Module KSW4

Kent/Sussex/Wessex Routes

Sectional Appendix

Module 4

Signallers' Additional Instructions

December 2006

CONTENTS

PART A

SIGNALLERS' ADDITIONAL INSTRUCTIONS APPLICABLE IN TRACK CIRCUIT BLOCK AREAS

SIGNALLER'S ADDITIONAL INSTRUCTIONS APPLICABLE IN TRACK CIRCUIT BLOCK AREAS

1 Bell signals

Class of Train		Special Code Lists (to be used only where authorised in the Signaller's Special Instructions)	
	Standard Code	No. 1	No. 2
1	4	4 - 4	4 - 4 - 2
2	3 - 1	1 - 3	3 - 1 - 2
3	1 - 3 - 1	1 - 3 - 1 - 1	1 - 3 - 1- 2
4	3 - 1 - 1	3 - 1 - 1- 1	3 - 1 - 1 - 2
5	2 - 2 - 1	2 - 2 - 1 - 1	2 - 2 - 1 - 2
6	5	5 - 1 - 1	5 - 1 - 2
7	4 - 1	4 - 1 - 1	4 - 1 - 2
8	3 - 2	3 - 2 - 1	3 - 2 - 2
0	2 - 3	2 - 3 - 2 - 1	2 - 3 - 2 - 2
-	2 - 2 - 3	2 - 2 - 3 - 1	2 - 2 - 3 - 2
TES	2	1 - 2	3
Sandite train or Water Jetting, (which can be relied upon to operate track circuits)	3 - 3 - 1	3 - 3 - 1	3 - 3 - 1

2 Train describers

Magazine Type
If an incorrect description has been sent for the last train, the 'Cancel' description must be sent, followed by the correct description. If the incorrect description relates to other than the last train described, the correction must be advised by telephone.

Where separate describer labels are not provided for Class 4 or 6 freight trains, trains must be described as van trains and the description supplemented by a telephone message.

Digital Type
If an incorrect description has been transmitted to the box in advance the 'Cancel' button (where provided) must be operated and the correct description then transmitted.

Where no 'Cancel' button is provided, and in all cases when the incorrect description relates to other than the last train described, the Signaller at the box in advance must be informed of the correction by telephone.

3 Shunting movements towards an adjacent signal box or panel

If a shunting movement is to be made on to a line on which track circuits are indicated in an adjacent signal box or panel, the movement must be described by the description ***S*** or bell signal 3-3-2. When the movement has been completed and the joint track circuit(s) are again clear the Cancel train description must be sent, or the bell signal 8-consecutively sent where the Cancel facility does not exist.

4 Regulation 3 – Working of signals

In accordance with the Rule Book, Module T3, Section 4.1 – 4.2, an emergency replacement switch may be used for the purpose of train signalling as permitted in Track Circuit Block Regulation 3.2.3.

5 Regulation 4.3 - Emergency alarm equipment

When an emergency alarm has been sent in respect of a multi-track route the equipment must be reset immediately after the Signallers concerned have reached agreement on the action to be taken and all necessary reminder appliances have been used.

6 Regulation 11.2

When it is necessary to pass a train description to another signal box this must be done by telephone.

7 Stop signals located in tunnels

Regulation 10.1.4

If a disabled train has come to a stand ahead of a signal in a tunnel, and the person carrying out protection telephones from such signal requesting assistance from the rear, an assisting train may be allowed to enter the tunnel provided the person carrying out protection gives an assurance that:

(a) the signal in the tunnel is at danger,

(b) they have placed detonators on the obstructed line in accordance with the Rule Book, Module M2. Section 4.2,

(c) they fully understand what is to be done and that they must remain at the signal until the arrival of the assisting train.

The Driver of the assisting train must be informed of the circumstances and advised that the person carrying out protection is at the signal in the tunnel.

If the following train has entered the tunnel before assistance is requested, such train must not be authorised to pass the signal in the tunnel until the person carrying out protection has reported their arrival at the signal.

Regulation 11.4

If the signal in the tunnel is held at Danger by a track circuit failure, when authorising the Driver of a train to proceed on the affected line, the Signaller must instruct the Driver to ignore the aspect displayed by the signal in the tunnel.

If a train arrives at the signal in the tunnel when the track circuit ahead of it has failed, it will not be necessary for the line to be examined.

Provided the Signaller is satisfied that the previous train on that line has passed clear of the tunnel, the Driver must be instructed to proceed with extreme caution, at a speed not exceeding 10 miles per hour; to stop at the first signal beyond the tunnel to confirm that the train has arrived complete and that the line is clear. While this train is proceeding out of the tunnel, the Signaller must not allow a train to enter the tunnel on the unaffected line.

When the Driver of the train on the affected line has reported that the line is clear, normal working may be resumed on the **unaffected** line. Following trains on the affected line may be allowed to proceed in accordance with Regulation 11.4.2.

Defect in Signalling Equipment - Rule Book, Module T1B, Section 4
Should a Driver telephone from a signal controlling the entrance to the tunnel when all the track circuits between that signal and the overlap of the first signal beyond the tunnel are clear, the Driver must be warned that the signal in the tunnel may be showing no aspect and instructed to proceed cautiously to the first signal beyond the tunnel. The Driver must also be instructed to report what aspect is being displayed by the signal in the tunnel.

