ENGINEDRIVER 2ND-GRADE – *SIGNALS and RULES & REGULATIONS* EXAMINATION
TYPICAL Q & A

Note:
TA: Train Advice. Daily operational notice to all personnel.
LA: Locomotive Assistant. Driver's assistant/Observer/Second-person.
OIC: Officer-in-charge. The senior employee at a station or depot.
OCTR: Officer Controlling Train Running: A Traffic Branch member in the Train Running office, who schedules and manages the day-to-day requirements around the operation of trains.
TCO: Train Control Officer: A Traffic Branch member qualified to manage an area of a rail network and who authorises and directs all activities that take place on that part of the network.
MIS forms: Administrational instruments that convey ***MIS***cellaneous train operation information and instructions via dedicated pro-formas. Each type of MIS form is identified by a number.

RULES

1. (a) Definition of station limits
All lines within Home, Outer Home, or Arrival signals. Where fixed signals are not provided, within the first facing points met approaching the station on the main line from either direction. Station limits may be defined by noticeboards.

(b) Definition of Open Section
A section of line operated strictly in accordance with the working timetable and Train Advices, and where Tabletworking or Automatic Signalling is not provided.

2. Duties of engine drivers regarding use of whistle when approaching level crossings
Drivers must sound the locomotive whistle at such a distance back from the crossing as will be of ample warning of the approach of the train. They must make use of the whistle during shunting operations at public level crossings. When two trains approach a level crossing at the same time on double line, each driver must sound the whistle continuously until over the crossing. The whistle should be sounded loud and long, and repeated if necessary.

3(a) When should a tail lamp be used on a locomotive?
When the locomotive is running light or assisting a train in the rear.

(b) When should the headlamp be on Full and when on Dim?
The headlamp must be on Full at all times on trains running on the main line, and on all railcars, locomotives (including EMUs) moving between platforms, yards, and depots. Headlamps must be dimmed when trains are standing at a station, and when approaching stations at which they are timed to stop (provided that the train is entering the station on a signal that indicates the line ahead is clear). Headlamps on shunt locomotives are to show a Dimmed white light at each end when the locomotive is engaged on shunting duties.

4. Where no Low Speed signal is provided, how will trains proceed past a Home Signal at STOP when the line is occupied?
The train must stop at the signal, and the driver must be verbally instructed by the signalman (or shunter when authorised by the signalman) to pass the Home signal at STOP. The signalman (or shunter) must ride on the locomotive or clearly inform the driver how far he may proceed.

5. When a train running in a 2-position signalling area is not timed to stop, how should it be signalled to stop at the station and how should the driver proceed?
The Home or Outer Home signal must be kept at STOP until the train has stopped or nearly stopped. The signalman may then place the signal at Proceed for the train to draw ahead, provided that the Starter, Advance Starter, or Departure signal is at STOP and that the line is clear to the next fixed signal in advance applicable to the train. The driver so-signalled must slowly bring the train in being prepared to stop at the signalbox if it is situated between the Home and Starter signals. The train must not proceed until the Starter, Advance Starter, or Departure signals have been placed at Proceed, or — where fixed signals are not provided — until signalled to proceed by the signalman.

6. What procedure must be adopted when a train is detained outside a Home signal?
The driver must sound the engine whistle immediately. If no action is forthcoming, the locomotive assistant must communicate with the signalman and advise him of the situation. The train must be protected if necessary. The signalman must allow sufficient time for the guard or locomotive assistant to rejoin the train before placing the signal at Proceed. The driver must receive a 'Clear' hand-signal from the guard before starting the train.

7. When may shunting movements outside station limits be carried out in an Open Section area? What precautions must be taken and what permission must be received?
This shunting may only be permitted by instruction of the Officer in Charge. Shunting operations must be completed 15 minutes before the next incoming train is due. When necessary, protection must be provided.

8. When signal indications cannot readily be seen, what precautions must the driver take?
Drivers must be particularly alert, and trains must move under such control as will enable them to stop before passing a signal, the indication of which is unknown.

9(a) State the first two duties that must be performed immediately following an accident or obstruction which involves a train on any line?
Immediate measures to ensure safety must be taken. The train must be protected, and the driver and guard must communicate and inform the Train Control Operator of the circumstances. If there is no TCO, then the signalman at each end of the section must be advised so that assistance can be arranged.

(b) When a train is disabled, what undertaking must be given?
That of a completed MIS 39 form (i.e. crew not to move the train).

(c) After the relief locomotive arrives at the disabled train, what authority must the driver receive before clearing the section?
The permission of the driver and guard of the disabled train.

10. When a train is stopped for a long period in an Open Section area because of accident or obstruction;
(a) In which direction must protection be placed?
To the rear.

(b) If the train is running without specific instructions as to the crossing of other trains, how must it be protected?
To the front and rear.

(c) When a train has been authorised to pass a defective Departure signal at STOP, and then becomes disabled in the block section, how should it be protected in an Automatic Signalling area?
To the front and rear in accordance with the Rules & Regulations.

11. When a train is divided on a double line and the locomotive takes it forward in two portions, what is the procedure?
The driver and guard must come to an understanding as to the measures to be adopted. The rear portion must be secured and protected in the rear if necessary. The front portion must be moved ahead 200 m where the locomotive assistant will place two detonators 10 m apart on the rail to warn the driver when returning of the position of the rear portion of the train.

The LA must advise the driver of the class and number of the last vehicle of the front portion and if the air brake is not operative throughout this portion of the train or all vehicles are not properly coupled, he must ride on this or the nearest suitable vehicle. Otherwise he may ride on the locomotive.

Upon arrival at the first signalbox, the driver must satisfy himself that the front portion is complete and inform the signalman of the circumstances. If the locomotives or front portion of the train has to pass into the next block section a tail lamp must then be placed on the rear of it. In this case, the locomotive must return on the proper line to the station in front of the rear portion, cross to the wrong line, and return to the rear portion to remove it forward. The returning locomotive or the remainder of the disabled train must not pass any signalbox that is switched in without the permission of its signalman.

After or near sunset, or during fog or falling snow, a red light must be displayed on the front vehicle of the rear portion of the train as a warning to the driver returning for it.

