

C. 8/15.



VICTORIAN RAILWAYS.

[For the use and information  
of employes only.]

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Instruction for Guidance  
of Employes

In the Service of the Victorian Railways  
Commissioners in regard to the use of

Three-Position Signals.

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These instructions will become effective only when and where specially  
authorised by the General Superintendent of Transportation.

5201.7.15

## VICTORIAN RAILWAYS.

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# Three-Position Signals.

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*The Instructions contained in this Book will become effective only when and where specially authorised by the General Superintendent of Transportation.*

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Every Station-master, Inspector, Workmaster, Roadmaster, Foreman, Engine-driver, Fireman, Train-examiner, Guard, Signaller, Electrical Fitter, Signal Adjuster, Yard Foreman, Shunter, Conductor, Ganger, and Repairer, and every other employe who the Head of the Branch considers should be acquainted with the instructions contained herein, must be supplied by his Superior Officer with, **and have with him when on duty**, and produce when required, a copy of this Book.

Every employe supplied with this Book must make himself thoroughly acquainted with, and will be held responsible for compliance with the whole of the Instructions contained therein.

The system of Three-position Signalling does not in any way dispense with the use of Hand or Detonating Signals, whenever or wherever such Signals may be requisite to protect obstructions on the Line; and the Rules and Regulations, also the Instructions contained in the General Appendix and other printed or written Notices, which do not conflict with the instructions contained in this Book will be effective so far as they are applicable to Three-position Signalling.

BY ORDER OF THE VICTORIAN RAILWAYS COMMISSIONERS,

W. M. SHANNON,  
Chief Mechanical Engineer.

J. H. FRASER,  
Chief Engineer of Way and Works.

T. B. MOLOMBY,  
General Supt. of Transportation.

## SPECIAL NOTICE.

1. The instructions in this book relate to the introduction of Three-position Upper Quadrant Signals, which will be brought into use by special authority from time to time, preparatory to the installation of Electric Traction, until by a gradual process the whole of the Suburban area will be equipped with Three-position Signals. Whereas the existing Semaphore Signal displays only two indications, viz., Danger and All Right—the All Right Signal being displayed in the lower Quadrant—the new Semaphore Signal, referred to as the Three-position Signal, displays three indications, viz., (1) Danger or Stop, (2) Caution, (3) Clear.

The Danger or Stop indication is the same in each class of Signal, but in the Three-position Signal, the Caution and the Clear indications are displayed in the upper left-hand Quadrant.

2. Three position Signals are divided into three classes, viz., Interlocked, Automatic and Repeating Signals.

Each Interlocked Signal is controlled by the Track Circuit and the Signaller, but Automatic and Repeating Signals are controlled by the Track Circuit only.

3. A new arrangement of Signals will also be brought into use at Junctions and other places where there are diverging routes. Instead of the Signals applying as prescribed in Regulation 50, the passage of trains at such places will be governed by Speed Signals as explained on pages 10 to 12 inclusive.

4. Consequent upon the variation in the conditions of operation where Three-position Signalling is in use, some modifications in the instructions contained in the Book of Rules and Regulations and the General Appendix, are necessary, and in addition to the general description and instructions respecting the new arrangement of Signals, certain modifications of the existing practice in regard to Train Signalling and Train Working appear in the following instructions.

5. The contents of this book are briefly summarised here under:—

See

Pages

4 & 5

A compendium of the various aspects or indications displayed by Three-position Semaphore and Disc Signals illustrating the various types of Signals; the colours of the Signal lights; the occasion for the use of each Signal displayed; and the indications that each aspect is intended to convey to Drivers and other employes in charge of Train movements.

6 & 7

Definition and diagram of Upper Quadrant Signals and general description of Three-position Signals, also description and diagrams of Automatic and Interlocked Signals.

8 & 9

Instructions concerning, and diagrams and indications of Signals having only one Arm, including Repeating Signals.

10 to 13

Instructions concerning, and diagrams and indications of Signals having two or three Signal Arms, i.e., Normal, Medium and Low Speed Signals, also Disc Signals.

14 & 15

Illustrations of arrangement of Speed Signals at Junctions.

16 & 17

Illustration and object of Automatic Signalling.

18

Notice to Drivers entering Two-position Signal area.

18 & 23

Detention at Interlocked Signals.

18 to 21

Working of Points and Signals.

21

Detention at Automatic Signals.

22

Duties of Hand-Signalman at a Defective Automatic or Repeating Signal.

23

Defective Interlocked Signals.

24

Signal imperfectly displayed to be treated as a Stop Signal.

25

Signalling in Foggy weather.

26 to 28

General Instructions in regard to Train Working.

29

Working of Single Line by Pilotman.

29 & 30

Permanent Way and Works operations on Track Circuit Sections.

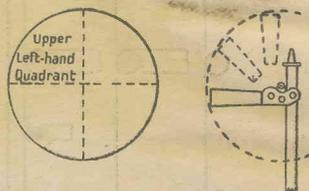
Colour of Light.	Interlocked Signals.		Automatic Signals.	Occasion for use. This Aspect will be displayed to govern movements when—	Indication. For Drivers, Guards and others.	Name. As used in these Instructions.
	Semaphore.	Disc.				
Red						
Red						
(None) Purple						
Red						
Red				Section is occupied.	STOP, then proceed as provided in clause 23.	STOP Signal.
Red						
Red						
Red						
Yellow Yellow	(Short range light) 			Track is occupied or is suitable for low speed only.	Proceed at low speed PREPARED TO STOP.	Caution Low Speed Signal.
Red						
Red						
Green Green	(Short range light) 			Section is clear, but suitable for low speed only and Signal next in advance is at Caution or Clear.	Proceed at low speed.	Clear Low Speed Signal.
Red						
Yellow						
(None)				Section is clear, but suitable for medium speed only and Signal next in advance is at STOP.	Proceed at medium speed prepared to stop at next Signal.	Caution Medium Speed Signal.
Red						
Green						
(None)				Section is clear, but suitable for medium speed only and Signal next in advance is at Caution or Clear for medium or normal speed.	Proceed at medium speed.	Clear Medium Speed Signal.

ASPECTS AND INDICATIONS OF THREE-POSITION SIGNALS.

