

# NWWT

## Combined Work on Track units

**Effective 04 December 2022**

**Version: 1.9**

***RailSafe***

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.

## Planning work in the Rail Corridor

A safe place can be created by using stationary rail traffic, where an assurance that the rail traffic will not be moved has been obtained in person from the Driver or Track Vehicle Operator.

For the duration that the safe place is required, the Driver or Track Vehicle Operator must be able to see the worksite from the lead vehicle.

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### 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.

## Planning work in the Rail Corridor

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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### 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

## Planning work in the Rail Corridor

- 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
- 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.

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## Planning work in the Rail Corridor

### 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.

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#### **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.

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### 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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## Planning work in the Rail Corridor

### 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.



## Planning work in the Rail Corridor

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

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### Effective date

30 May 2021

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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.

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### Network Procedures

*NPR 700 Using a Local Possession Authority*

*NPR 701 Using a Track Occupancy Authority*

*NPR 702 Using a Track Work Authority*

*NPR 707 Clipping points*

*NPR 709 Using railway track signals*

*NPR 710 Piloting rail traffic*

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

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### Effective date

29 September 2019

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# Track Occupancy Authority

## Purpose

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

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## General

A TOA authorises occupancy of track within specified limits, for work on track or track vehicle movements.

A TOA may be authorised for:

- exclusive occupancy of track, or
- joint occupancy of track if:
  - following a unidirectional rail traffic movement, or
  - rail traffic is disabled, or
  - rail traffic is stabled, or
  - mutual agreement has been reached with the holder of another TOA for the same limits or overlapping limits, or
  - mutual agreement has been reached with the holder of a Track Work Authority (TWA).

A TOA is issued to the Protection Officer for an agreed period.

For track within the specified limits, a maximum of two TOAs may be in effect at any one time.

A TOA may involve one or more track vehicles and machines working within the specified limits.



## Track Occupancy Authority

A TOA may be issued for track vehicles to travel singly or in convoy.

TOA may be issued to adjoin a Local Possession Authority (LPA) if agreed to by the Possession Protection Officer in accordance with *NWT 302 Local Possession Authority*.

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### TOA limits

The TOA limits must be defined as:

- one yard limit and another yard limit, or
- defined clearance points wholly within one yard's limits, or
- one yard limit and a defined clearance point in another yard, or
- a defined clearance point within one yard's limits and a defined clearance point within another yard's limits, or
- defined clearance points wholly within an intermediate siding.

A TOA may include more than one section only if the TOA does not extend beyond a location where rail traffic is shunting in the section ahead.

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## Track Occupancy Authority

### Authorisation

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

If the proposed limits of a TOA affect more than one Network Controller:

- the Network Controllers must agree about the Network Controller area most affected, and
- the Network Controller responsible for the area most affected must authorise the TOA.

Before authorising a TOA, the Network Controller must make sure that:

- the track is unoccupied, and will remain unoccupied, except as specified in the TOA, and
- the Protection Officer knows about existing obstructions, and
- the Protection Officer understands and agrees to the TOA limits, and
- blocking facilities have been applied to prevent unauthorised rail traffic entry into the TOA limits.

### Attended locations

If the limits of the proposed TOA are wholly within the yard limits of an attended location, the Protection Officer must ask the Signaller to issue the TOA.

The Signaller must get authority to issue the TOA from the Network Controller.

## Track Occupancy Authority

### Pilot staff

A Network Controller may authorise a TOA during pilot staff working after arrangements have been made to secure the pilot staff out of use for the duration of the TOA.

The TOA must be issued on a *NRF 002 Track Occupancy Authority (TOA)* form.

### Half-staff

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

Signallers must record, in permanent form when a half-staff is:

- secured for work on track, or
- used for a track vehicle movement.

If a half-staff for the section cannot be taken and secured, a TOA must be issued on a *NRF 002 Track Occupancy Authority (TOA)* form.

### Joint occupancy following a unidirectional rail traffic movement

Before issuing the TOA, the Network Controller must make sure that preceding rail traffic is authorised for a unidirectional movement only, and has passed clear and complete beyond the:

- limits of the proposed worksites, or
- starting point of the track vehicle movement.

## Track Occupancy Authority

### Joint occupancy with disabled rail traffic

To allow infrastructure restoration work, the Network Controller may authorise a TOA for a portion of track occupied by disabled rail traffic, in accordance with *NGE 206 Reporting and responding to a Condition Affecting the Network (CAN)*.

All disabled rail traffic within the proposed limits of the TOA must be restrained.

