PDF Version

1965

Regulations For Automatic Signalling

The pdf version of the Automatic Signalling Regulations is based on an original that has been updated to1979. I have formatted this document so that it is a close match to the original. However, it is not identical – for example, I have made no attempt to match the pagination of the original.

In the original document the Mis. Forms are included in the body of the document. In the pdf version I have included them at the start.

Griptypethyne
March 2003

Forms Used In Automatic Signalling

N.Z.R. **Single-line Automatic Signalling** Mis. 58

Authority to Pass Departure Signal at "Stop" *and Proceed through Block Section

Authority No.		Sent at	a.m. p.m.
Office of Origin		„ by	
Date / /19		Repeated back at	a.m. p.m.
Time	a.m. p.m.	„ „ by	
		„ „ from	

To Enginedriver and Guard,

Train No. ....., at .....

Today, ..., No. ..... is authorised to pass the

..... **DEPARTURE** signal at .....

at "Stop" *and proceed In Accordance with Fixed Signals through the block section to .....

.....

Train Control Operator.

*To be deleted when issued for Shunting purposes only.

Specimen of Mis. 58 form (see Automatic Signalling Regulation 19).

N.Z.R. **Single-line Automatic Signalling** Mis. 59

Authority to Pass Departure Signal at "Stop" *and Proceed Through Block Section

Authority No.	
Office of Origin	
Date / /19	
Time	a.m. p.m.

To Enginedriver and Guard,

Train No. ....., at .....

Today, ..., No. ..... is authorised to pass the

..... **DEPARTURE** signal at .....

at "Stop" *and proceed In Accordance with Fixed Signals through the block section to .....

THE TRAIN MUST TRAVEL CAUTIOUSLY, THE ENGINE-DRIVER BEING PREPARED TO FIND THE SECTION OBSTRUCTED, POINTS WRONGLY SET, OR A BROKEN OR MISPLACED RAIL.

Countersigned,

.....

Train Control Operator.

Guard No. ..... Train.

*To be deleted when Mis. 59 is issued for Shunting purposes only.

Specimen of Mis. 59 form (see Automatic Signalling Regulation 19).

Mis 58 & Mis 59

NEW ZEALAND RAILWAYS Mis. 53

Authority No. .....

AUTOMATIC SIGNALLING

ESTABLISHING PILOT WORKING ON SINGLE LINE

Office of Origin: .....

To .....

(Full name and designation)

.....

You are authorised to have possession of the Pilot Key and act as Pilotman between ..... and ....., in accordance with Regulation No. 28 until further advised.

Time: ..... a.m. p.m. *Signature:* .....

Train Control Operator.

Date: 19

Repeated back at ..... a.m. p.m.

(When this form is cancelled it must be forwarded to the District Traffic Manager.)

Specimen of Mis. 53 form (see Automatic Signalling Regulation 28).

NEW ZEALAND RAILWAYS

AUTOMATIC SIGNALLING

CANCELLING PILOT WORKING ON SINGLE LINE

Office of Origin: .....

To .....

(Full name and designation)

.....

Your authority to act as Pilotman between .....

and ..... is hereby cancelled.

Time: ..... a.m. p.m. *Signature:* .....

Train Control Operator.

Date: 19

Repeated back at ..... a.m. p.m.

Specimen of form printed on back of Mis. 53 forms.

Mis 53

Mis. 54

N.Z.R.

SINGLE-LINE AUTOMATIC SIGNALLING

PILOTMAN'S TICKET

No. .....

..... *19*.....

Train No. .....

From .....

To .....

Preceding Train No. .....

**has arrived at* .....

**left at* ..... *a.m.* *p.m.*

.....

Pilotman.

*Delete words not required.

Mis. 54

NEW ZEALAND GOVERNMENT RAILWAYS

AUTOMATIC SIGNALLING

No......

PILOT WORKING ON SINGLE-LINE - PILOTMAN'S TICKET

Date:..... 19.....

To Driver and Guard of Train No. .....

AFTER seeing Pilot Key for section you are authorised to proceed from

..... Station to .....

(To be printed in block letters) (To be printed in block letters)

Station, Pilotman following.

The preceding train (No. .....)

**has arrived at* .....

**left at* ..... a.m. p.m.

Signature:.....

Pilotman.

*Delete words not required.

NOTE: This does not authorise the passing of fixed signals at "Stop".

Specimen of Mis. 54 form (see Automatic Signalling Regulation 28).

Mis 54

NEW ZEALAND GOVERNMENT RAILWAYS Mis. 55

SINGLE-LINE AUTOMATIC SIGNALLING

CROSSING ORDER

Crossing Order No.		Sent at	a.m. p.m.
Office of Origin		„ by	
Date	/ /19	Repeated back at	a.m. p.m.
Time	a.m. p.m.	„ „ by	
		„ „ from	

To Enginedriver and Guard,

Train No. ....., at .....

Today, ..., No. ..... will cross No. .....

at .....

(To be printed in block letters)

Instructions: .....

.....

.....

Train Control Operator.

Specimen of Mis. 55 form (see Automatic Signalling Regulation 34).

N.Z.R. Mis. 56

SINGLE-LINE AUTOMATIC SIGNALLING

CROSSING ORDER

Crossing Order No.		Received at	a.m. p.m.
Office of Origin		„ by	
Date	/ /19	Repeated back at	a.m. p.m.
Time	a.m. p.m.	„ by	

To Enginedriver and Guard,

Train No. ....., at .....

Today, ..., No. ..... will cross No. .....

at .....

(To be printed in block letters)

Instructions: .....

.....

NOTE—This does not authorise the passing of Departure signals at "Stop".

.....

Train Control Operator.

Specimen of Mis. 56 form (see Automatic Signalling Regulation 34).

Mis 55 & Mis 56

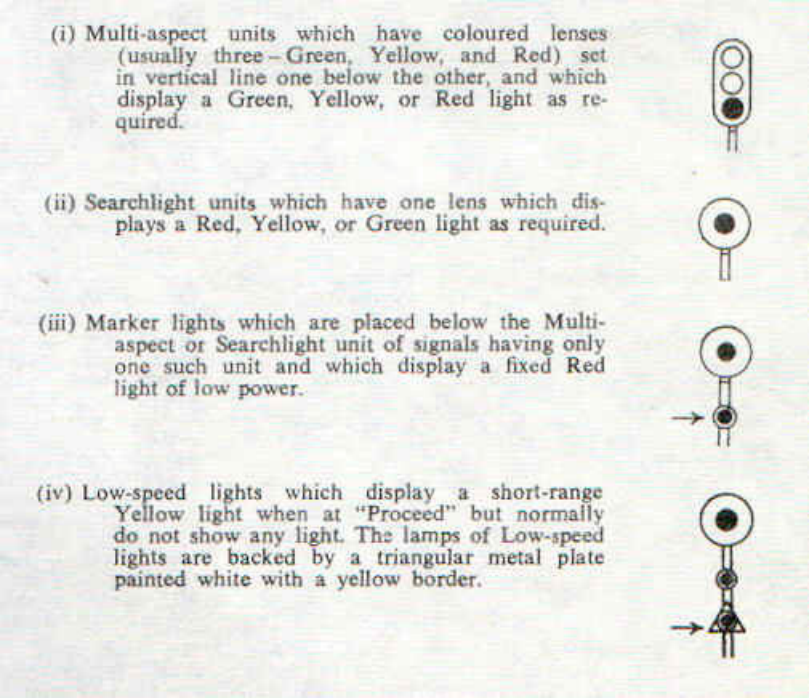
TABLE OF CONTENTS

REGULATIONS
FOR
AUTOMATIC SIGNALLING

The object of automatic signalling is to facilitate the regular movements of trains by dividing the line into sections and automatically maintaining a safe space interval between following trains.

This object is accomplished by controlling the signal 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 signal next in advance. To enable the order of trains to be controlled some automatic signals may also be held at "Stop" by a Signalman.

When the track controlling an automatic signal is unoccupied the signal unless held at "Stop" by a Signalman, automatically assumes the "Clear" or "Caution" position as illustrated in the diagram following :



The above diagram represents a series of sections on which automatic signalling is in operation, the various sections being C-D, D-E, E-F, F-G, and G-H.

A train is standing at the platform at station B, and the next following train is just passing out of section C-D and entering 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 beyond the signal H.

At signal F a 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 a Clear signal, indicating that the signal next in advance is at either "Caution" or "Clear".

At station A the 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 retain that indication until the whole of the train has passed beyond signal D.

In addition to the foregoing, the object of automatic signalling on single lines is to prevent trains travelling in opposite directions being in the block section between two crossing places at the same time.

Besides providing for a safe spacing of following trains and protecting trains travelling in opposite directions on single lines, the electrical circuits of automatic signals ensure that all points are correctly set and secured and also that the rails are continuous.

Some sections of line worked under automatic signalling are arranged and equipped so that interlocked stations may be unstaffed; the signals and motor-driven points at these stations are operated from a Centralised Traffic Control (C.T.C.) machine located in a train control office or in a remote continuously attended signal box. In C.T.C. areas provision may also be made for points and signals at interlocked stations to be operated from local control panels after "Control" has been handed over by the Train Control Operator or Signalman operating the central panel. The rules and regulations applicable in automatic signalling areas apply in areas worked under the C.T.C. system. The sections worked under this system are specified in working timetables or train advices.

The system of automatic signalling does not in any way dispense with the use of hand or detonator signals when or where such signals may be necessary. The rules, instructions contained in the working timetables, and other printed or written notices will be effective so far as they are applicable to automatic signalling.

REGULATIONS APPLICABLE TO BOTH DOUBLE-LINE AND SINGLE-LINE AUTOMATIC SIGNALLING

1. DESCRIPTION OF AUTOMATIC SIGNALS

(a) Automatic signals are either –

(i) Power Shunting signals, or

(ii) Automatic Running signals.

Power Shunting signals have one Shunting signal unit and display one light. Where specified in S & I Circular Memoranda Power Shunting signals may also be used as Starting signals. For details of Shunting signals and the indications they display see Rules 46-48 and diagrams on page 34

Automatic Running signals must be used for shunting movements where Shunting signals are not provided.

For diagrams of Automatic Running signals, the aspects they display, and their meanings, see pages 144 to 151.

(b) The units which display the coloured lights which, in combination with one another, give the indications of Automatic Running signals are -

(i) Multi-aspect units which have coloured lenses (usually three – Green, Yellow, and Red) set in vertical line one below the other, and which display a Green, Yellow, or Red light as required.

(ii) Searchlight units which have one lens which displays a Red, Yellow, or Green light as required.

(iii) Marker lights which are placed below the Multi-aspect or Searchlight unit of signals having only one such unit and which display a fixed Red light of low power.

(iv) Low-speed lights which display a short-range Yellow light when at "Proceed" but normally do not show any light. The lamps of Low-speed lights are backed by a triangular metal plate painted white with a yellow border.

(c) Each Automatic Running signal will display at least two lights.

At places where one or more lines diverge from the main line or at junctions or other places where a reduction to medium speed may be required, double-unit signals having two Multi-aspect or two Searchlight units are provided. Double-unit signals are also provided, where necessary, to indicate that a train is approaching a signal which may require a reduction to medium speed.

