

general

# Network communication

## General

To prescribe the rules for spoken and written communication in the Network.

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## Principle

Communication in the Network must be:

- clear, brief and unambiguous
- relevant to the task at hand
- agreed to its meaning before being acted upon.

Safeworking communication must use:

- the 24-hour clock to give the time of day
- the phonetic alphabet and spoken numbers to identify:
  - train numbers and track vehicle numbers
  - signal numbers.

Communication equipment used for rail traffic operation or work on track must be tested and checked for its intended operation.

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## Network communication

### Confirmation of communication

The receiver must confirm the content of a message by repeating the message back to the sender, if the communication is about:

- a Condition Affecting the Network (CAN)
- a Proceed Authority
- an instruction not to proceed
- a work on track authority
- a work on track method
- work on track Train Running Information
- Special working.

As far as practicable once commenced, communication must be completed without interruption.

If communication is interrupted, the sender must restart the communication from the beginning, repeating items already sent.

The receiver must not act on the communication until the sender confirms that the message has been repeated correctly.

### Relaying communications

If it is not possible for a sender to communicate directly with an intended receiver, Qualified Workers may relay the content.

The content of a communication must be relayed exactly as received.

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## Network communication

### Emergency communication

Emergency communications must be:

- given priority
- answered immediately.

If there is an emergency message on an open-channel radio, other users of the channel must stop transmission immediately.

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### Spoken communication

Open-channel communication must use the standard terms and protocols in this Rule and in *NPR 721 Spoken and written communication*.

If not sure whether communication equipment is discrete channel, Qualified Workers must use open-channel communication protocols.

Spoken communication must be promptly acknowledged.



#### **WARNING**

Qualified Workers must not assume that a receiver has understood a message before the receiver confirms that the message has been understood.

If the meaning of a spoken communication is not understood:

- the receiver must ask that it be repeated, or
- if necessary, the sender and the receiver must use the phonetic alphabet and spoken numbers to clarify and confirm the message.

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## Network communication

The receiver must try again as soon as practicable, or arrange alternative means to communicate with the sender, if:

- the receiver cannot understand the message, or
- the sender cannot hear or understand the reply.

### Recording spoken communications

If spoken communication recording equipment is provided, it must be used to record Network communications.

The recordings must be kept for at least 28 days.

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### Spoken communication protocols

Senders and receivers of communications must start the communication with identification of the receiver first, and the sender second.

Communications from an attended location must include the sender's name and location.

Communications from train or track vehicle must include the sender's train number or track vehicle number.

Communications from a worksite must include the sender's:

- name
- Safeworking designation
- location.

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## Network communication

### Open-channel radio communication

Unless the use of 450.050MHz train radios has been advertised in a Weekly Notice as prohibited at that location, they may be used for shunting in yards.

Qualified Workers using open-channel radios must:

- except in an emergency, check that the channel is not already in use before starting a transmission
  - if a reply is expected, use the term "Over" to end each statement
  - use the term "Out" to end each transmission.
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### Written Safeworking communication

Qualified Workers compiling Network Forms, authorities and records must:

- record numbers in numerals, not words, for example using "12" instead of "twelve"
- use only authorised abbreviations, and
- unless completing an electronic form:
  - write clearly in ink
  - draw a single line through errors, and if required print the corrections above them
  - initial corrections in the margin beside the correction.

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## Network communication

If Network Forms include items that have a numbered box before them, Qualified Workers must:

- tick the numbered box  if it applies, and complete the item, or
- place a cross in the numbered box  if the item does not apply.

Qualified Workers must complete all other items on the form.

Unless otherwise specified, Network Forms and records must be kept for at least 90 days.

### Network Procedures

*NPR 721 Spoken and written communication*

### Effective date

29 September 2019

work on track

# Planning work in the Rail Corridor

## Purpose

To prescribe the rules for planning work within the Rail Corridor and assessing the work for safety.

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## General

Work planned for the Rail Corridor must be assessed for safety and its potential to intrude on the Danger Zone.

Work in the Danger Zone must:

- be carried out in accordance with the Network Rules and Network Procedures
- not begin until the required safety measures are in place.

The level of safety must not be reduced:

- to allow rail traffic movements, or
- because of a lack of Qualified Workers.

Unless constantly in a safe place on a platform or in other premises, workers in the Rail Corridor must wear approved high-visibility clothing.

Effective communication with Signallers, Possession Protection Officer and Protection Officers must be maintained.

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### NOTE

To create a safe place using stationary rail traffic, an assurance that the rail traffic will not be moved must be obtained in person from the Driver or Track Vehicle Operator.

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## Planning work in the Rail Corridor

### Protection Officer

Work within the Danger Zone must have a Protection Officer while work is being performed.

A Protection Officer is responsible for managing worksite protection. A Protection Officer's primary duty and responsibility is to keep the worksite and workers safe.

The Protection Officer must be satisfied that other work will not interfere with their primary duty.

The Protection Officer must:

- make a safety assessment
  - be the only person to brief workers about worksite protection and safety measures:
    - before work begins
    - if protection and safety measures change
    - before additional workers join the worksite.
  - make sure that the rail safety component of the work is done safely
  - keep records about the methods used for working safely on track and protection arrangements
  - communicate with the Signaller about the work.
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## Planning work in the Rail Corridor

### Assessing safety

When making a safety assessment, Protection Officers must consider, amongst other factors, if:

- the work will affect track under the control of different Signallers or Access Providers
- appropriate numbers of Qualified Workers will be available to protect the work
- easily-reached safe places will be available for workers
- the sighting distance and speed of approaching rail traffic allow sufficient warning time to be given by Lookouts
- it is possible to close the affected line during the work
- there will be rail traffic on lines next to, near to or close to the work on track
- rail traffic will travel in both directions on a unidirectional line next to, near to or close to the work on track
- there will be rail traffic between or within worksites
- rail traffic next to, near to or close to the work on track could pose a risk to workers and equipment
- safety measures are required to protect workers from the risk of rail traffic on lines next to, near or close to the work on track
- signals are available to protect worksites
- other work on track will affect the worksites
- there is safe access to and from worksites
- there is public access to the Rail Corridor
- road traffic could pose a risk to workers and equipment
- the work will affect or intrude on level crossings

work on track

## Planning work in the Rail Corridor

- the line is electrified
- the line is track-circuited
- the formation of the line and the location will affect the work
- effective communication will be available
- equipment used in the work will intrude into the Danger Zone
- other groups need to be told about or involved in the work
- the level of noise at the worksite will affect safety.