12. If—in a Double Line Automatic Signalling area—a train is disabled, what is the procedure to get a relief locomotive from the station in advance to move the train to that station, and what precautions must be taken after the crewmember has been sent for assistance?
The driver and guard must confer and arrive at an understanding. A member of the train crew must take a completed MIS 39 form to the station in advance to pilot the relief locomotive back to the disabled train. If that station is switched out, the crewmember must arrange for it to be switched in.

When going for assistance, the crewmember must protect the front of the disabled train in accordance with the Rules & Regulations. He must notify the signalman of the circumstances, hand the driver of the relief locomotive the MIS 39 form and pilot him back to the disabled train. At times of bad light or visibility, the driver of the disabled train must ensure of a red light on the front of the disabled train before the crewmember proceeds for assistance.

After the crewmember has gone for assistance, the disabled train must not be moved until the relief locomotive arrives unless satisfactory arrangements have been made previously to prevent the relief locomotive from travelling on the wrong line from the station in advance and the crewmember has returned to the disabled train.

13. Describe the procedure when a train is stalled or disabled in a Double Line Automatic Signalling area and assistance is available from a train in the rear to push through the section?
The disabled train must be protected in accordance with the Rules & Regulations and a member of the train crew must proceed back to the relief train or locomotive with a completed MIS 39 form. He must hand the MIS 39 to the driver of the relief train and pilot the relief train up to the disabled train at a reduced speed. After obtaining the permission of the driver and guard of the disabled

train, it may be pushed to a place beyond which it no longer requires assistance, or to where a relief locomotive may be attached at the front.

14. In a Double Line Automatic Signalling area, a train is prevented from moving forward and must return to the station in the rear:
(a) What authority is required and from whom must it be obtained?
A MIS 52 Wrong Line Order issued by the signalman at the station in rear.

(b) If more than one train is involved, how many MIS 52 forms will be issued?
One

(c) When the last train has cleared the section what must the driver do with the MIS 52?
He must hand it to the signalman who will cancel it.

(d) What action must the driver of each following train take with respect to the MIS 52 authority, before setting back?
The drivers of each following train must sign the form on the back and observe if any catch points are noted on it.

15. In an Automatic Signalling area, a train must return to the station in rear. What precautions must be taken by the driver when setting back?
The driver must proceed cautiously being able to stop short of any obstruction. He must make frequent use of the locomotive whistle and ensure that all points are secure for the movement. Speed over level crossings must not exceed 10 km/h.

16. If, in a Double Line Automatic Signalling area, a train stops on a brake application from an unknown cause and the driver cannot see that the opposite line is clear, describe the procedure to protect both lines.
The driver must immediately take steps to protect the opposite running line. If the locomotive can be moved, he must proceed to a point at least 1 200 m from the disabled train and there leave the LA with detonators and hand-signals to protect the opposite line.

If the locomotive cannot be moved, the LA must protect the opposite line in accordance with Rule 74 and the guard must protect in the rear. If the locomotive can be moved, the driver must proceed to the nearest signalbox or phone and inform the signalman of the matter. While going forward, the driver must stop any oncoming train by sounding the “apply brakes” whistle signal and exhibiting a Danger hand-signal or any other effective means. At night, or when visibility is bad, or when passing through a tunnel, a red light must be shown in a forward direction from the locomotive.

If there is no guard, the LA must proceed forward on foot as above and lay protection, and the driver—after placing a red light or flag on the front of his locomotive—must go back (or send another competent member) to protect the rear. Both lines must be protected and the TCO or Officer Controlling Train Running advised.

17. In a Double Line Automatic Signalling area, Pilotworking is in operation:
(a) Who personally dispatches each train?
The Pilotman (with the concurrence of all concerned).

(b) If communication exists between stations, when may a following train be dispatched?
When information is received from the station in advance that the train has arrived, or if the OCTR directs otherwise. Also, on signal indications which are Clear for the right direction.

(c) What authority does the driver need to travel through the section without a Pilotman?
A MIS 29 Pilotman's ticket, and the verbal authority of both the Pilotman and signalman. Any applicable signals must be at Proceed.

(d) Where communication does not exist, how may trains be dispatched?

i. Where—following the departure of the previous train—the running time for the section has elapsed, provided that the driver is informed of the nature and departure time of the previous train, and also that the Pilotman does not know if it has cleared the section.
ii. By special authority of the OCTR.
iii. By authority of the Pilotman who has concurred with the OIC and the signalman, and when the running of trains is to be governed by signals and the signal indicates that the section ahead is clear. The signal aspects displayed in this case must be adhered-to. Signals applicable to the obstructed line will not apply.

18. In a Double Line area, Pilotworking is in operation. State how a driver would be signalled back onto the right line.
By fixed signals situated at the crossover. If no fixed signals are provided, then by detonator- and hand-signals exhibited by a handsignalman station at the crossover.

19. In a Double Line Automatic Signalling area, a train is running in the wrong direction. What precautions must be taken by the driver?
Sound the locomotive whistle is necessary. Proceed with caution, being able to stop short of any obstruction. Speed over level crossings must not exceed 10 km/h (because warning devices are non-operational). At night, in bad visibility, and when travelling through a tunnel, a red light as well as the headlight must show to the front. Drivers must assure themselves that any facing points are correctly set and secure, and must watch for hand-signals from anyone employed at the points.

20. In a Double Line Automatic Signalling area, Pilotworking is in operation:
(a) What is the procedure when a train with a Pilotman is disabled?
The driver, guard, and Pilotman must confer and arrange for assistance. They must provide immediate protection and maintain it until the section is clear.

(b) What is the procedure when a train without a Pilotman is disabled?
The driver and guard must provide immediate protection and the guard must communicate with the Pilotman as soon as possible.

21. (a) Before a relief locomotive is dispatched into Open Section territory to assist a disabled train, what authority must its driver have?
A Train Advice from the OCTR and a MIS 39, plus permission of the OIC.

(b) In Open Section when alterations are required to the running order or crossing of trains, what authority does the driver need and who issues it?
A Train Advice from the OCTR.

22. What is the purpose of a 'Block of Line' Train Advice?
To temporarily close a stated portion of line to all traffic except that shown on the TA, which traffic may enter or be within the blocked section during the stated period. Trolleys may operate normally.

23(a) What are the driver's duties regarding TAs when coming on duty?
The driver must sign for and uplift all TAs and special instructions that will concern his shift. He must hand them to his locomotive assistant to peruse.