Following trains must not be allowed to proceed until the line is clear to the overlap of the first signal beyond the tunnel, the Driver has been informed of the circumstances and instructed to ignore any aspect which may be displayed by the signal in the tunnel.

A Handsignaller must not be appointed at the signal in the tunnel.

Regulation of Movements into the Tunnel
If a track circuit ahead of the signal in the tunnel fails or traffic is affected by abnormal conditions which result in a track circuit ahead of the signal in the tunnel being occupied for an unduly long time, movements into the tunnel must be regulated so as to avoid a train being detained at the signal in the tunnel.

8 Signalling general instruction 10.3 - Movements to running lines already occupied

If coupling or uncoupling is to take place, the Signaller must obtain an assurance from the person in charge of the platform that the coupling or uncoupling has been completed, before a further movement is made in accordance with the first two bullet points.

9 Route setting panels

NOTE -The term "route button" in these instructions also applies to route switches. The term "points" in these instructions also includes switch diamonds.

Rule Book, Module S5, Section 2.
The following procedure must be observed if a signal fails to clear.

A. Direct control area
The route buttons concerned must be normalised.

The individual point switches for any points in the route must be operated to the required position as shown in the "List of Routes" or relevant "Route Card". The Signaller must ensure that the correct indications are displayed and then place reminder appliances over these switches and any other buttons shown on the "List of Routes" or relevant "Route Card". The Signaller may then authorise the signal to be passed at Danger.

The relevant reminder appliances and individual point switches must be maintained in their positions until the movement has passed clear of the points concerned.

If the correct normal or reverse indication cannot be obtained for any of the points concerned, they must be secured in the required position before authority is given for the signal to be passed at Danger. The individual point switches must be operated to the appropriate position and reminder appliances used in accordance with Clause A.2 of these instructions.

B. Microcore cable control area
Except when an overriding control switch has been operated (see Clause E of these instructions) the instructions for Direct Control areas must be observed.

C. Electronic remote control area
The working for direct control areas must be observed provided the "Working Indication" is shown and:-

- The individual point switch for any points in the route have been operated at least twice and the correct indication has been obtained each time.
  or
- On multiple ended points, when a point end is locked by a track circuit failure and the points indication has been proved to be correct by setting a parallel route on an adjacent line.
  or
- A route has been correctly set and a subsequent track circuit failure has caused the route to become locked.

If the "Working" indication is not illuminated Regulation 11.6.5 will apply and the following instructions must be observed:-

The route buttons concerned must be normalised.

When appropriate the overriding control switch may be operated in accordance with the instruction headed "Overriding Controls", Clause 10.2.

Where an overriding control switch is not provided, or when its use is not appropriate, authority must not be given for the signal concerned to be passed at Danger until **ALL** of the points in the route have been secured in the correct position as shown on the "List of Routes" or relevant "Route Card". The individual point switches must be operated to the appropriate position and maintained in that position until it is known that the movement has passed clear of any points in the route concerned. Reminder appliances must be placed over the individual point switches concerned and any other buttons as shown on the "List of Routes" or relevant "Route Card".

D. Solid state interlocking area
The Signaller must operate the individual point switches for any points in the route at least twice, ensuring that the correct indication has been obtained each time,
or
On multiple ended points, when a point end is locked by a track circuit failure and the point/s indication has been proved to be correct by setting a parallel route on an adjacent line.

The instructions for Direct Control Areas must then be observed.

E. Overriding control switch operated
When an overriding control switch has been operated and a signal which should operate automatically, fails to clear, the instructions in Clause C.2.3 must be observed before authority is given for the signal to be passed at Danger.

Overriding Controls
Overriding controls permit certain routes in microcore cable control areas and electronic remote control areas to be set independently of the route buttons. Regulation 11.8 applies with the following additions.

Before operating the overriding control switch to 'Auto' the conditions set out below must be observed for the area concerned. If the Technician is readily available they should be consulted before the switch is used.

(a) If a ground frame is released when the fault develops, such release will remain effective when the overriding control switch is at 'Auto' until the ground frame release lever is restored to normal. It will not then be possible to give a further release until normal working is resumed.

(b) There must not be a requirement for maintaining at danger any of the signals which operate automatically under the overriding controls or for maintaining any power worked points in a particular position, e.g. Engineering Works.

When an overriding control switch has been placed to 'Auto', if it is necessary to place to danger any of the signals operating automatically, the switch must be placed to 'Signals On'. This will place or maintain **all** signals in the area at danger.

When the fault has been rectified and the Signaller has been advised that normal working can be resumed, the Signaller must ensure that all individual point switches for the area are in the centre position before placing the overriding control switch to 'Normal'.

Operation of Individual Point Switches
When a movement is made into or out of a siding, loop or bay line and the power worked points do not restore to normal automatically, the Signaller must watch the movement closely and restore the points to normal by means of the individual point switch immediately the movement is clear of them.

10. Regulation 11 - Section of line signalled in both directions

Failure of Signals
The requirements of Regulation 11.3.3 must be applied. Additionally, where a "Direction of flow indicator" is provided, if it cannot be illuminated for the direction concerned "Working of Single Lines by Pilotman" must be introduced for all trains over the affected section.