Colour of Light.	Interlocked Signals.		Automatic Signals.	Occasion for use. This Aspect will be displayed to govern movements when—	Indication. For Drivers, Guards and others.	Name. As used in these Instructions.
	Semaphore.	Disc.				
Yellow				Section is clear; but Signal next in advance is at STOP.	Proceed PREPARED TO STOP at next Signal.	Caution Normal Speed Signal.
Red						
(None)						
	16	17	18	19	20	
Yellow				Section is clear and Signal next in advance is at Caution or Clear for medium speed.	Proceed prepared to pass next Signal at medium speed.	Reduce to Medium Speed Signal.
Green						
(None)						
	21	22	23			
Green				Section is clear and Signal next in advance is at Caution or Clear for normal speed.	Proceed.	Clear Normal Speed Signal.
Red						
(None)						
	24	25	26	27	28	
<b>REPEATING SIGNALS</b>						
Yellow	These Signals are erected at and serve to indicate the entrance to an area where "Three-position" Signals are in operation			Section is occupied; or Signal next in advance is at STOP.	PREPARE TO STOP.	Caution Repeating Signal.
Yellow						
			29			
Green				Section is clear and Signal next in advance is at Caution or Clear or normal speed.	Proceed.	Clear Repeating Signal.
Yellow						
			30			

## GENERAL DESCRIPTION OF THREE-POSITION UPPER QUADRANT SIGNALS.

1. (a) The Signal Arms of Three-position Signals are worked in the Upper Left-hand Quadrant, as illustrated in the margin.



(b) The Signal Indications are exhibited as described hereunder:—

“**Danger**” or “**Stop**” Signal—By the Semaphore Arm being in the horizontal position, and by the exhibition of a Red Light by night or in dark places.

“**Caution**” Signal—By the Semaphore Arm being raised to an angle of 45 degrees above the horizontal position, and by the exhibition of a Yellow Light by night or in dark places.

“**Clear**” Signal—By the Semaphore Arm being raised to the vertical position and by the exhibition of a Green Light by night or in dark places.

2. A Driver must not pass any Signal when at the Stop position, except as provided for in the following cases:—

- (i) In the circumstances specified in Clauses 23 and 25.
- (ii) When a second train or engine is required to enter a Section to render assistance to a train that has failed. See Clauses 25 and 30.
- (iii) When Single Line Working is in operation during obstruction. See Regulation 254.

3. (a) Three-position Signals are divided into three classes, viz:—

- (i) Interlocked Signals.
- (ii) Automatic Signals.
- (iii) Repeating Signals.

(b) An **Interlocked Signal** is operated by the Track Circuit, and is also manually controlled. Interlocked Signals are distinguished during the day time by having square-ended arms, and at night by the Lights being displayed in a vertical line, as shown by diagram on margin:—



(c) An **Automatic Signal** is operated automatically by the Track Circuit, but is not manually controlled. Automatic Signals are distinguished during the day time by having pointed arms, and at night by staggered Lights as shown by the diagonal line in diagram on margin:—



(d) At some Stations or Sidings where the Points of the Cross-over Roads or Sidings are only occasionally used, the Signal-box may be "Switched In" or "Out" as required, in accordance with special instructions; and when the Signal-box is "Switched Out," the Interlocked Signals operate as Automatic Signals.

When an Interlocked Signal is operating as an Automatic Signal an illuminated letter "A," visible at short range only, is displayed when the Signal is a Stop. The distinguishing letter "A" is displayed on an Indicator fixed to the right of the lower light (see diagram in margin). In such circumstances the Signal must be treated as an Automatic Signal.



(e) A **Repeating Signal** is distinguished in the day time by having a fish-tailed arm, as in the case of the Two-position Distant Signal, and at night by its combination of lights, as shown under clause (6).

**4.** (a) Three-position Semaphore Signals are provided with one, two, or three arms, as required.

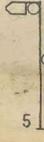
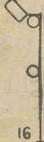
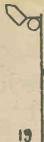
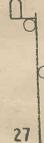
At night or in dark places each Semaphore Signal will always display two lights. In addition to these two lights a third (short range) light will be visible when the Caution or the Clear Low Speed Signal is displayed.

(b) In the case of Signals having only one arm, the lower light will be a fixed Red Light, except at a Repeating Signal, in which case the lower light will be a fixed Yellow light.

These lower lights are termed "Marker" lights, and by their relative position to the upper light serve to distinguish at night the difference between Automatic and Interlocked Signals.

**5. Fixed Signals with One Arm.**—(a) Except at places where a reduction from normal speed may be required, Semaphore Signals with only one Arm are provided.

(b) The aspects and indications of Semaphore Signals with only one Arm (Repeating Signals excepted) are as shown hereunder:—

SEMAPHORE SIGNALS *		OCCASION FOR USE.		INDICATION.	NAME.
Interlocked.	Automatic.	Colour of Light.	This aspect will be displayed to govern movements when:—	For Drivers, Guards and others.	As used in these Instructions.
		Red Red	Section is occupied, or when for any other reason it is required that the train should be stopped.	<b>Stop.</b>	<b>Stop Signal.</b>
1					
		Red Red	Section is occupied.	<b>Stop, then proceed as provided in Clause 23.</b>	<b>Stop Signal.</b>
	5				
		Yellow Red	Section is clear; but Signal next in advance is at <b>Stop.</b>	Proceed <b>prepared to Stop</b> at next Signal.	Caution Signal.
16	19				
		Green Red	Section is clear and Signal next in advance is at Caution or Clear for normal speed.	Proceed.	Clear Signal
24	27				

\* The distinguishing number shown at the foot of each Diagram serves as a means of reference to the corresponding aspect on page 4 or 5.

**6. Repeating Signals.**—(a) The Repeating Signal is erected at some distance from the point at which the first Automatic or Interlocked Three-position Signal is placed, and occupies a similar position in respect to such Signal as the present Distant Signal occupies in respect to the manually-operated Home Signal. The Repeating Signal denotes the entrance to the Three-position Signalling area, and also indicates whether the Signal next in advance is at Stop or Proceed.

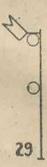
*For instructions in regard to the exit from an area where Three-position Signalling is in force, and entrance to an area where Two-position Signals are in operation, see clause 13.*

(b) The lower or marker light on the Repeating Signal always shows Yellow. The upper lamp shows Yellow or Green according to whether the Signal next in advance is at Stop or Proceed. See aspects 29 and 30, under sub-clause (d).

(c) The Caution Repeating Signal does not in any case indicate that the Line ahead is clear; it must not, therefore, be regarded as affording any protection.

