



## Access

# Possession Controller



# Learning information booklet

Issue 1

Effective 31st January 2015



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## I Introduction

The Possession Controller (PC) training will provide you with the skills and knowledge to:

- place and remove protection methods for a possession
- place and remove the protection, possession and traction current blocks and limits
- place and remove isolations for a possession
- place and remove the worksite limits (if applicable)
- manage the protection, possession and isolation arrangements
- control the movements of engineer's trains and mechanised vehicles.



Track safety certificates must be carried at all times when on or about the track.

### I.I On successful completion of this training

On successful completion of this training, you must arrange an appointment with the Access department and obtain a temporary Internal Verification (IV) number, valid for six months.

Once you have been observed successfully carrying out the activities of the PC on two occasions, by an approved assessor, you will obtain a full IV number.

## 2 Roles and responsibilities

### 2.1 Protecting Workers on the Track – Train Movements



A person certificated by London Underground (LU) to safely manage worksites and to supervise and control the movement of an engineer's train or mechanised vehicle within a Specified Area (SA) or an Engineer's Current Area (ECA).

A PWT-TM can be identified with a 'Train Movements' armband worn on the left arm above the elbow.

### 2.2 Protecting Workers on the Track – Possession Worksites



A person certificated by LU to safely manage possession worksites and to supervise and control the movement of an engineer's train or mechanised vehicles within their worksite.

A PWT-PW can be identified with a 'Possession Worksite' armband worn on the left arm above the elbow.

## Roles and responsibilities

### 2.3 Manager in Charge of Possession / Engineer in Charge



A person who plans the possession and ensures that all work within the possession is carried out safely.

### 2.4 Possession Controller



A person certificated by LU to take control and give up a possession, in order to carry out engineering and similar work.

A PC can be identified with a 'PC' armband worn on the left arm above the elbow.



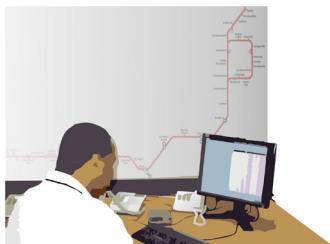
The activity of the Protection Support Manager (POSM) is normally undertaken by a person certificated as a PC. In some possessions the PC will also undertake the duties of the POSM.

## 2.5 Duty Depot Manager / Maintenance Manager Operations



Controls and manages the day to day running of a depot.

## 2.6 Controller



Any suitably competent person, in overall control of the train service on a line, normally acting from the line's control room.

## 2.7 Signaller



Any suitably competent person who operates signal control equipment.

## Roles and responsibilities

### 2.8 Track Access Controller



A person licensed by LU to control the Line Clear and Line Safe procedures during Engineering Hours.

### 2.9 Vehicle Control Centre Operator



Monitors, controls and maintains the VCC in addition to setting and locking points.



The VCC operator is not a signaller and does not authorise train movements.

## 2.10 Engineer's Train Operator



A person, certificated by LU, to drive an electric, battery or diesel train or locomotive.

## 2.11 Support staff



Persons trained and certificated by LU to carry out the following activities:

- forward, rear and intermediate limit defining
- checking the status of traction current
- securing and un-securing points
- lookout (if required).

Other support staff can include engineer (electrical), engineer (signals) and engineer (track).



## 3 Possession

A possession is defined as ‘a designated section of track where a PC has control. Unauthorised train movements into the section are prevented by the arrangements shown in the relevant Rule Book.’

### 3.1 When is a possession necessary

A possession is necessary:

- if a section of track is to be made physically unsafe for the operation of any trains or mechanised vehicles
- at any time, as a way of guaranteeing sole occupancy of a section of track
- when extended periods of track access are required
- when uncertificated staff will be on the track with no trains moving, except during Engineering Hours or on an approved training course and adequately protected
- when traction current will be switched off and on, other than at the published or amended time
- when there has been a component failure which prevents the railway from operating safely, this is an emergency possession.

If a possession is required in an emergency this must be arranged by the controller. The controller must make sure that:

- the area is protected from the unauthorised entry of trains, staff and the accidental liveening up of traction current rails
- an MCP/EIC, or a duty manager and a PC is appointed by the close of Traffic Hours on the day of the emergency possession.

## 4 Types of possession

### 4.1 Minor possessions

There are two types of minor possessions:

- fixed-term possessions
- regular maintenance possessions.

### 4.2 Fixed-term possessions

A fixed-term possession:

- does not require alterations to the normal timetabled passenger service
- might be one possession or a series of possessions over a fixed period of time
- must normally be planned in advance
- must have a possession plan.

### 4.3 Regular maintenance possessions

A regular maintenance possession is where a possession is needed at intervals to carry out maintenance work, it:

- might involve minor local timetabled alterations, for example, moving a train from a stabling siding to allow work to take place
- must have a possession plan for the first possession which can be used for subsequent identical possessions. A new possession plan must be produced if there are material changes to the arrangements within the plan.
- must normally be planned in advance for the first possession, and subsequent possessions can be carried out at shorter notice.

#### 4.4 Major possessions

Major possessions affect the normal timetabled passenger service, it must:

- be planned in advance
- have a possession plan.



Examples of a major possession include:

- Uxbridge blockade
- Hammersmith and City line blockade.

## 5 Planning and organising a possession

### 5.1 Appointing a project manager

Any company undertaking a possession on LU must appoint a project manager to:

- plan and deliver the work for each worksite within the possession
- carry out tasks mandated in the relevant Rule Book.

Where Engineering Hours and routine maintenance possessions are concerned a responsible manager from the asset discipline requiring the possession must be appointed.

For Engineering Hours and regular maintenance possessions it is not always appropriate, or necessary to appoint a project manager or MCP/EIC. In these circumstances a suitably competent person must be appointed to manage the possession, following the principles detailed in the relevant Rule Book; if this is not feasible, or possible then the reasons must be documented.

All possession staff undertaking tasks must comply with all of the following:

- be familiar with the area covered by the possession, or the specific area in which they will work
- hold the correct certification and licences for the task(s) they need to undertake
- be competent to undertake the task(s) assigned to them.



An individual can perform more than one activity providing they can safely carry out the duties of all the activities or tasks, and they have the necessary certification and licences. This must be decided at the possession planning meeting.

# Planning and organising a possession

## 5.2 Appointing a Manager in Charge of Possession / Engineer in Charge

An MCP/EIC will be appointed for each possession and must:

- be competent to plan a possession
- make sure that the work is carried out safely within the possession.

## 5.3 Responsibilities of a Manager in Charge of Possession / Engineer in Charge

An MCP/EIC plans the possession and ensures that all work is carried out safely within the possession.

## 5.4 Appointing a Possession Controller

A PC must be appointed to:

- establish and manage the possession protection arrangements
- give up the possession in a controlled, safe and effective manner
- safely move trains into and out of the possession.



For a minor possession the PC can be part of the work group, but must not interfere with their PC duties.

This must be agreed at the possession planning meeting.

## 5.5 Responsibilities of a Possession Controller

The PC is responsible for:

- arranging protection for a section of track (with protection staff and other competent persons, as required)
- a section of track handed over from the controller
- handing back the section of the track to the controller
- arranging traction current arrangements, if necessary
- authorising and co-ordinating the movement of engineer's trains into and out of the possession, to and from the operational railway.

The PC is also responsible for:

- authorising mechanised vehicles on to and off the operational railway
- the safety of personnel on the track between the protection and the start of the possession during:
  - Traffic Hours in conjunction with the controller
  - Engineering Hours in conjunction with the TAC
  - liaising with the POSM over the movement of engineer's trains and mechanised vehicles into, out of and through the possession and worksites.

## 5.6 Appointing a Protection Support Manager

A POSM must be appointed to:

- establish and manage the worksite protection arrangements
- give up the worksites in a controlled, safe and effective manner
- ensure the safe movement of trains within the possession including into and out of worksites.



The POSM must be identifiable to all staff and can be part of the work group, but this must not interfere with their POSM duties and must be agreed at the possession planning meeting.

## 5.7 Responsibilities of a Protection Support Manager

The POSM is responsible for:

- arranging the worksite(s) to be defined
- the protection of staff within the worksite(s)
- co-ordinating protection for the worksite(s)
- authorising and co-ordinating the movement of engineer's trains and mechanised vehicles into, through and out of each worksite and, if necessary, between worksites
- setting up a safe system of work for each worksite with the PWT-PW/SPC
- assisting the PC as required.

## 5.8 Appointing a Protecting Workers on the Track-Possession Worksites or Site Person in Charge

A PWT-PW/SPC must be appointed for each worksite and they must have the competence to ensure, the:

- work within the worksite is planned and carried out in a safe manner
- safe movement of trains into, within and out of the worksite.