Failure of Track Circuits
Where directional arrows are provided, Working by Pilotman may not be necessary where authority is given for the following method of working: -

After the provisions of the Rule Book, Module S5, Section A2 have been complied with, the entrance/exit buttons must be operated for the route set in order to illuminate the "Direction of Traffic Flow" indication.

If it is necessary to work trains in the opposite direction to that indicated by the "Direction of Traffic Flow" indication, or if it is not possible to select a "Direction of Traffic Flow" indication, Working by Pilotman must be introduced for all trains over the affected portion of the line.

If Working by Pilotman has been introduced it must not be withdrawn until the failure has been rectified, or the service withdrawn. If it is necessary to run trains after the withdrawal of Pilotworking, and the original fault still exists, then Working by Pilotman must be re-introduced for every train.

During a failure of equipment, should the "Direction of Flow" indicators be illuminated in **both directions at the same time**, Working by Pilotman must be introduced for all trains over the affected section.

11. Incidents in electrified areas

If the Signaller observes that a track circuit is occupied by a train for an unusually long time, and **both** of the following conditions apply: -

(a) a track circuit on the opposite line shows occupied when no train is on that section of line, **and..**

(b) the traction current has been switched off in emergency from, or a persistent short circuit has occurred on one or both lines,

The Signaller must carry out the provisions of Regulation 4 immediately, endeavour to ascertain the cause and be prepared to summon the emergency services.

If the circumstances apply to a section of line within a tunnel, the Signaller must carry out the provisions of Regulation 4 and immediately call the emergency services, giving them the name of the tunnel, and advising them that a train could be on fire in the tunnel. Where necessary the Signaller at an adjacent box must be advised and a clear understanding must be reached as to which Signaller will call the emergency services.

Where the Signaller becomes aware of a short circuit of the conductor rail and an associated track circuit fails or a report of a serious conductor rail arcing is also reported on the same line, the signaller must apply the provisions of the Rule Book Modules TS2, Clause 9.5 Suspected Track Defect. In these circumstances engineering staff called to attend the affected portion of the line must be granted access to the line in accordance with the relevant Module Rules & Regulations without any unnecessary delay.

12. Ground frames

These instructions are additional to those under the heading "Electrically released ground frames" in Module 1 of the Sectional Appendix.

If it is necessary for a signal protecting a ground frame to be passed at danger, provided the "N" indication is illuminated for the ground frame, trains may pass the signal at Danger in accordance with Rule Book, Module S5, Section 2 and, where applicable using the appropriate route card. If the "N" indication is not illuminated, or flashes, the following additional arrangements must be applied: -

Trailing points must be examined before the first train on each line passes over them, by the Driver if necessary.

Facing points must be secured by scotch and clip, and padlocked. The key to the padlock must be held by a responsible person. The Signaller must make an appropriate entry in the Train Register together with the name of the person holding the key.

If the Signaller is advised by the Person-in-Charge at a power operated ground frame that the points have failed to operate or the appropriate "N" or "R" indication has not become illuminated after the point lever or switch has been operated, he must arrange for the points to be secured in the required position.

Where signals are provided, if the Signaller is advised by the Person-in-Charge at a power operated ground frame that the appropriate "N" or "R" indication is illuminated but the signal will not clear, he must comply with Regulation 11.3 as far as it applies.

If after a release has been given, a power supply failure occurs, the Signaller must ascertain the position of any train(s) for which the release was given.

It is not necessary to secure trailing points provided: -

(i) the Person-in-charge at the ground frame has been advised of the circumstances,

(ii) the ground frame release has been cancelled,

(iii) the Person-in-charge at the ground frame has confirmed that points are in the normal position and the points and release switch(es) is "normal".

A suitable entry must be made in the Train Register when a release is given and restored.

13. Rule Book Module T1A - Reporting of faults concerning signalling

Signallers must immediately report faults concerning signalling equipment to the Infrastructure Maintenance Control responsible for the area concerned DIRECTLY, and obtain a fault number.

Having done so, the Signaller must then advise Network Rail Control of the details and the fault number.

14. Application of Regulation 9.4.8

Should a track circuit which has failed to clear after the passage of a train, or has otherwise shown occupied, subsequently clear prior to attention by technical or operating staff the following is to apply:-

1. If no train has passed over the affected route at the time the track circuit clears, the first train must be used to examine the affected line. If no fault is found, normal working may resume.

2. If a train has already passed over the affected route, normal working may resume immediately.

The exception to the above is where a track circuit is continually alternating between occupied and clear and is therefore likely to cause a signal reversion if normal working were to be resumed. In such circumstances the track circuit must be regarded as defective pending attention by the Infrastructure Maintenance Contractor.

In every such case, the defective track circuit must be reported to the Infrastructure Fault Control and Network Rail Control even where normal working has been resumed.

15. Rule Book Module S5 – Passing a signal at danger

Part A Section 2.3 – Setting the route correctly where there is a lever frame
On the Kent, Sussex and Wessex Routes, the instructions contained in Part A, Section 2 clauses a) and c) (Setting the route correctly on a panel or workstation) are to be applied in respect of lever frame boxes.