(b) What are the driver's duties regarding TAs when commencing a run?
The driver must check with the guard and OIC that they all have the same TAs, crossing orders, and special instructions if in Open Section or Single Line Automatic areas.

(c) What are the driver's duties regarding TAs when changing-over en-route?
The driver must hand over all unfulfilled crossing orders and satisfy himself that the other driver possesses TAs and special instructions affecting the train.

24. What are the restrictions and precautions that apply when kicking or slipping vehicles over level crossings?
It is only allowed if absolutely necessary. If the crossing is not protected, movements must be piloted at a speed of no more than 6 km/h. Care must be exercised.

25. Locomotives running in reverse.
Locomotives having direct cab vision in one direction only, must face in the direction of travel when operating as single units. Exceptions are emergencies and shunting in station yards. Railcars and multiple units must be driven from the leading end.

26. When propelling vehicles on the mainline what lights must be exhibited when:
(a) Assisting a train up a gradient?
The leading locomotive must display an ordinary headlight.

(b) When setting back to the station in rear?
A red light on the front of the leading vehicle.

(c) Pushing a disabled train to the station in advance?
The leading locomotive must display an ordinary headlight.

(d) Trains being worked up to the point of obstruction?
A red light on the front of the leading vehicle.

(e) What is the maximum speed when propelling a train?
15 km/h.

27. What instructions apply to dead locomotives being towed to a repair depot on a train?
Dead locomotives should be coupled directly behind the train locomotive, except where local instructions prohibit two locomotives being coupled together, when the dead locomotive should be coupled as close to the head of the train as possible.

28. What instructions apply to passenger trains stopping in tunnels or on bridges?
They may not stop on or in either except where the bridge is completely decked and provided with walkways on both sides. Carriages must be removed from tunnels as soon as possible.

29. What instructions apply when the first of two trains travelling through an Open Section is losing time and encroaches within 15 minutes of the schedule of the following train?
The guard must leave two detonators to warn the driver of the following train that the train ahead is losing time.

30. What are the conditions for non-passenger trains to run ahead of time?
They are not permitted to do so in Open Section, or in Tablet areas when running without a tablet (or when running under Safeall) or when prohibited by the WTT or TA. They may do so in Tablet and Automatic Signalling areas when Train Control is in operation, and arrive ahead of time by authority of the TCO, WTT, or TA. If Train Control is not in operation, they may leave 15 minutes ahead of time and arrive up to 15 minutes ahead of time in Single Line Automatic Signalling areas not under CTC. This does not override Crossing Orders and trains must not pass their crossing places without the authority of the TCO.

31. (a) Where and why are CURVE boards erected?
On the driver's side at the entrance to a curve for which the board applies, to indicate a lesser speed than that allowed for the locality in the WTT. Boards are white with black numerals.

(b) Where and why are CURVE WARNING boards erected?
They are erected about 200 m from the curve to which they apply. They may be exhibited as a separate board or placed below the curve board of the preceding curve. They are placed on the driver's side and indicate a reduction of at least 15 km/h for that curve. They are yellow boards with black numerals.

32. When a train running "clear of all other trains" is in an Open Section or Single Line Automatic area and enters an unattended station to allow two timed trains to cross, what information must the drivers of the two timed trains receive?
They must be advised of the nature of the untimed train. Non-stopping trains must be stopped to be given this information.

33. What is the meaning of the term "clear of all trains" and what instructions apply to this in:
(a) Open Section?
it means a special or work train running without specific instructions as to the crossing of other trains. These specials or work trains must be sidetracked at least 15 minutes before any other train is due. If clearance time is in doubt, protection must be laid.

(b) Tablet and Double Line areas?
Specials and work trains must clear the section 5 minutes before any other train is due thereon.

(c) Automatic areas?
Specials and work trains must work under the direction of the TCO.

34. What is the instruction regarding:
(a) The interval between trains in Open Section?
15 minutes unless otherwise instructed by the District Traffic Manager.

(b) Trains setting back in Open Section?
This is permitted only by TA issued by the OCTR.

35. What precautions must be taken in a Double Line area when the driver observes a train standing on the opposite running line?
Sound the whistle and reduce speed. Must be able to stop clear of any obstruction.

36. What instructions apply to defective tank wagons on a train?
They must be placed in the nearest siding and the TCO advised. An official of the company owning the tank wagon should be advised.

37. What instructions pertain to the running of un-piped or defective vehicles?
They may be run by authority of the TA issued by the OCTR and containing the District Mechanical Engineer's instructions as to where they are to be placed on the train. Wherever possible, the train must be continuously Brake Pipe-connected.

38. When, why, and in what areas are the following forms used:
MIS 21 - Tablet instruments are out of order. Valid for a single journey through one section only. Must be read aloud by both driver and LA and collected by the signalman at the other end of the section and cancelled. Non-stopping trains need not be stopped to receive this form.

MIS 29 - Pilotman's ticket for Tablet and Double Line areas. It is the driver's authority to travel through the section when Pilotworking is an operation and the Pilotman does not accompany the train. Must be collected and cancelled by the OIC at the end of the section to which it applies.

MIS 31 – Driver's advice that signals staff are working in the section, and no TA has been issued advising of the conditions. Driver must expect (and be able to act upon) hand-signals from signals staff. This form is applicable to all areas.

MIS 39 - An undertaking by the driver and guard not to move their disabled train when assistance has been sent for. Must be carried by the driver of the relief train or locomotive. Applicable to all areas.

MIS 46 – Driver's advice of the alteration in hours of a Tablet station (i.e. when a Tablet station is to be switched in or out or remain switched in or out outside of the times or trains specified in a TA or the WTT). This form is used with the tablet to notify the driver that the tablet handed to him is for the station specified in the advice. Non-stopping trains must be stopped.

TABLET

39. Speed when exchanging tablets:
(a) where auto tablet exchangers are not in use.
Maximum 25 km/h.

(b) Where auto exchangers are in use
Maximum 70 km/h.

40 (a) When may a signalman NOT authorise shunting outside station limits without a tablet?
i. When a train is approaching in the section or has permission to enter the other end of the section.
ii. When a tablet, or bank engine key has been issued for a train to return through that section to the station.
iii. When Pilotworking is in operation.

(b) How MAY a signalman authorise trains to shunt outside station limits without a tablet?
By issuing permission either verbally, or by written instruction which must be timed, dated, signed by the signalman, and delivered by the shunter.