At places where a reduction to medium speed is not required, or where it is not necessary to indicate that a train is approaching a signal which may require a reduction to medium speed, signals having one Multi-aspect or one Searchlight unit are provided. These signals are equipped with a Marker light as the second and lower light.

Where a reduction to low speed may be required a Low-speed light is provided. This is placed below the lower Multi-aspect or Searchlight unit in the case of double-unit signals, and below the Marker light in the case of single-unit signals

2. MEANING OF ASPECTS DISPLAYED BY AUTOMATIC RUNNING SIGNALS

(a) The **speed** at which trains may proceed is shown by Automatic Running signals. The indications in each case also give advance information of the next signal ahead.

The speed indicated may be –

(i) Low speed..	Displayed by a Low-Speed light below two Red lights.	Indicates that the points are in the proper position but not necessarily that the track is unoccupied. Enginedriver must proceed cautiously at such a speed as will enable him to stop clear of any obstruction.
(ii) Medium speed..	Always includes Yellow or Green in the lower light unit, with the upper unit at Red.	Means train must not exceed 25 kilometres per hour unless a speed board authorising a higher speed is exhibited. Medium speed must be maintained up to the Advanced Starting signal, the Starting signal, or the Departure signal where provided; or where not provided, until the train is clear of all points to which the signal applies.
(iii) Normal speed..	Always includes Yellow or Green in the upper light unit.	Means train must not exceed the maximum speed laid down for the locality.

The maximum speeds authorised by Automatic Running signals may be subject to further reduction by Permanent or Temporary speed restrictions.

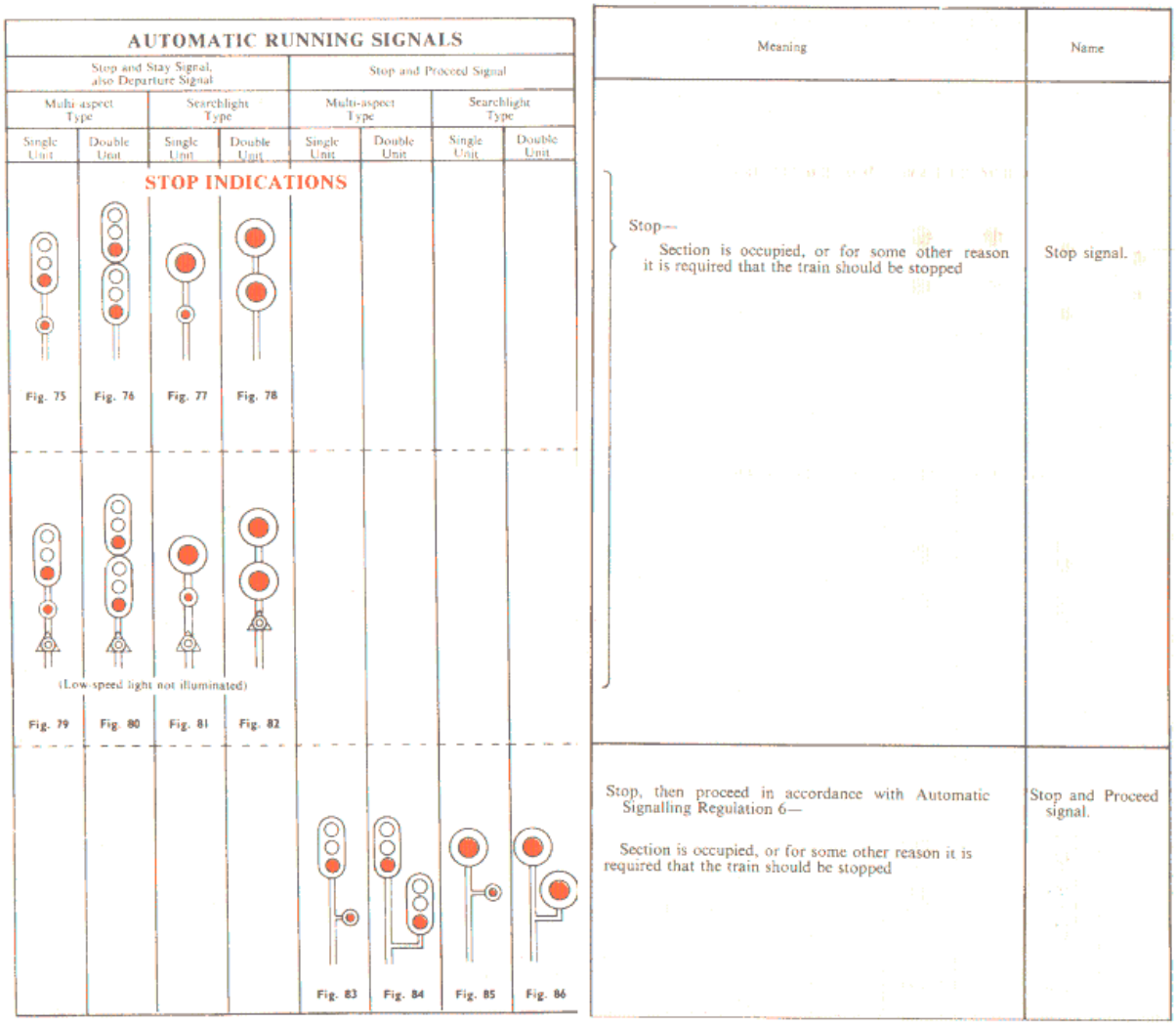
(b) Seven aspects may be displayed by Automatic Running signals, and their meanings are as follows:

Speed etc	Aspect	Meaning
Stop	Red over Red	Stop
Low Speed	Red over Red over Yellow (short range light)	Points are in the proper position but track may be occupied or suitable for low speed only. Proceed at Low speed prepared to find track occupied, and ready to stop clear of any obstruction.
Medium Speed	Red over Yellow Red over Green	Section is clear. Proceed at Medium speed to the Advanced Starting signal. Starting signal or the Departure signal where provided; or where any such signal is not provided , until the train is clear of all points to which the signal applies; be prepared to stop at next signal which is displaying a "Stop" or "Low-speed" indication. Section is clear. Proceed at Medium speed to the Advanced

		Starting signal. Starting signal or the Departure signal where provided; or where any such signal is not provided, until the train is clear of all points to which the signal applies; next signal in advance is at "caution" or "Clear" for Medium or Normal speed.
Normal Speed	Yellow over Red	Section is clear.Proceed at Normal speed prepared to stop at next signal which is displaying a "Stop" or "Low-speed" indication.
	Yellow over Green	Section is clear. Proceed at Normal speed but prepared to reduce to Medium speed at next signal which is at "Caution" or "Clear" for Medium speed only.
	Green over Red	Section is clear. Proceed at Normal speed; next signal in advance is at "Caution" or "Clear" for Normal speed.

(c) Where in the rules, regulations and instructions reference is made to passing signals at "Proceed", this refers to signals showing a Clear, Caution, or Low-speed indication.

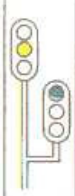
A Signalman must not display a "Proceed" indication without first satisfying himself that all points are in the proper position.



AUTOMATIC RUNNING SIGNALS

Stop and Stay Signal, also Departure Signal				Stop and Proceed Signal				Meaning	Name
Multi-aspect Type		Searchlight Type		Multi-aspect Type		Searchlight Type			
Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit		
LOW-SPEED INDICATION									
 Fig. 87	 Fig. 88	 Fig. 89	 Fig. 90					Proceed at low speed, prepared to find track occupied, and ready to stop clear of any obstruction. *See* Automatic Signalling Regulation 2— Points are in the proper position but track is occupied, or suitable for low speed only	Caution, Low-speed signal.
MEDIUM-SPEED INDICATIONS									
	 Fig. 91		 Fig. 92					Proceed at medium speed, in accordance with Regulation 2 (a) (ii), prepared to stop at next signal— Section is clear but suitable for medium speed only, and signal in advance is at "Stop" or is displaying a Low-speed indication	Caution, Medium-speed signal.
	 Fig. 93		 Fig. 94					Proceed at medium speed, in accordance with Regulation 2 (a) (ii)— Section is clear but suitable for medium speed only, and signal next in advance is at "Caution" or "Clear" for medium or normal speed	Clear, Medium-speed signal.

AUTOMATIC RUNNING SIGNALS

Stop and Stay Signal, also Departure Signal				Stop and Proceed Signal				Meaning	Name
Multi-aspect Type		Searchlight Type		Multi-aspect Type		Searchlight Type			
Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit		
NORMAL-SPEED INDICATIONS									
 Fig. 95	 Fig. 96	 Fig. 97	 Fig. 98	 Fig. 99	 Fig. 100	 Fig. 101	 Fig. 102	Proceed at normal speed, prepared to stop at next signal— Section is clear but signal in advance is at "Stop" or is displaying a Low-speed indication	Caution, Normal-speed signal.
	 Fig. 103		 Fig. 104		 Fig. 105		 Fig. 106	Proceed at normal speed, prepared to reduce to medium speed at next signal— Section is clear and signal in advance is at "Caution" or "Clear" for medium speed only	Normal speed: Prepare to Reduce to Medium speed signal.
 Fig. 107	 Fig. 108	 Fig. 109	 Fig. 110	 Fig. 111	 Fig. 112	 Fig. 113	 Fig. 114	Proceed at normal speed— Section is clear and signal next in advance is at "Caution" or "Clear" for normal speed	Clear, Normal-speed signal.

AUTOMATIC RUNNING SIGNALS

Stop and Stay Signal, also Departure Signal				Stop and Proceed Signal				Remarks
Multi-aspect Type		Searchlight Type		Multi-aspect Type		Searchlight Type		
Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit	Single Unit	Double Unit	
"A" LIGHT ON STOP AND STAY SIGNAL								Station switched In— "A" light NOT illuminated— When the "A" light is not illuminated the signal is in all respects a Stop and Stay signal. (*See* Automatic Signalling Regulation 3 (b).)
Fig. 115	Fig. 116	Fig. 117	Fig. 118					
Fig. 119	Fig. 120	Fig. 121	Fig. 122					Station switched Out— "A" light ILLUMINATED— When the "A" light is illuminated the signal is converted into a Stop and Proceed signal and the regulations applicable to Stop and Proceed signals become applicable to it. (*See* Automatic Signalling Regulation 3 (b).)
"L" LIGHT ON ARRIVAL SIGNAL								When the "L" light is illuminated it indicates that the points are set for the crossing loop and that all points off the loop are in the normal position but not necessarily that the loop is unobstructed. (*See* Automatic Signalling Regulations 20, 21 and 22.)
				Fig. 123		Fig. 124		

3. CLASSIFICATION OF AUTOMATIC RUNNING SIGNALS

(a) Automatic Running signals are divided into three main classes, viz:

Stop and Proceed signals;

Stop and Stay signals;

Departure signals

The lower Multi-aspect or Searchlight units in the case of double-unit signals, and the Marker lights in the case of single-unit signals, are so placed that by their position in relation to the upper lights they serve to distinguish Stop and Proceed signals from Stop and Stay or Departure signals. In the case of a Marker light the position of the lamp itself provides this indication.

The light units of **Stop and Proceed** signals are "staggered", i.e., the lower light unit is in a diagonal line to the right and not vertically below the upper light unit.

The light units of **Stop and Stay** signals and of **Departure** signals are in vertical line, i.e., the lower unit is vertically below the upper light unit.

