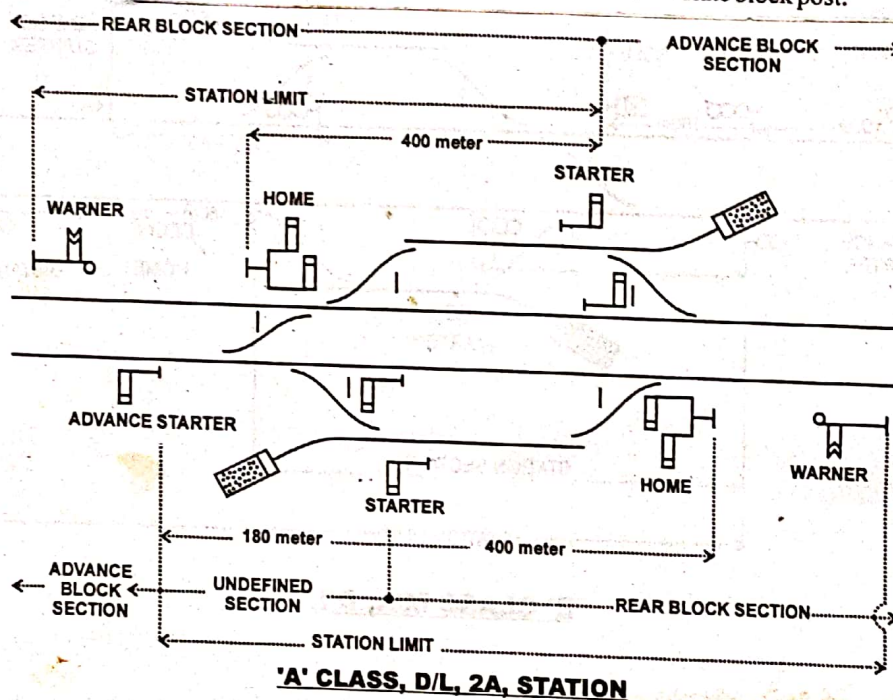


A Class Stn. :- 'A' class station are those station at which line clear may not be granted for a train unless line on which it is intended to receive train is clear for at least 400 metre beyond the home signal or up to the starter signal.

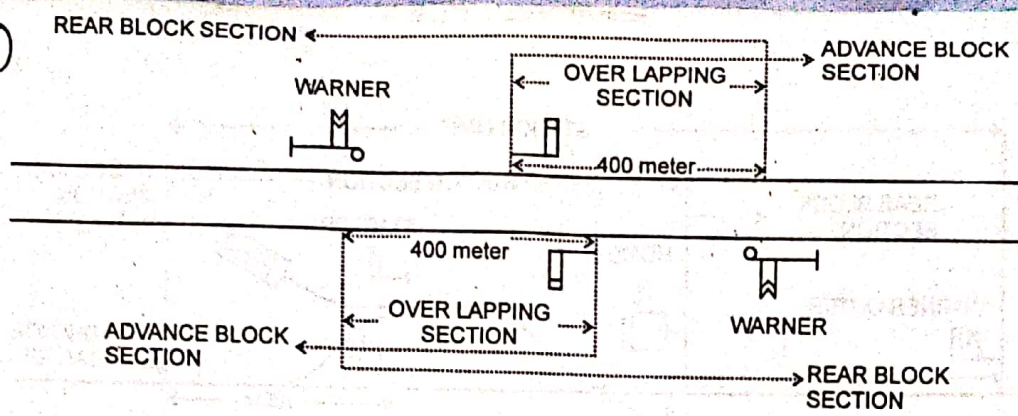
Undefined section:- When Advance Starter signal is provided at an 'A' class station on DL Rear block section terminates at starter signal and advance block section commences from advance starter signal and the portion between starter and advance starter signal is called "Undefined section".

'B' class station:- B class station are those stations where line clear may be granted for a train before the line has been cleared for the reception of the train within the station section.

'C' class station:- C class station are those stations where line clear may be not given for a train unless 'the whole of the last preceding train has passed complete at least 400 meters beyond the home signal and its continuing its journey. This will include an intermediate block post.