16. Temporary block working

Referring to the Rule Book, Module TS2, Regulation11.7, the following additional requirements must be applied:

Regulation 11.7.2
The introduction of Emergency Temporary Block working MUST be authorised by either:
- Route Signalling Inspector,
- Route Operations Manager,
- Operations Manager, or
- Local Operations Manager

Extending Emergency Temporary Block Working beyond 24 hours, or the introduction of pre-planned Temporary Block Working, will only be authorised by the Route Operations Manager.

Regulation 11.7.7
Reference to "all points have been secured" shall mean:

- The points concerned have been set by lever or Independent Point Switch placed and maintained in the required position, and a reminder appliance placed on the lever or switch and correct detection obtained; **or**

- The points concerned have been secured by clip, padlock, and scotch in the required position.

- Once secured, all points within a Temporary Block Section must be maintained in the same position for the duration of the Temporary Block Working arrangements.

PART B

SIGNALLERS' ADDITIONAL INSTRUCTIONS APPLICABLE IN ABSOLUTE BLOCK AREAS

SIGNALLERS ADDITIONAL INSTRUCTIONS APPLICABLE IN ABSOLUTE BLOCK AREAS

1. Bell signals

Class of Train		Special Code Lists (to be used only where authorised in the Signaller's Special Instructions)	
	Standard Code	No. 1	No. 2
1	4	4 - 4	4 - 4 - 2
2	3 - 1	1 - 3	3 - 1 - 2
3	1 - 3 - 1	1 - 3 - 1 - 1	1 - 3 - 1- 2
4	3 - 1 - 1	3 - 1 - 1- 1	3 - 1 - 1 - 2
5	2 - 2 - 1	2 - 2 - 1 - 1	2 - 2 - 1 - 2
6	5	5 - 1 - 1	5 - 1 - 2
7	4 - 1	4 - 1 - 1	4 - 1 - 2
8	3 - 2	3 - 2 - 1	3 - 2 - 2
0	2 - 3	2 - 3 - 2 - 1	2 - 3 - 2 - 2
-	2 - 2 - 3	2 - 2 - 3 - 1	2 - 2 - 3 - 2
TES	2	1 - 2	3
Sandite train or Water Jetting, (which can be relied upon to operate track circuits)	3 - 3 - 1	3 - 3 - 1	3 - 3 - 1

2. Block controls and interlocking

The following block controls and interlocking are provided. In certain cases additional controls, etc. apply as necessitated by local circumstances.

Closed Block

(a) To enable the block indicator to be placed to LINE CLEAR the distant signal must be proved at Caution (interlinking) and the lever of the outermost home signal must be in the normal position.

(b) Sequential locking to permit a stop signal lever to be pulled only if the lever of the next stop signal ahead (worked from that box) is in the normal position.

(c) The lever of the section signal is locked until LINE CLEAR is received and is backlocked until the block indicator is placed to TRAIN ON LINE.

(d) After being turned to LINE CLEAR the commutator is locked to prevent a second train being accepted until the first train has passed through the block section in the proper manner and the block indicator has been placed to TRAIN ON LINE and then restored to NORMAL.

(e) In certain cases dual cancelling is provided to release the block controls, etc. in the event of a train which has been accepted not proceeding.

BR Block

(a) To enable the block indicator to be placed to LINE CLEAR the distant signal must be proved at Caution (interlinking), the lever of the outermost home signal must be in the normal position, and the berth track circuit of the outermost home signal must be clear.

(b) Sequential locking to permit a stop signal lever to be pulled only if the lever of the next stop signal ahead (worked from that box) is in the normal position.

(c) The lever of the section signal is locked until LINE CLEAR is received.

(d) After a train has been accepted the commutator cannot again be placed to LINE CLEAR until the train has occupied and cleared the berth track circuit of the outermost home signal. This is known as the "Welwyn control".

(e) Occupation of the berth track circuit of the outermost home signal places or maintains the block indicator at TRAIN ON LINE.

(f) A screw release is provided to release the block controls, etc. in the event of a train, which has been accepted, not proceeding.

Open Block

(a) To enable the block indicator to be placed to LINE CLEAR the distant signal must be proved at Caution (interlinking).

(b) In most cases the lever of the section signal is locked until LINE CLEAR is received.

2. Method of working

'A' and 'B' represent two signal boxes and the method of working the block instruments for a train proceeding from 'A' to 'B' is as follows: -

When the Signaller at 'B' acknowledges the IS LINE CLEAR signal they must turn the commutator to the right, which will change the lower block indicator at 'B', and the upper block indicator at 'A' to LINE CLEAR.

NOTE - In those cases where a plunger to release the lock on the commutator is provided on the instrument, this must be pressed when the commutator is turned from NORMAL to LINE CLEAR.

When the Signaller at 'B' acknowledges the TRAIN ENTERING SECTION signal they must turn the commutator to the left, which will change his lower block indicator and the upper block indicator at 'A' to TRAIN ON LINE.

NOTE - Subject to the provisions of the Signaller's General Instruction 4.5.1, the Signaller at 'A' must ensure that the section signal is replaced to Danger whilst the block indicator is at TRAIN ON LINE.

When the Signaller at 'B' gives the TRAIN OUT OF SECTION signal they must place the commutator to NORMAL.

3. Commutator locking slide

This slide is provided to act as a reminder appliance for the Signaller and can be operated to lock the commutator at TRAIN ON LINE. It must be used in this manner when trains are detained at signals, or in connection with the use of the BLOCKING BACK signal, or in any other circumstances when it is necessary to maintain the block indicator at TRAIN ON LINE.