## 5.9 Responsibilities of a Protecting Workers on the Track-Possession Worksites or Site Person in Charge

The PWT-PW/SPC is the designated person in a worksite responsible for:

- the work in progress
- discipline
- programme of work
- plant
- materials
- general health and safety
- setting up a safe system of work in collaboration with the POSM
- liaising with the POSM on the movement of engineer's trains and mechanised vehicles into and out of the worksite
- co-ordinating with the person responsible for the movement of engineer's trains and mechanised vehicles in the worksite.

## 5.10 Appointing support staff

The support staff are responsible for:

- placing blocks and marker boards as instructed by the PC
- checking for traction current as instructed by the PC
- implementing approved protection methods on behalf of the PC
- controlling the movement of engineer's trains and mechanised vehicles between the protection block and worksite limit as instructed by the PC
- securing and unsecuring points for the movement of engineer's trains and mechanised vehicles between the protection method and possession limit as instructed by the PC
- placing and removing Short Circuit Device's (SCD) as instructed by the PC.

## 5.11 Responsibilities of support staff

The support staff are also responsible for:

- checking for traction current as instructed by the POSM
- placing and removing SCD's as instructed by the POSM
- securing and unsecuring points for the movement of engineer's trains and mechanised vehicles within and between worksites as instructed by the POSM
- controlling the movement of engineer's trains and mechanised vehicles within worksites, and between worksites as instructed by the POSM
- defining the limits of a worksite as instructed by the POSM.

The MCP/EIC must make sure that the following possession activities, if required, are assigned to one or more competent, certificated and licensed staff:

- placing of the protection block(s), where required
- placing of the possession limit marker(s)
- placing of the traction current gap marker(s)
- securing of points
- safe movement of engineer's trains and mechanised vehicles
- implementation of special traction current arrangements
- checking for traction current
- creation of short circuits or use of SCD's
- maintaining of signals at danger
- placing of worksite limit markers.



An individual can perform more than one activity or several tasks as long as they can safely carry out the duties of all the activities or tasks, and they have the necessary certification and licences.

## 6 Possession documentation

All possessions must be planned, managed properly, and appropriate documentation produced to demonstrate this.

The following possession documents are produced and approved for each possession:

- possession plan
- possession works guide
- train matrix (working plan)
- risk assessment.

### 6.1 Possession plan

A possession plan must be produced for every possession whatever the duration. This must be specific to the particular location and detail the method of protection. The possession plan must include the following information:

- area which will be under possession and its limits
- protection methods to be used at each point of entry to the possession
- protection limits
- traction current limits
- traction current arrangements including details on how the area under possession must be isolated, and the locations where a traction current short circuit must be created
- emergency preparedness plan, for example, evacuation procedure and emergency contact telephone numbers
- plan for the safe movement of engineer's trains or mechanised vehicles entering or leaving a possession
- process for gaining agreement to authorise engineer's trains to move into, out of, and between worksites

- contingency arrangements to protect or mitigate the impact of the possession not being completed on time or other foreseen considerations, including climatic conditions
- other work, if any, will be allowed to take place between the protection block and possession limit during any Engineering Hours part of the possession.

All alterations to the signal and control systems or traction current arrangements to provide protection for the possession must be authorised in the possession plan, by a competent engineer nominated by the relevant engineering authority.

Where possessions are planned which do not run from sub-station to sub-station, the LU power engineer must agree to the required traction current alterations before the possession.

Opening section switches or making other physical traction current arrangements might have an affect on revised traction current feeding arrangements and must be checked and approved by the LU power engineer.

The MCP/EIC must make sure the possession plan is agreed and formally signed off by:

- key engineering staff, including engineer (signal) and engineer (electrical), for agreement to implement
- engineer's trains and plant supplier, for agreement to implement
- operational managers, for agreement to implement
- TAC, for agreement that Engineering Hours can be carried out around the possession, and agreement to carry out duties identified for the TAC
- PC and POSM, for understanding and agreement to implement
- LU Access department for agreement that the details of the possession are consistent with the approved closure, and must be published correctly in the appropriate publication.



For Engineering Hours and maintenance possessions it might not be practical for the PC and POSM to agree and sign the possession plan or possession works guide. This must be done by their manager and the details within the plan briefed to the PC and the POSM.

There might be occasions or circumstances when changes have to be made to a possession plan after it has been approved and issued. These must be made on a 'Short Notice Change' which must be issued to all concerned. The MCP/EIC must approve the 'Short Notice Change' after consultation with those affected by the change.

## 6.2 Possession works guide

A possession works guide must be produced for every possession whatever the duration. The possession works guide must include:

- the area under possession
- number of worksites and limits
- information about each worksite (diagrams should be used wherever possible)
- protection to be used at each point of entry to the worksite
- brief scope of work and worksite times
- plant or equipment to be used
- contingency arrangements in the event of work not being completed within the time allowed
- any additional relevant information.



The possession works guide must be specific to the particular location and the method of protection. The possession works guide can be re-used for other possessions in the same location, using the same method of protection and undertaking the same type of work.

When engineer's trains or mechanised vehicles are working the possession works guide must contain details of:

- running to, and passing the engineer's train or mechanised vehicle into the possession
- passing the engineer's train or mechanised vehicle through the area under possession, including into a worksite
- working engineer's train or mechanised vehicle within a worksite
- passing the engineer's train or mechanised vehicle out of a worksite and into an area under possession
- passing the engineer's train or mechanised vehicle out of the possession and on to the operational railway.

The possession works guide must also contain contingency arrangements for dealing with unplanned events such as:

- the cancellation or delay of any engineer's train or mechanised vehicle
- the non-availability of a critical resource
- any other event likely to have a detrimental effect including safety and the ability to finish the work as programmed.

The MCP/EIC must make sure the possession works guide is agreed and formally signed off by the following persons:

- key engineering staff, including engineer (signal) and engineer (electrical), for agreement to implement
- engineer's trains and plant supplier, for agreement to implement
- operational managers, for agreement to implement (if required)
- PC and POSM, for understanding and agreement to implement
- MCP/EIC, for final approval.

The possession works guide must also include, for each shift as appropriate, the contact details of:

- MCP/EIC or operating official
- PC
- POSM
- PWT-PW or SPC
- service manager
- duty operations manager (engineering)
- controllers
- signallers
- TAC.

## 6.3 Train matrix (working plan)

The MCP/EIC must produce a train matrix where multiple engineer's trains and mechanised vehicles are working in a possession. The train matrix must include the safe entry, exit and movement of the engineer's trains and mechanised vehicles.



It is not necessary to produce a train matrix if only one engineer's train or mechanised vehicle is working in a possession or where, in a possession with more than one worksite, engineer's trains and mechanised vehicles are 'locked in' to the worksite for the duration of the possession.

## 6.4 Risk assessment

Risk assessment(s) must be carried out to identify hazards and assess risks associated with all the activities undertaken in the possession, specifically relating to the following:

- the risks to staff and assets within the possession
- the risks to customers, staff, assets and LU customer services adjacent to the possession.

The findings of the risk assessment(s) must be used to identify, prioritise and manage measures to control or reduce the risks associated with the implementation of a possession, and the work being undertaken within it.

The MCP/EIC must review the risk assessment produced by the contractor undertaking the work to identify the risks to the possession arising from the:

- planned work
- interaction between worksite(s) and the possession.

## 6.5 Publishing the possession

The details of all possessions must be published in the relevant LU publications, including:

- Engineering Notice Look Ahead
- Engineering Notice
- Nightly Engineering Protection Arrangements (NEPA).



The exception to this is an emergency possession which prevents the railway from operating safely.

## 7 Possession protection

### 7.1 Methods of protecting a possession

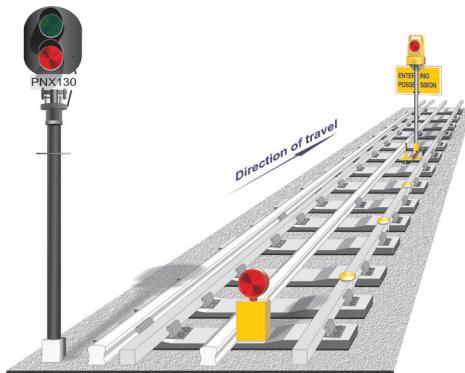
There are various methods available for protecting a possession depending on the location or environment where the possession is taking place. A combination of these methods can be used to protect a possession, they include:

- using the signalling system to stop trains reaching the possession
- securing points to divert trains away from the possession
- securing a train on the approach side of a possession
- using a physical barrier in un-signalled depots and sidings
- using traction current sections to prevent trains from reaching the possession.

A possession:

- must be protected in each direction from which a train can approach on a running line (this must be when working under normal operating conditions and fixed signalling)
- starts at the protection block
- ends at the leaving possession marker
- can include one or more separately defined worksites.