Where the exit from a Goods Yard is governed by Three-position Signals, the Repeating Signal may be erected some distance back on the Goods Line. The Caution Repeating Signal does not indicate that the track between it and the next Signal is unoccupied, and Drivers must proceed at a reduced speed, prepared to stop short of any obstruction that may exist between the Repeating Signal and the Signal next in advance.

(d) The Aspects and Indications of Repeating Signals are as shown hereunder :—

SEMAPHORE SIGNALS.		OCCASION FOR USE.	INDICATION.	NAME.
Repeating Signals.	Colour of Light.	This aspect will be displayed to govern movements when—	For Drivers, Guards and others.	Used in these Instructions.
 29	Yellow Yellow	Section is occupied; or Signal next in advance is at <b>Stop.</b>	<b>Prepare to Stop.</b> See Sub-clause (c)	Caution Repeating Signal.
 30	Green Yellow	Section is clear, and Signal next in advance is at Caution or Clear for normal speed.	Proceed.	Clear Repeating Signal.

## FIXED SIGNALS WITH TWO OR THREE ARMS.

7. (a) At places where one or more local roads diverge from the Main Line, or at Junctions or other places where a reduction to Medium or Low Speed may be required, Interlocked Semaphore Signals with two or three Arms are provided.

The object of this arrangement is to inform the Driver of an approaching train whether he may continue at Normal speed or is required to reduce to Medium or Low speed.

8. **Definition of Normal, Medium and Low Speeds.**—(a) When the **Normal Speed Signal** is displayed, the speed of the train must not exceed the maximum speed laid down for the locality.

(b) When a **Medium Speed Signal** is displayed, the speed of the train must not exceed a rate of 25 miles per hour.

(c) When the **Clear Low Speed Signal** is displayed, the speed of the train must not exceed a rate of 10 miles per hour.

When the **Caution Low Speed Signal** is displayed, the Driver must draw cautiously forward as far as the Line is clear.

(d) In every case when a **Medium Speed Signal** or the **Clear Low Speed Signal** is displayed, it must be distinctly understood that the speed restriction applies to the whole of the Section as far as the next Fixed Signal.

(e) The maximum rates of speed laid down above are subject to the Instructions and to the Special Rates of Speed shown on pages 176 to 192 of the General Appendix (as amended) and such Temporary Speed Reductions as are shown from time to time in the Weekly Notice or other Printed or Written Instructions.

9. (a) **Normal Speed Signal.**—When it is permissible for a train to proceed at Normal speed, the Signal to proceed (“Caution” or “Clear”) will be exhibited by the Top Arm or Light, and the train may proceed at the speed laid down for the locality. (See figure 1, page 14).

(b) **Medium Speed Signal.**—When the train is to proceed to or from a Running Line diverging from the Straight Running Line the Signal to proceed is displayed by the Second Arm or Light, whether the road diverges to the right or left, and the speed of the train must not exceed the rate of speed laid down for a Medium speed route (see figure 2, page 14).

At places where Automatic Signals are in use, and, owing to unusually short Sections, a reduction to Medium Speed may be required, one or more Automatic Signals, as may be necessary, will be provided with two Arms. When conditions require this reduction in speed, aspect No. 13 will be displayed. (See page 11).

(c) **Reduce to Medium Speed Signal.**—When a Caution or Clear Medium Speed Signal is displayed (aspect 11, 13, or 14, page 11), the Signal next in the rear will, provided the Section between the Signals is clear, display “Reduce to Medium Speed Signal” (aspect 21 or 23, page 11).

The special function of the second Arm of a Reduce to Medium Speed Signal is to give the Driver of an approaching train an advance indication that the Medium Speed Signal is displayed at the Signal next in advance. (Compare these aspects, figures 1 and 2, page 14).

(d) The Aspects and Indications of Semaphore Signals having two Arms are as shown hereunder:—

SEMAPHORE SIGNALS.		OCCASION FOR USE.		INDICATION.	NAME.
Interlocked.	Automatic.	Colour of Light.	This aspect will be displayed to govern movements when:—	For Drivers, Guards and others.	As used in these Instructions.
 2		Red Red	Section is occupied, or when for any other reason it is required that the train should be stopped.	<b>Stop.</b>	<b>Stop Signal.</b>
	 6	Red Red			
 11	 13	Red Yellow	Section is clear, but suitable for medium speed only and Signal next in advance is at <b>Stop</b> .	Proceed at medium speed prepared to <b>Stop</b> at next Signal.	Caution Medium Speed Signal.
 14		Red Green	Section is clear, but suitable for medium speed only and Signal next in advance is at Caution or clear for medium or normal speed.	Proceed at medium speed.	Clear Medium Speed Signal.
 17	 20	Yellow Red	Section is clear; but Signal next in advance is at <b>Stop</b> .	Proceed <b>prepared to Stop</b> at next Signal.	Caution Normal Speed Signal.
 21	 23	Yellow Green	Section is clear, and Signal next in advance is at Caution or Clear for medium speed.	Proceed prepared to pass next Signal at medium speed.	Reduce to Medium Speed Signal.
 25	 28	Green Red	Section is clear, and Signal next in Advance is at Caution or Clear for normal speed.	Proceed.	Clear Normal Speed Signal.

**10. Low Speed Signals.**—(a) At places where it may be necessary to reduce the speed of trains below Medium speed, three Arms are provided. Such Three-Arm Signal may display any of the indications of the Two-Arm Signal described, and, in addition to those indications, it may display the Low Speed Signal. See aspects 7 and 9 below.

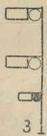
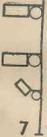
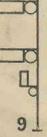
(b) The third or Low Speed Arm is a short Arm fixed below the Medium Speed Arm, and when in the horizontal position its light is obscured.

(c) The night indication of the Low Speed Signal is visible at close range only, nevertheless the Signaller must not take his control off the Low Speed Signal until the train has passed the Signal next in the rear.

(d) When the Caution Low Speed Signal (aspect 7) is displayed, it indicates that the Points are in the proper position, but not that the track is unoccupied; the Driver when proceeding must be prepared to stop clear of any obstruction.

(e) When the Clear Low Speed Signal (aspect 9) is displayed it indicates that the Points are set in the direction of another Fixed Signal and that such Signal is at Caution or Clear; also that the Section is unoccupied.