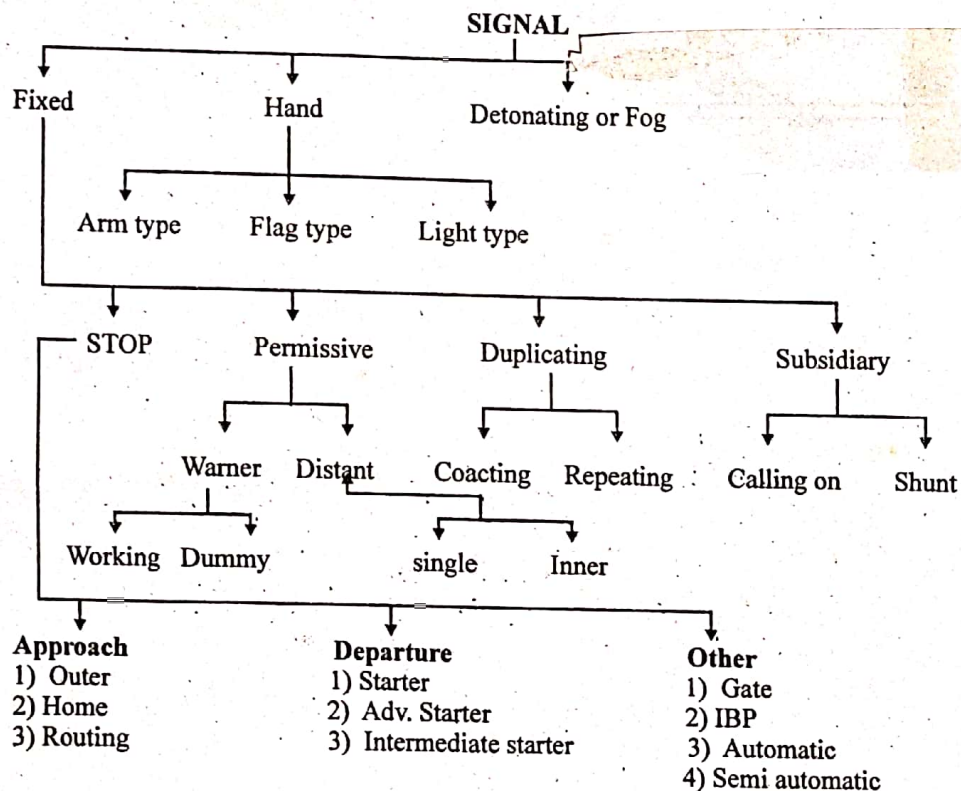
(2)



'C' BLOCK D/L, T/A SECTION

SIGNAL

Signal - Signal is a predetermined and pre practiced device by which the movement of train can be controlled.



Hand Signal :- Hand signals are displayed in three ways :-

- By arm :- In emergency when flag not available.
- By Flag - During day time
- By hand signal lamp :- During night time or view not clear.

The following indications can be given by hand signal :-

- "STOP"
- "Proceed"
- "Proceed with caution"
- Move towards the person.
- Move away from the person.
- Move slowly for coupling.

Note :- 1) White light waving violently (horizontally across the body) shall be used as a stop

POINTS: are those sources by use of which fixed route can be set for trains receptions, departure or running through a station or to divert them from one line to another line. Motor-operated points are clamped and pad locked at both ends.

(3) **Facing and trailing points :-** Points are facing or trailing in accordance with the directions of vehicles/trains moves over them. Points are set to be facing when by their operation an approaching train can be directly diverted from the line upon which it running.

Explanations :- A mechanical device capable of diverging a train into another line is called points. Facing point may be provided with point indicator which works in conjunction with the point and gives a clear indication whether the points is set for main line or loop line. Whenever facing point is guided by a signal then it must be locked before taking "OFF" the signal, either of interlocking arrangement or by manual locking before any movement over that point. The speed of a train over a non interlocked facing point is 15 Kmph.