## 7.2 Maintaining a signal at danger



To protect a possession the following signals can be used:

- semi-automatic signal
- automatic signal treated as a protection signal and renumbered with a 'PNX' prefix.

The signal overlap of the signal being maintained at danger must be long enough to prevent a train passing the signal at danger, from reaching the first possession limit marker.

Details of which semi-automatic signals, or PNX protection signals to be maintained at danger, will be agreed at the possession planning meeting.



When an automatic signal is being renumbered as a PNX protection signal, details will be published in the Traffic Circular; including the location of the signal(s) and the duration of the renumbering.

## 7.3 Before maintaining the signal at danger

Before taking the possession the PC must agree with the engineer (signal) and the signaller:

- which semi automatic signal(s) will be maintained at danger to protect the possession
- the details of any automatic signals being renumbered as 'PNX' protection signals.

When the controller has given permission for the possession to be taken, the PC must tell the signaller:

- the possession plan reference number
- the possession is ready to be taken
- details of semi-automatic signal(s) or 'PNX' protection signal(s) that will be maintained at danger
- the LU approved method being used to maintain the signal(s) at danger.

Before the possession is taken the PC must hold a briefing with the engineer (signal) and support staff to agree details for maintaining the signal(s) at danger.

When the controller has given permission for the possession to be taken, the PC must tell the engineer (signal) to:

- maintain the signal(s) at danger using the LU approved method
- write the details of the possession on the request form (OSU POSS 001) and sign the request form as confirmation that the signal(s) have been maintained at danger using the LU approved method
- tell the PC when this has done this.



Once the signal(s) has been maintained at danger, the engineer (signal) must tell the Maintenance Control Centre which semi-automatic or 'PNX' protection signals (or both) are maintained at danger.

## 7.4 Before reinstating the signal

When the possession is no longer required the PC must hold a briefing with the engineer (signal) and support staff to agree details for reinstating the signal(s).

When the possession is no longer required, the PC must tell the signaller that the engineer (signal) will be reinstating/renumbering the signal(s) that have been maintained at danger.

The PC will tell the engineer (signal) to:

- tell the signaller that they are going to reinstate the signal(s)
- remove the method for maintaining the signal(s) at danger
- renumber the 'PNX' protection signal, if appropriate
- sign the possession form (OSU POSS 001) once the signal(s) has been reinstated/renumbered and the PC is informed.



The PC must not carry out these instructions until all markers, blocks and any special traction current arrangements have been removed and the controller and DDM/MMO, as appropriate, have been informed.

## 7.5 Protection key switch

Certain semi-automatic signals can be maintained at danger by using a protection key switch at the following locations:

### Victoria line

- Brixton
- Finsbury
- Highbury & Islington
- Walthamstow Central
- Northumberland Park depot
- Seven Sisters

- Victoria
- King's Cross
- Warren Street

#### District line

- Putney Bridge

### 7.6 Before operating the protection key switch

Where protection key switches are being used to protect a possession, the PC must hold a briefing with the engineer (signal) or support staff and agree what must be done to operate the protection key switch.

The PC must confirm with the support staff the details of the protection key switches to be operated and tell the support staff to:

- complete section A of the form (OSU PKSR 008) and give the form to the station supervisor and ask the appropriate station supervisor to open the protection key switch box
- get the station supervisor to sign the form (OSU PKSR 008) and give it back to them
- ask the signaller for permission to remove the appropriate key(s)
- when permission is given, operate and withdraw the key(s) and keep them safe
- tell the PC when this has done this.



The PC must tell the signaller when the key(s) have been removed.

## 7.7 Before reinstating the protection key switch

When the possession is no longer required, the PC must hold a briefing with the engineer (signal) and support staff to agree what must be done before reinstating the protection key switch.

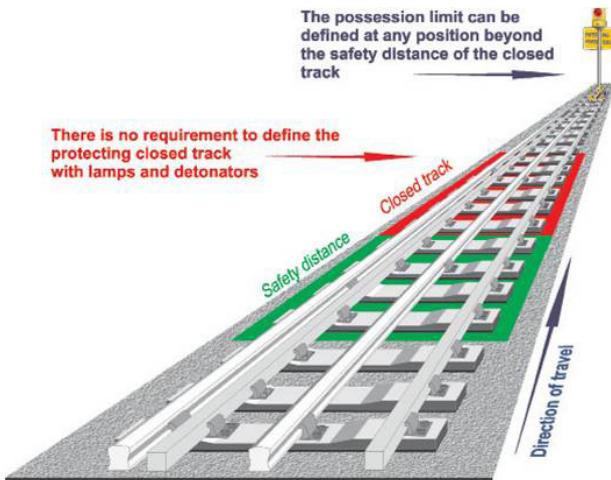
The PC must tell the support staff:

- to tell the station supervisor which protection key switches will be reset
- to ask the appropriate station supervisor to open the protection key switch box(s)
- reset the protection key switches
- tell the signaller when this has been done
- tell the PC when this has been done
- to complete section B of the form (OSU PKSR 008) and ask the station supervisor to sign their part of section B.



The PC must not carry out these instructions until all markers, blocks and any special traction current arrangements have been removed and the controller and DDM/MMO, as appropriate, have been informed.

## 7.8 Closing tracks



On lines fitted with the Transmission Based Train Control (TBTC) signalling system, signals can be maintained at danger by closing tracks.

## 7.9 Before closing tracks

Before taking the possession, the PC must agree with the engineer (signal) and the signaller which track(s) will be closed to protect the possession.

Once permission is given by the controller, the PC must tell the engineer (signal) to protect the possession by closing the track(s) using the LU approved method.



For possessions involving Traffic Hours, the service manager, controller and signaller must be consulted before closing (or reopening) tracks.

## 7.10 Before reinstating the closed tracks

When the possession is no longer required the PC must request permission from the controller to give up the possession.

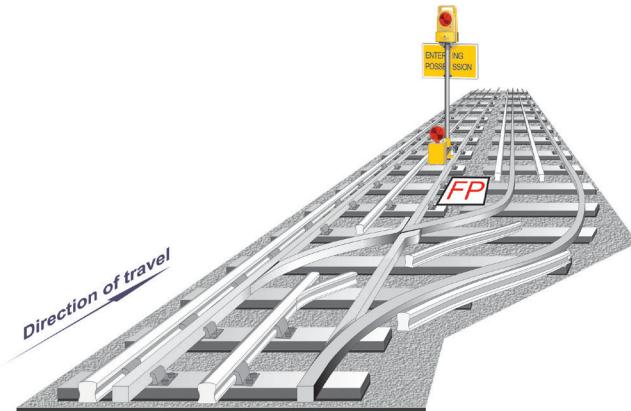
The PC must tell the engineer (signal):

- the possession is no longer required
- to reopen the track(s) concerned
- to tell the PC when this has been done.



The PC must not carry out these instructions until all markers, blocks and any special traction current arrangements have been removed and the controller and DDM/MMO, as appropriate, have been informed.

## 7.11 Protecting a possession by securing points



Facing points can be secured, using the approved method, so as to divert trains away from the section under possession. The points must be secured in the normal position unless the points are controlled from one of the signal boxes listed below, when they can be secured in either the normal or reverse positions.

### Circle and Hammersmith Lines

- Hammersmith (OZ) open continuously lever number 1 to 35.
- Edgware Road (OP) open continuously lever numbers 1 to 39.

### Metropolitan Line

- Rickmansworth (JP) open continuously lever numbers 1 to 47.

### District Line

- Whitechapel (EN) open continuously lever numbers 1 to 46.

It must be agreed at the possession planning meeting which points will need to be secured to protect the possession. The point number and position to be secured (normal or reverse) will be published in the Engineering Notice Look Ahead or Engineering Notice.

## 7.12 Before securing the points

Before the possession is taken the PC must hold a briefing with the support staff to agree which points need be secured and their positions.

When permission has been given to take the possession, the PC must tell the signaller:

- the possession plan reference number
- the possession is ready to be taken
- which points are to be secured.

When permission has been given to take the possession the PC must, then tell the support staff to:

- secure the agreed points
- retain the padlock key, or combination, safe until the possession is no longer required, or pass it on to their relief
- tell the PC when this has been done.

## 7.13 Before unsecuring the points

When the possession is no longer required, the PC must hold a briefing with the support staff to agree details for unsecuring the points.



The PC must remind the support staff that points might move suddenly and without warning.

When permission has been given to give up the possession, the PC must tell the support staff to:

- unsecure the points providing protection
- to tell the PC when this has been done.

When the PC has received confirmation that the points are unsecured they must ask the signaller to test the points to make sure they are working correctly.



The PC must not carry out these instructions until all markers, blocks and any special traction current arrangements have been removed and the controller and DDM/MMO, as appropriate, have been informed.