(f) The Aspects and Indications of Low Speed Signals are as shown hereunder:—

SEMAPHORE SIGNALS.		OCCASION FOR USE.	INDICATION.	NAME.
Interlocked.	Colour of Light.	This Aspect will be displayed to govern movements when:—	For Drivers, Guards and others.	As used in these Instructions.
	Red Red (None)	Section is occupied, or when for any other reason it is required that the train should be stopped.	<b>Stop.</b>	<b>Stop Signal.</b>
	Red Red Yellow	Track is occupied or is suitable for low speed only.	Proceed at Low Speed <b>prepared to stop.</b> See Sub-clause (d).	Caution Low Speed Signal.
	Red Red Green	Section is clear, but suitable for low speed only and Signal next in advance is at Caution or Clear.	Proceed at low speed. See Sub-clause (e).	Clear Low Speed Signal.

## DISC SIGNALS.

11. (a) Three-position Disc Signals of the design shown below are, where necessary, used to regulate the passage of trains between Sidings and Running Lines, or between one Line and another, or for shunting operations.

(b) The Three-position Disc Signal consists of a white disc on which a Signal Arm is painted in Red. The Disc Signal may give any of the three aspects, viz.:—**Stop**, **Caution**, or **Clear**. The normal position of the Disc Signal is at **Stop**.

The **Stop Signal** is displayed by the Signal Arm being shown in the horizontal position, and by a **Purple Light** at night or in dark places—see Aspect 4.

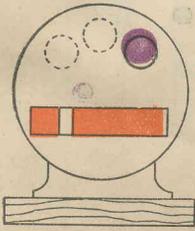
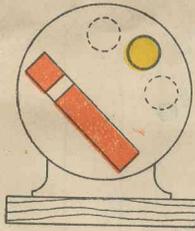
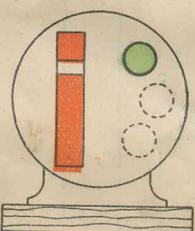
The **Caution Signal** is displayed by the Signal Arm being raised to an angle of 45 degrees above horizontal, and by a **Yellow Light** at night or in dark places—see Aspect 8.

The **Clear Signal** is displayed by the Signal Arm being raised to the vertical position, and by a **Green Light** at night or in dark places—see Aspect 10.

(c) When the Caution Low Speed Signal is displayed by a Disc Signal (see Aspect No. 8), the Driver, Shunter, or other employe engaged in the movement authorised by such Signal, must not assume that the Track is clear ahead of the Signal. The Caution Signal means only that the Points are locked in the proper position for the Driver to proceed, but not that the Track is unoccupied, and the Driver, Guard, Shunter or other employe must be prepared to stop clear of any obstruction.

(d) The Clear Low Speed Signal displayed by a Disc Signal indicates that the Points are set in the direction of another Fixed Signal, and that Signal is at Caution or Clear; also that the Section is unoccupied.

(e) The Aspects and Indications of Three-position Disc Signals are as shown hereunder:—

DISC SIGNALS. INTERLOCKED.	Colour of Light.	OCCASION FOR USE.	INDICATION.	NAME.
		This aspect will be displayed to govern movements when:—	For Drivers, Guards and others.	As used in these Instructions.
 4.	Purple	Section is occupied, or when for any other reason it is required that the train should be stopped.	<b>Stop.</b>	<b>Stop Signal.</b>
 8.	Yellow	Track is occupied or is suitable for low speed only.	Proceed at low speed <b>Prepared to Stop.</b> See sub-clause (c).	Caution Low Speed Signal.
 10.	Green	Section is clear, but suitable for low speed only, and Signal next in advance is at Caution or Clear.	Proceed at low speed. See sub-clause (d).	Clear Low Speed Signal.





**AUTOMATIC SIGNALLING.**

12. (a) The object of Automatic Signalling is to facilitate the regular movement of trains by dividing the Line between Signal-boxes into Sections, and at the same time automatically maintaining the proper space interval between following trains.

(b) This object is automatically accomplished by controlling the Signal governing the entrance to a Section by Track Circuits in advance of that Signal, so that, when a train enters the Section, the Signal is automatically held at the Stop position until the train is under the protection of the Signal next in advance.

(c) When the Track controlling an Automatic Signal is unoccupied, the Signal automatically assumes the Proceed position.

(d) Although it is necessary for the track to be clear for a certain distance (called overlap) beyond the Signal next in advance, before the Automatic Signal can assume the Caution position, such Caution Signal merely authorises a train to proceed only to the Signal next in advance.

(e) Illustrations of the operation of Automatic Signals are given on page 17.



The above Diagram represents a series of Block Sections on which Automatic (Three-position) Signalling is in operation. The various Sections being C—D; D—E; E—F; F—G; and G—H.

One train is standing on Platform Road at station "B," and the next following train has just passed out of Section C—D and entered the next Section D—E.

The train at "B" holds at "Stop" the Signal next in its rear (at G), and will continue to so control that Signal until the whole of the train has passed the required distance beyond Signal "H."

At Signal "F" the Caution Signal is displayed which indicates that the Signal next in advance at "G" is at Stop; whilst Signal "E" (in the rear of "F") displays the Clear Signal, indicating that the Signal next in advance is either at Caution or Clear.

At Station "A" a train has just entered the Section D—E, having replaced to the Stop position the Signal at "D." It still holds at "Stop" the Signal at "C," which will remain in that position until the whole of the train has passed the required distance beyond Signal "D."

### ENTERING TWO-POSITION (LOWER QUADRANT) SIGNAL AREA.

13. (a) At the different points where Three-position Signalling ends and the Driver is entering an area in which Two-position Signalling is in operation, a Notice Board with the following Notice painted thereon is erected at the last Three-position Signal:—



(b) The Fixed Signal (Interlocked or Automatic) at the entrance to a Section in which Two-position (Lower Quadrant) Signals are in operation will, provided the Section ahead is clear, display the Clear Signal although the Home Signal next in advance may be at Danger. It must be understood, however, that in such case the Signal next in advance is a Distant Signal, and Drivers must be prepared to act as prescribed in Regulation 55, in the event of the Distant Signal being at Danger.

### DETENTION AT INTERLOCKED SIGNALS (Regulation 75).

14. Where Three-position Signalling is in operation it will not be necessary for Guards, Firemen or Shunters to go to the Signal-box, as required by Regulation 75; but, in every case when a train is detained at a Signal at which a telephone is provided, the instructions in the General Appendix (pages 75 to 77 inclusive), respecting the use of such telephones, must be observed.