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

Explanations :- Isolation means separation of line or lines from the other connected line or lines. In other words a train or vehicle which is standing on a line should not come in to contact with the running train on the other line and cause accident. There are many devices of isolation by which two connected adjacent lines are isolated from one another. The followings are the isolation devices :- (1) Scotch block (2) Trap switch (3) Haye's derail switch (4) Derailing switch (5) Sand hump (6) Snag dead end.

SHUNTING

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

On road side stations - the guard will be the shunting supervisor. In absence of guard a competent railway servant as shunting jamadar, shunting master, yard master, or ASM will supervise the shunting.

The authority of shunting in station yard is shunting order (T/806).

Shunting performance must not disturb the marshalling order of train.

No shunting will be done on running line of station yard after granting line clear when the visibility is not clear.

Speed of shunting :-

- i) The impact speed of a single box wagon is 5 kmph.
- ii) The impact speed of group of 5 box wagon is 2.5 kmph
- iii) Maximum speed of shunting of dangerous goods wagon is 8 kmph
- iv) Normal speed of shunting is not exceed 15 kmph.

The wagon containing dangerous goods, motor vehicle, live stock, coaching stock and fragile article should not be loose/fly or hump shunted.

On single line - where token less handle type block instruments (TLHBI) is provided, there OCC (occupation key) will be given to the driver to perform shunting in block section.

On gradient section the maximum no. of wagon-brake and skids will be applied and the engine will be kept at failing gradient.

All the necessary points will be correctly set and the facing points properly locked before shunting.

L/C - gate if any within the shunting area must be closed before shunting.

While performing shunting in mid-section siding, T/409 will be issued to Driver and Guard.

Fouling Mark :- Fouling mark means the mark at which the infringement of fixed standard dimensions occurs where two lines cross or join one another.

Explanations :- This is place of danger where two lines join or cross each other. Before passing any train through a line where there is another train is to be cleared. Otherwise there will be a chance of collision between two trains. It is the duty of a SM to confirm that after arrival of train it clear the fouling mark, when required SM will sent the train intact arrival register (T/1410) to the guard, and the guard will sign and the register confirming that the train has arrived complete and cleared the fouling mark. On those stations where fouling mark is not visible from the cabin of SM office, there a fouling bar is provided to serve the purpose. Fouling mark is indicated by a white painted wooden/cemented bar with the word "F.M." in black / red. The distance between two adjacent track is at least 14 feet outside the station section but inside the station section this distance may be increased up to 15 feet inches. Those distance is measured from the centre of one track to the center of another track.

Marshalling is the operation of attaching vehicle or groups of vehicles in a particular order i.e. destination wise section wise, commodity wise or any other specified manner as per special Instructions to meet particular requirements.

Objective of Marshalling :-

1. **Passenger's Convenience**
2. **Safety Considerations**
3. **Shunting Requirements**
4. **Less detention**

A. MARSHALLING ORDER OF PASSENGER CARRYING TRAINS

Passenger Carrying trains are marshalled in accordance with the instruction issued by the Hd. Qtr. Office keeping in view the following :-