#### 7.14 Protecting a possession by using a secured train

This method of protecting a possession is used when a train is secured on the approach side of the possession, and a marker is secured to the running rails in the four foot telling personnel they are entering or leaving a possession.



The train being secured for protection must conform to the definition of a train.

It must be agreed at the possession planning meeting which train will be secured to protect the possession. The number of the train that will be used to protect the possession will be published in the Engineering Notice Look Ahead or Engineering Notice.

## 7.15 Before securing the train



Before the possession is taken the PC must hold a briefing with the support staff to agree the details for securing the train.

Once permission has been given to take the possession, the PC must brief the support staff to tell the ETO to:

- secure the train
- display red aspect tail lights at both ends of the train
- tell them when this is done
- give them the appropriate key.

When the train has been secured and the support staff are in possession of the appropriate driver's key they must:

- sign the train journal
- tell the PC the train has been secured.

If the train is being uncoupled, the ETO must not give the reverser/selector/RKL220 key to the support staff until this has been done.

## 7.16 Before unsecuring the train

When the possession is no longer required the PC must hold a briefing with the support staff to agree details for unsecuring the train.

When permission has been given to give up the possession, the PC must tell the support staff to return the key back to the ETO and tell the ETO to:

- unsecure the train as it is no longer required for protection
- sign the train journal
- tell them when this has been done
- uncouple or recouple the train
- display the correct lights for the return journey
- drive the train to the booked point (if required).

The support staff must tell the PC once the train has been unsecured.



The PC must not carry out these instructions until all markers, blocks and any special traction current arrangements have been removed and the controller and DDM/MMO, as appropriate, have been informed.

## 7.17 Protecting a possession using the Line Clear or Line Safe procedures



This method of protecting a possession must only be used during Engineering Hours for a minor possession and relies on the Line Clear and Line Safe procedures to provide a protecting ‘buffer’ traction current section, where traction current is switched off, to prevent unauthorised trains from reaching the traction current section(s), depot or siding under possession.

It is not possible to pass trains into and out of a possession through this means of protection. However, if this method is being used in conjunction with other protection methods, trains can be passed into and out of the possession through that particular method of protection if permissible.

Traction current section(s) required for the possession and those required for the ‘buffer’ protection will be agreed at the planning meeting. If there are no stations on the protecting ‘buffer’ traction current section, details of how the PWT-EH will access the traction current section, and the protection required from the TAC in order to do so, must be specified within the possession plan.

This method of protection can be used to protect a depot (or part of) or siding as long as:

- the person responsible for the depot can allow the work to take place while Engineering Hours applies on the protecting traction current section
- traction current is not switched on to the protecting traction current section while the possession is still in force.

If it is necessary to use more than one traction current section to provide protection for the depot or sidings, the possession start and finish time must be based on the latest and earliest traction current switching times, for the traction current section(s) concerned. Details of the traction current section(s) required to protect the possession will be published in the Engineering Notice Look Ahead or Engineering Notice.

When using this protection method, the PC can carry out the role of the support staff as long as this does not prevent them from carrying out their PC duties.

The PC must place a possession limit marker at the boundary between the possession and the protecting traction current section. There is no need to place a protection block or traction current gap marker.

If using this method in conjunction with other methods of protection, the requirement for placing the protection block and traction current gap marker contained in the other methods of protection will apply.

 There are no additional restrictions on other personnel accessing the protecting traction current section(s) during Engineering Hours using the Line Clear or Line Safe procedures.

## 7.18 Implementing the Line Clear or Line Safe protection for the possession

Once permission has been given to take the possession, the PC must:

- tell the controller that the PC will arrange for the support staff to book on with the TAC
- make sure support staff book on with the TAC
- ask the signaller for agreement to take the possession.

The PC must hold a briefing with the support staff, and tell them:

- the traction current section(s) to be used as protection to be requested from the TAC
- to tell the PC when Engineering Hours has commenced on the appropriate traction current section(s).

The PC must tell the support staff to:

- book on with the TAC for the protecting ‘buffer’ traction current section
- check on site for traction current
- tell the PC when this has been done.

When the support staff have booked on with the TAC and Engineering Hours has commenced on the traction current section(s), the PC must arrange for the possession limit marker(s) to be placed.

## 7.19 Removing the Line Clear or Line Safe protection for the possession

When the possession is no longer required, the PC must hold a briefing with the support staff to agree details for removing the possession protection. The protection must not be given up with the TAC until the possession marker(s) have been removed.

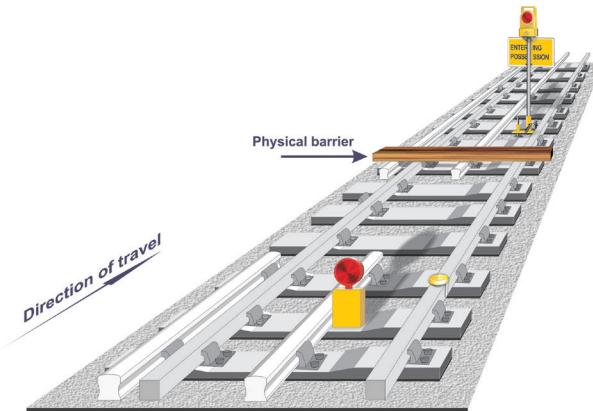
Before telling the support staff to clear with the TAC, the PC must tell the TAC that the possession is about to be given up. This authorises the TAC to accept the site clear or site safe message(s) from the support staff.

When the TAC has been informed, the PC must tell the support staff to:

- pass a site clear or site safe message to the TAC for the traction current section(s) providing protection, once they have removed the possession limit marker(s)
- tell you when they have done this.

If the work will not be finished by the call-back time, the PC must contact the TAC and ask for Late Surrender Protection (LSP).

## 7.20 Protecting a possession in an un-signalled depot using a physical barrier



This method of protection can be used in fully un-signalled depots or on un-signalled tracks in other depots. A physical barrier, such as a timber baulk, is placed in the four foot as a warning to train operators that the section of the track concerned is under possession.

Shed doors can be used as a physical barrier, as long as they can be secured in the closed position for the duration of the possession, except if there is a requirement to pass a train or mechanised vehicle, into, or through the possession.

Before taking the possession the PC must arrange with the DDM/MMO:

- details of the work being done
- the extent of the worksite
- possession protection details
- the risk of movement of trains on adjacent roads
- a permit to work form (OSU POSS 002)
- special traction current arrangements.

The PC can carry out all the protection arrangements themselves, but in some circumstances they might need assistance from support staff.

Where trains are stabled within a possession, or are stabled on tracks outside the possession, but on the same traction current section, train movements must not be made without the authority of the PC. This is to prevent an isolated section being 'livened up' by a feed from a battery locomotive.

The PC must make sure that the trains concerned are displaying the appropriate target.

## 7.21 Placing the protection in an un-signalled depot

When permission is given by the DDM/MMO to take the possession, the PC must tell the controller:

- to switch off traction current from the traction current section(s) concerned
- tell the PC when this has been done.

If the possession involves track fed from overhead trolleys, the PC must agree with the DDM/MMO how this track will be isolated.

When the controller confirms that traction current has been switched off, the PC must:

- test for traction current on the traction current section(s) concerned
- place a physical barrier in the four foot or lower the shed door and secure it in the down position, on the track(s) concerned
- place a lamp showing a red aspect and a detonator on the side of the physical barrier or shed door where trains can approach from
- place a possession limit marker at the physical block or shed door
- arrange for any special traction current arrangements and short circuits to be placed (if applicable).



The PC must arrange for the possession limit marker and traction current gap markers to be placed.

## 7.22 Removing the protection in an un-signalled depot

When the possession is no longer required, the PC must:

- arrange for any special traction current arrangements and short circuits to be removed
- remove the possession limit marker
- remove the lamp(s) and detonator(s)
- remove the physical barrier or unsecure and open the shed doors (as appropriate)
- tell the DDM/MMO when you have done this
- tell the signaller when this has been done.

The PC must tell the controller that:

- all traction current arrangements and short circuits have been removed
- the possession is no longer required
- traction current can be switched on to the section(s) concerned.

The PC must complete a permit to work form (OSU POSS 002).

## 7.23 Tower controlled depots

The PC must talk to the tower operator in addition to the DDM/MMO at the following tower controlled depots:

- Northumberland Park depot
- Stonebridge Park depot
- Upminster depot.

The PC must:

- get permission from the DDM/MMO to take the possession
- get the DDM/MMO to tell the tower, authorise the possession and say you will be going to the tower
- tell the tower operator which road(s) will be under possession
- get the tower operator to arrange protection by collaring the appropriate point switches
- check the protection arrangements protect the possession
- secure the appropriate points by scotch, clip and padlock.