### Joint occupancy with stabled rail traffic

The Network Controller may authorise a TOA with one or more sidings occupied by stabled rail traffic if:

- the stabled rail traffic is not associated with the TOA, and
- protection is placed to prevent the unintended movement of the stabled rail traffic.

### Joint occupancy with a second TOA

The Network Controller may authorise a second TOA for the same limits or with overlapping limits:

- after the Protection Officers have consulted with each other, and
- with the agreement of the Protection Officer holding the first TOA.

Each TOA must be recorded separately in permanent form, and where possible have separate blocking facilities applied.

## Track Occupancy Authority

### Joint occupancy with a TWA

The Network Controller may authorise a TOA where there is a current TWA:

- after the Protection Officers have consulted with each other, and
- with the agreement of the TWA 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 between 500m and 1000m from the worksite for the expected wrong running-direction movement.

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### Issue of TOA

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

Where the TOA limits extend into the yard limits controlled by another Signaller, the affected Signallers and Network Controller must confer.

The Network Controller will nominate an issuing Signaller. If a written Authority is issued, it must be issued on a *NRF 002 Track Occupancy Authority (TOA)* form.

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## Track Occupancy Authority

### Protection Officer

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

The Protection Officer must:

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

## Track Occupancy Authority

When requesting a TOA, the Protection Officer must identify the line names and limits of the TOA.

If the TOA is for a joint occupancy following a unidirectional rail traffic movement, nominate the limits of the worksites or road/rail access point as being between two signals.

Signals must be identified by their numbers.



**NOTE**

Nominating the worksite limits or road/rail access point as being between signals, provides only a guide to the Signaller to locate the worksite limits or road/rail access point on the track indicator diagram.

### Protecting the TOA limits

The Signaller must apply blocking facilities to prevent unauthorised rail traffic entry into the TOA limits.

All points of entry into the portions of track within the TOA limits must be protected against unauthorised rail traffic movements.



**NOTE**

Where the TOA limits extend into the yard limits controlled by more than one Signaller, the affected Signallers must confer to make sure that all points of entry are protected.

## Track Occupancy Authority

### Terminal lines and balloon loops

If the Signaller tells the 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 a worksite protection marker from that direction is not required.

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### 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.

### Worksite within 500m of the protecting signal

A worksite may be established within 500m of the protecting signal only if:

- a set of points has been clipped and locked to prevent access to the TOA limit, and
- a worksite protection marker is placed at the TOA limit.

Railway track signal protection is not required.



## Track Occupancy 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, and
- a worksite protection marker must be placed next to the middle railway track signal.

### Stabled rail traffic

If a siding within the limits of a TOA is occupied by stabled rail traffic not associated with the TOA, three railway track signals and a worksite protection marker must be placed immediately in front of the stabled rail traffic to prevent unintended movements within the TOA.

### Intermediate sidings

If the TOA limits are wholly within an intermediate siding, the points allowing entry to the siding must be clipped and locked for the duration of the TOA and a worksite protection marker placed at the TOA limit. Railway track signal protection is not required.

If the release for the points can be given from a remote location, the Signaller must apply blocking facilities to the release controls.

## Track Occupancy Authority

### Track vehicle journey

Railway track signals and worksite protection markers are not required:

- for a track vehicle journey, or
- for a track vehicle that has stopped to allow work to be carried out using:
  - light, non-powered hand tools
  - light, battery powered tools or devices
  - light, powered hand tools.

If a track vehicle journey is stopped to carry out work that breaks the track or alters track geometry or structure, that work must be protected as a worksite.

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## Track Occupancy Authority

### Rail traffic

Only rail traffic associated with the TOA may enter the TOA limits.

The Protection Officer must make sure that rail traffic associated with the TOA does not exceed the TOA limits.

#### Adjacent lines

If the safety assessment indicates that work need to be protected from rail traffic on adjacent lines, the Protection Officer must arrange to implement safety measures 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.

#### Piloting

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

#### Entering and travelling within TOA limits

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

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

#### Departing the TOA limits

Rail traffic may depart from the TOA limits only on the Signaller's authority.

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## Track Occupancy Authority

### Liaison

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

The Protection Officer must:

- tell affected Signallers about protection applied to lines adjacent to the TOA, and
  - tell affected Signallers about work progress, and
  - arrange for the movement of rail traffic associated with the TOA, and
  - if necessary, seek an extension of time.
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### 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 affected Signallers about the changed contact details, and
  - record their details on the TOA form.
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## Track Occupancy Authority

### Fulfilling the TOA

The TOA may be fulfilled only when the Protection Officer:

- arranges for work to continue under another work on track authority or work on track method, or
- tells the Signaller that:
  - the portion of track included in the TOA is clear and available for use, and
  - if required, the portion of track included in the TOA has been certified as fit for use, and
  - point clips and locks have been removed, and
  - railway track signals and worksite protection markers have been removed, and
  - half-staffs have been returned.