### WORKING OF POINTS AND FIXED SIGNALS.

15. The safety of the public is the first consideration, and to that, together with the safety, regularity and punctuality of the train service, Signalmen, Enginemmen, Guards, and others connected with the working or despatch of trains must subordinate all other considerations.

16. (a) Unless instructions are issued to the contrary, the Stop Signal must always be kept exhibited at all Interlocked Signals except when necessary to exhibit the Signal for a train to proceed; and before such Signal is exhibited, or, at places where the Signalman controls a Signal in the rear, before taking off such control, care must be taken by the Signalman to make certain that the Rules, Regulations and other Instructions have been complied with. Signalmen must be prepared for a train to proceed at the proper time, and, if the Section ahead be clear, must, when practicable, exhibit the Clear Signals so as to avoid checking the speed of trains.

(b) The Signalman must correctly describe each train to the Signal-box in advance by means of the Electric Bell in sufficient time to avoid the train being checked by the Signals ahead. As it is possible at some places for two or more trains to be between two Signal-boxes (according to the number of Sections), the Signalman must exercise special care to correctly describe each train.

(c) In addition to giving and receiving a correct acknowledgment of the Electric Bell Signal describing approaching trains, Signalmen must give special attention to the Distinguishing Head Signals of trains, and take care to avoid any misunderstanding arising from irregular Head Signals or an incorrect description of the trains on the Electric Bell.

(d) Drivers must see that the Distinguishing Head Signals and Destination Boards are properly exhibited, and must give the required notice by whistle when approaching an Interlocked Stop Signal.

**17. Train Register Books.**—(a) On receipt of the Electric Bell signal describing an approaching train, the Signaller must enter the name of train and the time into the Train Departure Received column of the Train Register Book.

**18. Illuminated Diagram and Bell Instrument.**—(a) Illuminated Diagrams are exhibited in each Signal-box to indicate to the Signaller when a train enters or occupies each Section under his control.

(b) When a Section is clear, the portion of the Diagram representing that Section is illuminated. When a train enters a Section the light representing such Section on the Signal-box Diagram will be extinguished until the whole of the train has passed off the Section. When the train enters the next Section, the light for that Section will in turn be extinguished, and so on, until the train has passed out of the area represented by the Diagram.

In addition to the Diagram indication, the Bell Instrument will give one beat when the train enters the Section approaching the Signal-box.

**19. Electric Locking.**—(a) When a train has entered the Section approaching a Signal governing movements over Points, and that Signal has been put to the Proceed position, the lever controlling such Signal cannot be put back fully to normal until the train has passed a pre-determined point beyond the Signal. If, however, it should become necessary to stop the train, the Signal lever may be put back sufficiently far to place the Signal to the Stop position; but the position of the Points cannot be altered, except by the use of the Releasing Instrument. If, therefore, any doubt should exist in the mind of the Signaller in respect to the route to be taken by an approaching train, the Signal to proceed must not be displayed until the direction in which the train is to travel is definitely known.

(b) The Releasing Instrument consists of an appliance for assuring the lapse of a pre-determined time between the operation of the Instrument and the releasing of the apparatus with which it is connected.

(c) The Signaller must be careful to re-set the Releasing Instrument, otherwise the Signal will be held at the Stop position.

(d) The Signaller must not apply undue force in the operation of levers. Before attempting to operate any lever, the Signaller must satisfy himself, by means of the indicators provided, that the conditions are suitable for the intended movement.

(e) In the event of the Signaller being unable to operate any portion of the Signalling apparatus when such operation is required, he must not assume the apparatus to be out of order until he has made a careful investigation, making certain that all levers have been properly manipulated, and that the other conditions necessary for the intended movement exist. In this connection attention is directed to sub-clause (c).

**20. Testing Signals, etc.**—(a) After coming on duty the Signaller must, as far as is reasonably practicable, satisfy himself that the Fixed Signals and instruments work correctly and show properly. In the event of any failure or irregularity, the circumstance must be noted in the Train Register Book, and the Electrical Fitter and Signal Adjuster must be at once notified. The Block and Signal Inspector also must be advised and a report of the failure or irregularity must be forwarded to him as soon as practicable.

(b) The Block and Signal Inspector will allocate to each Station-master by instruction in writing the Signals for which he will be responsible in respect of the condition of the Signal lamps, and also as to dealing with any failure in connection with the Signals.

(c) No person other than a properly authorised employe of the Way and Works Branch is to be permitted to do any work whatsoever in connection with the Tracks, Points, Instruments, or Signal appliances.

**21. Stop and Examine Train.**—Station-masters, Signallers and employes of the Way and Works Branch must keep a sharp look-out, and should they have any reason to apprehend danger, take any steps that may be necessary. If a Signaller or other employe observe anything unusual in a train during its passage, such as signals of alarm by a passenger, goods falling off, a door open outwards, a vehicle on fire, a hot axle-box, a train divided, or other mishap, he must endeavour to stop the train, but should he fail to do so he must telephone the circumstances to the Signaller at the Signal-box in advance, or to the Station-master at the next Station in advance if there is an intermediate Station. The Signaller or other employe who sends the advice, and the Signaller or Station-master who receives the message, must take any action that may be necessary to prevent accident. At intermediate Stations the train must be stopped by Hand Signals.

Should the Station-masters or Signallers sending or receiving the message have reason to believe in the case of a vehicle being off the rails or goods falling from the train, that the Permanent-way has been damaged or fouled, they must not allow any train to proceed in the direction of the obstruction until the Line has been examined and they are satisfied that it is safe for the passage of the train.

**22. Train passed without Tail Disc or Light.**—All trains and light engines will carry a White Disc in the rear by day, and a Red Tail Light by night and during foggy weather, to indicate that no vehicle has become detached on the journey, and Signallers must carefully watch each train as it passes and satisfy themselves that it is complete. In the event of a train passing a Signal-box with the Tail Signal missing, or the Signaller be unable to satisfy himself whether or not the Tail Disc or Light is on the train, he must immediately exhibit the Signals to stop the first train going in the opposite direction, informing the Driver what has occurred, and instructing him to proceed cautiously

so as to avoid danger in the event of any portion of the train having fouled the line on which he is running. The Signalman must also telephone the circumstances to the Signalman next in advance, or to the Station-master at the next Station in advance if there is an intermediate Station; the Signalman or Station-master in advance must stop the train and inform the Guard of the circumstances, and take any steps necessary to prevent accident should it be found that a portion of the train has broken away.