The Protection Officer must reassess safety measures if conditions such as visibility or work locations change.

### Multiple Access Providers

If the planned work will affect track under the control of more than one Access Provider, the Protection Officer must get authority for the work as required by each Access Provider.



#### **NOTE**

Protection Officers must be aware of the protection arrangements required for adjoining networks.

Where necessary, Qualified Workers must be qualified in the adjoining network's Network Rules and Network Procedures.

## Planning work in the Rail Corridor

### Level crossings

If work on track at level crossings will intrude on level crossings or affect their operation, the Protection Officer must arrange to ensure the safety of:

- workers
  - road, pedestrian and rail traffic.
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### Working in Maintenance Centres and stabling yards

Within a Maintenance Centre or in sidings within a stabling yard the Protection Officer may arrange to protect a worksite:

- using a work on track authority, or
- using work on track method, or
- by contacting the persons responsible for allowing rail traffic entry into the affected portion of track.

If a work on track authority or work on track method is not available, the Protection Officer must arrange for:

- blocking facilities to be applied to prevent rail traffic entry into the worksite, or
- points to be clipped and locked to prevent rail traffic entry into the worksite.

Before work begins, stationary rail traffic within the affected portion of track must be prevented from moving.



#### **WARNING**

The persons responsible for allowing rail traffic entry into the affected portion of track must tell affected workers about the location of the worksite.

## Planning work in the Rail Corridor

### Work in the Danger Zone

Work in the Danger Zone may be carried out by using one of the following work on track authorities:

- Local Possession Authority (LPA), as described in *NWT 302 Local Possession Authority*
- Track Occupancy Authority (TOA), as described in *NWT 304 Track Occupancy Authority*
- Track Work Authority (TWA), as described in *NWT 306 Track Work Authority*

or, by using one of the following work on track methods:

- Absolute Signal Blocking (ASB), as described in *NWT 308 Absolute Signal Blocking*
- Lookout Working, as described in *NWT 310 Lookout Working*
- Signal Key Switch (SKS) Blocking, as described in *NWT 320 Signal Key Switch Blocking*.

The preferred worksite protection arrangements for working on track are:

- Local Possession Authorities
- Track Occupancy Authorities.



#### NOTE

Each work on track authority and work on track method has mandatory minimum safety measures. Additional safety measures may be applied.

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# Planning work in the Rail Corridor

## Network Procedures

- NPR 700 Using a Local Possession Authority*
- NPR 701 Using a Track Occupancy Authority*
- NPR 702 Using a Track Work Authority*
- NPR 703 Using Absolute Signal Blocking*
- NPR 704 Using Infrastructure Booking Authorities*
- NPR 705 Removing 1500V supply*
- NPR 706 Removing 1500V supply in Electric Vehicle Maintenance Centres*
- NPR 707 Clipping points*
- NPR 708 Using X, Y and Z keys*
- NPR 709 Using railway track signals*
- NPR 710 Piloting rail traffic*
- NPR 711 Using Lookouts*
- NPR 712 Protecting work from rail traffic on adjacent lines*
- NPR 713 Placing temporary speed signs*
- NPR 714 Removing 1500V supply in unplanned situations*
- NPR 753 Using Signal Key Switch Blocking***
- NPR 754 Using a signal key switch***

## Effective date

29 September 2019

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# Local Possession Authority

## Purpose

To prescribe the rules for authorising, issuing and using a Local Possession Authority (LPA).

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## General

An LPA authorises the closure of a defined portion of track for a specified period.

An LPA gives exclusive occupancy for the defined portion of track.

An LPA is issued exclusively to the Possession Protection Officer.

The Possession Protection Officer and Protection Officers must make safety assessments as described in *NWT 300 Planning work in the Rail Corridor*.

A number of separate worksites and their associated rail traffic and equipment may occupy the portion of track defined by an LPA.

Work within the portion of track included in the LPA limits must be done only with the agreement of the Possession Protection Officer.

Unless advertised in the *Network Local Appendix* the intention to take an LPA must be advertised in a *Special Train Notice* at least 7 days in advance.

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## Local Possession Authority

### Authorisation

Only Network Controllers may authorise an LPA for track under their control.

If the proposed limits of an LPA affect more than one Network Controller, the affected Network Controllers must agree on who will be the Coordinating Network Controller. The Coordinating Network Controller must authorise the LPA.

The Network Controller must make sure that Signallers responsible for the affected area, and the Possession Protection Officer, are aware of the protection arrangements.

The Network Controller must record, in permanent form, the details of an LPA before authorising the possession.

A form is not required.

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### Issue of an LPA

Only Network Controllers may issue an LPA.

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### Possession Protection Officer

At all times, there must be a nominated Possession Protection Officer for the LPA.

Arrangements for a Track Work Authority (TWA) or Track Occupancy Authority (TOA) to adjoin an LPA must be agreed to by the Possession Protection Officer.

## Local Possession Authority

The Possession Protection Officer must:

- get the LPA
  - be responsible for the protection of workers from rail traffic
  - make sure that the LPA is protected against the entry and exit of unauthorised rail traffic
  - manage the establishment of worksites and coordinated worksites
  - make sure that each worksite under the LPA has a Protection Officer while work is being performed
  - make sure that each coordinated worksite under the LPA has a Coordinating Protection Officer while work is being performed
  - establish effective communication with Protection Officers and Coordinating Protection Officers
  - make sure that Protection Officers and Coordinating Protection Officers keep the tracks between worksites and protecting locations clear of obstructions
  - coordinate the protection of all worksites within the LPA limits
  - make sure that work in the Danger Zone does not begin before the required safety measures are in place
  - coordinate the movement of rail traffic within the LPA.
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## Local Possession Authority

### Protection Officer

If the LPA includes more than one worksite, a Protection Officer must be on duty at each worksite when work is being done.

Each Protection Officer:

- must have effective communication with the Possession Protection Officer
  - must comply with the Possession Protection Officer's instructions
  - is responsible for the protection of workers at the worksite from rail traffic
  - must make sure that tracks between the worksite and protecting locations remain unobstructed
  - if their worksite is within a coordinated worksite:
    - have effective communication with the Coordinating Protection Officer
    - comply with the Coordinating Protection Officer's instructions
  - must be the only person to brief workers about worksite protection and safety measures:
    - before work begins
    - if the protection arrangements change
    - before additional workers join the worksite.
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## Local Possession Authority

### Coordinating Protection Officer

At all times, there must be a nominated Coordinating Protection Officer for the coordinated worksite.