(b) At some stations where the points at the crossover roads or sidings are only occasionally used the signal box is arranged so that it may be switched In or Out as required in accordance with Automatic Signalling Regulations 15 and 27. In such cases the Stop and Stay signals at the station are equipped with an additional light unit placed below and to the right of the lower unit or Marker light as the case may be. The additional light unit displays no light when the station is switched In, but when .the station is switched Out it displays an illuminated letter " A ", visible at short range only. (See figs. 115 to 122.) The lamps of " A " lights are backed by a triangular metal plate painted black with a white border. When an illuminated letter "A" is displayed on a Stop and Stay signal the signal concerned is converted to a Stop and Proceed signal and the rules and regulations applicable to Stop and Proceed signals become applicable to it.

"A" lights are also provided on Intermediate Stop and Stay signals protecting points and crossover roads at double-line switch-locked sidings. (See Automatic Signalling Regulation 16.)

(c) Automatic Running signals are further classified as under:

Intermediate signals..	Stop and Proceed , or Stop and Stay signals	
Arrival signals (used exclusively at Attended and Unattended crossing stations in single-line automatic signalling areas)	Stop and Proceed signals, (See Automatic Signalling Regulation 20)	Not controlled directly by signalman
Approach signals	Stop and Stay signals	
Outer Home signals Home signals Directing Signals Starting signals Advanced Starting signals	Stop and Stay signals	Can be held at "Stop" by a signalman. (see also Rules 32-45.)
Departure signals (used exclusively on single-line sections carrying traffic in both directions, to control the entrance of trains to such sections)	Departure signals (See Automatic signalling Regulation 19)	Some can be held at "Stop" by a Signalman.

(NOTE-*At Switch-out stations the classification of Stop and Stay signals as shown above is applicable only when the station is switched In; when the station is switched Out and the "A" lights are illuminated the signals become Intermediate Stop and Proceed signals.)*

(d) **Intermediate signals** are signals provided, where necessary, in either single- or double-line automatic signalling areas, to divide the line into shorter sections and to control the entry of trains into such intermediate sections. They are usually Stop and Proceed signals, but in particular localities where it is necessary to ensure that only one train is within an intermediate section at a time, (e.g., tunnel areas), they may be Stop and Stay signals.

(e) **Approach signals** may be provided at places where it is necessary to control the speed of trains approaching junctions, points, or other interlocked areas.

An Approach signal is a Stop and Stay signals placed in rear of another Stop and Stay signal and operating in the same way as an Intermediate Stop and Stay signal with the exception that when the signal in advance of the Approach signal is at "Stop", the Approach signal is also at "Stop" until, at the expiration of a prearranged time-delayed period, it displays a "Proceed" indication.

4. TRAINS NOT TO SET BACK

(a) Trains which leave a station must continue their journey through the section in the same direction, and must not set back, except in accordance with Rule 80, Automatic Signalling Regulations 24 (f), 30 and 31, or by authority of the Officer Controlling Train-running.

(b) Trains and shunting movements which are wholly within the Home Signals ata station and are within the signalled area may not reverse direction except on the authority of the signalman who must first satisfy himself that the movement is protected. Movements on the main line may otherwise reverse direction only as provided in clause (a) and (c) of this regulation.

(c) When shunting at a station involves going outside station limits, setting back on the main line is permitted provided the shunting movement does not involve passing an Intermediate signal.

5. TRAIN STOPPED AT STOP AND STAY SIGNAL

(a) Stop and Stay signals must not be passed at "Stop" except as may be authorised in the rules and regulations. (See indexed references on pages 272 and 273, under the heading of Passing of Fixed Signals when at "Stop".)

It should be noted that this does not apply to Departure signals, which must not be passed at "Stop" except in accordance with Automatic Signalling Regulation 19.

(b) If detained at a Stop and Stay signal equipped with an "A" light, and the "A" light is not illuminated, an Enginedriver after ascertaining that the signal box is switched Out (or, in the case of a switch-locked siding, that the switch lock is locked), and upon observing that the line is clear, must move the train forward, with the Guard or Locomotive Assistant acting as pilot, to the next signal. Where there are motor-operated points in the section ahead of the signal they must be so secured that the train may pass safely over them.

(c) If a train is detained at an Intermediate Stop and Stay signal which is not equipped with an" A " light the Enginedriver (or Guard in the case of a railcar or electric multiple-unit) must communicate with the Train Control Operator from the adjacent telephone. The Train Control Operator, after satisfying himself that it is safe to do so, may authorise the train to pass the signal at "Stop" by issuing a T.R. telegram.

6. TRAIN STOPPED AT STOP AND PROCEED SIGNAL

(a) When an Enginedriver observes a Stop and Proceed signal at "Stop" he must stop the train; if, at the expiration of 10 seconds, the signal is still at "Stop" the train may proceed cautiously past the signal, the Enginedriver being prepared to find the section occupied or obstructed, points wrongly set, or a broken or misplaced rail. When the signal is an Arrival signal and the train is required to cross another train at the station, the regulations regarding Arrival signals will apply.

Where there are main-line points in the section ahead of a Stop and Proceed Signal which has been passed at "Stop" the Enginedriver, before the train passes over the points, must see that they are so secured that the train may pass safely over them.

After passing a Stop and Proceed signal at "Stop" a train must not travel at a speed greater than 10 kilometres per hour, unless there is an unobstructed view of the line ahead; in any case the Enginedriver must not assume that any obstruction in the section is protected, but must regulate the speed of the train when passing through the section so that he can stop the train within the distance he can see ahead and clear of any obstruction.

If the signal next in advance is observed to be at "Caution" or "Clear" the Enginedriver must not relax vigilance but must, until he reaches the signal, be prepared to stop the train clear of any obstruction.

(c) If, after passing a Stop and Proceed signal at "Stop", an Enginedriver becomes aware that there is a preceding train stopped in the section he must stop his train 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 before again starting his train.

If, however, the preceding train is observed to be moving through the section the second train may follow it at a safe interval.

NOTE-In connection with the passing of Stop and Proceed signals at "Stop" Enginedrivers must clearly understand that –

(i) The signal next in advance of a train indicates the condition of the next section and not of the section through which the train is travelling.

(ii) The passing of a signal at "Slop" as herein permitted applies only to a Stop and Proceed signal, and not to a Stop and Stay signal, except when a Stop and Stay signal is converted into a Stop and Proceed signal by the display of an " A" light upon it.

(iii) In view of the possibility of a train which has passed a Stop and Proceed signal at "Stop" being in the same section as a preceeding train, strict attention to and observance of side and tail lamps and lights after dark, or when visibility is bad, is of the utmost importance.

(iv) Locomotive headlamps must be lighted.

7. TWO POSITION SIGNALS WORKED IN CONJUNCTION WITH THREE-POSITION SIGNALS

Where two-position signals are worked in conjunction with three-position signals, a two-position signal at "Proceed" is an indication to an Engine-driver that the line is clear only to the next signal, at which the train must stop if the signal is not at proceed

8. SIGNAL IMPERFECTLY DISPLAYED

(a) Except in accordance with Rule 25 *(re* signals not in use) the absence of a signal at a place where a signal is ordinarily shown. or a signal imperfectly displayed, must be regarded as a Stop signal and the conditon of the signal reported to the Officer in Charge or Train Control.

"Imperfectly displayed" signals are signals displaying any aspect not described in the regulations, or signals not showing a steady indication.

(b) When a train is stopped at an imperfectly displayed signal-

If it is a Stop and Proceed signal, Automatic Signalling Regulation 6 applies;

If it is a Stop and Stay signal, Regulation 5 applies;

If it is a Departure signal, Regulation 19 applies.

9. ILLUMINATED DIAGRAMS

Illuminated diagrams are exhibited in each signal box to indicate to the Signalman when a train enters or occupies each track circuit under his control.

10. WORKING OF LEVERS IN SIGNAL BOXES

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

(b) Unless instructions are issued to the contrary. a Signalman must keep all signals under his control at "Stop" except as required for train movements.

(c) When practicable, a Signalman must place signals at "Proceed" in sufficient time to avoid checking trains.

12. IDENTIFICATION OF SIGNALS

Signals controlled by a lever bear the number of the lever .

Signals not controlled by a lever are numbered in accordance with the metrage at which they are located. To distinguish Down signals from Up signals the nearest odd figure is used for the last number to indicate Down signals and the nearest even figure Up signals.

The numbers of signals are shown on S. and I. Circular Memoranda.

13. INTERFERENCE WITH TRACK CIRCUITS

(a) Owing to the risk of interference with track circuits Enginedrivers must use sand sparingly only sufficient being applied to provide effective braking or adhesion. If heavy sanding is applied the Enginedriver must advise the nearest Officer in Charge or the Train Control Operator

as early as possible.

In automatic signalling areas the use of ballast by engine crews for the purpose of providing extra adhesion between engine and rail is prohibited.

If sand, ballast, or other material should be on the line in quantity sufficient to prevent the wheels making metallic contact with the rails, the train must be stopped and protected in accordance with the rules in both front and rear when travelling on a single line, and in the rear only when on a double line. The nearest Officer in Charge must be advised immediately of the position and he must advise the Officer Controlling Train-running without delay.

(b) Surfacemen and other employees must avoid making contact between one railnand another with crowbars or any other metallic substance. Metallic guages or trolleys without insulated axles must on no account be used in automatic signalling areas, or where track circuits are installed.

(c) Any of the following circumstances occurring on a section will prevent the signal or signals controlling the entrance to the section being placed at "Proceed":

(i) A train or vehicle;

(ii) Any metallic or other conducting substance so placed as to form a connection between the rails;

(iii) A broken or displaced rail;

(iv) Any bond wire becoming detached or broken;

(v) Points not properly set;

(vi} Switch-lock and releasing-switch door not closed;

(vii) Half pilot key removed or incorrectly replaced;

(viii) A vehicle in a siding fouling the track circuit

If anything hindering or likely to hinder the proper working of automatic signals is observed by an employee and cannot be rectified immediately, he must advise the nearest Officer in Charge or the Train Control Operator.

(d) Where track circuits exist the bonding of the rails at the joints is necessary for the proper working of the signalling system, and employees must use care to prevent damage to the bond wires, and must see that ballast is kept clear of them; they must at once advise the Signal Maintainer of any damage to bond wires.

14. REPORTS OF FAILURES AND IRREGULARITIES

In the event of any failure or irregularity the Train Control Operator and the Signal Maintainer must be immediately advised by the most expeditious means available.

At attended stations the circumstances must also be noted in the train register.

Enginedrivers must also report any failure or irregularity to the Locomotive Supervisor.

In order to facilitate repairs Enginedrivers may, in cases of emergency, stop where required between stations to take up or set down Signal Maintainers.

REGULATIONS APPLYING ONLY TO DOUBLE-LINE AUTOMATIC SIGNALLING

15. METHOD OF SWITCHING IN AND OUT A SIGNAL BOX

(a) A switch-in signal box is equipped with an interlocking machine or panel consisting of control levers and levers to operate the signals and points. An illuminated diagram is also provided.

Local instructions are shown in each signal box in connection with the procedure for switching In and switching Out.

When a signal box is switched Out the positions of the levers are as follows: Control levers reversed, all signal levers controlling running on the main line reversed, and all other levers normal. The " A " lights on the signals are displayed when the control levers are reversed.