1. Same class coaches should be marshalled together as far as possible.
2. When the train is having some coaches vestibule, all vestibule coaches should be marshaled together.
3. Dining car should be located in the middle attached with AC coaches.
4. Position of ladies compartment to be as near to guard as possible so that he can look to their safety and other comforts during run.
5. SLR must be Marshalled next to train Engine and as rear most vehicles, and it must be ensured that the luggage & rest portion is always towards engine & towards rear.
6. The coaches of a passenger carrying train are usually operated in sets known as "Block Rake" in the following manner.
 - **Train Engine**
 - **Front SLR (R portion towards engine)**
 - **Half of the number of IInd class bogies**
 - **Mail coach**
 - **AC Coaches**
 - **Dining Car**
 - **Rest half portion the IInd class bogies**
 - **Rear SLR (R portion towards rear)**
7. Attachment of 4 wheeler or 8-wheeler goods stock with passenger trains is not permitted.
8. On Mail/Express train an Anti-Telescopic/Steel bodies SLR must be provided at either end of the rake at the originating point. In addition, two Anti-Telescopic or steel bodies coaches must be provided inside the SLRs at both ends.
9. In case, it is inescapable to utilise a wooden bodies SLR on Mail/Express trains, there should be two Anti-Telescopic coaches between the front SLR and the engine and two Anti - Telescopic coaches outside the rear SLR.
10. If at an intermediate station a coach other than an Inspection carriage has to be attached in rear, it must be Anti-Telescopic or steel-bodied.
11. In case of passenger trains, other than Mail/Express trains, at least one Anti-Telescopic or Steel bodied coaches should be marshalled inside the Anti - Telescopic or Steel - bodied SLRs at both ends in the first instance and when adequate number of Anti-Telescopic or Steel - bodied coaches are available there should be atleast two such coaches.
12. In case of short trains running with single SLR, the SLR whether Anti - Telescopic, Steel-bodied or not, should be marshalled in the middle. One Anti-Telescopic coach each in front and rear should be marshalled as the outermost vehicle in the first and two such coaches should be in the front and rear in the second phase.
13. In case Anti-Telescopic or Steel bodied SLRs which have passenger portion on one side and luggage-cum-brake portion on the other, the SLR should be marshalled in such a way that the luggage and brake portion is trailing outermost in the rear or next to the engine. These instructions should be followed rigidity.

The SM & Gdr of the starting station should check that the rakes are formed in accordance with these instructions otherwise should take steps to rectify the marshalling.

(5) **B. Marshalling of Goods Train**

A goods train to be marshalled taking in to account the following factors. The facilities for Marshalling in Yard.

- The Traffic that is to be carried
- The section that is to be covered
- The distance to be covered and
- The terminal facilities available at destination.

Principles :-

- (1) Through trains are given through loads in order to eliminate shunting at intermediate station; express goods trains are given block load where possible.
- (2) In case of works trains; wagons for the section should be marshalled In station order; because attacking & detaching at intermediate station Should involve minimum possible shunting.
- (3) A single four- wheeler is not to be marshalled between two bogies of eight wheels.
- (4) Not more than two wagons may be attached in rear of the brake van subject to the condition that the wagons are fitted with vacuum brake in good working order.
- (5) No empty wagons will be kept in between loads wagons.
- (6) Out of 8 wagons from engine end 6 wagons must be active and six wagons attached with brake van must be active.
- (7) Not more than two non- active wagons will be kept in a hook.
- (8) A goods train normally runs in 85% brake force.

SECURING OF VEHICLES GR/SR 5.23:-

Whenever at any stations some vehicles or wagons are to be stabled they are secured because the wagons some time slip away from the station or they may roll down whenever there be any storm or cyclone etc. Normally any vehicle can not be stabled o a running line, but in case of emergency it may be stabled.

Whenever any vehicles are stabled they are secured by the following manners :-

SR 5.23 (i) Action by station Master/Traffic Staff when vehicles/load/train is to be stabled at station.

- a) The vehicles/load/train be chained and padlocked using at least two chains, one at either end;
- b) At least four sprags/wooden wedges be used, to each below the outermost pair of wheels at either end;
- c) Hand brakes of at least 6 wagons from either end must be fully tightened. In case coaching vehicles are stabled, Guard hand brakes in SLR (S) must be applied. The hand brakes must be operated under the personal supervision of the Guard, and in the absence of Guard, by SM/ASM on duty;
- d) The vehicle of stabled load/train should be coupled together. In case the stabled load has to be split for any reason, each such split part should be treated as a separate load for the purpose securing;
- e) The points must be set clamped and padlocked against the blocked line and towards dead end or trap point (if available). Scotch blocks must be used if available;
- f) Stop Collars must be placed on relevant signal and point buttons / slides / levers etc.
- g) Remarks should be made in TSR and / or SM diary in Red ink to the effect that Line No. is blocked and all precautions for securing the load have been taken as prescribed above :
- h) After any load/train/loco is stabled the station master must inform the section Controller/ supported by private number that all laid down precautions for stabling and securing the load/train/loco have been taken.
- i) Additional precautions to be taken while stabling vehicles/load/train at a station with gradient of 1 in 400 or steeper may have been prescribed under approved special instruction (by CRS) and mention in SWR of respective station. These should be followed scrupulously. In addition, following precautions must also be observed over and above those prescribed under approved special instructions :-
- j) Before vehicles are uncoupled, then and brakes should be applied as sprags/wooden wedges/skids, should also be used to prevent vehicles from rolling down :
- k) As far as possible, the vehicles/load/train should stabled on a line which is isolated from other lines, particularly running lines.