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

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

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## Track Occupancy Authority

### Keeping records

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

The Protection Officer must record, in permanent form:

- the TOA details, and
  - protection arrangements for worksites, and
  - details of communications about:
    - current protection arrangements, and
    - changes to the worksite protection arrangements.
- .....

### Network Procedures

*NPR 701 Using a Track Occupancy Authority*

*NPR 702 Using a Track Work Authority*

*NPR 707 Clipping points*

*NPR 709 Using railway track signals*

*NPR 710 Piloting rail traffic*

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

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### Effective date

04 December 2022

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work on track

# 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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## Track Work Authority

### Authorisation

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

If the proposed TWA limits affect more than one:

- Network Controller:
  - the Network Controllers must agree about the Network Controller most affected, and
  - the Network Controller responsible for the area most affected must authorise the TWA.
- Signaller:
  - the Network Controller and affected Signallers must confer, and
  - the Network Controller must nominate an issuing Signaller.

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

#### **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, and
- 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.

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work on track

## Track Work Authority

### 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.

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### 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, and
- rail traffic has passed beyond the limits of the worksite.

Handsignallers must replace railway track signals on the line immediately after each rail traffic has completely passed their location.

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

## Track Work Authority

When requesting a TWA, the Protection Officer must identify the worksite limits in kilometres, the line names and nominate the worksite kilometres as being between:

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

Signals must be identified by their numbers.

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### **NOTE**

Nominating the worksite kilometres as being between signals or between a signal and the end of a terminal line, provides only a guide to the Signaller to locate the worksite limits on the track indicator diagram.

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### **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.

## Track Work Authority

Effective communication must be maintained between the Protection Officer and:

- the Signaller, and
- 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.

Points may be unclipped to allow rail traffic movements into and within the TWA limits, only if, the Protection Officer has made arrangements to advise the Driver or Track Vehicle Operator to proceed:

- at normal speed, or
- at caution, or
- under special conditions.

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, and
- 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, and
  - 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 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.

## Track Work Authority

### 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, and
- place Handsignallers at the affected signals.

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, and
- 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.

## Track Work Authority

### Approaching worksites

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

- workers are in safe places, and
- 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.

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.



## Track Work Authority

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.

### 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.

## Track Work Authority

### Converging lines

If adjacent signals on converging lines are used to protect a worksite a single Handsignaller must be placed in a safe place, where approaching rail traffic on either line can be seen, and:

- railway track signals placed at each signal, or
- railway track signals placed beyond the crossovers, and
- if necessary, place an additional Handsignaller responsible for placing and removing railway track signals.

### Platforms

Where a platform prevents railway track signals from being placed within 20m beyond the fixed signal:

- a Handsignaller must be placed at the protecting signal, and
- railway track signals must be placed beyond the end of the platform, and
- if necessary, place an additional Handsignaller responsible for placing and removing railway track signals.



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#### NOTE

Where an additional Handsignaller is used, the Handsignallers must maintain effective communication.

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#### WARNING

When railway track signals are placed beyond crossovers or platforms, worksites must not be established within 500m of the railway track signals.

## Track Work Authority

### 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.

### 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, and
  - 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, and
- Handsignallers placed at controlled absolute signals.

## Track Work Authority

The Protection Officer must:

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

### 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, and
  - 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, and
  - protection has been removed, and
  - 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.

## Track Work Authority

### **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.

The Signaller must make sure that the track within the limits of the 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, and
  - the protection arrangements for worksites, and
  - details of communications about:
    - Train Running Information, and
    - 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*
- .....

### Effective date

04 December 2022

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work on track

# Absolute Signal Blocking

## Purpose

To prescribe the rules for working in the Danger Zone using Absolute Signal Blocking (ASB) where the Advanced Train Running Information Control System (ATRICS) is in use.



### NOTE

Where ATRICS is not used, and the safety assessment shows that ASB is the minimum protection required, then work must be carried out using a work on track authority.

## General

ASB excludes rail traffic from a defined portion of track for a specified period.

The Protection Officer must correctly define the nominated worksite location.

The Signaller must identify all protecting signals and points to exclude rail traffic from the nominated worksite location.



### 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.*

## Absolute Signal Blocking

ASB may be used if a 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.

ASB can be used by a single worker, in which case, the worker is also the Protection Officer.

ASB 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.