(b) When it is necessary tor a signal box to be switched In or Out the apparatus must be operated as follows:

(i) **To Switch In** -The employee operating the signal box must replace to "normal" the control lever (or levers) applicable to the line (or lines) affected, thereby illuminating the diagram and extinguishing the " A " lights on the signals, converting them from Stop and Proceed to Stop and Stay signals.

If an approaching train is indicated on the diagram no other lever should be operated until the train has cleared the station or been brought to a stand. The signal levers applicable to the desired road must then be placed to normal, after which the points and Shunting signal levers may be operated subject to time delays as explained in the local instructions.

(ii) **To Switch Out** -All Shunting signal levers and points levers must be replaced to "normal"; the signal levers controlling running on the main line and the control levers must then be reversed in that order, extinguishing the diagram lights and displaying the " A " lights on the signals.

16. METHOD OF WORKING SWITCH LOCKED SIDINGS ON DOUBLE LINES

A train which is required to shunt a switch-locked siding on a double line must stop before reaching the points.

When the intended movement entails the crossing of the opposite main line the Guard or Locomotive Assistant, after observing (as far as possible) that a train is not approaching the signal on the opposite line which protects the crossover road, must open the door of the switch lock and wait until the time release runs down and the indication arm is raised - see diagram. The switch handle ("B" lever) must then be turned over to free the points. The points may then be operated as required.

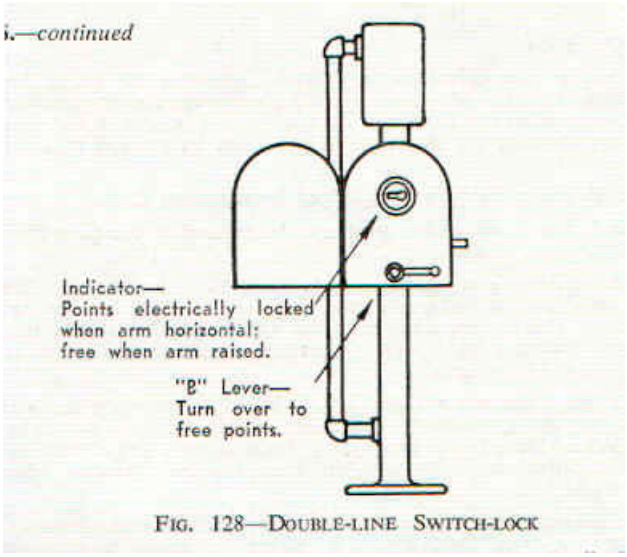


FIG. 128—DOUBLE-LINE SWITCH-LOCK

The opening of the switch-lock door holds at "Stop" all signals protecting the lines affected and extinguishes the " A " light on such signals, converting them from Stop and Proceed to Stop and Stay signals.

After shunting is completed and the whole of the train is again on the main line the Guard must set the points in their normal position for the main line, and close and padlock the door of the switch lock.

When the turnout does not cross the opposing main line the operating of the switch lock does not affect the signals on that line.

When a train has entered a switch-locked siding to permit a following train to pass the Guard must restore the switch lock and points to normal and satisfy himself that all is clear and safe for the following train to pass.

17. WORKING OF TRAINS

(a) In a double-line area alterations in scheduled train crossings or running order of trains may be made by direction of the Train Control Operator, or in the event of the failure of all communication, by Signalmen, when necessary to facilitate the running of important trains.

(b) If, on a double line, all signals have failed or all signals and communication have failed and arrangements have not been made by the District Traffic Manager, a train may proceed in accordance with Automatic Signalling Regulation 6 over the portion of the line affected up to the next Stop and Stay signal, where, if the failure has not been rectified, the Officer in Charge or Train Control Operator, after an interval of not less than five minutes since departure of the previous train, may authorise the train to proceed after notifying the Enginedriver particulars as to the preceding train, and warning him to expect to find any of the conditions referred to in Automatic Signalling Regulation 6. The Officer Controlling Train-running must be notified of the position as soon as possible.

(c) Bell communication is provided between permanent signal boxes, and bell or telephonic

communication between permanent signal boxes and switch-out signal boxes.

Except where local instructions provide otherwise all trains leaving attended signal boxes must be described by bell code (or by telephone if bell is not provided) to the next attended signal box, and the time of sending and receiving the departure signal must be entered in the train registers.

All code signals must be acknowledged by repeating them.

The arrival time of all trains must also be entered in the train registers at permanent signal boxes.

(d) Trains leaving a signal box may, in some cases, be required to terminate their run or sidetrack at a switch-out signal box or switch- locked siding. This information must be given verbally at the time of sending the departure signal. The departure signal must be sent at the time of departure of the train.

If after a train has left a signal box it becomes necessary for it to be sidetracked at an intermediate switch-out signal box or switch-locked siding (prior advice of this not having been given), the Guard of the train must arrange acoordingly with the Train Control Operator, who will advise the signal box next in advance.

Before allowing a train to enter on to the main line to commence or continue its run from an intermediate switch-out signal box or switch-locked siding, the employee in charge must obtain the permission of the Train Control Operator, who must advise all other Signalmen concerned of the arrangements made.

(e) The train-description code signals (which constitute the departure signal) and other code signals used in automatic signalling areas are as follows:

Bell Code	Number of Beats	How to be Given
Train description -	4	2 pause 2
Express passenger train		
Express goods train; breakdown-van train; relief engine	4	3 pause 1
Railcar	4	4 consecutively
Passenger train	5	2 pause 3
Empty carriage train	5	2 pause 2 pause 1
Mixed train; with-car goods train	5	5 consecutively
Goods train	6	6 consercutively
Light engine; light engines coupled	6	2 pause 2 pause 2
Work train	6	3 pause 3
Other signals-		
Cancel signal	7	3 pause 4
Speak on telephone	1	1

(f) When it is necessary to issue special instructions relating to the working of trains the telephone should be used to supplement the bell code.

(g) For instructions relating to the working and protection of trains in double-line automatic signalling areas in the event of accident, failure, train divided, etc., see Rules 73 to 84.

For instructions relating to the working of double-line traffic over a single line by pilot working, see Rules 85 to 94.

REGULATIONS APPLYING ONLY TO SINGLE-LINE AUTOMATIC SIGNALLING

18. DEFINITIONS

In addition to those specified in Rule 2, the following definitions will apply in single-line automatic signalling territory:

(a) **"Block Section"**: The section of single line extending between any two adjoining stations equipped for crossing trains.

(b) **"Intermediate Section"**: Any division of the single-line block section the entrance to which is governed by a fixed signal. A block section may be divided into two or more intermediate sections.

(c) **"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, in addition to being controlled by track circuits. Interlocked stations are protected by Home signals.

(d) **" 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 Arrival signals.

Signal control slides are provided in the station building at some attended crossing stations to place at "Stop" one or more Departure signals; this does not cause the station to be classed as an interlocked station.

(e) **"Unattended Crossing Station"**: A crossing station at which an employee of the Traffic staff is not in attendance until the arrival of a train, and where the signals and points are not arranged and operated as at an interlocked station. An unattended crossing station is protected by Arrival signals.

Unless otherwise arranged the Guard is in charge of the station until the departure of his train. When two trains are at a station, the Guard of the train which arrived first shall be in charge.

19. DEPARTURE SIGNALS

(a) A Departure signal is a signal which authorises entry to a single-line block section from an interlocked, an attended, or an unattended crossing station.

(b) If a Departure signal fails to operate, the Officer in Charge, Signalman, or Guard must see that all the apparatus has been correctly operated in accordance with the regulations and then operate the signal lever or releasing switch. If the signal still fails to operate he must immediately communicate with the Train Control Operator who may authorise either the passing of the Departure signal at "Stop" or the institution of pilot working, as may be considered necessary. The authority to pass the Departure signal at "Stop" will be given on Mis. 59 form (Authority to Pass Departure Signal at "Stop"), and will be the Enginedriver's authority to enter the block section and, except when issued for a shunting movement, proceed through the block section concerned under the conditions set out on the form.

A separate Mis. 59 must be issued for each shunting movement past the Departure Signal.

If a Departure Signal has been passed at "Stop" the Train Control Operator may after satisfying himself that it is safe to do so, either:

(i) Authorise the train to be set back within station limits in accordance with Automatic Signalling Regulation 4; or

(ii) Give authority by the issue of a Mis. 59 for the train to proceed through the block section, or authorise the institution of pilot working; which ever may be appropriate to the circumstances. If, after the Train Control Operator has been advised, the Departure signal goes to "Proceed" the train must not be permitted to depart without authority being first obtained from the Train Control Operator.

(c) The authority to pass the Departure signal at "Stop" will be entered on a Mis. 59 form by the Train Control Operator, who will telephone particulars to the Officer in Charge or the Guard of the train, as the case may be, for entry on a Mis. 59 form, which must be countersigned by the Guard and delivered to the Enginedriver.

In the case of a light locomotive at an unattended station the Enginedriver will write out the Mis. 59authority.

The employee receiving the telephoned authority must at once repeat the instruction back to the Train Control Operator, who will confirm it.

When the train has reached the end of the block section (or, in the case of a Mis. 59 authority issued for shunting purposes, has passed the Departure signal) the Enginedriver must write the word "Cancelled" across the Mis. 59 form or tear it in half.

Except when specially instructed by the Train Control Operator it will not be necessary to take receipts for Mis. 59 authorities.

Stationmasters must ensure that a supply of Mis. 59 forms is maintained in telephone boxes at all crossing station under their control.

(d) **A train must not pass a Departure signal at "Stop" except in the following circumstances:**

(i) Upon receipt of the Mis. 59 authority from the Train Control Operator referred to in clause (c) hereof;

(ii) When, in accordance with Automatic Signalling Regulations 28 and 29, pilot working has been instituted;

(iii) When, in accordance with Automatic Signalling Regulation 30, it is necessary for a relief locomotive or train to enter the block section for the purpose of rendering assistance to a disabled train;

(iv) When, in accordance with Automatic Signalling Regulation 30, a locomotive is required to return from a crossing station for a portion of the train left in the block section;

(v) When, in accordance with Automatic Signalling Regulation 31, a train is required to enter an obstructed block section;

(vi) When, in accordance with Automatic Signalling Regulation 32, the operation of automatic signalling is suspended by train advice;

(vii) When all signals and communication have failed in an area where Automatic Signalling Regulation 33 applies;

(viii) In accordance with Rule 99(c).

(e) When a Departure signal has been passed at "Stop" the train having received its proper

authority to proceed must travel cautiously, the Engine-driver being prepared to find the section obstructed, points wrongly set, or a broken or misplaced rail.

Unless authority is given to the contrary Enginedrivers who have passed a Departure signal at "Stop" must, before passing over any points in the block section ahead, see that they are so secured that the train may pass safely over them.

20. ARRIVAL SIGNALS

(a) Stop and Proceed signals at the entrance to attended and unattended crossing stations are called Arrival signals, and are fitted with a short-range light which shows a white letter "L " when the points are set for the loop and all points off the loop are in the normal position. (See Figs 123 and 124.)

When the points are set for the loop the Arrival signal controlling the entrance of a train into the station will be at "Stop". The "L" light indicates that the road is correctly set but not that it is unobstructed. Enginedrivers entering the loop when the "L" light is illuminated must satisfy themselves that the road is clear.