(c) What is the limit of travel under these conditions?
400 m outside station limits.

41. On whose authority may the driver proceed and what would he be instructed to do if the OCTR has not received security telegrams from all stations in the area to be suspended under "Safeall Authority"?
On the authority of the OCTR conveyed on a Safeall TA. The driver would be informed of what securities had not been received and he would be instructed to examine the points before passing over them, and to take any other necessary action.

42. When running under "Safeall Authority":
(a) What signals may a driver a pass at STOP?
Those at stations that have been suspended provided the lamps are not lit and no Danger- hand- or detonator-signals are being exhibited.

(b) What is the allowable speed over facing points at stations where signals are suspended?
Maximum 15 km/h.

43. (a) A train is to run on Safeall Authority. What action must be taken by station staff to stop this train if the signals are suspended?
Signal lamps must be re-lit and placed at Stop, and hand-signals must be exhibited. Detonators must also be placed to draw the driver's attention to signal indications.

(b) What undertaking must be given from the driver of a light locomotive to the OCTR upon arrival at the end of the section covered by his Safeall Authority?
The driver must send a TR telegram stating that the section is safe for the passage of trains and that any apparatus that has been used for any reason has been returned to its correct position.

44. When Tabletworking and signalling has been suspended, under what conditions may Tabletworking be resumed?
When the last train authorised to run without tablet has arrived at the end of the section for which Tabletworking was suspended, or at a point fixed under special conditions by the OCTR.

45. When a train running under tablet encroaches on the time of a train authorised to run under Safeall Authority, what is the procedure?
Tabletworking must remain in operation for both trains until the train running under tablet has reached its destination or has crossed the train which has authority to run without tablet. From the crossing place onward, the last-mentioned train must run without tablet as originally instructed (i.e. under Safeall).

46. (a) What is the purpose of a Safeall TA and who issues it?
To meet special conditions by running over certain sections of line with Tablet- and signal-working suspended. It is issued by authority of the OCTR.

(b) What action would a driver take if a suspended Home signal displayed an indication?
The driver must stop at the signal and sound the whistle. The guard (or LA in the case of a light locomotive) must inspect the points at both ends of the station, then pilot the train in and communicate with the TCO.

(c) How far may a train set back when working under Safeall TA?
To within 600 m of the Home or Outer Home signal at the station at the commencement of the section covered by the Safeall TA.

(d) Must the signals controlling the entrance and exit to a suspended area be at Proceed before the train passes them?
Yes.

(e) Must the signals at switch-out stations be at Proceed before the train passes them?
Yes.

47. When a signalman cannot communicate with the signalman at the other end of the section, and permission is needed to obtain a tablet, on what authority may trains proceed?
By authority of a TA issued by the OCTR, or if Pilotworking is instituted, by the Pilotman's authority (MIS 29).

48. What instructions are issued to a driver when a station is switched 'in' or 'out' at an unusual time, and what are the driver's duties?
A MIS 46 form. The driver must sign on the butt and also ensure that the tablet he receives is for the same station as on the MIS 46. Non-stopping trains are to be stopped. These instructions could also be issued by TA.

49. Where the WTT or a TA states that a switch-out station will switch 'out' after a specified train has cleared but this train is running late, what advice will the driver require before proceeding?
A MIS 46.

50. If a train is approaching a 'switch-out' station where staff are not on duty and the signals are either incorrect or imperfectly displayed, what action must the driver take before his train can proceed?
He must stop at the Home signal. The guard (or LA if on a light locomotive) must inspect the points at both ends of the station and if they are secure, pilot the train in and communicate with the TCO. The TCO must be satisfied that the driver is in possession of a tablet or TA authorising him to pass through the block section and that the mainline points Are secure, and he may then authorise the train to proceed.

If there is no TCO in attendance, the guard (or LA) after ensuring that the driver is in possession of a tablet or the appropriate TA authority, will pilot the train out of the station from where it may proceed.

If communication exists with the signalman at the next attended station, his permission must be obtained before proceeding, otherwise he must be informed of the circumstances upon arrival at the station.

51. State the procedure to obtain a relief locomotive to enter a section and remove a disabled train without the relief locomotive possessing a tablet.
The driver and guard must confer, and then contact the TCO. The guard (or LA) will take possession of the tablet and completed MIS 39, and after the disabled train has been protected, will communicate with the OCTR giving him particulars of the MIS 39 and the precise location of the disabled train. The OCTR will issue a TA authorising a relief locomotive to enter the section without a tablet, and run at reduced speed to the point at which protection has been laid.

This TA must be acknowledged by all concerned before the relief locomotive enters the section. When the relief locomotive arrives at the point of protection, the crewmember of the disabled train will give the relief driver the tablet and MIS 39, and pilot him to the disabled train. After receiving permission of the driver and guard of the disabled train, the relief driver may remove it from the section. The relief driver must retain possession of the tablet until all of the disabled train is removed from the section.

52. What is the procedure to clear a Tablet Section by working trains from each end of the section to the point of obstruction?
The driver and guard must confer and contact the TCO. Unless otherwise instructed by the OCTR, the guard will place the driver in charge of the obstruction where the driver will be responsible for seeing that protection is maintained until he is relieved by a member of the Traffic Branch. The guard will take a completed MIS 39 and proceed to the station from which Pilotworking will be instituted, inform the OIC of the circumstances, and show the MIS 39. He will lay protection on the way.

The LA, with a completed MIS 39 and the tablet, will proceed to the station from which Tablet Working will be used, protecting the train on the way. Upon arrival, he will show the signalman and OIC the tablet and MIS 39. OICs at both stations will make the necessary arrangements. The LA must retain possession of the tablet.

When the section is clear and safe for traffic, the tablet has been given to the signalman, and Pilotworking has been cancelled, normal Tablet Working may resume. No train way pass the point of obstruction unless under normal Tablet Working.

53. If the train locomotive fails while an assisting locomotive is attached at the rear and the train can only be moved to the station in rear, how is the section cleared by removing the train in two parts?
Contact the TCO, and unless the OCTR directs otherwise, all members present must reach an understanding. The driver of the train will give the assisting driver the tablet and a completed MIS 39. The assisting locomotive proceeds with a portion of the train to the station in the rear, laying protection on the way, where the OIC is advised and handed the MIS 39.