This appliance does not take the place of lever collars, which must also be used in accordance with the relevant instructions.

4. Cancelling arrangements

In the event of a train which has been signalled to 'B' being cancelled, the Signaller at 'A' must replace the section signal to Danger and give the CANCELLING signal to 'B'.

The Signaller at 'B' must acknowledge the CANCELLING signal and have a clear understanding with the Signaller at 'A' as to the description of the particular train that will not proceed. Both Signallers must satisfy themselves that no train is in the section.

In order to release the block controls to enable the block indicator to be placed to LINE CLEAR for another train and where necessary, to release the backlock of the lever of the section signal, the following procedure must be carried out: -

(a) **Closed Block with dual cancelling** - The Signaller at 'B' must turn the commutator to NORMAL and arrange with the Signaller at 'A' for the push button release at both boxes to be depressed simultaneously.

(b) **BR Block** - The Signaller at 'B' must turn the commutator to NORMAL and then operate the screw release. This will cause the block indicator to move automatically to TRAIN ON LINE and then back to NORMAL.

(c) **Closed Block without dual cancellation and Open block where the section signal is interlocked with the block apparatus** - The Signaller at 'B' must turn the commutator to TRAIN ON LINE and then restore it to NORMAL. The movements of the commutator must be made slowly in order that the electrical circuits may be set up correctly.

5. Opening of signal box

Closed Block with Dual Cancelling
When the signals at the opening box have been placed to Danger in accordance with Regulation 13.1.2, in order to release the backlock of the lever of the section signal the Signaller must arrange with the Signaller at the box in advance for the push button release at both boxes to be depressed simultaneously.

Other types where the Section Signal is interlocked with the Block Instrument, including BR Block
When the box is switched into circuit and the signals have been placed to Danger, unless the block indicator worked from the box in advance is at TRAIN ON LINE, the Signaller must arrange for the Signaller at the box in advance to place the block indicator to TRAIN ON LINE and then to NORMAL.

6. Closing of signal box

Closed Block With Dual Cancelling and BR Block
After the block indicator has been placed to LINE CLEAR and then to NORMAL in accordance with Regulations 13.2.2 and 13.2.4 and the closing box has switched out of circuit, the Signaller in advance of that box must confirm with the Signaller at the next box open in rear that no train is in the section, and where **closed block with dual cancelling** is provided arrange for the push button releases to be depressed simultaneously or in the case of **BR Block** operate the screw release.

7. Testing of block indicators and bells

Closed Block With Dual Cancelling and BR Block
When testing the block instruments, on each occasion after the block indicator has been restored to NORMAL the Signaller must where **closed block with dual cancelling** is provided arrange with the Signaller at the box in rear for the push button release at both boxes to be depressed simultaneously or in the case of **BR Block** operate the screw release.

8. Rule Book Module T1A - Reporting of faults concerning signalling

Signallers must immediately report faults concerning signalling equipment to the Infrastructure Maintenance Control responsible for the area concerned DIRECTLY, and obtain a fault number. Having done so, the Signaller must then advise Network Rail Regional Control of the details and the fault number.

9. Incidents in electrified areas

If the Signaller observes that a track circuit is occupied by a train for an unusually long time, and **both** of the following conditions apply: -

(a) a track circuit on the opposite line shows occupied when no train is on that section of line, **and.**

(b) the traction current has been switched off in emergency from, or a persistent short circuit has occurred on one or both lines,

The Signaller must carry out the provisions of Regulation 4 immediately, endeavour to ascertain the cause and be prepared to summon the emergency services.

If the circumstances apply to a section of line within a tunnel, the Signaller must carry out the provisions of Regulation 4 and immediately call the emergency services, giving them the name of the tunnel, and advising them that a train could be on fire in the tunnel.
Where necessary the Signaller at an adjacent box must be advised and a clear understanding must be reached as to which Signaller will call the emergency services.

Where the Signaller becomes aware of a short circuit of the conductor rail and an associated track circuit fails or a report of a serious conductor rail arcing is also reported on the same line, the signaller must apply the provisions of the Rule Book ModulesTS3, Clause 9.5 Suspected Track Defect.
In these circumstances engineering staff called to attend the affected portion of the line must be granted access to the line in accordance with the relevant Module Rules & Regulations without any unnecessary delay.

10. Application of regulation 9.4.9

Should a track circuit which has failed to clear after the passage of a train, or has otherwise shown occupied, subsequently clear prior to attention by technical or operating staff the following is to apply:-

1. If no train has passed over the affected route at the time the track circuit clears, the first train must be used to examine the affected line. If no fault is found, normal working may resume.

2. If a train has already passed over the affected route, normal working may resume immediately.

The exception to the above is where a track circuit is continually alternating between occupied and clear and is therefore likely to cause a signal reversion if normal working were to be resumed. In such circumstances the track circuit must be regarded as defective pending attention by the Infrastructure Maintenance Contractor.

In every such case, the defective track circuit must be reported to the Infrastructure Fault Control and Regional Control even where normal working has been resumed.