In addition to advising the Signalman or Station-master in advance, the Signalman sending the message must advise the Signalman next in the rear, and also the Station-masters at intermediate Stations, and the Signalmen and Station-masters so informed must stop the next train to arrive, and inform the Driver of the circumstances, specifying the train.

### TRAIN STOPPED BY AUTOMATIC SIGNAL.

23. (a) Should a Driver find an Automatic Signal at Stop, he must wait at such Signal ~~one minute~~ <sup>one minute</sup>. Unless he is aware that the Section ahead is occupied—see sub-clause (b), the Driver may, if at the expiration of one minute the Signal is still at Stop, proceed cautiously past the Signal, being prepared to find the Section occupied or obstructed, or a broken or misplaced rail.

After passing an Automatic Signal at Stop, the Driver must continue to exercise great caution when passing through the Section, and even though the Signal next in advance may be seen to be at Proceed, he must, nevertheless, be prepared to stop clear of any obstruction until he arrives at such Signal. In foggy weather, or when a good view of the Line ahead cannot be obtained, the Driver must not rely on the number of minutes that a previous train is supposed to be ahead of him, but in all cases must regulate the speed of his train so as to enable him to stop within the distance he can see ahead.

If the Driver cannot see beyond 200 yards ahead, the speed must be such as to enable him to stop the train in that distance.

If he can see only 15 yards ahead, the speed must be such as to enable the Driver to stop within that distance if necessary.

If, on arrival at the next Signal, it is at Caution or Clear, the Driver may proceed accordingly; if, however, it also is an Automatic Signal, and it is at Stop, the same procedure must be observed.

*NOTE.*—It must be distinctly understood that the passing of a Stop Signal as herein permitted under special circumstances applies only to an Automatic Signal, and not to any Interlocked Signal. See Clause 25.

(b) Except under the circumstances specified in Clause 30, a train must not pass any Fixed Signal as permitted in paragraph (a) of this Clause when it is known that there is a train in the Section. If, after passing a Stop Signal, the Driver becomes aware that the preceding train is in the Section, he must at once bring his train to a stand, and, except when verbally instructed by the Guard of the preceding train to draw cautiously forward, must wait until the train in front has proceeded on its journey.

Special care must be exercised where there are parallel Lines. If, after passing an Automatic Signal as prescribed in paragraph (a), the Driver should see the rear of a train in advance of him when in the vicinity of or passing around a curve, he must not assume the front train to be on an adjoining Line, but must exercise special care until he has definitely ascertained the Line on which the front train is standing or proceeding.

When two trains are in any Section at the same time, the Driver of the second train must, after the front train has proceeded, follow at such a distance as will enable him to avoid colliding with the front train in the event of its being again stopped, and he must bring his train to a stand at the next Signal.

(c) When a Driver passes an Automatic Signal at the Stop position, or should a Driver observe any defect or irregularity in the working of a Signal, he must report the circumstance to the Station-master or person in charge at the Station next in advance, giving the number of the Signal, and it will be the duty of this person in charge to at once advise the Electrical Fitter of the circumstances. Should the Driver arrive at a Signal-box before reaching a Station, he must stop and inform the Signaller, and the Signaller will be responsible for notifying the Electrical Fitter.

Advice of any failure of Signals must be sent by telegraph or the most expeditious means to the Electrical Fitter, and to the Block and Signal Inspector.

(d) In order to facilitate repairs, Drivers may stop to take up or set down the Repairmen between Stations where required in cases of emergency.

#### **DUTIES OF HAND-SIGNALMAN AT A DEFECTIVE AUTOMATIC OR REPEATING SIGNAL.**

**24.** (a) When a defective **Automatic Signal** cannot be put to the Stop position, the Station-master must appoint a Hand-signalman, furnished with the necessary Hand Signals and not less than 36 Detonators, with instructions to remain at the Signal. The Hand Signalman must exhibit a Red Hand Signal to stop any approaching train and, when the train has been stopped, must fully inform the Driver of the circumstances, stating the time the previous train passed. The Driver may then be allowed to proceed as prescribed in Clause 23.

(b) When a defective **Repeating Signal** cannot be put to the Caution position, a competent employe must be stationed just outside it with Hand Signals and Detonators to signal in place of the defective Signal until it has been repaired and is again working properly. The Hand-signalman must exhibit his Red Signal until the approaching train has been almost stopped, when a Green Signal may be exhibited to the Driver as an intimation to proceed cautiously until another Signal is received.

(c) At night, or in foggy weather, the top light of the defective Signal must be obscured.

(d) The Hand-signalman must stand (just outside the defective Signal), in the best position, having regard for his own safety, for effectively giving the Hand Signals to the Driver and Guard. When a Tunnel intervenes, or in foggy weather, or when from any other cause a distant view of the Hand Signals cannot be obtained by the Driver, the Hand-signalman, in addition to exhibiting his Red Hand Signal as required, must keep two Detonators ten yards apart at a sufficient distance outside his Hand Signal, on one rail of the Line to which the defective Signal applies, until the Signal has been repaired and is again in working order.

(e) The Station-master or other responsible employe, when appointing a Hand-signalman, must satisfy himself that the Hand-signalman is competent to perform his duties, and fully equipped with Hand Signals and Detonators.

#### **TRAIN STOPPED BY INTERLOCKED SIGNAL.**

25. (a) When it is required to allow a train to pass an Interlocked Signal at Stop, either owing to the Signal being defective or for the purpose of rendering assistance to a disabled train, a Caution Order (see form at end of this clause) must be issued by the Signalman and given to the Driver as authority to pass such Signal.

(b) Should the Signal be defective, the Station-master and the Signalman will be responsible for seeing that the measures and precautions prescribed in Regulation 95 are strictly carried out.

In the event of a Hand-signalman not being available, the Signalman must himself carry out the duties specified for the Hand-Signalman, and deliver the Caution Order to the Driver.

(c) Should it be necessary for a train to pass the Signal at the Stop position, for the purpose of rendering assistance to a disabled train, the Signalman, before issuing the Caution order, must satisfy himself that all the Points over which the train will pass are in the proper position.

In every case the Driver must be accompanied by the Guard of the disabled train, or the Fireman in the case of a disabled Light Engine.

(c) A Driver must not go forward past an Interlocked Signal in the Stop position until he clearly understands the written instructions received from the Signaller, and must then regulate the speed of his train as laid down in Clause 23.

*Form referred to in Clause 25.*

*To be printed on White paper.*

SIGNALMAN'S CAUTION ORDER FOR DRIVER  
TO PASS AN INTERLOCKED SIGNAL.