Each Coordinating Protection Officer must:

- comply with the Possession Protection Officer's instructions
- make sure that each worksite within the coordinated worksite has a Protection Officer while work is being done
- have effective communication with Protection Officers
- coordinate the movement of rail traffic within the coordinated worksite
- tell the Possession Protection Officer about changes within the coordinated worksite, and arrange for:
  - the removal or placement of worksite delineation markers
  - railway track signals and worksite protection markers placed between 500m and 1000m from the outermost worksites.
- be the only person to brief Protection Officers in the coordinated worksite about worksite protection and safety measures:
  - before work begins
  - if the protection arrangements change
  - before worksites join or leave the coordinated worksite.

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## Local Possession Authority

### Protecting the LPA limits

Signallers must apply blocking facilities to prevent unauthorised rail traffic:

- from entering the LPA
- where available, from exiting the LPA

Railway track signals and possession limit markers must be placed at the LPA limits or 2500m from the outermost worksite if this is more practicable.

Possession limit markers must include the contact details of the Possession Protection Officer.

### Extending the limits of an LPA

The limits of an LPA may be extended:

- if provision to extend the LPA limits has been advertised in the associated *Special Train Notice*
- as agreed between the Possession Protection Officer and the Network Controller.



### WARNING

LPA limits must not be extended to a location where blocking facilities cannot be applied.

### Intermediate access points

The Possession Protection Officer must make sure that intermediate access points are clipped and locked to prevent unauthorised rail traffic from entering and exiting the LPA.

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## Local Possession Authority

### Half-staff

If practicable, the Possession Protection Officer must arrange for signals at the limits of the LPA to be set at **STOP** by taking one or more half-staffs and securing them for the period of the LPA.

The Signaller must record, in permanent form, details about half-staffs that have been secured.

### Terminal lines and balloon loops

If the Signaller tells the Possession Protection Officer that there is no planned rail traffic movement between the worksites and the end of a terminal line or balloon loop, railway track signals and possession limit markers are not required from that direction.

## Protecting worksites

Unless otherwise specified in this Rule, worksites must have three railway track signals and a worksite protection marker placed between 500m and 1000m from each end.

Worksite protection markers must include the contact details of the Protection Officer.

If there is only one worksite within an LPA, it may be protected by the protection at the LPA limits.



### NOTE

Worksite protection markers are not required for worksites where Lookout Working is used as the safety measure for the work.

## Local Possession Authority

### Worksites within 500m of an LPA limit

If there is a worksite within 500m of an LPA limit, it must be protected by:

- the protection at the LPA limit
- a worksite protection marker placed adjacent to the possession limit marker.

Where a fixed signal can provide access to an LPA limit, a worksite must only be established within 500m of the limit if:

- Lookout working is established in accordance with *NWT 310 Lookout Working*, or
- a set of points has been clipped and locked to prevent access to the LPA limit, or
- a TWA or TOA has been authorised to prevent rail traffic from approaching the LPA limit for the period of the work.



### WARNING

Worksites with associated rail traffic must not be established within 500m of an LPA limit unless a TOA adjoining the LPA limit has been authorised.

## Local Possession Authority

### Multiple worksites

Worksites less than 500m apart may be protected and managed as a single worksite.

If worksites are between 500m and 1000m apart:

- three railway track signals must be placed midway between the worksites
- a worksite protection marker must be placed next to the middle railway track signals.

### Coordinated worksites

Worksites less than 500m apart that cannot be managed as a single worksite, may be protected and managed as a coordinated worksite.

A coordinated worksite must have:

- approved worksite delineation markers placed midway between worksites
- railway track signals and worksite protection markers placed between 500m and 1000m from the outermost worksites.

Worksite delineation markers must include the contact details of Protection Officers.

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## Local Possession Authority

### Lookout Working

If a safety assessment shows that it is safe, Lookout Working may be used as a safety measure within the limits of an LPA for work:

- not requiring tools, or
- using tools which can be easily and immediately removed from the track by one person and are:
  - light, non-powered hand tools
  - light, battery powered tools or devices.

Lookout Working must be implemented in accordance with *NWT 310 Lookout Working*.



#### WARNING

Work on the overhead wiring, or work that breaks the track or alters track geometry or structure must not be done using Lookout Working as the only safety measure.

### Rail traffic

Only rail traffic associated with an LPA may enter the LPA limits.

Other rail traffic may cross the LPA to enter or exit a balloon loop or siding, but only with the Possession Protection Officer's agreement.

The Possession Protection Officer or delegate must manage all rail traffic movement within the LPA.

## Local Possession Authority

### Adjacent lines

If the safety assessment indicates that the work needs to be protected from rail traffic on adjacent lines, the Possession Protection Officer must arrange for Coordinating Protection Officers and Protection Officers to implement safety measures in accordance with *NPR 712 Protecting work from rail traffic on adjacent lines*.

The Coordinating Protection Officers and Protection Officers may arrange for the speed of rail traffic on adjacent lines to be restricted.

### Piloting

The Possession Protection Officer or a delegate must act as the Pilot.

### Entering and travelling within LPA limits

Rail traffic that is associated with the LPA must be piloted when entering or travelling within the LPA limits:

- from the controlled absolute signal protecting the LPA limits, or
- if there are no controlled absolute signals, from the entry to the section.

### Departing the LPA limits

Rail traffic must depart from the LPA limits only on the Signaller's authority.

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## Local Possession Authority

### Liaison

The Possession Protection Officer must be the only point of contact between Signallers and work groups for matters of worksite protection.

The Possession Protection Officer must:

- tell affected Signallers about the protection arrangements at the LPA limits
- tell affected Signallers about protection arrangements on the lines adjacent to the LPA
- tell affected Signallers about work progress
- if necessary, seek an extension of time
- arrange for the movement of rail traffic associated with the LPA.

### Change of Possession Protection Officer

An outgoing Possession Protection Officer must tell an incoming Possession Protection Officer about the LPA and worksite protection arrangements.