(6) SYMPTOMS OF SEIZURE OF ROLLER BEARING :-

- i) Smell of burning grease
- ii) Splashing of grease around the wheel
- iii) Sparking along rail
- iv) Metallic / screeching sound
- v) Red glow during night
- vi) White smoke comes out
- vii) Skidding of wheel.

Axle Counter :

Means an electrical device which, when provided at two given points on the track, proves by counting axles 'IN' and axles 'OUT' whether the section of the track between the said two points is clear or occupied.

An essential requirement for track circuiting is that track should have wooden sleepers. As an alternative to track circuiting is a device known as Axle Counter. An Axle Counter is fixed at either end of the track (may be in the block section, a reception line etc.). As the train passes the Axle Counter automatically counts the number of the axle passing. If the same number of the axles passed and counted at the other end, it means that whole train has left the section indicating the section is cleared. The axles are counted when the train enters the section and reversed counting is done when the train leaves the section. The section being clear when the indicator comes back to zero.

Track circuit :- Track circuit means an electrical circuit provided to detect the presence of vehicle on a portion of track, the rails of the track forming parts of the circuit.

ALL RIGHT SIGNAL

All Right Signal is a manual signal exchanged between train staff and station staff, train staff the help of green hand signal to ensure that all is right with the train.

On normal running between stations or passing stations some irregularities may be happened which may caused a great disaster. Hence any staff are directed to check the trains on run and exchange signals among them which ensures about the safe running of trains, hence the object of exchanging All Right Signal is (i) It keeps the station staff and train staff alert on duty and (ii) to achieve safety.

The man exchanging All Right Signal should be in full and proper uniform and exchange All Right Signal by left hand and right hand should be kept ready for showing danger signal when any irregularities found.

Train staff and station staff

When a train passes a station through, All Right Signal will be exchanged between train staff i.e. Driver and Guard with station staff i.e. SM, Cabin man etc. Here it ensures that the staff are alert on duty, there is no abnormality with the train.

Exception : where the station is adjoining with yard and pilot is working All Right Signal will not be exchanged but only checking is necessary.

Reception of train on obstructed line/block line

1. Whenever a train is to be received on an obstructed line the driver of the train will be intimated, if possible, by the SM in rear that his train will be received on an obstructed line at the next station on T/409.
2. No approach stop signal will be taken 'OFF' for the reception of the train.
3. All the points of the said line will be correctly set and facing point will be properly locked.
4. The driver of the train will be authorised to enter the line :-
 - a) By taking off calling on signal (if available)
 - b) By authorizing the driver by the signal post telephones. (if available)
 - c) By piloting the train with T/509.
5. The train will be stopped at the facing point leading to the reception line there after it will start on proceed hand signal.
6. A man will be deputed 45 mtrs away from the point of obstruction to indicate the Driver (by red hand signal) where he is to stop the train.
7. The speed should not exceed 15 kmph.

(-7)

SINGLE LINE WORKING DOUBLE LINE

On double line section when one line between two block stations gets obstructed, both directional trains are passed by other line - this consequence is termed as Single Line Working On Double Line. Before introducing this process, the SM of the station in rear of the affected section shall act as follows :-

1. The SM will receive permission from section controller for this.
2. He will obtain line clearance and fitness certificate from an engineering official not below the rank of PWI.
3. Two nearest station having emergency crossover should be chosen.
4. The commutator of block instrument of both end station including all intervening station should be locked in 'TOL' position.
5. All intervening 'C' class station and IBP will be put out of use and commutator of all those station will be locked on 'TOL'.
6. Temporary BLB may be placed for granting line clear of wrong line train.
7. The rear station SM will send a 9 point message CLIPSSTIL (9 point message) under exchange of private no. as under :-

C :- Cause of introducing single line working.