If the "L" light does not show when the points are set for the loop all the points on the loop must be examined, and, if they are correctly set, the train may then be hand-signalled to enter the loop.

(b) When an Arrival signal is at "Stop" and the train is not required to cross another train at the station, the signal may be passed at "Stop" under the provisions of Automatic Signalling Regulation 6.

When an arrival signal is at "Stop" and the train is required to cross another train at the station, the signal may be passed at "Stop" on the receipt of written or verbal instructions or the exhibition of a proper hand signal in accordance with Automatic Signalling Regulations 21 or 22.

(c) When two trains are approaching an attended or unattended crossing station from opposite directions at the same time the Intermediate Stop and Proceed signals in rear of the Arrival signals at both ends of the station will be at "Caution", although the Arrival signals may be at "Caution" or "Stop".

(d) When two trains are approaching an attended or unattended crossing station from opposite directions at the same time the Departure signals at both ends of the station will be at "Stop", and as each train occupies the clearing track circuit (from 400 metres to 1,200 metres from the loop facing points) it will cause the opposing Arrival signal (which is normally at "Caution") to change to "Stop".

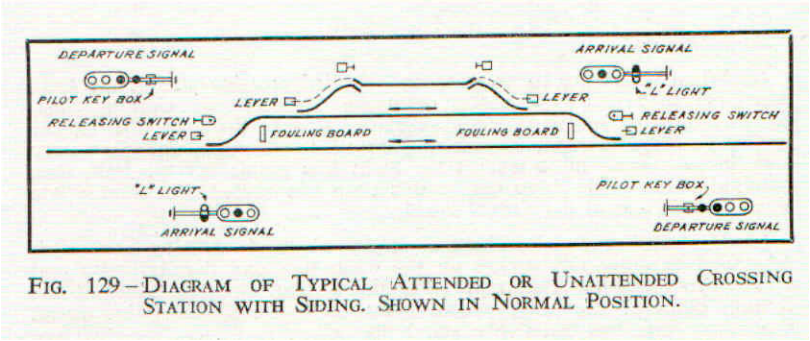


FIG. 129 – DIAGRAM OF TYPICAL ATTENDED OR UNATTENDED CROSSING STATION WITH SIDING. SHOWN IN NORMAL POSITION.

21. WORKING OF ATTENDED CROSSING STATIONS

(a) The main line points at each end of attended crossing stations are operated by a hand lever fixed near the points, the lever being secured by an A.S. padlock. The points are electrically connected with the signals so that when the points at either end of a station are reversed, both Arrival. Signals go to "Stop" and the "L" light is illuminated at the end at which the points are reversed.

A releasing switch (see below) is provided close to the points lever by which, provided the block or intermediate section ahead is clear, the Departure signal may be placed at "Proceed"; the points may then be set for the departure of a train from the loop (see clause (i)).

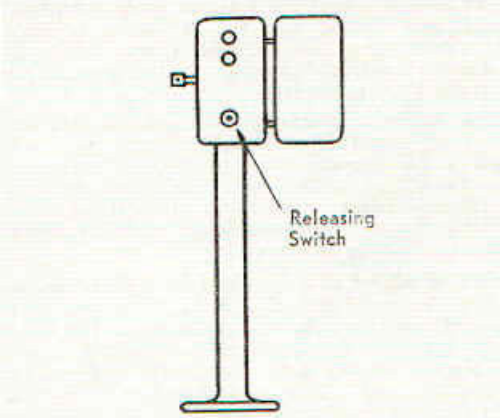


FIG. 130 – RELEASING-SWITCH BOX

At stations which are normally worked as attended crossing stations, Signal Control Slides are provided to enable Departure signals to be placed or kept at "Stop" when required. Before going off duty each day the Officers in Charge at such stations must see that the slides are left so that the Departure signals will operate automatically.

(b) Where signal control slides are provided and it is necessary to stop a train which is not scheduled to stop, the Officer in Charge must operate the slide for the Departure signal concerned (if possible, before the train has passed the Intermediate signal next in rear of the Arrival signal), and thus place and keep the Departure signal at "Stop" until the train may depart.

(c) When trains are to cross at an attended crossing station the train scheduled to arrive first, unless otherwise instructed by working time- table or train advice, is the train scheduled to take

the loop. The Officer in Charge may, however, rearrange the berthing of trains when necessary and, in such case, must reverse the main line points for the train then required to enter the loop before this train has passed the Intermediate signal next in rear of the Arrival signal.

(d) **If the first train to arrive at an attended crossing station is scheduled to enter the station on the main line** and the Arrival signal is at "Proceed", the train may enter the station, stopping short of the fouling point of the loop, which is marked by a fouling-point board. When the train has come to a stand the Officer in Charge must set the points for the opposing train to enter the loop.

If the Departure signal is also at "Proceed" the reversing of the points will automatically place it at "Stop" and the Departure signal at the next crossing station in advance, which will have been held at "Stop", will then be free to go to "Proceed". **If the points are not reversed promptly in such circumstances the opposing train will be detained at the Departure signal at the station in advance.**

The signal control slides must be operated when necessary to keep the Departure signal at "Stop" and so avoid detention of the opposing train at the station in advance.

When the opposing train approaches, the Officer in Charge, after seeing that the points are correctly set and secure, and that the line is clear into the loop, must hand-signal the train to enter the loop. The Engine-driver, after satisfying himself that the "L" light is illuminated, must take the train into the loop and, after it is clear of the fouling point, the Officer in Charge must set the points in their normal position for the main line, and padlock the points lever.

If the first train to arrive is scheduled to enter the station on the main line but the Arrival signal is at "Stop", it must wait until the other train has arrived in the loop and the Arrival signal has gone to "Proceed", and then enter the station on the main tine. Provided, however, that if the Officer in Charge desires to rearrange the berthing, and hand-signals this train to enter the loop in accordance with the procedure set out in clause (e) hereof, this may be done.

(e) **If the train scheduled to enter the loop arrives first** the train must not pass the Arrival signal, even if it is at "Proceed", as the points, in these circumstances, would not be set for the loop. The Officer in Charge must operate the signal control slide, where provided, to place and keep the Departure signal for this train at "Stop", and set the points for the train to enter the loop. After seeing that the points are secure, that the line is. clear into the loop, and that a trai.n is not entering or leaving the opposite end of the station, the Officer In Charge must hand-slgnal the train to pass the Arrival signal at "Stop" and enter the loop. After satisfying himself that the "L" light is illuminated the Enginedriver must take the train into the loop.

When the last vehicle has passed into the loop and is clear of the fouling point the Officer in Charge must set the points in their normal position for the main line and padlock .the points lever. The Arrival signal for the train approaching from the opposite direction will then go to "Proceed" and this train may enter the station on the main line.

When the Officer in Charge wishes to rearrange the berthing, the train scheduled to enter the loop may be held outside the Arrival signal and then enter the station on the main line either after the opposing train is observed to be berthed in the loop and the Arrival signal has gone to "Proceed", or upon receipt of instructions from the Officer in Charge.

(f) **When both trains arrive at the same time** both Arrival signals will be at "Stop". The train scheduled or required to enter the loop must first be brought in as provided in clause (e). The second train must then enter the station on the main line when the Arrival signal goes to "Proceed".

(g) A train may be sidetracked and stand in the loop or siding at an attended crossing station to allow another train to overtake it on the main line. Instructions in regard to side-tracking of

trains will be given by the Train Control Operator.

(h) **When a train is to be despatched from the main line** the Departure signal works automatically, provided the trailing points are set for the main line (this does not ensure that a train in the loop is standing clear of the main line).

If the Departure signal is at "Caution" or "Clear" the Enginedriver may start the train after the receipt of the requisite signal or verbal advice from the Guard who must first obtain permission to leave from the Officer in Charge. If the Departure signal is at "Stop" the Enginedriver must keep his train clear of the fouling point of the loop (as indicated by the fouling-point board) until the signal goes to "Proceed".

The signal control slide must be operated, when necessary, to permit the signal to display a "Proceed" indication.

(i) **When a train is to be despatched from the loop or siding** the Enginedriver must keep his train clear of the fouling point until hand-signalled by the Locomotive Assistant that the points are correctly set. The Locomotive Assistant must first observe the indication of the Arrival signal for trains approaching from the opposite direction to ascertain whether a following train is approaching closely.

If the signal is at "Caution" it indicates that another train is not closely following his train. If the signal is at "Stop" it indicates that there is a train on the section in the rear; in the case of a opposing train departing, the Locomotive Assistant will be aware of this as his train will have crossed this train at the station. If there is a following train approaching closely in the rear, the train standing on the loop or siding must not be dispatched until the train from the rear has stopped.

On sections where signals are approach lighted, releasing-switch boxes are provided with an indicator which exhibits a white ball when the Arrival signal is at "Caution". When the white ball is not exhibited the Arrival signal will be at "Stop". At stations where this indicator is provided the Locomotive Assistant, instead of proceeding to the signal to observe its indication, will open the releasing-switch box and observe the condition of the indicator.

If a train is not approaching in the rear the Locomotive Assistant must push in the releasing switch (see Fig. 130). The Departure signal will go to "Proceed". After satisfying himself that all other points are correctly set for the train to proceed the Locomotive Assistant must reverse the main line points and signal to the enginedriver, who will acknowledge the signal with one short pop of the whistle. The Enginedriver may then start the train after the receipt of the requisite signal or verbal advice from the Guard, who must first obtain permission to leave from the Officer in Charge.

The signal control slide must be operated, when necessary, to permit the Departure signal to display a "Proceed" indication. After the locomotive has passed the Departure signal, but not until then, the Officer in Charge must close and padlock the door of the releasing-switch box. When the whole train has passed clear of the points he must set them in their normal position and padlock the points lever.

The Guard of a railcar will be responsible for carrying out the duties prescribed for the Locomotive Assistant. The Officer in Charge, instead of the Locomotive Assistant (or Guard), if he considers it desirable in order to expendite the dispatch of a train, may accept responsibility for dispatching a train from the loop or siding. In such case he must Inform the Enginedriver and the Locomotive Assistant (or Guard) of his intentions.

(j) Sidings connected to the loop at attended crossing stations are provided with trap points. Points off the loop and associated trap points are locked and operated by a ground lever secured by an A.S. padlock.

When it is necessary to use the sidings the lever must be unlocked and the points operated as required. After shunting is completed the employee in charge of the shunting operations must place the lever in its normal position and padlock it.

22. WORKING OF UNATTENDED CROSSING STATIONS

(See Fig 129)

(a) The main line points at each end of unattended crossing stations are operated by a hand lever fixed near the points, the lever being secured by an A.S. padlock. The Guard and Enginedriverof each train on a line operated under this system must carry a key for A.S. padlocks. The points are electrically connected with the signals so that when the points at either end of a station are reversed. both Arrival signals go to "Stop" and the "L" light is illuminated at the end at which the points are reversed.

A releasing switch (see fig 130) is provided close to the points lever by which, provided the block of intermediate section ahead is clear, the Departure signal may be placed at "Proceed "; the points may then be set for the departure of a train from the loop (see clause (i).