ASB may be used at Network access level crossings, to allow vehicles to cross the track.



**NOTE**

Network access level crossings are defined in *NGE 216 Level crossings*.



# Absolute Signal Blocking

## Authorisation

Signallers may authorise ASB where rail traffic can be excluded from a portion of track.

ASB must only be authorised where all protecting assets are able to be blocked using ATRICS.

ASB must not be authorised if the proposed 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.

If the proposed ASB requires more than one Signaller to exclude rail traffic from a portion of track, the affected Signallers must:

- confer to make sure that all points of entry are protected
- nominate an authorising Signaller.

The authorising Signaller must use a system-generated electronic ASB form, or if that is unavailable, an *NRF 018 Absolute Signal Blocking (ASB)* form, to record the ASB details, and issue the protection number to the Protection Officer.

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## Absolute Signal Blocking

### Protection Officer

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

The Protection Officer must:

- be the only person to tell workers about:
  - the locations of safe places
  - the safety measures in place
  - the 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.

When requesting ASB, the Protection Officer must:

- identify the line name and define the nominated worksite location as being:
  - from one signal to another signal, or
  - from a signal to the end of a terminal line.
- tell the Signaller the planned type of ASB protection.

If the nominated worksite location is on more than one line, the Protection Officer must define the nominated worksite location separately for each line.

Signals used to define the nominated worksite location must be associated with the specific lines and identified by their numbers.

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# Absolute Signal Blocking

## ASB Protection

Unless otherwise specified in this Rule, rail traffic must be excluded from the nominated worksite location by:

- at least two consecutive controlled absolute signals kept at STOP with blocking facilities applied, or
- at least one controlled absolute signal kept at STOP with blocking facilities applied, and:
  - removing an ESML/EOL key, or
  - securing points to prevent access, or
  - there being an easily-reached safe place available and providing a Lookout.



### NOTE

Unless ASB is suspended or has been ended, rail traffic must not be authorised to enter the ASB worksite location.

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

Before allowing work to start, the Signaller must make sure and confirm with the Protection Officer that:

- all points of entry into the nominated worksite location are protected
- there is no approaching rail traffic between the protection and the nominated worksite location.

Signallers must not authorise unsignalled movements into the nominated worksite location.

## Absolute Signal Blocking

### Intermediate sidings

If an intermediate siding is occupied by rail traffic and movements from the siding could enter the nominated worksite location, the points for the siding must be secured by:

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

If an intermediate siding is unoccupied:

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

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### Alternative routes

If the nominated worksite location is protected by two consecutive controlled absolute signals, rail traffic may be authorised to pass the first protecting signal reached by approaching rail traffic only after:

- the Protection Officer has been told about the movement and has confirmed the alternative route
- a set of points has been set and secured to prevent rail traffic from entering the nominated worksite location.

Controlled absolute signals immediately protecting the nominated worksite location must remain at STOP.

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## Absolute Signal Blocking

### Adjacent lines

Protecting signals on adjacent lines may be cleared only for movements that do not allow rail traffic to enter the nominated worksite location.

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### Temporarily suspending ASB

ASB may be temporarily suspended to allow rail traffic movements over the nominated worksite location.

Before temporarily suspending ASB, the Signaller must make sure that:

- the Protection Officer's name, the nominated worksite location and the protection number provided correspond with details of the ASB to be suspended
- the workers and their equipment are clear of the Danger Zone.

The Protection Officer may ask to re-establish ASB, if agreed to by the Signaller and there is no change of:

- the protection arrangements
- the nominated worksite location.

The Signaller must tell the Protection Officer if a new protection number is used.

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## Absolute Signal Blocking

### Ending ASB

To end ASB, the Protection Officer must tell the Signaller:

- their name, the worksite location and the protection number
- that workers and their equipment are clear of the Danger Zone
- that ESML/EOL keys that were removed have been restored
- that points that were secured are available for use.

The Signaller may end the ASB after making sure that:

- the Protection Officer's name, the nominated worksite location and the protection number correspond with the ASB details
- the track is clear.



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#### **NOTE**

If the protection number is not available to end ASB, the Protection Officer must provide:

- their name
  - the nominated worksite location
  - their contact phone number.
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### Keeping records

Signallers and the Protection Officer must record, in permanent form, the ASB details.

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# Absolute Signal Blocking

## Network Procedures

*NPR 703 Using Absolute Signal Blocking*

*NPR 711 Using Lookouts*

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

*NPR 751 Calculating Minimum Warning Time*

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## Effective date

22 October 2021

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work on track

# Lookout Working

## Purpose

To prescribe the rules for working in the Danger Zone without a work on track authority using Lookouts or an approved Automatic Track Warning System (ATWS) as the only safety measure.