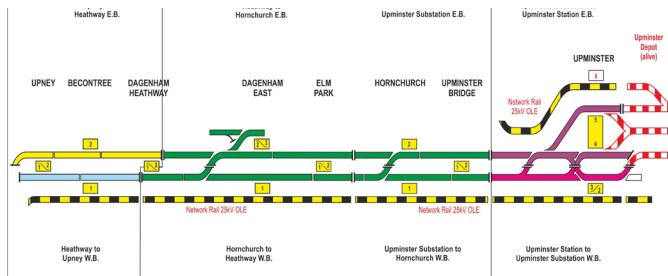
When the possession is no longer required the PC must go to the tower to give up the possession.

## 7.24 Additional requirements for certain depots

The PC must refer to the relevant line supplement for additional requirements for taking possessions in the following depots:

- Neasden depot (Metropolitan Line supplement)
- Stonebridge Park depot (Bakerloo Line supplement)
- Northumberland Park depot (Victoria Line supplement)
- Upminster depot (District Line supplement)
- Stratford Market depot (Jubilee Line supplement).

## 7.25 Using the Line Clear or Line Safe procedures to implement and remove possession protection and worksite controls



These arrangements utilise Line Clear or Line Safe procedures to provide a method of implementing and removing possession protection and worksite controls during Engineering Hours.

These arrangements can be used to:

- allow trains and mechanised vehicles, if being used, to travel, work, couple, uncouple, load and unload only when in a defined worksite
- protect an increase to the possession area during Engineering Hours, provided this is published and documented in the possession plan

- protect a decrease to the possession area during Engineering Hours, the PC and TAC agree the arrangements.

At the relevant transition stages of this process, the PC must:

- confirm with the controller, signaller and TAC, as appropriate, the possession arrangements and protection methods to be used
- make sure all possession arrangements and protection methods are implemented as and when required
- when circumstances require trains to remain secured within the possession, ready for traction current to be switched on at the start of Traffic Hours, tell the controller this information.

These arrangements must not be used, if:

- the possession will only be in force during a single period of Engineering Hours
- it is planned for any traction current section in the Line Clear or Line Safe area within the possession to remain switched on
- Engineering Hours are cancelled.



All areas of track within the possession must be in the Line Clear or Line Safe area.

Where trains or mechanised vehicles (or both) are to be used or moved whilst under these arrangements, they must not:

- enter or exit the possession
- move between the possession limit and a worksite
- enter or exit a worksite
- move between worksites.

## 7.26 Implementation of the Line Clear or Line Safe protection (Stage 1)

When permission is given to take the possession, the PC must book the entire area published for the possession with the TAC.



Possession limit markers and traction current gap markers are not required to be placed on the track at this stage.

The PC must make sure support staff:

- check and confirm that traction current has been switched off from all traction current sections within each worksite, prior to defining them
- define the limits for each worksite
- confirm back to the PC when this has been done.

## 7.27 Moving from Line Clear or Line Safe protection to Traffic Hours protection (Stage 2)

When Traffic Hours protection has been implemented, the PC must notify the TAC that these arrangements are no longer required.



During this stage, possession limit markers and traction current gap markers will need to be placed on the track.

The PC must tell the POSM that Traffic Hours protection has been implemented and these arrangements have been removed, the POSM must:

- tell the PWT-PW/SPC and the manager of the ETO this information
- make sure the requirements for normal possession arrangements apply.

While under these arrangements, in the event of failure to implement Traffic Hours protection before the start of Traffic Hours, LSP must be implemented.

## 7.28 Moving from Traffic Hours protection to Line Clear or Line Safe protection (Stage 3)

The PC must book the entire area published for the possession with the TAC.

Before Traffic Hours protection is removed and before these arrangements are implemented, the POSM must:

- tell the PWT-PW/SPC and the manager of the ETO this information
- make sure the requirements for these arrangements apply.

When the controller gives authority, you can remove Traffic Hours protection.

The possession will remain protected using these arrangements and at this stage, the possession limit markers and traction current gap markers, can be removed from the track.

## 7.29 Removing the Line Clear or Line Safe protection arrangements

When the possession is no longer required and all work is complete, the PC must pass a site clear/site safe message to the TAC. In the event of work overrunning, LSP must be implemented.

If necessary, the possession area protected by these arrangements can be reduced to provide a later call back time and/or to minimise the impact on the start of Traffic Hours in the event of work overrunning.

Engineer's trains unable to leave the possession can remain secured within the possession, ready for traction current to be switched on at the start of Traffic Hours.

### 7.30 Tracks in depots and sidings that are not protected by Line Clear or Line Safe procedures

In circumstances where an area of the possession is required to include tracks in depots and sidings which are outside the Line Clear or Line Safe area, it is acceptable to use these arrangements provided the following conditions are met:

- the arrangements are planned and published
- the accountable person for the tracks concerned has given agreement for this to happen
- the appropriate control measures are implemented to prevent unwanted train movements and traction current switching on the tracks concerned
- the PC must retain the acceptance of the accountable person for track in depots and sidings for continued use of the agreed protection methods in the depots or sidings, if and when appropriate
- where any possession is protected using these arrangements in conjunction with another Rule Book method, all of these arrangements must apply.

## 8 Possession isolation

### 8.1 Traction current arrangements

Traction current can be switched off, or special traction current arrangements might be required, for a possession on the running line, depot or stabling siding. It must be decided at the possession planning meeting which traction current section(s) will be affected, and what special traction current arrangements are required. All traction current arrangements must be published in the Engineering Notice Look Ahead or the Engineering Notice (or both).

### 8.2 Special current arrangements

If part of a track within a traction current section has to have traction current switched off, special traction current arrangements will have to be made. This might involve the opening of section switches, installing temporary gaps, and so on. These arrangements must not be made until the method of protecting the possession is in place.

When protecting a possession, there must not be a substation gap, or other traction current rail gap of less than 15m within the signal overlap of the protection signal to avoid a train bridging the gap and causing traction current to flow on to an isolated section. Creating the 15m gap might have to be done by one, or a combination of the following:

- opening section switches
- removing cables
- cutting or removing the traction current rails
- using temporary section switches.



Where reference is made to a 15m gap, this means a 'nominal' 15m's. The original distance for an isolation gap was 48 ft which equates to 14.63m. Any existing gaps measuring between 14.63m and 15m do not need to be extended to 15m.

### 8.3 Making special traction current arrangements

Special traction current arrangements and isolations must be made by a competent engineer (electrical) using approved methods.

Traction current can be left switched on if special traction current arrangements using the following are made:

- isolating switches
- changeover switches
- section switches.

So far as reasonably practicable, traction current must be switched off when switches are being operated to minimise risk.

Traction current must be switched off when the following are made:

- special traction current arrangements
- physical removal or replacement of cables and bonds.

### 8.4 Changes in status between ‘live’ and ‘dead’ traction current conductor rails

Where there is a combination of ‘live’ or ‘dead’ sections, and there are no moving engineer’s trains or mechanised vehicles within any part of the possession, a warning marker must be secured to the running rail in the four foot to warn personnel that the status of traction current on the traction current rails has changed, for example, from ‘live’ to ‘dead’ or ‘dead’ to ‘live’.

If an engineer’s train can approach the gap between ‘live’ and ‘dead’ sections from either direction (for example, an engineer’s train leaving a possession):

- a warning marker must be secured to the running rail in the ‘four foot’
- one detonator must be secured to the running rail at the marker.

Consideration must be given to the practicalities of placing markers and detonators (if required) at the traction current gap marker in single track tube tunnels. If it is not practicable to place the markers, an appropriate worded notice must be shown at the station headwall and the details must be specified in the possession plan.

## 8.5 Short circuits

A short circuit must be used to reduce the risk of traction current from ‘livening’ up a possession, as agreed at the possession planning meeting.

One or more short circuits must be used during a possession when:

- traction current is switched off, and gaps in the current rail of at least 15m are not provided
- a possession extends into Traffic Hours
- a possession overruns into Traffic Hours
- temporary changes to traction current feeding arrangements have been made to a section of track within a possession.

Consideration must be given at the possession planning meeting on how the short circuit will be created. Where it is not practicable to use an SCD, for example if the SCD could be displaced by moving trains or track trolleys, alternative means of creating a short circuit must be considered. This could be by using cables clamped to the underside of the traction current rails and routed under the running rails.

Where an SCD is not being used to create a short circuit, for example, by cables clamped to the traction current rails, this must be done by an engineer (electrical). Where an SCD is being used to create a short circuit this must be done by a competent person. The locations of where short circuits are to be created and who will do this must be shown in the possession plan.

The PC must:

- make sure traction current has been switched off before giving authorisation for short circuits to be created and SCD's to be placed on the track
- provide the protection staff, with an SCD, at the start of a possession
- tell the controller that short circuits have been placed and SCD's have been placed on the track
- record the time and location where short circuits and SCD's were placed or removed
- receive the SCD's from the competent person at the end of a possession and arrange for them to be returned to where they were supplied.