..... Signal-box.

..... Date.

..... Time.

To Driver of..... train  
from..... to.....

You are authorised to proceed with caution  
past Signal No.....

\*(a) Signal apparatus out of order.

\*(b) Disabled train in Section.

Signed.....

*(Signaller.)*

*\*Delete (a) or (b) as the case may require.*

[OVER.]

*Back of Form.*

This order must be retained by the Driver and attached to his Running Sheet. Caution Orders received attached to Drivers' Running Sheets to be promptly forwarded to the General Superintendent of Transportation.

**SIGNAL NOT SHOWN OR SIGNAL IMPERFECTLY DISPLAYED.**

26. (a) Except as provided in Regulation 91, the absence of a Signal at a place where a Signal is ordinarily shown, or a Signal imperfectly displayed, must be considered a Stop Signal and treated accordingly, and the fact reported to the Signaller or Station-master.

(b) A Signal displaying any aspect not described in these instructions, for example:—

Any Two-arm Signal with both Arms in the vertical or Clear position, or with both Arms in the Caution position;

Any Signal (other than a Disc Signal) not displaying two lights at night or in dark places or,

Any Signal displaying a White Light where a Red, Purple, Yellow or Green Light should be displayed,

shall be considered to be an imperfectly displayed Signal and treated accordingly.

(c) When a Driver is stopped at an imperfectly displayed Signal, he must satisfy himself as to whether it is an Automatic or an Interlocked Signal. If it be an Automatic Signal, the Driver may proceed as prescribed in Clause 23.

### SIGNALLING IN FOGGY WEATHER, WHERE THREE-POSITION SIGNALS ARE IN USE.

27. (a) In foggy weather, or during falling snow, the safety of the train depends in a more than ordinary degree upon the Driver, who must travel cautiously, keeping a sharp look-out for the Fog-signalmen. When the fog is so dense that the Fixed Signals cannot be seen by the Driver when approaching them, he must, unless he see the Fog-signalman's Hand Signal, assume that the Fixed Signal is at Stop, and act accordingly.

The speed of the train must be such as to enable the Driver to stop within the distance he can see.

If the Driver cannot see beyond 200 yards ahead, the speed must be such as to enable him to stop the train in that distance.

If he can see only 15 yards ahead, the speed must be such as to enable the Driver to stop within that distance if necessary.

(b) When an engine or train explodes a Detonator in foggy weather the Driver must immediately reduce speed and bring his train under complete control, so as to be prepared to obey any Signal that may be exhibited. If he receive a Red or Danger Hand Signal he must at once bring his train to a stand. If, after the explosion of the Detonator, the Red or Danger Hand Signal is changed to a Green Signal, the Driver must understand that the Signal he is passing is at Caution.

*When, in consequence of any repairing operation to the Permanent Way or Works, or any similar cause, a reduction of speed is necessary over a portion of the Line in foggy weather, the Driver will be verbally warned by the Flag-signalman, after which the Red or Danger Hand Signal will be changed to a Green Signal, waved slowly from side to side. (See Regulation 274).*

(c) When a Fog-signalman is employed in connection with Interlocked Signals, he must place two Detonators, 10 yards apart, at a sufficient distance outside the Signal, on one rail of the Line for which the Signal is at Stop or Caution, exhibit a Red Hand Signal to the Driver of an approaching train, and carry out any instructions he may receive from the Signalman on duty. The Fog-signalman must not take up the Detonators unless the Clear Normal Speed Signal is exhibited.

(d) When a Signal indicates that the Signal next in advance is at Stop, or when the Medium Speed Signal is displayed, the Fog-signalman must continue to exhibit his Red Hand Signal until a Detonator has exploded, and the train has been brought almost to a stand, when the Green Hand Signal must be exhibited to the Driver and Guard.

(e) When a Proceed Signal is displayed by a Low Speed Arm, the Fog Signalman must leave the Detonators on the rail, and exhibit the Red Hand Signal to stop the train. He must then inform the Driver that it is the Low Speed Signal which is displayed, and the Driver must proceed accordingly.

(f) The Fog-signalman must see that the Signal, which has been placed to Proceed for a train to pass, goes to the Stop position after the passing of such train; if, however, the Signal is not placed at Stop, the Fog-signalman, in addition to putting down two Detonators, must at once communicate with the Signalman.

(g) After having fixed the Detonators on the rail, the Fog-signalman must place himself between the Detonators and the Fixed Signal or obstruction for which he is Signalling, and so exhibit the Hand Signals, that they may be seen by the Driver after the engine or train has exploded the Detonators.

(h) Fog-signalmen must stand in the best position (having regard to their own safety) for effectively giving the Hand Signals to the Driver and Guard.

(i) The Fog-signalman must be careful not to remove any of the Detonators from the rail until he has made sure that the proper Signal is exhibited by the Fixed Signal for which he is Signalling. When the Fixed Signal for which he is fog-signalling cannot be seen by the Fog-signalman he must, unless he can satisfy himself to the contrary, assume that it is at Stop.

(j) If, after the Detonators have been removed, the Fixed Signal should be put to Stop before the train has reached it, and the Fog-signalman not have time to replace a Detonator on the rail, he must show a Red Hand Signal, and do all in his power to attract the attention of the Driver and Guard.

(k) In cases of accident, failure, or obstruction, Guards and Drivers must act strictly in accordance with the prescribed Rules, Regulations and Instructions, and must not depend upon Fog-signalmen for the protection of their trains.

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## GENERAL.

**28.** All Normal and Medium Speed Signals, within the Three-position Signalling area, will be automatically replaced to the Stop position when the front wheels of an engine or train have passed a point a short distance ahead of the Signal. Regulation 81 is modified accordingly.

**29.** (a) When the rear of a train has passed beyond the limits of a Section it must not be set back into such Section, except as prescribed in Clause 31.

(b) The Driver must carefully approach all Stations, and must not stop short of or over-run the platform. He must also exercise care in passing Stations at which the train is not booked to stop.

(c) Should a train, in stopping at a Station, stop short of or partly over-run the platform, the Driver must not draw the train forward or move it back unless he receive instructions from the Guard to do so.

(d) In the event of a train running past the platform, and the rear of the train has passed the Signal next in advance of the platform, the Driver must not set back except as provided in Clause 31.