The assisting locomotive now returns for the remainder of the train, and after receiving permission of the train crew, removes this portion and the disabled locomotive from the section. The assisting driver retains possession of the tablet until the section is clear. Protection must be maintained until this locomotive returns for the remainder of the train.

AUTOMATIC SIGNALING

54. What are the objects of Automatic Signalling?
They are to facilitate the regular movement of trains by dividing a portion of line into sections and to automatically maintain safe space intervals between following trains. This object is accomplished by controlling the signals governing the entrance to a section by track circuits, so that when a train enters a section, the signal is automatically held at Stop until the train is under the protection of the next signal in advance. Some automatic signals may be held at Stop by a signalman.

The electrical circuits of automatic signals also ensure that all points are correctly set and secure and that the rails are continuous, and that trains travelling in opposite directions cannot be in the same block section at the same time.

55. Why are Double-Unit Automatic signals provided in some areas?
To indicate a reduction to Medium Speed where lines diverge or converge, or at other places where Medium Speed is required. They also indicate to a driver that the train is approaching a signal that may require a reduction to Medium Speed.

56. How is Normal, Medium, and Low Speed indicated on an Automatic running signal, and what are the meanings of the following indications?
Normal Speed:

Green-over-Red	'Clear, proceed at Normal speed'. Section is clear up to the next signal in advance, which is indicating 'Proceed at Normal speed'.
Yellow-over-Red	'Caution, Normal speed'. Be prepared to stop at the next signal.
Yellow-over-Green	'Caution, Normal speed'. Prepare to reduce to Medium speed at the next signal in advance, which is at 'Proceed at Medium speed'.

Medium Speed:

Red-over-Green	'Clear, proceed at Medium speed'. Section is clear to the next signal in advance, which is at 'Proceed' (may be for Medium or Normal speed).
Red-over-Yellow	'Caution, Medium speed'. Section is clear to the next signal in advance, which is at Stop.

With both of the above indications, medium speed must be maintained up to the next signal in advance or until clear of the points to which the signal applies.

Low Speed:

Red-over-Red-over-short-range yellow	'Caution, proceed at Low speed'. Points are correctly set but the track may not be unoccupied. Proceed cautiously as far as the line can be seen to be clear, being prepared to stop short of any obstruction or discontinuity.

57. (a) Why are Approach signals used?
To control the speed of trains entering junctions, points, or interlocked areas.

(b) Where are they located?
In rear of a Stop-and-Stay signal controlling the entrance to junctions or other interlocked areas.

(c) How do they operate?
The same way as an intermediate Stop-and-Stay signal except that when the signal in advance is at Stop, the Approach signal is also at Stop until the expiration of a prearranged time delay, when it goes to Proceed.

58. When a Departure signal has been passed and part of the train is still within station limits, under what conditions may the driver set back?
The driver may be hand-signalled back on the authority of the signalman (who may be the TCO) and the OIC, provided that the train will be completely within station limits.

59. In a Single-Line Automatic signalling area, the train has been stopped when entering the station but the rear of the train is still outside of station limits and it is necessary to set back a short distance. What authority must the driver receive?
A Train Advice from the OCTR.

60. If a Stop-and-Stay signal fitted with an 'A' light is that Stop and the 'A' light is extinguished, what is the procedure before the train proceeds?
The driver must stop the train and ascertain that;

i. the station is switched out
ii. the switch-lock door is closed and locked
iii. the points are secure and safe for passage
iv. the main line is clear.

The train must be piloted through the station to the next signal by the LA or guard. Contact the TCO.

61. What is the authority required to pass an Intermediate Stop-and-Stay signal not fitted with and 'A' light?
A TR telegram from the TCO if he considers it safe to proceed.

62. What is the procedure when a train arrives at a Stop-and-Proceed signal displaying Stop?
The driver must stop the train and wait 10 seconds. If the signal is still at Stop, he may proceed cautiously; speed not to exceed 10 km/h if the view ahead is obstructed. The driver must expect to find the section obstructed or occupied, a broken or misplaced rail, or points wrongly set, and he must be able to stop short of any such obstruction.

Any mainline points must be secured before the train passes over them. If the next signal is at Proceed, the driver must wait until the train is completely past the signal before resuming normal running. If the signal is an Arrival signal, the regulations applicable to Arrival signals will apply.

Drivers must pay strict attention to observance of preceding side and tail lamps, and also to any headlights seen. The driver must stop if any of these are sighted, and must only move forward if the guard of the preceding train verbally instructs to do so. If the preceding train is moving, the following train may continue at a safe distance.

63. (a) What is an imperfectly-displayed signal?
An indication not covered by Rules & Regulations, or a signal not showing a steady indication.

(b) When may an imperfectly-displayed signal be passed?
If a Stop-and-Proceed signal, under Automatic Signalling Regulation 6.
If a Stop-and-Stay signal, under Automatic Signalling Regulation 5.
If a Departure signal, under Automatic Signalling Regulation 19.

(c) What must the driver do regarding an imperfectly-displayed signal?
The driver must stop at the signal and advise the OIC, TCO, or the locomotive supervisor.

64. What are the instructions and precautions regarding use of sand in an Automatic Signalling area?
Sand must be used sparingly. If excessive sand has been used, stop and advise the TCO or OIC. If under Single-Line Automatic Signalling, protected both ends of the train, and if under Double-Line Automatic Signalling, protect the rear.

65. What circumstances will prevent a Departure signal clearing normally?

- a train or vehicle is occupying the section ahead
- there is a conducting object forming a connection between the rails
- there is a broken or misplaced rail
- there is a detached or broken bond wire
- points are wrongly set
- a switchlock or releasing-switch door is open
- a half pilot-key has been removed or incorrectly replaced
- a vehicle in a siding is fouling the track circuit.

66. In a Double-Line Automatic Signalling area:
(a) What is the effect on a signal protecting a crossover road of opening a switchlock door?
It will place the signal at Stop and extinguish the 'A' light.

(b) If an 'A' light is showing, what does this indicate?
That the signalbox is switched out, the switchlock door is closed, and points are correctly set. When an 'A' light is illuminated, the Stop-and-Stay signal is converted to Stop-and-Proceed.

67. What is the procedure to shunt a Double-Line switchlock siding when the movement requires crossing an opposite running line?
The driver must stop clear of the points. The LA will proceed to the switchlock box and observe as far as possible that no train is approaching the signals protecting the crossover, then open the door, allow the time delay to run down and indicator arm to raise, then turn lever 'B' to free the points. The points may now be moved as required.