The engineer (electrical) is responsible for providing the approved equipment or material for short circuits being created other than by using an SCD.

The PC must make sure support staff:

- check traction current has been switched off from the traction current section(s) concerned before creating the short circuit or placing an SCD(s) on the track
- remove the short circuit or SCD(s) when told by the PC
- record the time and location the short circuit was created or removed or the SCD(s) were placed or removed
- report all the actions to the PC.

## 8.6 Positioning short circuiting devices on the track

The location of short circuits and SCD's must be within the area under possession. If there is:

- no substation gap within a possession, SCD's must be placed as close as possible to both ends of the possession

- one or more substation gaps within a possession, short circuits must be created or SCD's must be placed immediately either side of the substation gap in addition to both ends of the possession.

Short circuits must not be created and SCD's must not be placed:

- where traction current is switched on
- where conductor or running rail fixtures or fittings can prevent its correct use
- under or over a set of points
- where there are out of gauge rails
- on a traction current section where it is planned to carry out traction current switching arrangements during a possession.

Short circuit and SCD's must be removed before the switching arrangements are removed.

## 9 Depot isolations

### 9.1 Switching traction current off and on from or to overhead trolley feeds

The PC must ask the DDM/MMO to arrange for a competent person to carry out the necessary arrangements when a possession has been taken on a shed road and traction current has to be switched off and on from or to overhead trolley feeds.

## 10 Possession demarcation

### 10.1 Traction current gap marker



Traction current gap markers are placed on the track to warn personnel when the status of traction current changes, for example, from switched on to switched off.



When train movements are involved a single detonator will be placed adjacent to the traction current marker board.

### 10.2 Possession limit marker



A possession limit marker is placed on the track at the extremities of the possession to inform personnel that they are entering or leaving a possession. Where space is limited and it is not practicable to place a protection block and possession limit marker, the possession limit and protection block will be defined by using a possession limit marker. This must be agreed at the possession planning meeting and included in the possession plan. A temporary sign indicating the dual purpose of the marker must be displayed on the marker covering the existing wording.

### 10.3 Worksite limit marker boards



Possession worksites are demarcated using standard worksite limit marker boards, which have a red sign with the words 'Entering Worksite' on one side and 'Leaving Worksite' on the other. The boards have a flashing light on top showing a red aspect facing into the worksite and red aspect facing out of the worksite. The markers are secured to the running rail by clamp and padlocked (if required).



The old style boards have a flashing light on top showing a red aspect facing into the worksite and yellow aspect facing out of the worksite.

When multiple worksites are planned in a possession, each individual worksite must be clearly demarcated. This is to ensure:

- there is clear visibility on site regarding areas of control
- there is additional protection for the work group against the risk of moving vehicles outside of the worksite area
- demarcation equipment must be placed at all locations where engineer's trains, vehicles and personnel could enter or leave the worksite.

When engineer's trains and vehicles are working within a worksite the worksites will also require the use of detonators (which are fixed to the crown of the rail). A red lamp(s) is placed to warn an approaching engineer's train/ mechanised vehicle operators of a worksite limit.

## **11 Briefings**

### **11.1 Staff briefings**

The MCP/EIC must identify and brief staff on the tasks involved in the possession and the worksite protection arrangements, before the possession begins. The activities and tasks to be briefed include:

- PC
- POSM
- support staff
- engineer (signal)
- engineer (electrical)
- PWT-PW / TM / PWT-TM.

Any other activity or task involved with:

- setting up, maintaining and removing the possession protection and worksite(s)
- the control of engineer's trains and mechanised vehicles in a worksite(s).

### **11.2 Possession protection briefings**

The PC must hold briefings with those involved with setting up and protecting the possession, including the:

- POSM
- support staff
- engineer (electrical)
- engineer (signal)
- PWT-PW / TM / PWT-TM (if appropriate).

## 11.3 Safety briefings

The PC must give safety briefings before:

- implementing the possession protection method(s)
- implementing traction current arrangements
- placing the various blocks and markers
- taking the possession
- removing traction current arrangements
- removing the various markers and blocks
- removing the possession protection method(s)
- giving up the possession.

The PC must make sure the safety briefing contents include:

- limits of possession
- routes to and from the worksites
- places of safety
- emergency arrangements
- any other relevant safety information.

Depending on the complexity of the arrangements for protecting the possession, you might need to consider providing support staff with check lists.

If additional safety briefings are required they will be agreed at the possession planning meeting.

The PC must verify that the POSM and PWT-PW/SPC have the correct possession plan reference number, check they hold relevant and valid certification and licences, and confirm their respective locations and contact telephone numbers. The PC must hold a briefing with the POSM and PWT-PW/SPC to confirm the following:

- possession limits
- possession protection arrangements
- details of any engineer's trains or mechanised vehicle movements into and out of the possession, and details
- of additional protection procedures which will be used, if required
- details of when and where traction current will be switched off and on, and the traction current sections concerned (if required).

The PC will hold a briefing with the support staff undertaking the following possession protection tasks, the:

- placing of the protection block, possession limit markers and traction current gap markers
- securing of points
- safe movement of trains and mechanical vehicles
- implementation of special traction current arrangements and creation of short circuits
- checking of traction current
- maintaining of signals at danger.

The POSM is responsible for briefings up to the worksites.

## 12 Communication

All safety critical communication must be:

- accurate
- brief
- clear.



Always make sure that the message has been received and understood.

### 12.1 Giving and receiving messages

You must make sure:

- you are talking to the right person and that person knows who you are
- you lead and control the conversation, depending on who you are talking to
- the message is clear, accurate, and to the point
- you repeat back all safety related information or actions to be carried out
- you record details in the logbook or your notebook (where applicable).

### 12.2 Using numbers

When using numbers 10 and over in a message, you must say them one at a time.

For example, 'Train 123' must be spoken as 'Train one two three' not 'Train one hundred and twenty three'.

You must also say the number '0' as 'zero'.

When signals, points, train descriptions or locations have similar names or numbers (for example, signals A 114 and A 314 on adjacent lines), you must take great care not to cause confusion.

You do not need to quote numbers separately when you refer to time, for example, the time 13.17 hours should be stated as 'thirteen seventeen'.

### 12.3 Using communication equipment

You must:

- make sure your speech is clear, accurate and to the point
- use normal railway terms and phrases found in the rules and other instructions
- use the phonetic alphabet
- say numbers one at a time and not all together.

When using a radio or telephone, you must always:

- speak slightly slower than you would in normal conversation, but at the same volume
- try to avoid hesitation sounds (for example, 'umm', 'err') and slurring one word into another.

When using a radio or telephone, you must not:

- interrupt transmissions unless in an emergency
- use offensive language
- make unnecessary calls or transmissions
- use any radio within 15 metres of a suspect package.

## 12.4 Phonetic alphabet

When giving a message, you must use the phonetic alphabet to identify letters of the alphabet to spell words and place names that are difficult to pronounce. This is important to avoid misunderstanding.

A	Alpha			Q	Quebec
B	Bravo			R	Romeo
C	Charlie			S	Sierra
D	Delta			T	Tango
E	Echo	K	Kilo	U	Uniform
F	Foxtrot	L	Lima	V	Victor
G	Golf	M	Mike	W	Whiskey
H	Hotel	N	November	X	X-ray
I	India	O	Oscar	Y	Yankee
J	Juliet	P	Papa	Z	Zulu

For example, 'Angel' would be spelt out as 'Alpha, November, Golf, Echo, Lima'.

## 12.5 Documentation and records

The PC must record information in their log book for:

- key conversations
- times for key events.

All telephone conversations must be audio recorded for all possessions:

- involving special traction current arrangements
- train movements
- and retained for 28 days.

## I3 Setting up the possession

The PC must get permission from the TAC (if applicable), controller or DDM/MMO (whichever is appropriate) to take the possession and confirm:

- the method(s) of protection to be used
- when traction current must be switched off and from what traction current section(s), if required before the possession can be taken.

If permission is not given for any reason the PC must:

- not allow the possession to be taken
- immediately tell the MCP/EIC.

The PC must get written permission (a permit to work) from the DDM/MMO before taking a possession in any depot.

The PC does not have authority to take the possession until given permission by the controller or DDM/MMO. Once the PC has been given permission by the controller or DDM/MMO (whichever is applicable), the PC must ask the relevant signaller for permission to use the appropriate protection method(s).

When a possession starts in Engineering Hours the PC must book the traction current sections concerned with the TAC. Where a possession has started in Traffic Hours the PC must give the details when the TAC comes on duty.

For a possession continuing over several Engineering Hours shifts, the PC must contact the TAC at the start of each shift to confirm the published arrangements.