PART C

CAB SECURE RADIO INSTRUCTIONS TO SIGNALLERS

CAB SECURE RADIO INSTRUCTIONS TO SIGNALLERS

1. General information.

How it Works
The system provides radio communication between the Driver of a multiple unit train on the Southern Region and the Signaller in the controlling signal box.
The Signaller is also able to speak to passengers via the train public address system and whenever required, connect the Driver with the internal telephone network.

Signallers are allocated an area code used throughout the radio section related to their area of control.

When passing from one radio section to another the train radio equipment automatically changes to the next area unless the Driver is making a call. In these circumstances the Driver must change area manually at the end of the call.

Whilst a speech call is being made, other Drivers will not be able to gain access to the system in that radio section (except when using the Emergency call procedure) nor will they be able to hear the other conversation. A call lasts a maximum of **six** minutes.

When the Signaller sends out a general call, all drivers in the Signallers area will hear it.

It is not possible for one Driver to speak to another via the radio system.

Each train is identified in the radio system by a unique code consisting of the six digit train unit number (e.g. 455809) sent out automatically when a call is made by the Driver. The Signaller is able to call a Driver by using either the train number (after the Driver has carried out the "set up procedure") or the unit number.

A speech call made by a Driver is a request for communication with the Signaller and it is necessary for the Signaller to recall the Driver to open the speech circuit. The speech circuit cannot be opened or closed down by the Driver.

All conversations and exchanges of pre-set 'telegram' messages are automatically recorded in the signal box.

If another DOO (P) train provides assistance, the Signaller and the two Drivers must come to a clear understanding as to which Driver will be using the radio.

The radio may also be used by the Signaller to send in an emergency, a single "Stop" message to any individual Driver, or a "General Stop" message to all Drivers within his area. Drivers can also make emergency calls to the Signaller.

The facility to connect Drivers to the internal telephone network must only be used for essential communication affecting the operation of trains.

2. Types of radio calls

Normal Speech Calls
These can be initiated by either a Driver or a Signaller.

If a Driver wishes to speak to the Signaller he requests a speech call by pressing [c] on the control panel. The Signaller must then call the train by using keyboard entries before the radio control equipment can open up the speech call.

Emergency Calls
This facility is available to Drivers by pressing **[EM]** and is for the use only in the following circumstances: -

(a) When necessary to give immediate advice of the need for trains to be stopped or cautioned in connection with an accident, obstruction or other exceptional incident.
or
(b) When necessary to call the emergency services.

After pressing **[EM]** the Driver will immediately place a track circuit operating clip on any adjacent lines. If the call is answered before the Driver has had time to apply the track circuit operating clip he will advise the Signaller of the circumstances and apply the clip, immediately he is able to do so.

On receipt of an Emergency call the Signaller must immediately act in accordance with Regulation 4, 'Obstruction of the Line'.

General Calls
A General Call is a voice transmission from a Signaller to all Drivers within his control area and is made as follows: -

(a) The command is entered on the VDU keyboard to establish the call.

(b) The broadcast is made using the telephone handset. The maximum duration of the message is 15 seconds. The broadcast is simultaneously recorded and transmitted over the first group of radio transmitters in the Signaller's control area.

(c) At the end of the broadcast, the radio control system automatically replays the recording over the other groups of radio transmitters in turn.

(d) The broadcast is made over the Drivers' loudspeakers.

(e) When using this facility to broadcast details of an emergency to a number of trains the Signaller must commence with "This is an Emergency General Call...."

No action is required by a Driver to receive a General Call.

If the recording equipment in (b) above fails the General Call is made manually. The Signaller must repeat the message over each group of radio transmitters in turn. Prompts are provided to indicate that the system is in manual mode and the countdown from 15 seconds is repeated for each transmitter group.

Telegram Calls
Certain pre-set messages can be sent from the Signaller to a Driver and vice versa to reduce the number of speech calls, which would otherwise have to be used.

3. Radio and D.O.O. equipment faults and reporting.

If the Signaller becomes aware of, or receives information of a defect affecting that the Cab Secure Radio System, or the D.O.O. equipment, he must record details of the fault in his train register. He must then report the failure to the Infrastructure Fault Control and Regional Control.

Failure of Radio System
The Signaller must broadcast a General Call to Drivers of trains approaching an area where the radio system is has failed in order to:

(i) advise the Drivers of the circumstances.
(ii) instruct Drivers to 'Set Up' the radio link at the first stopping point beyond the affected area.

Drivers must also be advised if the signal post telephones have failed.

Trains can continue to operate where both the radio system and signal post telephones have simultaneously failed. The Signaller however must specially observe the track circuit indications for the passage of trains through the area concerned.

Advice to Drivers Concerning Defective CCTV Cameras or Mirrors
When informed of defective CCTV cameras or mirrors, the Signaller must use the train radio system to make occasional General Calls advising Drivers of the circumstances. These occasional calls must continue until it is ascertained that the defect is rectified or that Drivers are being advised by other means.

Advice of Emergency by using the General Call facility
When making an emergency call using the General Call facility the Signaller must commence the broadcast with "This is an Emergency General Call....."

General Call - Failure of Recording Equipment.
If the recording equipment fails, the Signaller must repeat the General Call message over each group of radio transmitters in turn.

Call Received for another Signaller.
A Signaller receiving a call from a Driver intended for another Signaller must transfer the call as quickly as possible. An emergency call must be transferred immediately.