(b) If a train scheduled to cross another train at an unattended crossing station arrives before the train from the opposite direction, it may be found that the Arrival and Departure signals are at "Proceed". When this occurs the Enginedriver, Locomotive Assistant, and Guard must be careful to observe the instructions given in the timetable or train advice and, when given, those of the Train Control Operator.

(c) When trains are to cross at an unattended crossing station the train scheduled to arrive first, unless otherwise instructed by working timetable or train advice, or by Mis 56 order, is the train scheduled to take the loop.

(d) **If the first train to arrive at an unattended crossing station is scheduled to enter the station on the main line** and the Arrival signal is at "Proceed", the train may enter the station, stopping short of the fouling point of the loop, which is marked by a fouling-point board. When the train has come to a stand on the main line the Locomotive Assistant must at once go forward and set the points for the opposing train to enter the loop.

If the Departure signal is also at "Proceed" the reversing of the points will automatically place it at "Stop" and the Departure signal at the next crossing station in advance (which will have been held at "Stop") will then be free to go to "Proceed". **If the points are not reversed in such circumstances the opposing train will be detained at the Departure signal at the station in advance.**

When the opposing train approaches, the Locomotive Assistant, after seeing that the points are secure and that the line is clear into the loop, must hand-signal the train to enter the loop. The Enginedriver, after satisfying himself that the "L" light is illuminated, must take the train into the loop and, after it is clear of the fouling point, the Locomotive Assistant must set the points in their normal position for the main line and padlock the points lever.

If the first train to arrive is scheduled to enter the station on the main line but the Arrival signal is at "Stop", it must wait until the other train has arrived in the loop and the Arrival signal has gone to "Proceed" and then enter the station on the main line.

(e) **If, upon arrival, the Enginedriver of the train which is scheduled to enter the loop observes the opposing train stopped at the Arrival signal at the other end of the station, or if the train scheduled to enter the loop arrives first,** the train must not pass the Arrival signal, even if it is at "Proceed", as the points, in these circumstances, would not be set for the loop. After the train has stopped at the Arrival signal the Locomotive Assistant must go forward and

set the points for the train to enter the loop. After seeing that the points are secure, that the line is clear into the loop, and that a train is not entering or leaving the opposite end of the station, the Locomotive Assistant must hand-signal the train to pass the Arrival signal at "Stop" and enter the loop. After satisfying himself that the "L" light is illuminated the Enginedriver must take the train into the loop.

When the last vehicle has passed into the loop and is clear of the fouling point the Guard of the train must at once set the points in their normal position for the mainline and padlock the points lever. The Arrival signal for the train approaching from the opposite direction will then go to "Proceed" and this train may enter the station on the main line.

In the case of a light locomotive which has entered the loop, the Locomotive Assistant will set the points in their normal position for the main line and padlock the points lever.

(f) **When both trains arrive at an unattended crossing station at the same time** both Arrival signals will be at "Stop". The train scheduled to enter the loop must first be brought in as provided in clause (e). The second train must then enter the station on the main line when the Arrival signal goes to "Proceed".

(g) A train may be sidetracked and stand in the loop or siding at an unattended crossing station to allow another train to overtake it on the main line. Instructions in regard to sidetracking of trains will be given by the Train Control Operator.

(h) **When a train is to be dispatched from the main line** the Departure signal works automatically provided the trailing points are set for the main line (this does not ensure that a train in the loop is standing clear of the main line). If the Departure signal is at "Caution" or "Clear" the Enginedriver may start the train after the receipt of the requisite signal or verbal advice from the Guard. If the Departure signal is at "Stop" the Enginedriver must keep his train clear of the fouling point of the loop (as indicated by the fouling-point board) until the signal goes to "Proceed".

(i) When a train is to be dispatched from the loop or siding the Enginedriver must keep his train clear of the fouling point until hand-signalled by the Locomotive Assistant that the points are correctly set. The Locomotive Assistant must first observe the indication of the Arrival signal for trains approaching from the opposite direction to ascertain whether a following train is approaching closely.

If the signal is at "Caution" it indicates that another train is not closely following his train.

If the signal is at "Stop" it indicates that another train is on the section in the rear; in the case of an opposing train departing the Locomotive Assistant will be aware of this, as his train will have crossed this train at the station. If there is a following train approaching closely in the rear the train standing on the loop or siding must not be dispatched until the train from the rear has stopped.

On sections where signals are approach lighted, releasing-switch boxes are provided with an indicator which exhibits a white ball when the Arrival signal is at "Caution". When the white ball is not exhibited the Arrival signal will be at "Stop". At stations where this indicator is provided, the Locomotive Assistant, instead of proceeding to the signal to observe its indication, will open the releasing-switch box and observe the condition of the indicator.

If a train is not approaching in the rear, the Locomotive Assistant must push in the releasing switch (see Fig 130). The Departure signal will go to "Proceed". After satisfying himself that all other points are correctly set for the train to proceed the Locomotive Assistant must reverse the main line points and signal to the Enginedriver who will acknowledge the signal with one short pop of the whistle. The Enginedriver must then obtain the Guard's signal or verbal advice for the train to draw out of the loop of siding.

After the locomotive has passed the Departure signal, but not until then, the Guard must close and padlock the door of the releasing-switch box. When the whole train has passed clear of the points he must set them in their normal position and padlock the points lever.

(j) Sidings connected to the loop at unattended crossing stations are provided with trap points. Points off the loop and associated trap points are locked and operated by a ground lever secured by an A.S. padlock.

When it is necessary to use the sidings the lever must be unlocked and the points operated as required. After shunting is completed the Guard must place the lever it its normal position and padlock it.

(k) The Guard of a railcar will be responsible for carrying out the duties prescribed in the preceding clauses for the Locomotive Assistant.

The duties of train crews as specified in the foregoing provisions may be varied by the Train Control Operator.

24. SWITCH-LOCKED SIDINGS

(a) Switch-locked siding points are provided with a switch lock which is so arranged that the points can be reversed for the siding only after the electric lock has been released.

(b) **When it is necessary for a train to work a switch-locked siding** it must be brought to a stand on the track circuit opposite the white peg (approximately 15 metres outside the switch-locked points). The Locomotive Assistant must then go to the switch lock and open the door, which is locked with an A.S. padlock, pullout contact handle "A", and at the same time turn lever "B" (See Fig 131.) This will release the lock, and allow him to reverse the points by means of the points lever.

(c) **When it is necessary to lift or put off wagons in the siding,** the lock must be left free until shunting is completed and the locomotive has returned to the main line. The Guard must then set the points in their normal position for the main line, replace lever "B", and close and padlock the door of the switch lock.

(d) **When it is necessary for a train to completely enter the siding** the Guard, after the train is clear of the main line, must place the points in their normal position for the main line and close and padlock the door of the switch lock; the signals applying to the section will then be free and traffic can be operated over the section while the train is in in the siding.

(e) **When the train is ready to proceed to the main line** the Locomotive Assistant must go to the switch lock, open the door, and observe from the indicator whether the section is clear or occupied.

If the indicator shows that the section is clear he must free the lock by turning lever "B" and reverse the points.

If the indicator shows that the section is occupied, the switchlock door must be closed again and the Train Control Operator communicated with.

After the train is on the main line the Guard must set the points in their normal position for the main line and close and padlock the door of the switch lock.

(f) **When it is necessary for train to leave a station, shunt a switch-locked siding, and return to the station**, the whole of the train must be placed in the siding clear of the main line before any movement is made in the reverse direction on the main line. The points must then be placed in their normal position for the main line and the door of the switch lock closed. When the

train is ready to depart on its return journey it must do so in accordance with clause (e) hereof.

(g) **When a train is running under the authority of a Mis. 59** a switch-locked siding may be worked only in accordance with clauses (b) and (c) hereof. In addition at least one vehicle must be left on the main line while the train is in the siding and the train must proceed through the whole Block Section. On arrival at the next crossing station the Guard must advise the Train Control Operator whether his train has arrived complete.

25. ASSISTING LOCOMOTIVES

(a) An assisting locomotive at the front of a train must not be detached from the train except at a crossing station.

(b) A banking locomotive assisting a train in the rear must not be detached from the train between crossing stations except when a switch-locked siding is available for the purpose.

(c) A banking locomotive detached from a train at a switch-locked siding must enter the siding, and the Locomotive Assistant, after setting the points in their normal position for the main line, must close the door of the switch lock and obtain the instructions of the Train Control Operator.

(d) When an assisting locomotive or a banking locomotive is detached at an unattended crossing station or a banking locomotive is placed in a switch-locked Biding, it must not leave the crossing station or siding until the Enginedriver has obtained the instructions of the Train Control Operator. At attended stations the Officer in Charge will obtain the instructions of the Train Control Operator.

26. SHUNTING OUTSIDE DEPARTURE SIGNALS

(a) Shunting outside the Departure signals at any station may be carried out provided the Departure signal which applies to the movement is at "Proceed" before the shunt passes it.

At attended and unattended crossing stations (see Automatic Signalling Regulations 21 and 22) shunting outside the fouling point (marked by a fouling-point board), on either the main line or crossing loop, is prohibited unless the Departure signal is at "Proceed".

In the event of failure of a Departure signal the provisions of Automatic Signalling Regulation 29 must be observed.

(b) When the locomotive or front portion of a train passes a Departure signal at "Proceed" for shunting purposes, and owing to the length of the train cannot be set back within the Departure signal after the shunting is completed, the train which is already occupying the block section may be dispatched when ready on the authority of the Train Control Operator.

27. METHOD OF SWITCHING IN AND OUT A SIGNAL BOX

Signal boxes must be switched In and Out in accordance with the instructions exhibited therein.
Before commencing to switch In or Out the Signalman must ascertain, by reference to the diagram, whether trains are approaching the signal box.

When the signal box is switched Out, and the "A" lights on the signals displayed, the signals will be treated as Stop and Proceed signals.

28. PILOT WORKING

In the event of the failure of a Departure signal, unless otherwise arranged by the Train Control Operator, pilot working must be instituted in accordance with the following :

(a) **Train Control Operator to make Arrangements** -The Train Control Operator must be immediately informed of the circumstances, and if the defect cannot be immediately rectified he will, if he considers necessary, arrange for a Pilotman to be appointed and pilot working to be commenced from the station in advance if possible.

(b) **Instituting Pilot Working from Station in Advance** -The necessary forms for pilot working are contained in the telephone box at the Departure signal. The Pilotman must fill in a Mis 53 form as instructed on telephone by the Train Control Operator. These instructions must be repeated back after the form has been completed.