The incoming Possession Protection Officer must:

- tell affected Signallers about the changed contact details
  - make a permanent record of the handover of the LPA.
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## Local Possession Authority

### Fulfilling the LPA

An LPA may be:

- fulfilled for the entire portion of track included in the LPA, or
- fulfilled progressively for one or more advertised track possessions included in the LPA.

An LPA may be fulfilled only when the Possession Protection Officer:

- arranges for work to continue under another work on track authority or work on track method, or
- tells the Network Controller that:
  - the worksite has been cleared
  - protection has been removed
  - half-staffs have been returned
  - the portion of track included in the LPA has been certified as available for use.

The Possession Protection Officer must tell affected Signallers about operating restrictions that have been placed or removed.

If arrangements have been made to continue work under another work on track authority, the Possession Protection Officer must make sure that the protection for the LPA is not removed until the new work on track authority is issued and the required protection is in place.



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## Local Possession Authority

### Keeping records

Network Controllers and Signallers must record the LPA details in permanent form.

The Possession Protection Officers, Coordinating Protection Officers and Protection Officer must record, in permanent form:

- the LPA details
- protection arrangements for worksites
- any communication details about:
  - current protection arrangements
  - changes to the protection arrangements.

### Network Procedures

<i>NPR 700</i>	<i>Using a Local Possession Authority</i>
<i>NPR 701</i>	<i>Using a Track Occupancy Authority</i>
<i>NPR 702</i>	<i>Using a Track Work Authority</i>
<i>NPR 707</i>	<i>Clipping points</i>
<i>NPR 709</i>	<i>Using railway track signals</i>
<i>NPR 710</i>	<i>Piloting rail traffic</i>
<i>NPR 712</i>	<i>Protecting work from rail traffic on adjacent lines</i>

### Effective date

29 September 2019

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# Track Work Authority

## Purpose

To prescribe the rules for authorising, issuing and using a Track Work Authority (TWA).

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## General

A TWA:

- authorises occupancy of a defined portion of track between rail traffic movements
- does not give exclusive occupancy of the defined portion of track
- is requested by and issued to the Protection Officer
- may include multiple worksites
- allows work that breaks or obstructs the track or alters track geometry or structure.

Drivers and Track Vehicle Operators must follow instructions given by Handsignallers and the Protection Officer.

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## Authorisation

Only Network Controllers may authorise a TWA for track under their control.

A TWA must not be authorised if there is approaching rail traffic between the protection and the identified worksite.

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## Track Work Authority

### Joint occupancy with a Track Occupancy Authority (TOA)

Where there is a TOA for a track vehicle journey, the Network Controller may authorise a TWA:

- after the Protection Officers have consulted with each other
- with the agreement of the TOA Protection Officer.

Prior to the issue of a TOA for a wrong running-direction track vehicle journey, the TWA Protection Officer must place three railway track signals at least 500m, and no more than 1000m, from the worksite for the expected wrong running-direction movement.

### Issue of a TWA

The Signaller must get the Network Controller's authority to issue the TWA.

A TWA is a spoken authority, a form is not required.

### Rail traffic

Protection Officers must manage rail traffic approach to, and passage through, the TWA.

Before allowing workers to re-enter the Danger Zone, Protection Officers must make sure that the protection has been replaced.

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## Track Work Authority

### Protection Officer

At all times there must be a nominated Protection Officer for a TWA.

The Protection Officer must:

- get the TWA
- be the only person to speak to the Signaller about protection arrangements
- protect workers from rail traffic
- make sure that worksites are protected against the unauthorised entry of rail traffic
- be the only person to tell workers about:
  - the locations of safe places
  - the safety measures in place
  - the extent of the area protected
  - changes to protection arrangements.
- make sure that the protection is in place before work starts.

When requesting a TWA, the Protection Officer must identify the line and define the worksite location as being between:

- two signals, or
- a signal and a set of points, or
- a signal and the end of a terminal line, or
- a set of points and the end of a terminal line.

Signals and points must be identified by their numbers.

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## Track Work Authority

### Protecting worksites

The Danger Zone must not be occupied before the TWA has been issued and protection is in place.

Where possible, Protection Officers must protect worksites by placing railway track signals and Handsignallers at signals protecting the worksite.

Where there are no protecting signals, Protection Officers must place Handsignallers and railway track signals at the TWA limits.

Effective communication must be maintained between the Protection Officer and:

- the Signaller
- outer and inner Handsignallers
- if provided, clearance Handsignallers.

Protection Officers must make sure that all points of entry into worksites are protected against unauthorised rail traffic.

The Protection Officer, in agreement with the Signaller, may reduce the number of points of entry to a worksite by making sure points are clipped and locked to exclude rail traffic.

The Protection Officer must make sure that worksites are protected against unauthorised rail traffic entry before restoring the points for use.

Where the protection arrangements of adjoining TWA worksites would overlap, the worksites must be managed as multiple worksites under a single TWA.

## Track Work Authority

### Protecting worksites by setting signals at STOP

A worksite may be protected by setting signals at **STOP** on the approach side of the worksite.

At locations where controlled absolute signals are available, these signals must be used to protect the worksite.

Controlled absolute signals must be:

- set and kept at **STOP** with blocking facilities applied
- cleared only if it is safe to allow rail traffic to pass through the worksite.

Automatic signals may be used to protect the worksite if:

- the signals are booked out of use for the duration of the TWA by a Maintenance Representative, or
- the signals are fitted with a signal key switch and can be operated to protect the TWA.

In remotely controlled locations where signals or routes cannot be remotely blocked, a Qualified Worker must cut-in the local control panel to set and keep signals at **STOP** for the duration of the work.

To use signals to protect worksites, Protection Officers must use one of the following methods:

1. If there are two controlled absolute signals within 500m before the worksite, an inner Handsignaller must be placed at the first signal reached by approaching rail traffic. An outer Handsignaller is not necessary.
2. If a signal between 500m and 1000m before the worksite can be set at **STOP**, an inner Handsignaller must be placed at that signal. An outer Handsignaller is not necessary.



## Track Work Authority

3. If there are no signals within 1000m before a worksite:
  - an inner Handsignaller must be placed between 500m and 1000m before the worksite
  - an outer Handsignaller must be placed at a signal that can be set at **STOP**, within a further 2500m from the inner Handsignaller.

The distance between the outer and inner Handsignallers must not be greater than 2500m.

If the distance between the outer and inner Handsignallers is less than 2500m, the outer Handsignaller or the Protection Officer must warn Drivers and Track Vehicle Operators about the reduced distance to the inner Handsignaller.