68. If signals and communications have failed in a Double-Line Automatic Signalling area, how may trains proceed?
Unless other arrangements have been made by the DTM, trains may proceed in accordance with ASR 6 over the portion of line affected up to the next Stop-and-Stay signal. If the fault still exists, then after the expiration of 5 minutes following the departure of the preceding train, the TCO or OIC may authorise the train to proceed, notifying the driver of particulars of the preceding train and that the conditions of ASR 6 still apply.

69. (a) Definition of Block Section.
A section of single-line extending between two adjoining stations equipped for crossing trains.

(b) Definition of Intermediate Section.
A portion of the single-line block section the entrance to which is governed by fixed signals.

(c) Definition of Unattended Crossing Station.
A crossing station at which no member of the traffic branch is in attendance until the arrival of a train, and where the signals and points are not arranged and operated as an interlocked station. If no employee is booked on duty then the guard of the first train to arrive becomes the OIC. The entrance to an unattended crossing station is protected by Arrival signals.

(d) Definition of Attended Crossing Station.
A crossing station at which an employee of the traffic staff is in attendance but where the signals and points are not arranged and operated as at an interlocked station. An attended crossing station is protected by an Arrival signal. Signal control slides are provided at some crossing stations to place at Stop one or more of the Departure signals.

(e) Definition of Interlocked Station.
A station at which the apparatus for working the points and fixed signals is centralised and arranged to prevent conflicting movements, and the operation of the points and signals is manually controlled as well as being controlled by track circuits. Interlocked stations are protected by Home signals.

70. When and why is a MIS 59 used?
It is used when, for any reason, it is required that a train movement must be made past a Departure signal at Stop. It is the driver's authority from the TCO that the train may proceed past the Departure signal at Stop and into or through the block section. It is also used if the signal has gone to Red immediately in front of a train and the train has passed it before being able to stop.

71. When a light locomotive arrives at an unattended crossing station and the Departure signal fails to operate, what procedure must be adopted to obtain authority to proceed?
After all apparatus has been operated correctly and if the signal still fails to operate, the driver must immediately contact the TCO who may issue a MIS 59 authority or institute pilotworking. If a MIS 59 is issued, the driver must repeat it back to the TCO.

72. If a Departure signal failed and went to Stop just before the locomotive passed it, how may the driver proceed without having to set back?
By authority of a MIS 59 from the TCO if he considers it safe, or by the institution of pilotworking.

73. If a driver has received a MIS 59 to pass a Departure signal at Stop what is the procedure if the signal goes to Proceed as the train approaches it?
The driver must stop and contact the TCO for his authority to proceed.

74. Under what circumstances may a locomotive or train legitimately pass a Departure signal at Stop?
i. upon receipt of a MIS 59 authority from the TCO
ii. when Pilotworking has been instituted (ASR 28 and 29)
iii. when a relief locomotive or train must enter the block section to render assistance to a disabled train (ASR 30)
iv. when a locomotive is required to return from a crossing station for a portion of the train left in the block section
v. when a train is required to enter an obstructed section
vi. when Automatic Signalling has been suspended by TA
vii. when all signals and communications have failed in an area where ASR 33 applies.

75. When a driver has received authority to pass a Departure signal at Stop, how must he proceed through the section?
The driver must proceed cautiously being prepared to find the section obstructed, points wrongly set, or a broken or misplaced rail. All points must be secured before passing over them unless authority has been given to the contrary.

76. If a train has passed a Departure signal at Stop but part of the train is still within station limits:
(a) What authority does the driver need to push back into station limits?
The authority of the signalman, TCO, or OIC.

(b) What authority does the driver need to continue through the section?
A MIS 59 form from the signalman if he considers it safe to do so, or—if Pilotworking has been instituted—authority from the Pilotman.

77. (a) In a Single-Line Automatic Signalling area, if a driver is travelling on a MIS 59 authority, what action must he take if an Intermediate signal is at Proceed?
The driver must act upon the indication of that signal only when his whole train has passed it.

(b) In a Single-Line Automatic Signalling area, if a driver is travelling on a MIS 59 authority, what action must he take if an Intermediate Stop-and-Stay signal is at Stop and is not fitted with an 'A' light?
The driver must stop and obtain a TR telegram from the TCO.

78 (a) What class of automatic running signal is an 'L' light fitted to?
Arrival signals.

(b) What does it indicate when illuminated?
That mainline points are set for the loop and all points off the loop are in their Normal position.

(c) What action must a driver take if an 'L' light will not illuminate?
All points on the loop must be examined, and if in Normal position, the train may be hand-signalled to enter the loop.

79. In a Single-Line Automatic Signalling area not under CTC, a train is about to depart the loop:
(a) What is the meaning of *Yellow-over-Red* on the opposing Arrival signal?
No train is following closely in the rear.

(b) What is the meaning of 'All Red' on the Arrival signal?
There is a train following closely in the rear or an opposing train is departing.

(c) What is the meaning of *Green-over-Red* on an opposing Arrival signal?
There is an opposing train approaching.

80. What is the procedure to dispatch a train from the loop at an unattended crossing station?
The LA must go and observe the indication of the opposing Arrival signal to see whether any trains are approaching from either end. The driver must keep his train clear of the fouling board until the LA signals that points are correctly set.

A Caution indication means no other train is following closely. A Stop indication means another train is on the section in the rear. If this train is departing in the opposite direction, the LA will be aware of it.

If a train is closely approaching from the rear, the train on the loop must not be dispatched until the train from the rear has stopped.

Where signals are approach-lit there are releasing-switch boxes with an 'eyeball' indicator. In this case, the LA need only observe the 'eye-ball' indicator instead of proceeding to the Arrival signal.

If there is no train closely approaching in the rear, the LA must push in the releasing switch to set the Departure signal to Proceed. After ensuring that all other points are correctly set for the train to proceed, he may reverse the mainline points and signal the driver who will acknowledge with a short pop of the whistle.

The driver must obtain the guards signal to draw out of the loop. After the locomotive has passed the Departure signal, the guard must close and padlock the releasing-switchbox door. When the whole train has cleared the points, he may reset them to Normal and padlock the lever.