The Pilotman must then unlock the pilot-key box adjacent to the Departure signal, and remove

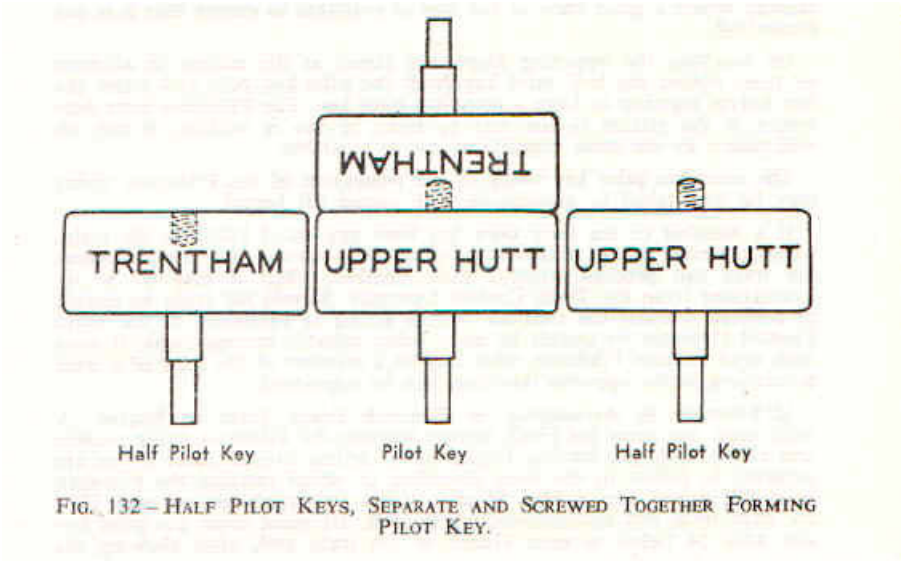


FIG. 132 – HALF PILOT KEYS, SEPARATE AND SCREWED TOGETHER FORMING PILOT KEY.

the half-pilot key (see Fig 132). This will lock the Departure signal at "Stop".

If, however, there is a train leaving the station at that time the Pilotman must travel by it, in which case the half pilot key must not be removed from the pilot-key box until the train has passed the Departure signal.

If a train is not available a velocipede or other conveyance from which the Pilotman has a good view of the line may be used.

On reaching the defective Departure signal the Pilotman must unlock the pilot-key box and remove the half pilot key, which will lock the defective Departure signal at "Stop".

The two half pilot keys (each of which bears the name of the station to which it belongs) must be screwed together to form a complete pilot key engraved with the name of the section to which it applies, and this pilot key, when shown to an Enginedriver by the Pilotman, will be authority for a train to proceed past the Departure signal at either end on to the block section which is under pilot working. **The pilot key does not authorise Enginedrivers to pass any other fixed signals in the "Stop" position**.

(c) **Instituting Pilot Working from Station at which Defective Signal is Located** -If a Pilotman is not available at the station in advance the Train Control Operator will arrange to institute pilot working from the station where the Departure signal is defective

The Pilotman may be any employee authorised by the Train Control Operator, and may, if necessary, be the Locomotive Assistant or Guard of a train which is being delayed.

The Pilotman must fill in a Mis 53 form as instructed on telephone by the Train Control Operator. The instructions must be repeated back after the form has been completed. The Pilotman must then remove the half pilot key from the pilot-key box for the defective Departure signal; and unless otherwise instructed by the Officer Controlling Train-running, make his first journey over the section by trolley or velocipede, or alongside the railway where a good view of the line is available to ensure that it is not obstructed.

On reaching the opposing Departure signal at the station in advance he must obtain the half pilot key from the pilot-key box, and screw the two halves together to form a complete pilot key. The Pilotman must then return to the station in the rear by train, if one is waiting; if not, he will return by the most expeditious means available.

The complete pilot key being in the possession of the Pilot man, trains may be dispatched in accordance with clause (d) hereof.

If a member of the train crew has been appointed Pilotman the train, when it arrives at the station in advance, must wait at that station, unless the train can proceed without such member, when it may do so on instructions from the Train Control Operator. Should the train be unable to proceed without the member who is acting as Pilotman, or the Train Control Operator be unable to make other suitable arrangements, it must wait until another Pllotman, who may be a member of the crew of a train proceeding in the opposite direction, can be appointed.

(d) **Pilotman to Accompany or Dispatch Every Train or Engine** -A train must not enter the block section without the Pilotman being present and riding with the leading Enginedriver, unless two or more trains are required to follow in the same direction, in which instance the Pilotman must fill in and sign a Mis 54 pilot ticket for each trin not accompanied by himself. He must show the pilot key and Mis. 54 ticket to each Guard of the train and, after showing the pilot key to each Enginedriver, must hand the Mis 54 pilot ticket to the leading Enginedriver. The Pilotman must personally authorise each train to start and must himself travel with the Enginedriver of the last train. The Pilotman must not authorise any train to depart without the concurrence of the Guard and, where appicable, the Officer in Charge and Signalman.

The pilot ticket will apply only to a single journey to the other end of the section, where it must be immediately collected by the Officer in Charge, who must at once write the word "Cancelled" across the face of it. If there is no Officer in Charge at the other end of the section the Enginedriver must cancel the ticket immediately on completing the journey through the block section and hand it to the Officer in Charge at the first attended station

Intermediate sidings must be worked only by trains accompanied by the Pilotman.

Where communication exists, the Pilotman, after starting a train which he does not accompany, must not (unless special authority has been received from the Officer Controlling Train-running) permit another train to enter the block section until he has received advice that the preceding train has arrived at the station in advance. If there is no Officer in Charge at this station the Guard of the train must call the Train Control pperator immediately upon arrival there.

Where communication does not exist, the Pilotman, after starting a train which he does not accompany, must not (unless special authority has been received from the Officer Controlling Train-running) permit another train to enter the block section until the expected running time of

the preceding train has elapsed, due regard being given to the circumstances obtaining at the time. Before the following train is started the Enginedriver must be advised of the nature and departure time of the preceding train, and that advice of its arrival at the station in advance has not been received.

(e) **Changing Pilotman** -When the Pilotman is changed, as in the instance of a member of a train crew handing the pilot key to the member of another train crew, it will be necessary for the previous authority to be cancelled and for a new Mis 53 form to be completed as instructed by the Train Control Operator.

(f) **Cancelling Pilot Working** -When pilot working is to be cancelled the Train Control Operator will cancel the Pilotman's authority. The Pilotman must fill in the form printed on the back of the Mis 53 form as instructed by the Train Control Operator. He must then immediately replace the half pilot key in the pilot-key box of the Departure signal at the station at which he is at the time, and this signal will then become operative. If a train is ready to depart for the other end of the section he must travel by it; if, however, a train is not available he must proceed to the other end of the section by other conveyance. Upon arrival there he must replace the other half pilot key in the pilot-key box of the Departure signal.

Normal working may then be resumed.

(g) **Indication of Intermediate Signals** -The indications of Intermediate signals must be acted upon in all cases and such signals, if at "Stop", may be passed only in accordance with Automatic Signalling Regulations 5 or 6 as may be applicable.

(h) **"Pilotman" Badge not Necessary** -As the possession of the pilot key gives the necessary authority to proceed on to the section the Pilotman need not wear any distinctive badge.

(i) **Pilot-key Box to be Kept Locked** -The pilot-key box has an iron cover which is locked with an A.S. padlock; the box must never be left unlocked whether the half pilot key be in or out.
(j) **Disposal of Forms** -All forms which have been used in connection with pilot working, and all telegrams and recorded messages sent or received must be forwarded together with reports on the matter, to the District Traffic Manager.

(k) **Pilot Working in Special Circumstances** -When so authorised by the Officer Controlling Train-running, pilot working in accordance with this regulation may be instituted to meet special circumstances.

29. LOSS OF PILOT KEY

If, after pilot working has been instituted, the pilot key is lost or destroyed, the following steps must be taken

(a) If the pilot key is lost on a train which is travelling on the block section, the train must continue its journey to the station in advance, and the Pilotman must there advise the Train Control Operator that the key has been lost

(b) If the pilot key is lost at a station before the train has started the train must not start, and the Train Control Operator must be advised that the key has been lost.

(c) As soon as advice is received that the pilot key has been lost the Train Control Operator will arrange for a Handsignalman to be placed at the Departure signal at each end of the block section on which pilot working has been instituted. A train advice must be issued advising all concerned that the pilot key has been lost.

The Handsignalman must not under any circumstances allow any locomotive or train to pass

the Departure signal unless the Engine-driver has been authorised to do so by the Pilotman.

(d) The Pilotman who was in possession of the pilot key must continue to act as Pilotman as soon as he receives advice from the Train Control Operator that a Handsignalman has been stationed at each end of the block section. The Pilotman, under these circumstances, must wear a distinctive badge (which, until the regulation badge can be obtained, will be a Red flag tied round his left arm above the elbow), and must show the Mis. 53 form to Enginedrivers in place of the pilot key

(e) If a half pilot key is lost a Pilotman must be appointed and the same arrangements carried out as when a pilot key is lost. The Pilotman must take possession of the half pilot key from the Departure signal at the other end of the section

(f) When a pilot key or half pilot key has been lost the District Traffic Manager will issue instructions regarding its replacement. In the event of the original pilot key or half pilot key being subsequently found it must be locked away and the District Traffic Manager advised.

30. TRAINS STALLED OR DISABLED ON A SINGLE LINE

(a) Trains stalled or disabled must be protected in accordance with Rules 74 or 75 as may be applicable.

In all cases the Train Control Operator must be advised of the circumstances as soon as possible. Unless otherwise directed by the Officer Controlling Train-running the following procedures must be adopted.

Train Stalled

(a) When a train is stalled on a single line and it is possible for the locomotive to take forward part of the train to the station in advance, the Enginedriver, on arrival at the station in advance, must at once remove the half pilot key from the pilot-key box. After communicating with the Train Control Operator and advising the Officer in Charge of his intention to do so, the Enginedriver may then return to move the remainder of the train out of the section, retaining the half pilot key in his possession until the whole of the train has been brought forward.

When the half pilot key is removed the Departure signal will remain at "Stop", and the Enginedriver may pass it in that position when returning for the remainder of the train.

When the whole of the train has been brought forward the half pilot key must be replaced in the pilot-key box and the box locked.

(c) **When a train is stalled on a single line and it is expedient for it to set back to the station in the rear the Guard must return to the station in the rear**, remove the half pilot key from the pilot-key box, communicate with the Train Control Operator, and advise the Officer in Charge of the circumstances, and then return to his train. The Engine- driver, after being shown the half pilot key, and so instructed, must move the train to the station in the rear.

If one or more trains have followed the first train into the section the Guard of the first train, on his return from the station in the rear , must show the Enginedriver and Guard of each such following train the half pilot key, and instruct that the trains be moved to the station in the rear, maintaining a sufficient interval between trains to ensure safe working.

The Guard must ride on the last train to move out of the section.

Train Disabled When No Following Train Is in Same Block Section

(d) When a train becomes disabled and there is no train closely following it a member of the train crew, after obtaining from the Enginedriver a Mis 39 undertaking (see Rule 73 (d)) must go toward the station from which assistance may be expected, communicating with the Train Control Operator at the earliest opportunity.

After being advised full particulars the Train Control Operator will make arrangements for a relief locomotive to clear the section in accordance with clause (e) or (f) hereof as may be applicable.

(e) **If a relief locomotive is to be sent from the station in advance** the member sent for assistance must go to this station and remove the half pilot key from the pilot-key box, report to the Train Control Operator and the Officer in Charge, and await the relief locomotive. When the relief locomotive arrives he must show the Enginedriver the half pilot key and give him the Mis 39. The locomotive may then pass the Departure signal at "Stop" and, piloted by the member sent for assistance, go to the disabled train and pull it out of the section. When the section is clear the half pilot key must be replaced in the pilot-key box and the box locked.