### Protecting with Handsignallers only

An inner Handsignaller must be placed at least 500m, and not more than 1000m, from the worksite in the direction of approaching rail traffic.

An outer Handsignaller must be placed 2500m from the inner Handsignaller in the direction of approaching rail traffic.

### Worksite Warning

If a platform is located between the inner and outer Handsignallers, a **WORKSITE** warning sign must be placed beyond the departure end of the last platform before the inner Handsignaller.

### Affected signals

If signals will display **STOP** because they are affected by work on track, the Protection Officer must:

- tell Signallers about the affected signals before starting work
- place Handsignallers at the affected signals.

## Track Work Authority

Once rail traffic has stopped at an affected automatic signal, Handsignallers must follow the Protection Officer's instructions about allowing rail traffic to proceed, and at what speed.

The Protection Officer must direct Handsignallers at affected controlled absolute signals to get the Signaller's authority to allow rail traffic to pass the signal at **STOP**.

### **Protecting signals that cannot be cleared**

A clearance Handsignaller must be placed beyond the worksite at the first running signal that can display **STOP** if:

- a protecting signal cannot be cleared
- the Protection Officer cannot be sure that the line is clear between the worksite and the first running signal beyond the worksite that can display **STOP**.

The clearance Handsignaller must report to the Protection Officer when rail traffic has passed complete beyond the clearance location.

The clearance Handsignaller must not do other work.

### **Approaching worksites**

Before authorising inner Handsignallers to allow rail traffic to approach worksites, Protection Officers must make sure that:

- workers are in safe places
- the track is unobstructed and safe for the passage of rail traffic.

Only Protection Officers may tell Handsignallers whether to allow rail traffic to proceed, and at what speed.

## Track Work Authority

The Protection Officer must direct Handsignallers at controlled absolute signals to:

- ask the Signaller to clear the signal, or
- get the Signaller's authority to allow rail traffic to pass the signal at **STOP**.

Handsignallers at automatic signals must allow rail traffic to proceed only if the Protection Officer directs them to do so.

### Multiple worksites

Worksites more than 3500m apart must be managed under separate TWAs.

Worksites less than 1000m apart must be treated as one worksite.

If the protection arrangements of adjoining worksites would overlap, the worksites must be managed as multiple worksites under a single TWA.

A designated Protection Officer must coordinate rail traffic passage through the worksites.

The inner Handsignaller located at the first worksite must issue Drivers and Track Vehicle Operators a *NRF 011 Worksite Warning* form.

Handsignallers and three railway track signals must be placed at least 500m, and not more than 1000m, from each worksite in the direction of approaching rail traffic.

A **CLEARANCE** sign or Handsignaller must be placed at least 50m beyond the last worksite.

Drivers and Track Vehicle Operators may resume normal speed after the rear of the last vehicle has passed the **CLEARANCE** sign or the Handsignaller.

## Track Work Authority

### Adjacent lines

If the safety assessment indicates that workers need to be protected from rail traffic on adjacent lines, the Protection Officer must arrange for safety measures to be implemented in accordance with *NPR 712 Protecting work from rail traffic on adjacent lines*.

The Protection Officer may arrange for the speed of rail traffic on adjacent lines to be restricted.

### Slip sites

If a signal at **STOP** protects a slip site, Drivers and Track Vehicle Operators must follow the directions on the instruction sign on the signal.

### X, Y and Z keys

If bidirectional running has been prevented by withdrawing an X, Y or Z key, protection is needed only in the normal running-direction.

### Single line crossing locations

If adjacent signals on converging lines at a single line crossing location are used to protect a worksite, railway track signals at each signal and a single Handsignaller must be placed to protect the worksite.

### Terminal lines

If the Signaller tells the Protection Officer that there is no rail traffic between the worksite and the end of a terminal line or balloon loop, protection from that direction is not necessary.

## Track Work Authority

### Tonnage signals

A tonnage signal affected by work on track, or being used to control rail traffic approaching the worksite, must be set and kept at **STOP** and a Handsignaller must be placed at the signal.

Before authorising the Driver of a prescribed train to pass a tonnage signal, the Protection Officer must make sure that the train can pass through the worksite to the last signal controlling the tonnage signal. This signal might be as many as three signals beyond the tonnage signal.

A clearance Handsignaller must:

- be placed at the signal controlling the tonnage signal
  - tell the Protection Officer when the line is clear for rail traffic as far as that signal.
- 

### Liaison

The points of contact between Signallers and work groups for matters of worksite protection must be the:

- Protection Officer
- Handsignallers placed at controlled absolute signals.

The Protection Officer must:

- tell the Signaller about protection applied to lines adjacent to the TWA
  - tell the Signaller about work progress
  - if necessary, seek an extension of time.
-

work on track

## Track Work Authority

### Change of Protection Officer

An outgoing Protection Officer must tell the incoming Protection Officer about the worksite protection arrangements.

The incoming Protection Officer must:

- tell Signallers about the changed contact details
  - record, in permanent form, the handover details.
- 

### Fulfilling the TWA

The TWA may be fulfilled only when the Protection Officer:

- arranges for work to continue under another work on track authority, or
- tells the Signaller that:
  - the worksites have been cleared
  - protection has been removed
  - the portion of track included in the TWA is certified as available for use.

The Protection Officer must tell the Signaller about operating restrictions that have been placed or removed.

#### **Work to continue under another work on track authority**

If arrangements have been made to continue work under another work on track authority, the Protection Officer must make sure that the protection for the TWA is not removed until the new work on track authority is issued and the required protection is in place.

work on track

## Track Work Authority

The Signaller must make sure that the track within the limits of the proposed work on track authority:

- is clear of rail traffic, or
  - is occupied only by associated rail traffic permitted under that Authority.
- 

### Keeping records

Network Controllers and Signallers must record, in permanent form, the TWA details.