L :- Line by which single line working is to introduced.

I :- source of information

P :- place of obstruction

S :- speed restriction (if any) already imposed.

S :- assurance of all signal of wrong line and last stop signal of right line is at 'ON' condition.

T :- Trap point are clamped and spiked.

I :- Name of intervening stations which are suspended.

L :- Arrival and departure time of last two trains.

Paper for right line trains :- For right line train T/D - 602 will be given to the driver which includes the following :-

1. Authority to proceed.
 2. Authority to pass last stop signal/signals at on condition.
 3. Authority to pass the signals of all intervening stations which are temporarily suspended.
 4. Caution order with LOST message as follows :-
- L :- Line by which S/L working is being done.
- O :- Place of obstruction (k.m)
- S :- speed i) 25 kmph for 1st train to inform gateman and gangman ii) Book speed for 2nd and subsequent trains.
- T :- Trap points are closed & spiked.

Reception :- At the next station the train will be received by taking 'OFF' signal or otherwise.

Papers for wrong line trains :-

- i) T/D - 602 - with LOST message as above and same speed restriction.
- ii) T/806 - (shunting order) - if require to shunt the trains from right line to wrong line.
- iii) T/511 - Starting order.

Reception :- The train will be stopped at the 1st stop signal of right line or the last stop signal of the wrong line whichever comes first. Then the driver will sound long whistle and the train will be received by piloting with T/409.

Restoration of normal work :- After the obstruction is removed the SM will introduce the normal working under permission of section controller. The SM of either end station shall ensure the clearance of that section by mentioning the arrival and departure time of last train in that section. All the particulars will be recorded in station diary, TSR and SI - 24 duly.

SENDING ART / ASSISTING ENGINE / RELIEF ENGINE INTO OCCUPIED BLOCK SECTION

Paper for right line movement :- The driver to proceed via right line will be given from T/A - 602 which includes the following :-

1. Authority to proceed without line clear
2. Caution order with speed restriction as follows :-
 - i) 15 kmph - during day and when view is clear
 - ii) 10 kmph - during night / when view is not clear.
 - iii) WP :- during thick foggy weather the engine will be piloted by fog signal and red hand signal by two railway man. Incase of double line driver will keep sharp look out and preparing to stop short of any obstruction ahead.
- 3) Authority to pass signals at 'ON'.

Paper for wrong line movement :- a) AIP

- 1) T/A - 602 - which includes. (b) Authority to pass signals at 'ON' (2) T/511 (3) T/806 (if reqd.)

(8) FIRE IS NOTICED ON PASSENGER/GOODS TRAIN
When a vehicle or a train catches fire the train shall be stopped by Guard/Driver (and also station staff) and

1. take all possible steps to extinguish it.
 2. prevent it from spreading and
 3. report the matter to the nearest SM.
 4. Isolate the burning vehicle at least 45 meters distance away from the adjacent vehicle.
- Guard/Driver first to save passenger and mail bags and render first aid to passenger. Assistance of the people living in and around, may be had in putting out the fire. In case of a town near by, the services of fire service may be utilized. Train is to be protected as per GR+SR 6.03 (600, 1200, 1210, 1220). SM/TPC to be informed by means of emergency telephone or by otherwise, to arrange for the affected section of OHE to be made dead.

Fire in EMU/ Elec. Engine : - In case of fire or continued tripping of OHE, the driver at the earliest possible moment move the master controller handle to 'OFF' position. If fire continued, the power supply of OHE of the track is to be cut off by sending information to the TPC. The special fire extinguishers provided or sand only be used in extinguishing the fire. When the fire is finally put out, the defective coach shall, if necessary, be electrically isolated from the rest of the trains should the coach affected be the leading cab. the driver operate the train as GR 4.21.

- (i) Spl. type fire extinguisher shall be fitted in each EMU/Elect. Loco cab. Sand shall be provided in the luggage compartment of each motor coach, station and other appointed places.
- (ii) Ordinary fire extinguisher or water shall on no account be used to extinguish fire on live electrical equipment. If the service of the fire brigade are required, the brigade shall not be allowed to commence operations until all electrical equipment in the vicinity of the fire has been made dead.