(f) **If a relief locomotive is to be sent from the station in the rear** the member sent for assistance must go to this station and first remove the half pilot key from the pilot-key box and then report to the Train Contro! Operator and the Officer in Charge and await the relief locomotive. When the relief locomotive arrives he must show the Enginedriver the half pilot key and give him the Mis 39. The locomotive may then pass the Departure signal at "Stop".

If it is decided to push the disabled train forward to the station in advance the member sent for assistance, after the relief locomotive has passed the Departure signal at "Stop", must replace the half pilot key in the pilot-key box, lock and box, and pilot the locomotive to the disabled train.

If it is decided that the disabled train must be returned to the station in its rear the member sent for assistance must retain the half pilot key in his possession and pilot the relief locomotive to the disabled train, which may then be moved to the station in the rear. When the section is clear the half pilot key must be replaced in the pilot-key box and the box locked.

(g) **If the member sent for assistance finds that assistance cannot be obtained from that direction** he must proceed as quickly as possible to the station at the other end of the block section, and there act in accordance with the regulations for obtaining assistance from that end of the section.

Train Disabled When a Following Train is in Same Block Section

(h) **If a train becomes disabled and the locomotive cannot take forward any part of the train a train** in the same block section and approaching the disabled train in the rear, provided the first train is complete with the locomotive, may assist the disabled train forward to the next station in advance.

(i) **When a train has followed into the block section and is behind a disabled train and is able to assist it to the station in the rear only** a member of the crew of the disabled train must be sent to the station in the rear. He must obtain a Mis 39 undertaking from the Enginedriver of the disabled train and, on his way, confer with the Enginedriver and Guard of the rear train and advise the Train Control Operator of the position.

On arrival at the station in the rear he must first remove the half pilot key from the pilot-key box and then report to the Train Control Operator and the Officer in Charge. He must then return through the section to the disabled train, on his way showing the half pilot key to the

Enginedriver and Guard of the rear train. The trains, when coupled, may then be moved to the station in the rear. When the section is clear the half pilot key must be placed in the pilot-key box and the box locked.

(j) **When a train has followed into the block section and is behind a disabled train but is unable to move it and it is necessary for a relief locomotive to be sent from the station in the rear**, the member sent for assistance, after obtaining a Mis 39 undertaking from the Enginedriver of the disabled train, must proceed to the station in the rear, on his way conferring with the Enginedriver and Guard of the rear train and advising the Train Control Operator of the position.

-On arrival at the station in the rear he must first remove the half pilot key from the pilot-key box and then report to the Train Control Operator and the Officer in Charge. He must then return through the section to the rear train where he must show the Enginedriver and Guard the half pilot key and instruct them to move the train to the station in the rear. The member in possession of the half pilot key must ride on. the train.

If more than one train has followed the disabled train into the block section the Enginedriver and Guard of each such following train after being shown the half pilot key and so instructed, must move their trains to the station in the rear, a sufficient interval being maintained between trains to ensure safe working. The member in possession of the half pilot key must ride on the last train to move out of the section.

When all trains except the disabled train have cleared the block section the relief locomotive may be allowed to enter the section for the purpose of removing the disabled train. (See clause (f).)

Train Disabled - Additional Instructions

(k) **Before a disabled train is moved by a following train or a relief locomotive the Guard of the disabled train must give the necessary authority.** Before doing this he must obtain the Enginedriver's permission to move the train.

(l) When the disabled train has been moved and the block section is clear the Train Control

31. SECTION OBSTRUCTED BY ACCIDENT

(a) If the line is blocked by a landslip, flood, or other cause, arrange ments must be made by the Train Control Operator for working trains by means of the half pilot key to and from the obstruction; if possible, he will arrange for an employee to be placed in charge of the crossing station on each side of the obstruction.

Immediately information is received that the line is obstructed, **the half pilot key for the Departure signal at each end of the obstructed block section must be removed** by the Officer in Charge at the station.

The half pilot key will be in the custody of the Officer in Charge at the station, who will hand it to the Enginedriver of any train entering the obstructed block section. The train is thereby authorised to pass the Departure signal at 'Stop". On returning from the point of obstruction, the Enginedriver must hand the half pilot- key to the Officer in Charge at the station.

A train must not enter an obstructed block section unless the Engine- driver is in possession of

the half pilot key.

(b) **If a train is prevented by an obstruction from going forward** it must be moved to the station in the rear under the following conditions unless otherwise directed by the Officer Controlling Train-running:

The guard must return to the station in the rear, remove the half-pilot key from the pilot-key box, advise the Train Control Operator and the Officer in Charge that the line is blocked, and then return to the train. The Enginedriver, after being shown the half pilot key, and so instructed, must move the train to the station in the rear.

If one or more trains have followed the first train into the obstructed section the Guard of the first train, on his return fron the station in the rear, must show the Enginedriver of each such following train the half pilot key , and instruct him to maintain a sufficient interval between trains to ensure safe working.

The Guard must ride on the last train to move out of the section.

(c) **After the obstruction has been removed and the line declared clear and safe for normal working** the Train Control Operator will instruct the Officer in Charge at the crossing station on each side of the obstruction to replace the half pilot key in the pilot-key box. Normal working may then be resumed.

32. SUSPENSION OF AUTOMATIC SIGNALLING

When necessary to meet special conditions or requirements the operation of single-line automatic signalling in a specified area may be sus pended by special instructions issued by train advice. During the time the operation of automatic signalling is suspended trains may pass Stop and Proceed, Stop and Stay, and Departure signals at "Stop" in accordance with the authority, and subject to the exceptions, shown in the train advice.

When the operation of automatic signalling is suspended as provided in this regulation, all trains will be scheduled and alterations in the scheduled crossing or running order of trains must not be made except by authority of a train advice; a train must not be allowed to follow another train on the same line within 15 minutes, except by authority of the Officer Controlling Train-running. During fog or falling snow, or when a fast train is following a slow train at a short interval, the Officer in Charge at the station must stop the second train and fully inform the Enginedriver of the position.

Automatic signalling must not be suspended on sections worked under the centralised traffic control system.

33. EMERGENCY CONDITIONS WHEN ALL SIGNALS AND COMMUNICATION HAVE FAILED

(a) **The following instruction will apply only in such areas as are specified in the working timetables.**

(b) If it should occur that all signals are unlighted and communication has failed and suitable arrangements have not been made previously by the District Traffic Manager, a train on arrival at a station may proceed to the crossing station laid down in the timetable or train advice or as altered by the Train Control Operator, and may pass the Departure signal after the following examinations have been made by the Enginedriver and the Guard:

(i) The train control telephone and any other telephone in the vicinity of the station must be tried at least three times at intervals of five minutes;

(ii) Examination must be made of all station signals and the first two intermediate signals in the section ahead.

(c) If the signals referred to in subclause (ii) are unlighted and telephonic communication broken, automatic signalling must be considered as having failed. The Enginedriver and the Guard, having acted in accordance with rubclauses (i) and (ii), and being convinced that a complete failure of automatic signalling has occurred, the train may proceed to the crossing statation at a speed sufficiently reduced to ensure that the Enginedriver will be able to stop the train short of any obstruction. At places where the view is not clear the Guard must precede the train by at least 400 metres with flag or lamp, and the speed of the train must not exceed 6 kilometres per hour.

After both trains have arrived at the crossing station the telephones must be tried and the signals examined in accordance with subclauses (i) and (ii), and if communication is still broken and all signals are unlighted both trains may proceed under similar running conditions until communication with the Train Control Operator is available.

34. CROSSING ORDERS

(a) In single-line automatic signalling areas worked under the C.T.C. system alterations in the crossing stations or in the running order of trains will be arranged by the Train Control Operator; Officers in Charge will be advised particulars of alterations by telephone when necessary, and train crews will be advised by the display of appropriate signal indications. In C.T.C. territory a Departure signal displaying a "Proceed" indication will be sufficient authority for a train to enter a block section.

(b) In single-line automatic signalling areas not worked under the C.T.C. system, alterations in the scheduled crossing stations or in the scheduled running order of trains will be authorised by a Mis.55 crossing-order form issued by the Train Control Operator. Particulars will be telephoned for delivery to the Enginedriver of the leading locomotive of each train affected; also to the Guards of such trains, when practicable.

This will apply whether the altered arrangements affect interlocked, attended, or unattended crossing stations.

When a crossing is altered to, or away from an attended station, and the crossing orders are issued to the train crews prior to arrival at the station concerned, the crossing order must also be issued to the Officer in Charge at that station.

Crossing-order forms will also be used by Train Control Operators when altering the berthing arrangements of trains scheduled to cross at unattended crossing station.

(c) An employee receiving a crossing order must enter particulars on a Mis 56 crossing-order form and at once repeat back to the Train Control Operator the instructions received. (See specimen forms at the start of his document). One completed form must be retained in the crossing-order book.

(d) Except when instructed by the Train Control Operator it will not be necessary to take receipts for crossing orders.

(e) Crossing orders remain effective until fulfilled, or until cancelled by a further Mis 55/56 order.

When a crossing order has been fulfilled the employee to whom it was issued must at once write the word "fulfilled" across the face of the order or tear it in half.

(f) The responsibility for ensuring that scheduled crossings or the provisions of a crossing order are fulfilled will rest upon the following employees:

(i) If the station is staffed-
The Officer in Charge.

(ii) If the station is not staffed-
The Enginedriver of the leading engine of each train affected: also the Guard when supplied with the crossing order.

(g) When handing over a station, either temporarily or permanently, the outgoing Officer in Charge must supply unfulfilled crossing orders to the in- coming Officer in Charge, who must acknowledge receipt by initialling the office copies of the crossing orders.

When an Enginedriver hands over a train to another Enginedriver he must hand over all unfulfilled crossing orders.

When a Guard hands over a train to another Guard he must hand over all unfulfilled crossing orders that he has received.

(h) When an Officer in Charge receives a crossing order for delivery to the Enginedriver of a train which is not required to stop for any other purpose, the Officer in Charge must hand the crossing order to the Enginedriver in the sling provided for the purpose; the train need not be stopped provided the sling transfer is made a safe distance beyond the station verandah, so that the locomotive member receiving the sling will not be endangered.

(i) Stationmasters must ensure that a supply of Mis. 56 crossing-order forms is maintained in telephone boxes at all unattended crossing stations under their control.

35. T LIGHT AND WANTED WINKER INDICATORS

At certain stations a "T" light which displays an illuminated letter "T" when in operation, or a "Wanted Winker" which displays a flashing Red light when in operation, is provided to enable Train Control Operators to indicate to trainmen or other staff that they are required to speak on the train control telephone or receive instructions from the Officer in Charge at the station. Enginedrivers must keep a sharp look-out for such indicators, and if they are observed in operation at an unattended station the Enginedriver or Guard must telephone the Train Control Operator; if at an attended station, the Enginedriver must reduce speed sufficiently to receive instructions from the Officer in Charge, being prepared to stop if necessary. Track and other staff must similarly keep a sharp look-out for indicators at unattended stations, and must promptly telephone the Train Control Operator when the indicator is observed in operation. The opening of the telephone-box door will extinguish the indicator light and such staff must therefore exercise every care not to extinguish the light when a train for which the call may be intended is closely approaching.

36. TELEPHONES

Telephones are provided at all crossing stations, at switch-locked sidings, and at places along the track as specified in the working time- tables

Trainmen must make themselves acquainted with the situations of the telephones.