The Protection Officer must record, in permanent form:

- the TWA details
  - the protection arrangements for worksites
  - details of communications about:
    - Train Running Information
    - changes to the worksite protection arrangements.
-

work on track

## Track Work Authority

### Network Procedures

- NPR 701 Using a Track Occupancy Authority*
  - NPR 702 Using a Track Work Authority*
  - NPR 707 Clipping points*
  - NPR 708 Using X, Y and Z keys*
  - NPR 709 Using railway track signals*
  - NPR 712 Protecting work from rail traffic on adjacent lines*
  - NPR 715 Protecting Type F level crossings*
  - NPR 724 Using clearance locations*
  - NPR 754 Using a signal key switch*
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### Effective date

29 September 2019

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work on track

# Infrastructure Booking Authority

## Purpose

To prescribe the rules for recording and advertising changes to the Network for:

- the temporary or permanent installation or removal of infrastructure
- booking infrastructure into or out of use.



### NOTE

Removal of 1500V overhead supply is prescribed in:

- *NGE 224 Planned removal of the 1500V supply*
- *NGE 226 Planned removal of the 1500V supply in Electric Vehicle Maintenance Centres*
- *NGE 228 Unplanned removal of the 1500V supply.*

## Advertising infrastructure work

Maintenance Representatives must make sure that work on infrastructure that affects the configuration of the Network is documented and advertised in a *Weekly Notice*.

Infrastructure must be advertised in a *Weekly Notice* before it is commissioned or decommissioned/permanently removed.

work on track

## Infrastructure Booking Authority

### Compiling an Infrastructure Booking Authority

The Maintenance Representative must use *NRF 003 Infrastructure Booking Authority (IBA)* form to record details about:

- using uncommissioned infrastructure, or
- infrastructure equipment to be:
  - temporarily booked out of use, or
  - decommissioned/permanently removed, or
  - booked back into use, or
  - commissioned.

Maintenance Representatives must compile the IBA form before equipment is removed or commissioned.

The Maintenance Representatives must:

- send a copy of the IBA form to the appropriate Signaller, or
- jointly compile the IBA form with the Signaller.

The Maintenance Representative must give a copy of the IBA form to:

- the Possession Protection Officer for work associated with a Local Possession Authority (LPA), or
- the Protection Officer for work associated with a Track Occupancy Authority (TOA) or a Track Work Authority (TWA).

The Signaller and the Maintenance Representatives must keep the completed IBA form.

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work on track

## Infrastructure Booking Authority

### Securing infrastructure

Infrastructure that is not yet commissioned, or has been decommissioned but not yet removed, must be secured against unauthorised use.

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### Certifying infrastructure

Infrastructure that has been installed or removed must be certified in an IBA form:

- compiled by the relevant Maintenance Representatives
  - acknowledged by the Signaller.
- 

### Booking infrastructure back into use

If infrastructure has been certified as working correctly, the relevant section of the IBA form must be signed.

The Maintenance Representative must give a copy of the IBA form to:

- the Possession Protection Officer for work associated with a Local Possession Authority (LPA), or
- the Protection Officer for work associated with a TOA or a TWA.

If parts of the infrastructure cannot be certified at the end of work, they must be booked out of use again in a new IBA form.

work on track

## Infrastructure Booking Authority

The new IBA form must:

- be compiled before the original IBA is signed
- include a reference to the original IBA.

The original IBA form must include a reference to the new IBA for those parts of the infrastructure that were not certified.

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### Using uncommissioned infrastructure

Infrastructure that is not yet commissioned (uncommissioned) may be given limited certification for specific purposes including rail traffic movements.

Before uncommissioned infrastructure is used:

- a Maintenance Representative must certify that it is fit for the specific purpose
  - it must be advertised in a SAFE Notice.
  - A Maintenance Representative and a Qualified Worker must together unsecure and secure uncommissioned infrastructure as necessary.
-

work on track

## Infrastructure Booking Authority

### Network Procedures

- NPR 704 Using Infrastructure Booking Authorities*
  - NPR 705 Removing 1500V supply*
  - NPR 706 Removing 1500V supply in Electric Vehicle Maintenance Centres*
  - NPR 714 Removing 1500V supply in unplanned situations*
- 

### Effective date

29 September 2019

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pre-release

work on track

# Signal Key Switch Blocking

## Purpose

To prescribe the rules for working in the Danger Zone using Signal Key Switch (SKS) Blocking.

## General

SKS Blocking uses automatic signals fitted with a signal key switch to exclude rail traffic from a portion of track for a specified period.

SKS Blocking may be used if the Protection Officer has assessed that the work to be performed will not:

- involve multiple worksites
- require a work on track authority
- break the track
- alter track geometry or structure.

Drivers and Track Vehicle Operators must follow any instructions given by Handsignallers.



### **WARNING**

If the safety assessment shows that a work on track authority is necessary, work must be carried out using:

- *NWT 302 Local Possession Authority, or*
- *NWT 304 Track Occupancy Authority, or*
- *NWT 306 Track Work Authority.*

work on track

## Signal Key Switch Blocking

SKS Blocking may be used to exclude rail traffic for work:

- not requiring tools, or
- using tools which can be easily and immediately removed from the track by one person and are:
  - light, non-powered hand tools
  - light, battery powered tools or devices
  - light, powered hand tools.

### Establishing SKS Blocking

Signallers may permit the implementation of SKS Blocking.

SKS Blocking must not be established if the nominated worksite location is within the limits of:

- a Local Possession Authority, or
- a Track Occupancy Authority, or
- the protection arrangements for a Track Work Authority.

### Rail traffic

Protection Officers must manage rail traffic approach to and passage through the portion of track within the SKS worksite protection limits.

work on track

## Signal Key Switch Blocking

### Protection Officer

At all times there must be a nominated Protection Officer for the SKS Blocking.

The Protection Officer must:

- be the only person to tell workers about the:
  - locations of safe places
  - safety measures in place
  - extent of the area protected.
- be the only person to speak to the Signaller about safety arrangements
- make sure that the protection is in place before work starts.

The Protection Officer must identify the line and define the worksite location as being between two signals.

Signals must be identified by their numbers.

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### Protecting SKS worksite

Effective communication must be maintained between the Protection Officer and:

- the Signaller
- the Handsignaller.

The Protection Officer must make sure that:

- unless an easily reached safe place is available and a Lookout is provided, worksites must not be established within 500m of the protecting signal
- all points of entry into the affected portion of track are protected.



work on track

## Signal Key Switch Blocking

If using Lookouts as part of SKS Blocking protection, the Protection Officer must make sure that the minimum warning time requirements are satisfied.

### Worksite warning

If a platform is located before the protecting signal, a **WORKSITE** warning sign must be placed beyond the departure end of the last platform before the protecting signal.