81. When two trains are to cross at an unattended crossing station, and the train due to take the main line arrives first and stops clear of the fouling point for the loop, what must be done immediately and why?
The LA must at once go forward and set the points for the opposing train to enter the loop, to free the opposing Departure signal at the station in advance.

82. In a Single-Line Automatic Signalling area:
(a) What is the procedure to enter and be locked into a switch-locked siding?
The driver must stop within 15 m from the main line points. The LA will go forward and open the switchlock door, pull out handle 'A' and turn lever 'B' to free the points. He must then reverse the points and hand-signal the driver to enter the siding. When the train is in clear, the guard (for LA if a light locomotive) must reset the points to Normal and close and lock the switchlock door.

(b) What is the procedure for a train to return to the main line?
The LA will go forward and open the switchlock door. He must observe the indicator to see whether the section is clear or occupied. If occupied, he must close the door and contact the TCO. If clear, he may turn lever 'B', reverse the points, and signal the driver out. The guard (or LA) will then return the points to Normal and close and lock the switchlock door.

(c) What must be observed when shunting a wagon off a through train into the switchlock siding?
The lock must be left free by leaving the door open until shunting is completed and the locomotive has returned to the main line.

83. In a Single-Line Automatic Signalling area, and an assisting locomotive is locked in a switchlocked siding, what instructions must be sought before beginning the return journey?
Instructions from the TCO.

84. (a) When shunting an unattended crossing loop in a Single-Line Automatic Signalling area, and the Departure signal is at Stop, where must the locomotive be stopped?
Clear of the fouling board.

(b) When a shunting movement has passed a Departure signal at Proceed but the train is so long that the locomotive cannot setback within the Departure signal, what authority does the driver need to proceed?
The authority of the TCO and the guard's 'right away'.

85. When and why are the following forms used?
(a) MIS 53
When single-line Pilotworking is being instituted. The form is used to appoint a Pilotman and the rear of the form is used for cancelling Pilotworking.

(b) MIS 54
It is a Single-Line Pilotman's Ticket. It is issued to the driver when the Pilotman does not accompany the train, to authorise the driver to proceed to the station mentioned on the form. It is valid for a single journey only.

86. What is the procedure to dispatch trains under Pilotworking in a Single-Line Automatic Signalling area?

With the concurrence of all concerned, the Pilotman will personally dispatch all trains. He must ride on the leading locomotive unless any trains are following in which case he must show the guard a completed MIS 54 and pilot key, give the driver the MIS 54 and show him the pilot key, and authorise the train to depart. He must then travel on the leading locomotive of the last following train.

Upon arrival of the train at the other end of the section, the MIS 54 must be handed to the OIC who will cancel it. If there is no OIC, the driver must cancel and hand it to the OIC at the first attended station he comes to.

If communication exists, no following train may be dispatched until information has been received that the preceding train has arrived at the end of the block section. If there is no OIC at the end of the block section, the driver must stop and the guard (or driver if on a light locomotive) must telephone the necessary information.

If no communication exists, the following train may be dispatched after the normal running time of the preceding train has elapsed.

The driver of each following train must be informed of the particulars of the preceding train and that the Pilotman has not received word of its arrival. A following train may be dispatched earlier than the above conditions by special instructions from the OCTR but the driver must still be supplied with the information already mentioned.

87. What is the procedure to institute Pilotworking from a station in advance of a defective Departure signal?

The Pilotman will be appointed by the TCO and instructed to fill out a MIS 53, which must be repeated back to the TCO. The Pilotman must remove the half pilot-key to lock the Departure signal at Stop and then lock the pilot-key box. He must then proceed back through the section by any means at his disposal provided he has a clear view of the track ahead. If a train is leaving the station, he may ride on the locomotive. In this case, the train must pass the Departure at Proceed before the half pilot-key is removed. The Pilotman must carry the half pilot-key back to the station that has the defective Departure signal where he will remove its half pilot-key and screw the two halves together to form a (Full) pilot-key for that section. Both Departure signals will now be locked at Stop. The TCO must then be advised.

A pilot-key is a driver's authority to pass Departure signals at either end at Stop when so-instructed.

88 (a) Which signals does the sight of the pilot-key and instructions from the Pilotman authorise the driver to pass?

The Departure signal at each end of the section being pilot-worked.

(b) Under what conditions would a driver pass other classes of signals?

By observance of the indication displayed thereon or if defective, in accordance with ASR 5 or 6.

89. If the Pilotman does not accompany the train, what authority is needed by the driver to proceed?
The Pilotman, with the concurrence of all concerned will verbally authorise the driver to depart, show him the pilot-key, and give him a completed MIS 54. In double-line areas when trains are running in the right direction, and signals are operative, they must be at Proceed for the driver to continue.

90. What is the procedure for when a pilot-key is lost?
If lost en-route, the driver must continue and advise the TCO at the next station. If lost before departing, the train is not to depart. The TCO must be advised to arrange for hand-signalmen to be placed at the Departure signal at each end of the block section to operate on the Pilotman's authority. The OCTR will issue a TA stating that the pilot-key is lost.

Under these circumstances, the Pilotman must have a badge. If a Pilotman's badge is not available, he must tie a red flag around his left arm above the elbow. He must show the driver his MIS 53 in place of the pilot-key.

If the half pilot-key is lost, a Pilotman must be appointed who will take possession of the other half pilot-key and the same arrangements will apply as already stated.

91. If a train has stalled in a Single-Line Automatic Signalling area:
(a) What is the procedure to clear the section to the station in advance?
The driver and guard are to confer and contact the TCO. Unless the OCTR directs otherwise, the train will be double-banked. After the rear portion has been secured, the front portion will be moved to the station in advance. The rear portion is to be protected.

Upon arrival at the station in advance, the LA is to remove the half pilot-key and lock the pilot-key box. After the front portion is secured and the TCO and OIC have been informed, the driver may take possession of the half pilot-key and return past the Departure signal at Stop for the rear portion. When the section has been cleared, the half pilot-key is to be replaced, the pilot-key box locked, and the TCO advised.

(b) What is the authority for a driver to pass a Departure signal at Stop when returning for the second portion of the train?
Possession of the half pilot-key.

92. What is the procedure when a train has stalled in a Single-Line Automatic area and is to set back to the station in rear?
The driver and guard must confer and contact the TCO. The guard will proceed to the station in rear, remove the half pilot-key and lock the pilot-key box, and inform the OIC and TCO. The guard will then return to the train, show the driver the half pilot-key and instruct him to set back. When the section has been cleared, the half pilot-key is to be replaced and the box locked, and the TCO informed.