Staff Unavailable to Operate RA Indicators
When advised that staff are not available to operate RA indicators, the Signaller must use the train radio system to make occasional General Calls advising Drivers of the circumstances. These occasional calls must continue until it is ascertained that staff are in attendance.

Track Circuit Failures.
The Signaller must pay special attention to the identity of trains and the occupation of track circuits as radio identity of a train may be lost within 20 minutes from a section of line where a track circuit failure exists.

4. Communication between the signaller and driver

Drivers 'set up' procedure.
The following procedure shall be carried out by Drivers before the start of each journey or when it is necessary to change cabs during the journey, or at any other time the master switch is moved to Off and then away from "Off" (e.g. changing Drivers).
Unless the train radio is set up, the Signaller can only contact the Driver by a General Call.

SIGNALLER'S ACTION	DRIVER'S ACTION
	1. Press **[SU]** ..."ENTER SIGNAL NO" is displayed
Normally no message is displayed on VDU.	2. Enter number of signal at which train is standing. (Add leading zeros to make up four digits e.g. for VC517 enter 0517)
	3. Press **[*]** "WAIT" is displayed. After a short delay the train number is displayed to confirm that unit is properly "set up"
If "NO DESCRIPTION" is displayed:- 1. Check that signal number entered by Driver is correct. 2. If necessary, call Driver by unit number and arrange for the signal number to be corrected. 3. Press (a) **[Q SEL]** (b) Enter queue number of train (c) **[Enter]** If the train number is now available, message transfers to right hand side of screen and set-up completes normally. If train number is still not available, a speech call will be set up.	If "set up" does not initiate correctly there will be a speech call from the Signaller. To clear an incorrect signal number press **[#]** and restart sequence. If incorrect running number is set up, make a speech call to the Signaller.

NOTE 1: When two trains are at the same platform and both are to depart in the same direction the Driver of the second train must not "set up" until the first train has passed clear of the signal controlling the exit from the platform.

NOTE 2: Unless otherwise indicated, the driver cannot carry out the "set up" procedure at a position light signal and must do so at the first signal with a main aspects.

NOTE 3: If a train number is not available to enable the "set up" procedure to be completed, the Signaller should record the 6 digit unit number to enable him, if necessary to call the Driver. The unit number can be obtained from the "Train Calling Queue"

NOTE 4: Failure of "set up" to complete may be the result of the train number not being available from the train describer.

SIGNALLER CALLING A DRIVER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
Press 1. **[DVR]** 2. Enter train number **or** **[STOCK NO]** Enter 6 digit unit number. 3. **[ENTER]** • If no answer "NOT ANSWERING" is displayed.	• The alert tone sounds, "SPEAK" flashes in the display and the Signallers speech is heard in loudspeaker. Lift handset and:-
REPEATING CALL Press **[ENTER]**.	Press **[SP]**. • The "SPEAK" will then steady.
CALL ESTABLISHED • VDU entry is transferred to right hand side of screen and displayed with last reported position of train and speech circuit is opened. Lift handset.	*FINISHING CALL* 1. Replace handset • "SPEAK" display is replaced by the area code and train number.
CALL FAILS -TRAIN NOT IN SYSTEM • "NOT IN SYSTEM " is displayed on VDU. Driver may not have carried out "set up" procedure correctly. 1. Make A General Call and request the Driver to call in.	

DRIVER CALLING THE SIGNALLER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
• Train details added to "Trains Calling" list with last reported location of train and word "Driver"	1. Press **[C]**... • "CALL" is displayed. If system is already in use, "BUSY" is displayed. • When system is free, train number replaces "BUSY" 2. If "FAIL" is displayed:- Press **[#]** and repeat procedure from 1. • Receipt of call by Signaller is acknowledged by "CALL SENT" being displayed. • Wait for Signaller to return call.
ANSWERING CALL • Lift handset Press 1. **[Q SEL]** 2. Enter queue number of train 3. **[ENTER]** Note - If queue number is not entered the first entry will be selected.	*ANSWERING RETURNED CALL* • Alert tone sounds. "Speak" flashes in display and Signaller's speech is heard in loudspeaker. 1. Lift handset and:- Press **[SP]** • "Speak" steadies.
CLEARING CALL 1. Replace handset or press **[CLR CALL]**	*FINISHING CALL* 1. Replace handset. • "Speak" replaced by area code and train number.

DRIVER MAKING AN EMERGENCY CALL TO SIGNALLER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
• "EMERGENCY" displayed in top left corner on screen. Audible alarm is sounded.	1. Press **[EM]**.
1. Press **[EMER ANS]**.	• "EMERG" is shown in display.
• Note: Pressing **[EMER ANS]** with a call in progress will automatically close that call.	
• "EMERGENCY" Transfers to right hand side of screen.	*CALL ACKNOWLEDGED*
• Train number and "DRIVER" displayed alongside "EMERGENCY"	• "EMERG" is replaced by a steady "SPEAK" and alert tone.
• If the system fails to obtain the identity of the train, a speech call is still established.	• Proceed as in normal speech call, except that **[SP]** DOES NOT need to be pressed before speaking to the Signaller.
CLEARING CALL	
1. Replace handset or press **[CLR CALL]**	

SIGNALLER SENDING A STOP INSTRUCTION TO A DRIVER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
Press 1. **[STOP]** 2. Enter train number **or** **[STOCK NO]** Enter 6 digit unit number 3. **[ENTER]** • "STOP" instruction transfers to right hand side of screen. • If no answer "NOT ANSWERING" is displayed. *REPEATING CALL* Press 1. **[ENTER]** *CALL ACKNOWLEDGED* • "ACKNOWLEDGE" appears on right hand side of screen adjacent to instruction transmitted.	*ACKNOWLEDGING INSTRUCTION* • Alert tone sounds and "STOP" flashes in display. 1. Bring train to a stand and:- 2. Press **[ST]** ... to acknowledge. • Await speech call from Signaller.