If a PC is relieving another PC at a change of shift, the PC coming on shift must give their details to the controller.

### 13.1 Getting traction current switched off

When the signaller has given permission, the PC must ask the controller to:

- switch off the traction current sections concerned
- confirm when this has been done.

When told by the controller that traction current has been switched off the PC must:

- arrange for the traction current sections concerned to be checked
- confirm that traction current has been switched off, using a CRID.



Where blocks and markers are being placed on a traction current section(s), the support staff placing the blocks and markers can do this.

If a traction current section has not been checked by support staff, the PC must:

- arrange for a competent person to do so before the worksite limit markers are placed
- get agreement with the POSM and confirm by who and when this will be done.

Special traction current arrangements or the creation of short circuits must not be carried out until the possession protection has been put in place.

## 13.2 Putting the possession protection in place

When the signaller has given the PC permission to implement the protection method and has received confirmation that traction current has been switched off from all traction current sections within the possession (as appropriate), the PC must tell the support staff or engineer (signal) (or both) to put the possession protection in place, and confirm when they have done this.

## 13.3 Implementing special traction current arrangements

When the controller has confirmed traction current has been switched off, the engineer (electrical) must carry out the special traction current arrangements using the approved method.

When the protection methods have been implemented, the PC must tell the engineer (electrical):

- the methods of protecting the possession are in place
- that any engineer's trains associated with the possession are in place
- to make any agreed additional traction current arrangements and short circuits.

At this point support staff can place SCD's at the locations agreed in the possession plan.



The PC must tell the TAC (if applicable) when SCD's and short circuits have been placed/created.

## 13.4 Placing possession and traction current markers

Before support staff place the protection block, possession limit and traction current gap markers the PC must tell them:

- to check traction current
- to place markers at the relevant locations

- any other information relating to placing the markers
- to tell the PC when this has been done.

 Support staff can be briefed on these arrangements as part of the possession protection briefing.

### 13.5 When the possession has been taken

The PC must tell the controller or DDM/MMO:

- method(s) of protection have been implemented
- traction current arrangements have been implemented
- all blocks and markers have been placed
- the possession has now been taken.

### 13.6 Defining worksite limits (if applicable)

The PC must tell the POSM:

- all blocks and markers have been placed
- traction current has been checked and confirmed as switched off
- worksite limits can now be defined.

The only time it is necessary for a limit to be staffed is when:

- it is being placed in position at the time the limit is being established
- the limit is being removed
- an engineer's train or vehicle is being passed through a limit with the appropriate authorisation.

 Any additional traction current sections that have not been checked, must be checked by the PSOM.

## 14 Engineer's trains entering a possession

An engineer's train can be passed into a possession where protection is being provided by maintaining a signal at danger, either:

- by passing the signal at danger and the train's trip cock being activated by the train stop and continuing under 'normal' rules,
- by isolating the train's trip cock and passing the signal at danger with additional mitigation, a second person in the cab to provide a second pair of eyes to assist in identifying the protection block (if not placed at the signal) or possession limit marker and stop the train if they consider the ETO will not stop the train in time.

### 14.1 Agreeing the details for an engineer's train to enter a possession

Before an engineer's train enters a possession, the PC must agree the timings and process for the passage of each engineer's train with the:

- controller
- DDM/MMO, (if required)
- POSM.

The PC must agree the point at which the responsibility for the movement of the engineer's train transfers between the PC and:

- controller or DDM/MMO, as appropriate
- POSM.

The following must be replaced immediately after the passage of the engineer's train:

- protection method
- protection block
- possession limit marker

- traction current gap marker
- worksite limit marker.

Where multiple engineer's trains are following at close intervals, from a 'stack' of engineer's trains outside the possession; it might not be practicable to replace the method, block and markers between each engineer's train.



In these circumstances a safe system of controlling the movement of the engineer's trains, into and through the possession, must be agreed at the possession planning meeting.

Before an engineer's train enters a possession, the PC must make sure that all personnel working within the possession, who will be affected, must:

- be told of the engineer's train movement
- move to a place of safety to let the engineer's train pass.

The POSM must make sure the ETO is aware of the arrangements for the engineer's train movement, after it has entered the possession.

## 14.2 Transfer of responsibility for the engineer's train

When the engineer's train arrives at the point at which the responsibility for its movement transfers from the controller or DDM/MMO to the PC, the PC must formally accept responsibility for the engineer's train.

The PC must make sure the ETO is aware of the:

- transfer of responsibility
- requirement to take instructions from the support staff responsible for the protection block, possession limit marker and traction current gap marker.

# 14 Engineer's trains entering a possession

The PC must tell the POSM the engineer's train has arrived at the protection block and gain authority for the engineer's train to enter the possession.

## 14.3 Getting permission for an engineer's train to enter a possession

The PC must get permission from the POSM to allow the engineer's train to enter the possession. When it is safe to do so and the necessary arrangements have been put in place, the POSM must tell the PC to allow the engineer's train to enter the possession.

## 14.4 An engineer's train entering the possession

Before an engineer's train enters the possession the PC must tell the support staff to:

- lift the protection block
- tell the ETO, not to move their train until shown a handsignal displaying a yellow aspect when they can move the train to the possession limit marker and await further instructions
- secure points in the correct direction of travel, if required
- remove the protection block marker
- show the ETO a handsignal displaying a yellow aspect
- wait for the engineer's train to pass the protection block
- replace the protection block, if required
- tell the PC the engineer's train has passed the protection block.

## 14.5 Transfer of responsibility for the engineer's train

The PC must tell the POSM, once they have received confirmation that the engineer's train has entered the possession. The POSM will take over the responsibility of the engineer's train and authorise all movements of the engineer's train within the possession from the possession limit marker(s) and worksite and between worksites.

When an engineer's train has stopped at the possession limit marker, the PC must ask the POSM for permission to allow the engineer's train to pass the possession limit marker. The POSM will tell support staff responsible for the possession limit marker to allow the engineer's train to pass the possession limit marker.

## 14.6 Passing the possession limit marker

Where the possession limit marker and traction current gap markers are placed side by side at the same location, the possession plan must cover the arrangements for an engineer's train passing both types of marker.

When the POSM has given permission for the engineer's train to pass the possession limit marker the support staff must:

- tell the ETO, not to move their train until shown a handsignal displaying a yellow aspect when they can move the train to the traction current gap marker and await further instructions
- secure and unsecure points, if required
- remove the possession limit marker.

When the possession limit marker has been lifted, the support staff must:

- show the ETO a handsignal displaying a yellow aspect
- wait for the engineer's train to proceed past the possession limit marker
- replace the possession limit marker
- tell the POSM that the engineer's train has passed the possession limit marker.

## 14.7 Passing the traction current gap marker

When the ETO confirms that they are ready to pass the traction current gap marker the support staff must:

- tell the ETO, not to move the train until shown a handsignal displaying a yellow aspect and then to move the train to the worksite limit marker and await further instructions
- secure and unsecure points (if required).

Once the traction current gap marker has been lifted, the support staff must:

- remove the traction current gap marker
- show the ETO a handsignal displaying a yellow aspect
- wait for the engineer's train to pass over the traction current gap marker
- replace the traction current gap marker
- tell the POSM the engineer's train has passed the traction current gap marker.

## 14.8 Passing into the worksite

The POSM will arrange for the engineer's train to be passed into the worksite, after liaising with the PWT-PW/SPC.

## 14.9 Engineer's trains working within a possession with traction current on

If an engineer's train has to work within a possession and traction current is to remain switched on, the PC must arrange to assemble the support staff for a safety briefing to tell them:

- the working limits
- details of additional protection procedures that will be used
- details of when and where traction current will be switched off and on.

## 15 Engineer's trains leaving the possession

When an engineer's train is leaving a possession, the PC and POSM must both agree:

- the timings and process for the passage of each engineer's train
- the point at which the responsibility for the movement of the engineer's train transfers from the POSM to the PC
- when the engineer's train can leave the worksite.

Responsibility for the movement of the engineer's train will transfer between the POSM and the PC at the possession limit marker.

When an engineer's train is ready to leave the possession the POSM must tell the support staff responsible for worksite, traction current gap and possession limit markers, that an engineer's train will be leaving the possession and to be ready to lift their markers when the POSM tells them.

### 15.1 Passing the traction current gap marker

When the ETO is ready to pass the traction current gap marker, support staff must tell the ETO:

- not to move the train until shown a handsignal displaying a yellow aspect, it can then be moved to the possession limit marker
- to await further instructions, on arrival at the possession limit marker.

Support staff must also:

- secure and unsecure points (if required)
- remove the traction current gap marker.

When the traction current gap marker has been lifted, the support staff must:

- show the ETO a handsignal displaying a yellow aspect

# 15 Engineer's trains leaving the possession

- wait for the engineer's train to pass over the traction current gap marker
- replace the traction current gap marker
- tell the POSM the engineer's train has passed the traction current gap marker.