93. In a Single-Line Automatic Signalling area, what is the procedure when a relief locomotive is to come from the station in rear and push a disabled train to the station in advance?
The driver and guard are to confer and contact the TCO. Unless otherwise directed by the OCTR, the member going for assistance is to obtain a completed MIS 39 and proceed to the station in rear, laying protection on the way. Upon arrival at the station in rear, the member is to remove the half pilot-key, lock the pilot-key box, inform the OIC and the TCO, and await the relief locomotive.

He must hand the relief driver the MIS 39 and show him the half-pilot key. When the relief locomotive has passed the Departure signal at Stop, the member must replace the half-pilot key, lock the pilot-key box, inform the TCO, and then pilot the relief driver to the disabled train.

The relief driver must obtain the permission of the driver and guard of the disabled train before he begins pushing to the station in advance. The TCO must be advised when the section has been cleared.

94. What is the procedure to move a disabled train to the station in rear by a relief locomotive from the station in rear when a train or trains have followed into the Single-Line Automatic section and are behind a disabled train and unable to assist it?
The driver and guard are to confer and contact the TCO. Unless the OCTR directs otherwise, the member possessing the completed MIS 39 will proceed to the station in rear protecting the train on the way. He will stop any following trains, informing the crews of the circumstances and show them the MIS 39.

Upon arrival at the station in rear he will remove the half pilot-key and lock the box, and inform the TCO and OIC. He will then proceed back to the last following train, show the guard and driver the half pilot-key and instruct them to set back. He will do the same for each following train, allowing a safe interval between each. The member will then return to the station in the rear of the last following train. There he will give the relief driver the MIS 39, show him the half pilot-key, and pilot him to the disabled train.

After receiving permission from the driver and guard of the disabled training, the driver of the relief locomotive may remove it to the station in rear. When the section is clear, the member will replace the half pilot-key, lock the pilot-key box, and inform the TCO.

95. What is the procedure in a Single-Line Automatic Signalling area when a train following behind a disabled train is to assist it to the station in rear and there are no other following trains?
The driver and guard are to confer and contact the TCO. Unless the OCTR directs otherwise, the member with the completed MIS 39 will proceed to the station in rear, protecting his train on the way. He must then proceed to the station in rear and remove the half pilot-key, lock the box, and inform the OIC and TCO.

When the relief locomotive arrives, he must show the driver the half pilot-key, hand him the MIS 39, and pilot him to the disabled train. After receiving permission from the driver and guard of the disabled train, it may be removed to the station in rear.

After the section is clear, the half pilot-key must be replaced, the box locked, and the TCO advised.

96. What is the procedure in a Single-Line Automatic Signalling area when a train approaching from the rear is to assist a disabled train to the station in advance?
The driver and guard must confer and contact the TCO. Unless the OCTR directs otherwise, a crewmember must take a completed MIS 39 rearward, protecting his train on the way. He must stop the following train and inform the crew of the circumstances. He must then hand the driver of the following train the MIS 39 and pilot him to the disabled train.

After receiving permission from the driver and guard of the disabled train, the relief driver may assist the disabled train to the station in advance. After the section has been cleared, the TCO must be advised.

97. If a Single-Line Automatic Signalling area is blocked, how are trains worked to the point of an obstruction and what must the driver do when he returns from the section with his locomotive?
By adherence to the conditions printed on the TA. The driver of the train entering the blocked section must obtain the half pilot-key from the OIC and hand it back to him when he returns.

98. In a Single-Line Automatic Signalling area not worked under CTC, signals are suspended:
(a) What authority is required by the driver to proceed?
TA from the OCTR.

(b) How are signals passed during the suspension?
In accordance with the TA.

(c) What are the instructions around movement of following trains?
Following trains must run 15 minutes apart unless otherwise directed by the OCTR. When trains following at close intervals or a fast train is approaching a slower train, or during adverse weather conditions, the driver of the second train must be stopped and informed of the circumstances.

(d) How are alternate crossings authorised?
By TA from the OCTR

99. In a Single-Line Automatic Signalling area not worked under CTC:
(a) What authority is used to alter the running order of trains?
A MIS 56 from the TCO.

(b) Who issues this authority?
The TCO.

(c) How are these forms delivered to the driver of a non-stopping train at interlocked or attended crossing stations?
By cane sling if the transfer will not endanger the locomotive crew.

(d) What is the driver's responsibility with regard to these authorities when changing-over?
The driver must hand all unfulfilled crossing orders to the other driver.

(e) When may this authority be cancelled?
When fulfilled, the driver is to cancel it by writing the word “Fulfilled” across the face of the MIS 56, or by tearing it in half. A MIS 56 can also be cancelled by another MIS 56 or TA.

100. What is the procedure in an Automatic Signalling area when a relief locomotive is to be obtained from the station in rear to move the disabled train to the station in rear?
The driver and guard are to confer. Unless the OCTR directs otherwise, the member will proceed with a completed MIS 39 to the station in in rear, protecting the train on the way. Upon arrival at the station in in rear he must remove the half pilot-key, relock the pilot-key box, and advise the OIC and TCO. The member must show the driver of the relief locomotive the half pilot-key and hand him the MIS 39 and pilot him to the disabled train.

Upon receipt of permission from the driver and guard of the disabled train, the relief locomotive may remove the disabled train to the station in rear. When the section is cleared, the half pilot-key is to be replaced, the pilot-key box relocked, and the TCO advised.

MISCELLANEOUS FORMS – SUMMARY

MIS 21 – Tablet instruments out of order (Line Clear Working).
MIS 29 - Pilotman's Ticket (Tablet and Double Line).
MIS 31 - Signal Staff Working in Section.
MIS 33 - Instituting Pilotworking (Tablet and Double Line).
MIS 39 – Driver's undertaking not to move disabled train until relief arrives.
MIS 46 - Alteration in hours of tablet station.
MIS 52 - Wrong Line Order (Automatic Signalling Areas).
MIS 53 - Instituting Pilotworking (Single Line).
MIS 54 - Pilotman's Ticket (Single Line).
MIS 56 - Crossing Order (Single Line Automatic Areas).
MIS 59 – Driver's authority from TCO past Departure signal at STOP.