DRIVER SENDING A "STANDING AT SIGNAL" MESSAGE

SIGNALLER'S ACTIONS	DRIVER'S ACTION
• The train number, last reported location and the message "STANDING AT SIGNAL" is added to "Trains Calling" list. *REPLYING TO DRIVER* • To send a "WAIT" instruction:- Press 1. **[WAIT SIG]** 2. Enter queue number of train 3. **[ENTER]** *CLEARING SPEECH CALL* • Replace handset or: Press **[CLR CALL]**	Press 1. **[SG]**. Display shows "AT SIG" *MESSAGE ACKNOWLEDGED* • "AT SIGNAL" is replaced by area code and train number. • Await speech call or "WAIT" instruction from Signaller. *CLEARING DISPLAY* Press 1. **[#]** *FINISHING CALL* 1. Replace handset.

SIGNALLER SENDING A STOP INSTRUCTION TO A DRIVER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
RECEIPT OF ALARM MESSAGE The train number, the last reported position and "DSD ALARM" appears in "Train Calling" column.	With the master switch away from the "Off" position and pressure released from the DSD pedal or the holdover button for a period in excess of 30 seconds:- • The Alert tone will sound for up to 30 seconds, and..."DSD" Flashes in display. • Unless interrupted by the DSD pedal or holdover button being operated within the second period of 30 seconds:- • The alert tone ceases. • The DSD message stops flashing. • An ALARM message is sent to signal box

NOTE: If the Signaller is unable to contact the Driver he must immediately arrange for a responsible person to be sent to the train. Where practicable, the Driver of a train on an adjoining line must be asked to investigate and report.
The PA system must be used to keep customers on the train informed.
Failure of "set up" to complete may be the result of the train number not being available from the train describer.

SIGNALLER RECEIVING "OUT OF AREA" CALL.

SIGNALLER'S ACTIONS	DRIVER'S ACTION
• A call is added to "Trains Calling" list with signal number highlighted. EITHER:- 1. Call the Driver in the normal manner and advise him to change the area code manually and contact the correct Signaller, OR 2. Inform the correct Signaller and request him to call the train. This will automatically reset the Driver's area code to correct number.	*CAUSE OF "OUT OF AREA" CALL* Driver has manually set an incorrect area code or the radio equipment failed to change area automatically.

DRIVER CANCELLING CALL OR OTHER MESSAGE TO SIGNALLER

SIGNALLER'S ACTIONS	DRIVER'S ACTION
• If the call or message is cancelled the entry is deleted from the "TRAINS CALLING" list.	• Driver has requested a speech call to the Signaller. Prior to the Signaller responding, the need for the call has ceased. *NOTE: EMERGENCY CALLS CANNOT BE CANCELLED.* *CANCELLING* Press 1. **[CC]** • "CANCEL" is displayed. • If system is already in use, "BUSY" is displayed until message can be passed. If "Fail" is displayed, Press 1. **[#]** .. and repeat 1. *CANCEL ACKNOWLEDGED* • "CANCEL" is replaced by area code and train number.

DRIVER MAKING A CALL TO A RAILWAY INTERNAL TELEPHONE

SIGNALLER'S ACTIONS	DRIVER'S ACTION
ANSWERING SPEECH CALL Press 1. **[Q SEL]** 2. Enter queue number of train 3. **[ENTER]**	*INITIATING CALL* Press **[C]** and make a normal speech call.
ESTABLISHING CALL TO EXTENSION 1. Place key in "**PABX**" position and dial extension from telephone instrument. 2. When call is answered, place key in "**CONNECT**" position and advise both parties that call is connected. • Conversation is heard in handset replaced, from the loudspeaker. *NOTE:* *If call cannot be connected to extension, select "**NORMAL**" to speak to Driver.*	*ANSWERING RETURNED CALL* • When speech circuit is opened: Press 1. **[SP]** 2. Ask for required extension.
CLEARING CALL 1. Place key in "**NORMAL**" position and: Press **[CLR CALL]**	

SIGNALLER CONNECTING CALL FROM A RAILWAY INTERNAL TELEPHONE

SIGNALLER'S ACTIONS	DRIVER'S ACTION
TELEPHONE CALL RECEIVED 1. Place key in "**PABX**" position and lift handset. 2. Caller requests connection to a specific train. 3. Place key in "**NORMAL**" position. 4. Set up speech call to train. 5. Place key in "**CONNECT**" position and advise caller to proceed with the call. 6. Conversation is heard in loudspeaker.	
	FINISHING CALL Replace handset
CLEARING CALL 1. Replace handset and place key in "**NORMAL**" position or: Press **[CLR CALL]**	