## 15.2 Transfer of responsibility for the engineer's train

Once the engineer's train has reached the possession limit marker, the POSM must transfer the responsibility for movement of the engineer's train to the PC. The POSM must also make sure the ETO is aware of the transfer of responsibility and to take instructions from support staff responsible for the possession limit marker.

The following must be replaced immediately after the passage of the engineer's train:

- possession limit marker
- traction current gap marker
- worksite limit marker.

Where multiple engineer's trains are following at close intervals from outside the possession; it might not be practicable to replace the protection block and markers between each engineer's train.



In these circumstances a safe system of controlling the movement of the engineer's trains, into and through the possession, must be agreed at the possession planning meeting.

The PC must not allow an engineer's train to leave the possession without the permission of the controller.

## 15.3 Getting permission for the engineer's train to leave the possession

When responsibility for the movement of the engineer's train has passed from the POSM to the PC, the PC must:

- tell the controller the engineer's train is ready to leave the possession
- agree the location where the responsibility for the movement of the engineer's train transfers from the PC to the controller
- receive permission from the controller for the engineer's train to leave the possession when the signaller gives authority.

The controller must tell the signaller that:

- they have given permission for an engineer's train to leave the possession
- the PC will contact you when the engineer's train is ready to leave the possession and enter the operational railway.

The controller must tell the PC, to:

- let the engineer's train(s) out of the possession where appropriate
- contact the signaller when the engineer's train is ready to leave the possession.

When it is safe to do so and the necessary arrangements have been put in place, the signaller must tell the PC that the engineer's train(s) can leave the possession and go on to the operational railway.

When the signaller has given authority, the PC must tell the support staff responsible for the possession limit marker to allow the engineer's train(s) to pass and leave the possession.

# 15 Engineer's trains leaving the possession

Where multiple engineer's trains are following at close intervals from outside the possession; it might not be practicable to replace the protection block and markers between each engineer's train.



In these circumstances a safe system of controlling the movement of the engineer's trains, into and through the possession, must be agreed at the possession planning meeting.

The PC must tell the support staff to:

- tell the ETO(s) not to move their train until shown a handsignal displaying a yellow aspect
- remove the possession limit marker.

When the possession limit marker has been lifted, to:

- show the ETO a handsignal displaying a yellow aspect
- wait for the engineer's train(s) to proceed past the possession limit marker
- replace the possession limit marker
- tell the PC that the engineer's train(s) has passed the possession limit marker.

## 15.4 When the engineer's train has left the possession

When the PC has received confirmation that the engineer's train has passed the possession limit marker and that the possession limit marker has been replaced, (if required), they must:

- tell the controller that the engineer's train has left the possession.
- transfer responsibility for the movement of the engineer's train to the controller
- arrange for the ETO to be told that responsibility for movement has transferred to the controller and to follow instructions for movement from the signaller.

## 15.5 An engineer's train being passed between a possession and an adjacent specified area

If an engineer's train is being passed between a possession and an adjacent specified area, the PC must:

- make sure there are relevant support staff assigned to the engineer's train
- make sure personnel on the track are protected as appropriate
- authorise the engineer's train to enter or leave the possession from or into the adjacent specified area.

If traction current is switched on within the possession, support staff assigned to the engineer's train must get confirmation from the ETO that the isolation arrangements on the engineer's train have been carried out, before allowing it to cross from, or into the specified area.

## 15.6 Mechanised vehicles entering or leaving a possession

Mechanised vehicles that do not conform to the definition of a train can only enter or leave a possession:

- by means of a level access adjacent on or off-tracking site
- by being lifted in from, or off from an adjacent location
- from or into an adjacent specified area
- by other means not involving movement on the operational railway.

## 15.7 A mechanised vehicle being passed between a possession and an adjacent specified area

If a mechanised vehicle is being passed between a possession and an adjacent specified area, the PC must:

- make sure there are relevant support staff assigned to the mechanised vehicle
- make sure personnel on the track are protected as appropriate
- authorise the mechanised vehicle to enter or leave the possession from or into the adjacent specified area.

If a mechanised vehicle can operate on traction current which is switched on within the possession and support staff are assigned to the mechanised vehicle, they must get confirmation from the mechanised vehicle operator that the isolation arrangements on the mechanised vehicle have been carried out, before allowing it to cross from, or into the specified area.

## 15.8 Mechanised vehicle on-tracking into a possession

Arrangements for allowing mechanised vehicles to on or off-track into or out of a possession must be covered in the possession plan.

## 16 Planned or emergency work within a possession

Before planned or emergency work it to take place between the possession limit markers, the PC must agree with:

- the requestor
- POSM
- MCP/EIC.

The work must be carried out within a defined worksite and under the control of a PWT-PW/SPC, who must keep the POSM informed at all times.

If planned work specified in the possession plan or emergency work is to take place between the protection block and possession limit marker, the PC must agree in advance of the work commencing with the requestor, TAC (in Engineering Hours) or controller (in Traffic Hours) and the MCP/EIC that work can commence.

## **I7 Failure to finish work or possession on time**

If the work cannot be finished within the planned time, the POSM must, at the earliest opportunity, tell:

- the PC
- MCP/EIC
- other PWT-PW/SPC.

The POSM must follow the procedures detailed in the possession plan. If circumstances have changed, and it is not possible to implement the procedures in the possession plan, the POSM must immediately tell the MCP/EIC.

The POSM must give details of which worksite cannot finish the work within the planned time and the revised completion time.

As soon as the PC is informed of work not being able to be finished at the planned time, the PC must tell the:

- controller or DDM/MMO
- TAC
- service manager and duty operations engineer.

## 18 Giving up the worksites

The POSM must instruct the appropriate staff to remove any protection for the worksites when they have received confirmation from the PWT-PW/SPC for each worksite that:

- the work has finished
- the assets are safe to use
- uncertificated staff are clear of the track, and
- any certificated staff remaining on site are suitably protected.

The POSM will immediately tell the PC and MCP/EIC if any asset within a worksite has a restriction of use as a result of work undertaken during the possession.

When the POSM has received confirmation that the worksite protection has been removed, that each worksite is clear of staff and it is safe for trains to run, you must tell the PC and MCP/EIC that worksite protection has been given up and that it is safe for trains to run.

## 19 Starting the process of giving up the possession

Once the PC has received confirmation from the POSM, the PC must tell the TAC and gain authority from the controller or DDM/MMO to start the process of giving up the possession.



The PC must tell the controller or DDM/MMO (or both) immediately if any asset within a worksite has a restriction of use as a result of work undertaken during the possession.

### 19.1 Removing the protection block, possession limit and traction current gap markers

The PC must tell support staff to:

- remove the possession limit and traction current markers at the relevant locations
- remove the protection block, but not the method
- any other information relating to removing the markers
- tell the PC when this has been done.

### 19.2 Removing special traction current arrangements

Before the special traction current arrangements are removed the PC must make sure all tools, materials, plant and equipment are removed from the track.

When removing special traction current arrangements, (that is closing section switches), that will result in a traction current section being fully or partially liveened up, or having to be switched on before the possession is given up, the PC must confirm with the POSM that personnel within any affected possession worksite are:

- warned of this

- if remaining on the track are suitably certificated and protected.

If the affected area is outside of a worksite, the PC must make sure that the support staff are made aware that traction current will be on when they remove blocks, markers and the protection method.

When confirmation is received or all staff have been warned the PC must tell the engineer (electrical) to:

- remove the special traction current arrangements
- tell the PC when this has been done.

If the TAC is on duty, the PC must pass this information to them when giving up the possession.

### 19.3 Removing the short circuit

The short circuit and SCD's must be removed before the protection is given up, and before traction current is switched back on to the traction current section(s) concerned.

### 19.4 Giving up the possession

When all the possession protection and markers have been removed but before traction current is switched on, the PC must tell the controller or DDM/MMO that:

- all worksite markers and protection have been removed
- all possession markers and protection have been removed
- all staff and equipment are clear of the track
- the track is clear and it is safe to run trains
- traction current can be switched on to the traction current sections concerned (if required)
- they are giving up the possession.

The PC must wait for confirmation from the controller or DDM/MMO that traction current has been switched on to the traction current sections concerned (if required).

### 20 References

Rule Book 1 Communications

Rule Book 3 Traction current and high voltage supply

Rule Book 14 Possessions planning and management

Rule Book 15 Possessions protection methods

Rule Book 16 Going on the track in Engineering Hours

Rule Book 18 Engineer's trains, vehicles' and trolleys

Rule Book 20 Engineering staff – Traffic Hours protection

Rule Book 21 Personal safety on the track

Electricity at Work Regulations 1989

## Notes