When a goods vehicle catches on fire :- The same procedure to be followed along with under mentioned points :-

1. Samples of the commodity to be preserved.
2. Seal and side cards must be preserved.
3. Earth and soda with grass can be used for putting out.
4. Seal cards, side cards and sample of goods must be sent to DCM and commercial departments.

Reception of train on non-signalled line:

If a train is to be received in a non-signalled line :-

1. The train will be stopped at the 1st stop signal.
2. All the points of that line have been correctly set and facing point properly locked.
3. The line will be kept clear up to the trailing point or where the train usually comes to stop.
4. The driver will be piloted into the station with T/409.
5. Speed should not exceed 15 Kmph.

Departure of train from non-signalled line/common starter

For despatching a train from a non-signalled line/common starter:-

1. Line clear will be obtained from the other end station and tangible authority to proceed will be given to the driver.
2. Concerned points will be set and facing points are locked for the departure of the train.
3. Driver will be given T/511 to start the train.
4. For more than one line, but with common starter signal, T/512 will be given to the driver, in addition to the authority to proceed.

(9)

1. S&T (T/351) :- (Signal and telecommunication) disconnection and reconnection notice - -- for disconnection of signal gears. To be prepared and served by S&T inspector / maintainer to the station master.
2. T/369(1) :- Advance authority to pass defective signals :- issued by stn. Master of rear station or last stopping station to the driver to pass defective stop signal (approach stop signal only) of station in advance.
3. T/369(3b) :- Authority to pass signals at ON or defective (For starter and advance str. It may be issued on the same form)
4. T/409 :- caution order - prepared in three copies and issued by station master of notice/ to the driver of the train.
5. T/A 409 :- Nil caution order --- prepared and issued as T/409.
6. T/B 409 :- Reminder caution order - prepared in two copies (one record and one for driver) and issued from immediate rear station or last stopping station.
7. T/431 :- Train examination advise / report. Prepared in three foils by SM/YM and handed over to SE(C&W) for examination of train.
8. T/509 :- Authority to receive a train on blocked/obstructed line :- prepared in two copies - record/driver, train piloted from 1st stop signal.
9. T/409 :- used for reception of train on non signaled line.
10. T/511 :- Authority to start a train from non signaled line, prepared in two copies record/driver, train piloted upto last set of points of non signaled line.
11. T/512 :- Authority to start a train from common starter line :- Note for both T/511 and T/512, line clear tkt. No. / Token no. and line clear pvt. No. both in words and figures to be inserted.
12. T/A 602 :- Authority to proceed for relief engine / train into an occupied block section :- it contain (a) Block ticket to proceed without line clear (b) Authority to pass signals at ON and (C) caution order speed 15 kmph / 10 kmph / W.P.
13. T/B 602 :- During TFC on single line for sending light engine/train engine to being line clear to open communication. It contains (a) Authority to proceed without line clear (b) Authority to pass signals at ON (C) caution order - speed 15 kmph / 10 kmph/ WP (d) Line clear enquiry message and (e) conditional line clear message.
14. T/C 602 :- During TFC on Double Line :- It contains (a) Authority to proceed without line clear (b) Authority to pass signals at ON & (c) Caution order - speed 25kmph/ 10 kmph/walking pace.
15. T/D 602 :- Authority for temporary single line working ON double line. It contains (a) line clear ticket (b) Authority to pass signals at ON (departure signals) and also the signals of the closed intervening stations and (c) caution order - speed 25 kmph to 1st train only and warning about trap point (if any) neutral section and information to gangman/gateman; including other speed restrictions.
16. T/E 602 :- Line clear ENQ during TFC on single line
17. T/F 602 :- Conditional line clear message. During TFC on single line.
18. T/G 602 :- Conditional line clear ticket during TFC on single line for up direction.
19. T/H 602 :- Conditional line clear ticket during TFC on single line for DN direction.
20. T/I 602 :- Message on restoration of means of communication on both single/double line furnishing arrival/departure of last train, and information about cancelling the conditional line clear working to L/C working and resumption of normal working.
21. T/609 :- Authority given by guard, to driver, to proceed with the part load or light engine from mid block section to the next stn. Giving details there in, the particulars of load, last vehicle number of the load and km at which the remaining portion stands.
22. T/806 :- Shunting order - it contains shunting particulars, authority to pass signals at ON, issue of shunt /OCC key.
23. T/A 912 :- Authority to pass semiantomatic, automatic and manually operated gate signal at on.
24. T/B 912 :- Authority to proceed without line clear on automatic block signaling section. Uses :- (a) Failure of signals and communication between two automatic stations. It contains :- (a) Authority to proceed without line clear (b) Authority to pass signals in 'ON' position (c) Caution order speed - 25 kmph / 10 kmph 15 kmph over motor points.