**30. Protection of Train.**—When a train is stopped by accident, failure, obstruction or other exceptional cause, unless it is at a Station at which there is a Signal-box, and the train is protected by an Interlocked Signal, the ordinary Regulations will apply, except as shown hereunder:—

- (i.) The man, as defined in the various Regulations, as going back or forward to protect the obstruction, must place one Detonator at every 200 yards until he has reached the prescribed distance of 1200 yards.
- (ii.) Should, however, the second Stop Signal in the rear be within a distance of 1200 yards from the train, the man whose duty it is to protect the obstruction, in the rear, need not proceed beyond such Signal. He must place three Detonators on the Line, at the Signal, and continue to exhibit his Hand Danger Signal, as prescribed in the Regulations.
- (iii.) Should the Guard, when going back for assistance, as prescribed in clause (f) of Regulation 239, arrive at an intermediate Station it will not be necessary for him to go to the Signal-box in the rear, if arrangements for assistance can be made at that Station.
- (iv.) Should an accident to a train foul, or be dangerously near to any Line used by trains running in the opposite direction, in addition to the Guard going back to protect the train, the Driver must at once send his Fireman forward to protect the obstruction as prescribed in Sub-clause (i.) The Driver must then run forward with his engine as directed in Regulation 240.

**31.** (a) If, in case of accident, or other special emergency it is necessary for a train, or portion of a train, to return on the wrong Line to the Signal-box in the rear, the Guard or Fireman must go or send some other competent person to the Signalman there, and obtain his permission in writing for the train, or portion of the train, to run on the wrong Line to his Box; but the Driver must not move in the wrong direction until he has received such written permission—see Form C at end of this Clause.

(b) In the event of it being necessary to take a train, or part of a train, back on the wrong Line to a Station in the rear and there is no Signal-box at such Station, this must only be done by the authority of the Station-master, who must first take the following steps:—

- (i.) He must satisfy himself that the following train has come to a stand at the Automatic Signal controlled by the Section in which the train or part of a train, that has to be brought back is standing. He must advise the Driver of the “following”

train what is about to be done, and must then take steps to effectually prevent the "following" train from moving forward by placing two Detonators on the rail and posting a Flagman with a Hand Danger Signal at the Automatic Signal and station himself in a position to control by Hand Signal the movement of the train, or part of a train, which has to be brought back. He must send the Fireman of the "following" train with written authority (see Form C, at end of Clause) to the Driver of the train, or part of a train, which has to be brought back, and instruct him to pilot the Driver of the train to the place where it is intended he shall stop.

(ii.) For the purpose of issuing Form C, as referred to in sub-clause (b), the Station-master must be regarded as the Signaller and the Station as the Signal-box.

*Form C referred to in Clause 31.*

*To be printed on Yellow coloured paper.*

*(Front of Form C.)*

(A supply of these Forms must be kept in each Signal-box, and at each Station on Lines where Automatic Signalling is in force).

Authority for Engine-driver to Travel on  
Wrong Line in case of Accident.

To Driver of Engine No ..... working  
..... m. train from.....to.....

I authorise you to return with your train  
on the wrong Line to this Signal-box.

Signature of.....*Signalman.*  
at.....Signal-box.

Date.....19... Time issued..... m.

Catch points exist at.....

*(Back of Form C.)*

Here appears Regulation 244.

## WORKING OF SINGLE LINE BY PILOTMAN.

**32.** In addition to the arrangements and precautions laid down in Regulations 250 to 262 inclusive, that are applicable, the following instructions must be observed:—

(a) A Hand-signalman must, if necessary, be stationed at the Cross-over for the purpose of signalling the trains crossing on to the proper Line. He must exhibit a Red Hand Signal to stop any train approaching on the Single Line until he receives instructions from the Signalman to allow the train to draw forward, when the Hand-signalman must exhibit a Green Signal to the Driver. The Hand-signalman must see that the Points are secured in the proper position for each train. The Driver must not pass over the Points of the Cross-over unless he receives a Hand Signal to do so.

(b) The person arranging Single Line Working must at the same time arrange for the Driver of each train proceeding in the direction of the Single Line Working to be stopped at the Station next in rear and informed of the circumstances, and instructed to proceed cautiously.

**Interval between Trains.**—(c) Following trains *running in the right direction* may enter upon the Single Line on the Pilotman's authority, as prescribed in Regulation 254, as soon as the Illuminated Diagram shows the Section ahead to be clear; and the running of the trains will, throughout the Sections between the two Signal-boxes, be governed by the Fixed Signals, which will be worked as usual.

(d) In the case of trains *running in the wrong direction*, on the Single Line, an interval of not less than five minutes must be maintained between following trains unless the Pilotman can satisfy himself that the Single Line Section is clear. Each Driver when entering upon the Single Line must be instructed by the Pilotman as to whether his train has been preceded by another train. The Driver when running in the wrong direction must exercise extreme caution.

Intervening Automatic Signals applicable to the obstructed Line may be in either the Stop, Caution, or Clear position, according to whether the Section represented by each Signal is occupied by the obstruction necessitating Single Line working or by a train working on the obstructed Line, but Drivers of trains running on the Single Line in the wrong direction must bear in mind that these Signals have no significance whatever for them.

## PERMANENT WAY AND WORKS OPERATIONS.

**33.** (a) Before a rail is taken out or relaying operations are commenced on a section of Line where Track Circuits are in use, the Roadmaster, Ganger, or other employe in charge of the work must make all necessary arrangements with the Inspector of Electric Signals, who will be responsible for arranging for all Signals controlling the entrance of trains into the Section of Line affected by the work to be secured in the Stop position prior to the road being broken; and the operations must not be commenced by the Roadmaster or Ganger until the Signals have been so secured.

(b) The operations of the Way and Works Branch must be protected in the usual way in accordance with the Regulations.

(c) When the Permanent Way operations have been completed, and the usual certificate has been furnished by the Roadmaster or other employe in charge of such operations, working over the Section may be resumed, but the Signals affected must remain secured in the Stop position until the Inspector of Electric Signals has furnished a certificate that the Signals are again in proper working order.

(d) During the time which elapses after the road is made good and before the Signals are again in working order, a Flagman must be stationed at each Signal which is out of service. The Flagman must bring every train to a stand at the Signal, and inform the Driver that the Signal is out of service and that he must proceed cautiously through the Section to the next Signal ahead, prepared to stop short of any obstruction.

The Driver must not proceed until he fully understands the verbal communication received from the Flagman, and then must regulate the speed of his train, as prescribed in Clause 23.