### Operating the signal key switch

The SKS Blocking worksite must be protected with an automatic signal kept at **STOP** by removing the key from the associated signal key switch.

A Handsignaller must be placed at the signal.



### WARNING

The Handsignaller must remain at the protecting signal for the duration of the SKS Blocking and speak with the Signaller only when instructed to do so by the Protection Officer.

Before entering the Danger Zone, the Protection Officer must:

- confirm with the Handsignaller, that the key has been removed from the switch and the signal is displaying **STOP**
- confirm with the Signaller, that there is no approaching rail traffic between the protection and the identified worksite location.

work on track

## Signal Key Switch Blocking

### Intermediate sidings

If an intermediate siding is occupied by rail traffic and movements from the siding could enter the affected portion of track, the siding must be secured by:

- the Protection Officer clipping and locking points, or
- the Signaller applying blocking facilities to points release controls.

If the intermediate siding is unoccupied:

- rail traffic must not be authorised to occupy the siding while SKS Blocking is in place
- protection against movements from the siding is not required.

### Managing the approach of rail traffic

Before authorising the Handsignaller to restore the key to the switch to allow rail traffic to approach the worksite, the Protection Officer must make sure that workers and their equipment are clear of the Danger Zone.

Only the Protection Officer may tell the Handsignaller whether to allow rail traffic to proceed.

Handsignallers must:

- operate the signal key switch only on the direction of the Protection Officer
- immediately remove the key when the leading vehicle of the rail traffic has passed the protecting signal.

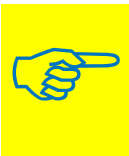


### WARNING

If the key is not removed from the switch immediately after the leading vehicle of the rail traffic has passed the protecting signal, SKS Blocking must be ended.

work on track

## Signal Key Switch Blocking



### NOTE

The Danger Zone must not be reoccupied until the Protection Officer gets an assurance from the Handsignaller:

- that the key was removed immediately after the leading vehicle completely passed the protecting signal
- that the protecting signal is at **STOP**.

### Protecting signal does not clear

If the protecting signal does not clear within the expected time after restoring the key to the switch, the Handsignaller must tell the Protection Officer.

The Protection Officer must contact the Signaller to determine if the last rail traffic to enter the affected portion of track is preventing the protecting Signal from displaying a **PROCEED** indication.

If rail traffic is not preventing the protecting signal from displaying a **PROCEED** indication, SKS Blocking must be ended.



### WARNING

Signals must only be passed at stop in accordance with *NSG 608 Passing signals at STOP* only after SKS Blocking has been ended.

work on track

## Signal Key Switch Blocking

### Ending SKS Blocking

To end SKS Blocking, the Protection Officer must tell the Signaller:

- their name and the worksite location
- that workers and their equipment are clear of the Danger Zone
- that the key has been restored to the switch.

### Keeping records

Signallers and Protection Officers must record, in permanent form:

- the SKS Blocking details
- details of communication about Train Running Information.

### Network Procedures

*NPR 711 Using Lookouts*

*NPR 712 Protecting work from rail traffic on adjacent lines*

*NPR 753 Using Signal Key Switch Blocking*

*NPR 754 Using a signal key switch*

*NPR 751 Calculating Minimum Warning Time*

### Effective date

29 September 2019

train working

## Protecting rail traffic

### Purpose

To prescribe the rules for protecting rail traffic in the Network.

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### General

Protection is required if:

- rail traffic is disabled, or
- rail traffic obstructs, or might obstruct, adjacent lines, or
- the line is obstructed.

Drivers or Track Vehicle Operators must ask the Signaller to prevent rail traffic from approaching the affected portions of track.

If necessary, the Train Crew or Track Vehicle Crew must act in accordance with:

- *NTR 416 Disabled rail traffic*
  - *NTR 426 Overdue rail traffic.*
-

## Protecting rail traffic

### Disabled rail traffic

Where practicable, the Signaller must make sure that a Qualified Worker is placed towards the direction of assisting rail traffic:

- at least 500m before the disabled rail traffic, or
- at the first protecting signal at **STOP**.

The Qualified Worker must:

- display a **STOP** handsignal to approaching rail traffic
- pilot the assisting rail traffic to the disabled rail traffic.

The Signaller must give the assisting Driver or Track Vehicle Operator written advice about:

- the length and location of the disabled rail traffic
- the need for rail traffic to travel at restricted speed:
  - from the protecting controlled absolute signal, or
  - if there is no protecting controlled absolute signal, from the entry to the section.
- whether or not a Qualified Worker has been placed to pilot the assisting rail traffic, and if so, the location of the Qualified Worker.

The written advice must be recorded on:

- an *NRF 004 Condition Affecting the Network (CAN)* form, or
  - an *NRF 005 Special Proceed Authority (SPA)* form.
- .....

train working

## Protecting rail traffic

### Adjacent or obstructed lines

#### Adjacent lines

The Train Crew or Track Vehicle Crew of rail traffic that is, or might be, foul of adjacent lines, must contact the Signaller to prevent other rail traffic from approaching the affected portions of track.

#### Obstruction of lines

If an obstruction is reported, the Signaller responsible for the affected portions of track must act in accordance with *NGE 206 Reporting and responding to a Condition Affecting the Network (CAN)*, and instruct Drivers and Track Vehicle Operators of rail traffic in or approaching the affected block to stop their rail traffic immediately.

#### Placing track-circuit shorting clips

Unless the Signaller has given an assurance that rail traffic has been prevented from approaching the affected portion of track, Qualified Workers must fasten a track-circuit shorting clip to the heads of the rails of the adjacent or obstructed lines.

### Network Procedures

*NPR 712 Protecting work from rail traffic on adjacent lines*

*NPR 720 Protecting rail traffic*

### Effective date

29 September 2019

# Manual block working

## Purpose

To prescribe the rules for manually maintaining blocks between rail traffic movements in the Network.

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## Method principle

Manual block working manually prevents rail traffic entries into occupied blocks.

Manual block working must be used if:

- it is specified in another Network Rule
- a train has been advertised as a block train
- rail traffic does not reliably operate track-circuits
- the Signaller needs to block work rail traffic
- the signalling system is not, or might not be, operating correctly.

The blocks used for manual block working may differ from those normally provided by the signalling system.

Signallers or Handsignallers controlling entry to a block must not authorise rail traffic to enter the block before the block is clear.