- 10) 25. T/C 912 :- Authority to proceed for relief engine/train into an occupied automatic signaling section. It contains :- (a) authority to proceed without line clear up to km and (b) caution order speed 15kmph/10kmph.
26. T/D 912 :- Authority to proceed on automatic block system during prolonged failure of signals and communication available. It contains (a) authority to proceed with line clear (b) authority to pass all signals between the station at ON and (c) caution order - speed 25 kmph.
27. T/1410 :- train intact arrival register. Sent by SM to guard of the train. Guards signature obtained as token that the train arrived complete and is standing clear of fouling marks.
28. T/A 1425 :- Line clear enquiry message (outward) and T/B 1425 (inward) for to be used before preparation of T/C 1425 or T/D 1425. It contains 4 parts :- (a) line clear ENQ message (b) line clear reply message (c) train out report and (d) train in report.
29. T/C 1425 - This is the authority to proceed for UP train on single line when instrument becomes defective and on single line working on double line in automatic block system. It is blue in color and prepared in two copies by carbon process. Original copy is given to the driver and carbon copy is kept for record.
30. T/D 1425 - This is the authority to proceed for DN train on single line when instrument becomes defective and on single line working on double line in automatic block system. It is blue in colour and prepared in two copies by carbon process. Original copy is given to the driver and carbon copy is kept for record.

INTERLOCKING

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

Mode of interlocking - There are two modes of interlocking - (i) Direct Interlocking and (ii) Indirect Interlocking.

Direct Interlocking - When points, lock and signal levers can be operated from the same place then this type of interlocking is called direct interlocking.

Indirect Interlocking :- When points and locks are operated from one place and signal are operated from another place then this type of interlocking is called indirect interlocking.

Object of Interlocking :-

1. To eliminate human failure which may arise in course of working and hence to provide safety in train movement.
2. To reduce the operational time.
3. To increase the speed of train and as well as sectional capacity.

Non Interlocked station :- Where taking off a signal does not depend upon the setting and locking of a particular route such a station is called 'non interlocked station'. Previously when the density of traffic was very low we had such stations and these stations were provided with single arm signal to control the movement of trains. At such stations, if provided with more than one line, then, point indicators are provided at the facing point to indicate the route to the driver. The maximum speed of trains in those stations is 15 kmph.

Panel Board Interlocking :- Panel board interlocking means the electrical interlocking which is provided to centralise the work of small stations having less complicated layout. The station is provided with a panel board at the station / cabin. If the entire layout of a station is displayed on a single panel, then it is called central panel. If the layout is little larger, then it is divided into two portion and controlled from two separate panel then this type of panel is called end panel. The operator of the board can get a clear picture of the line position and aspect of signal at a glance. Points are operated through individual switches/knob/button and all are motor points.

Route relay interlocking (RRI) :- On these stations, where the stations diagram is very large and complicated then route relay interlocking is installed. In this type of interlocking a single board is installed and all the points locks and signals of that station are centralised on that single board.

Solid State Interlocking (SSI) :- SSI is nothing but a modified form of RRI. Transistor and semiconductor diode, has replaced the relays. Computer is used for achieving the interlocking and other control. it is more reliable than RRI and with less number of failure. The SSI consist of - (A) Genesis (B) Micro lock (C) Even track