### Basic block working

Basic block working may be used on unidirectional and bidirectional lines in Rail Vehicle Detection territory, but may be used only for movements normally allowed by those systems of Safeworking.

Signals passed at **STOP** during basic block working must be passed in accordance with *NSG 608 Passing signals at STOP*.



## Manual block working

Signallers may require Drivers or Track Vehicle Operators to report when their train or track vehicle has passed complete beyond nominated locations.

### CAN block working

CAN block working is manual block working, using a *NRF 004 Condition Affecting the Network (CAN)* form to warn Drivers and Track Vehicle Operators about the working.

CAN block working may be used only for right running-direction movements on unidirectional lines.

Signallers, Handsignallers and clearance Handsignallers must record, in permanent form:

- train numbers and track vehicle numbers
- arrival times
- departure times.

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### Proceed Authority

The authority to enter and occupy a block under manual block working is:

- clearing of the signal allowing entry, or
  - the authority of a Handsignaller at a block post, or
  - passing a signal at **STOP** in accordance with *NSG 608 Passing signals at STOP*.
-

## Manual block working

### Basic block working

The limits for basic block working extend from a controlled signal to:

- another controlled signal, or
- a nominated location.

Before rail traffic enters the limits, Signallers must make sure that points for the intended route are set and secured.

After rail traffic enters the limits, Signallers must:

- set the entry-end signal at **STOP**, with blocking facilities applied
- maintain blocking facilities until rail traffic has passed complete beyond the nominated location.

### CAN block working

Unless notified on a CAN form about signals that may be passed at **STOP**, Drivers and Track Vehicle Operators must act in accordance with *NSG 608 Passing signals at STOP*.

Unless Drivers and Track Vehicle Operators are instructed otherwise, signals detailed in a CAN form may be passed at **STOP**:

- without further authorisation
- at normal speed.



#### NOTE

A CAN form must not authorise signals with prohibitive signs to be passed at **STOP**.

## Manual block working

CAN block working limits may extend from:

- the last working controlled signal before the first affected signal, or
- the first affected signal,

to:

- the first suitable controlled signal after the last affected signal, or
- the last affected signal.

If an affected automatic signal is used as an entry-end or exit-end limit of CAN block working, a Handsignaller must be placed at the signal.

If the Handsignaller at an automatic signal used as the exit-end limit of CAN block working cannot establish that the block ahead is clear, a clearance Handsignaller must be placed at the next signal.

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### Block posts

The Network Controller may authorise establishment and removal of block posts.

Before authorising establishment or removal of a block post, the Network Controller must be assured that the line between the limits of CAN block working:

- is not occupied
- will not be occupied before the block post is established or removed.

## Manual block working

Block posts must not be located so that rail traffic:

- stands on a level crossing, or
- stands on the controlling track-circuits of an automatic level crossing.

Handsignallers at block posts must not do any other work.

### Placing signs

Signs used for CAN block working must be placed as follows:

Sign	Placement
<b>BLOCK POST</b>	At block post locations.
<b>BLOCK POST WARNING</b>	At least 500m before block post locations.

If practicable, a **BLOCK POST WARNING** sign must also be placed at least 500m before an automatic signal used as the exit-end limit of CAN block working.

### Authorising and reporting

The Signaller or Handsignaller controlling entry to a block must:

- before authorising rail traffic to enter the block, get assurance that the block is clear from the Signaller or Handsignaller for the exit-end of the block
- report rail traffic departures to the Signaller or Handsignaller for the exit-end of the block.

The Signaller or Handsignaller for the exit-end of the block must report rail traffic clearance to the Signaller or Handsignaller controlling entry to the block.

## Manual block working

If an automatic signal is used as the exit-end limit, the Handsignaller at the signal must stop rail traffic, and tell Drivers or Track Vehicle Operators:

- that the exit-end limit has been reached
- to obey the next signal.

Before authorising rail traffic to depart, the Handsignaller at an automatic signal being used as the exit-end limit of CAN block working must make sure that the block ahead is clear.

If the entire block to the first signal beyond the exit-end limit cannot be seen to be clear a clearance Handsignaller must be placed at that signal.

The clearance Handsignaller must report to the exit-end Signaller or Handsignaller when rail traffic has passed complete beyond the clearance location.

The clearance Handsignaller must not do any other work.

### Recording

The establishment and removal of block posts and clearance locations, and the placing of Handsignallers, must be recorded, in permanent form, by:

- Network Controllers, and
- Signallers, and
- Handsignallers at block posts and at clearance locations.

## Manual block working

### Introducing CAN block working

The Network Controller may authorise the introduction of CAN block working.

The Network Controller must arrange to tell affected Network Controllers and Signallers.

The Network Controller and Signallers must agree about the signals within the CAN block working limits which may be passed at **STOP**.

The Network Controller may arrange for a Signals Maintenance Representative to suppress train stops.



#### WARNING

Affected signals used as the entry-end limit or exit-end limit must:

- not have train stops suppressed
- not be included on the CAN form as signals that may be passed at **STOP**.

Network Controllers and Signallers must record, in permanent form, the start of CAN block working.

## Manual block working

### Issuing CAN forms

Before authorising rail traffic to enter the CAN block working limits, Signallers must arrange to issue Drivers and Track Vehicle Operators with a CAN form including details of:

- CAN block working limits
- locations of block posts
- locations of **WARNING** signs
- signals that may be passed at **STOP** without further authorisation
- whether mechanical train stops have been suppressed
- whether Automatic Train Protection (ATP) train stops have been suppressed.

The CAN form for the first rail traffic to enter the CAN block working limits may include instructions to the Driver or Track Vehicle Operator to, if necessary:

- check and set points
- clip and lock facing points.

## Manual block working

### Ending CAN block working

Before ending CAN block working, the Network Controller must be assured that:

- the line between the CAN block working limits is not occupied
- Qualified Workers have been told about the end of CAN block working
- block posts, clearance locations and Handsignallers have been removed.

Network Controllers and Signallers must record, in permanent form, the end of CAN block working.

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### Network Procedures

<i>NPR 721</i>	<i>Spoken and written communication</i>
<i>NPR 722</i>	<i>Manual block working</i>
<i>NPR 723</i>	<i>Using block posts</i>
<i>NPR 724</i>	<i>Using clearance locations</i>
<i>NPR 746</i>	<i>Authorising rail traffic to pass an absolute signal at STOP</i>

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### Effective date

29 September 2019