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## General

If a safety assessment shows that it is safe, some kinds of work may be done in the Danger Zone without a work on track authority. Lookout Working is one of those methods of working.



### 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.*

If Absolute Signal Blocking (ASB) is available, it is preferred over Lookout Working.



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## Lookout Working



### WARNING

Lookout Working cannot be used as the only safety measure for:

- work on the overhead wiring, or
- work that breaks the track, or
- work that alters track geometry or structure.

Lookout Working may be used as a safety measure 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.

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### Safety measures

The only safety measures used in this method of working are:

- Lookouts, or
- an approved ATWS.

An easily-reached safe place must be available if this method is used.

Work in the Danger Zone must not begin until safety measures are in place.

Workers must be able to immediately remove themselves and their equipment to a safe place when warned of approaching rail traffic.

# Lookout Working

## Protection Officer

There must be a Protection Officer for the period of the work.

The Protection Officer must:

- tell workers about the locations of safe places
- determine the number and locations of Lookouts or ATWS sensors and warning equipment needed to protect the work
- make sure that minimum warning times are satisfied for the locations of Lookouts or ATWS sensors
- if the work location changes, reassess track speeds and the locations of Lookouts to make sure that minimum warning times and communication with the Lookouts are maintained
- reassess safety measures if conditions such as visibility change
- be the only person to speak to Signallers about safety arrangements.



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### NOTE

Where worksites are established over a large area, the minimum warning time must be continually reassessed for the location of the Lookout and the location where work is taking place.

The Protection Officer must record the outcomes of any reassessed safety measures in permanent form.

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work on track

## Lookout Working



### WARNING

If minimum warning times cannot be satisfied, then Lookout Working must not be used.

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### Liaison

Work in the Danger Zone must not begin until the Protection Officer has spoken with the Signaller about the use of Lookout Working.

The Protection Officer must tell the Signaller:

- their name and contact details
  - the type of work to be done
  - the intended duration
  - the location of the work.
- 



### NOTE

Where Lookout Working is to be used within the limits of a Local Possession Authority (LPA), the Protection Officer must also contact the Possession Protection Officer about:

- using Lookout Working
  - ending Lookout Working.
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work on track

## Lookout Working

### Lookouts

Lookouts must:

- remain within sight and hearing of the worksite
- keep watch for rail traffic approaching the worksite from any direction
- immediately warn workers if rail traffic approaches the worksite.

Lookouts must not:

- work continuously at the same location for more than 60 minutes, or
- manage the passage of rail traffic, or
- operate ATWS warning equipment, or
- do any other work.



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#### **NOTE**

Only one additional Lookout may be placed in each direction from which rail traffic can approach.

Additional Lookouts must remain within sight and hearing of the Lookout closer to the worksite.

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#### **WARNING**

Lookouts must:

- not use radios or telephones to warn workers
- be alert for rail traffic which is unexpected or comes from the wrong running-direction.

## Lookout Working

### ATWS

If an ATWS is used to warn of approaching rail traffic, the Protection Officer must make sure that:

- unless specified in the Network Local Appendices, the worksite and sensors are located outside yard limits
- all signalled routes that could allow entry into the worksite are identified
- all sensors are individually tested.

On bidirectional lines, if only the sensor for the normal running-direction can be tested by rail traffic, a Qualified Worker must remove an X, Y or Z key to prevent rail traffic approach from the opposite direction.

ATWS must not be used where a work on track authority is in place.



#### **WARNING**

Workers must:

- not enter the Danger Zone until all ATWS warning equipment has been tested
- remain within sight and hearing of the ATWS warning equipment.

## Lookout Working

### Additional safety measures inside yard limits

The Protection Officer must make sure that:

- all points of entry into the worksite are identified and:
  - place a maximum of 4 sensors for the worksite
  - if necessary, points are clipped and locked to reduce the number of entry points.
- for unexpected wrong running-direction rail traffic approach:
  - a Lookout is placed
  - a track speed of 25km/h is used for minimum warning time calculations.



#### **WARNING**

Protection Officers must not perform Lookout duties when operating ATWS warning equipment.

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### Ending Lookout Working

To end Lookout Working, the Protection Officer must tell the Signaller when work is completed and the workers and their equipment are clear of the Danger Zone.

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### Keeping records

Signallers and the Protection Officer must record, in permanent form, the Lookout Working details.

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## Lookout Working

### Network Procedures

*NPR 708 Using X, Y and Z keys*

*NPR 711 Using Lookouts*

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

*NPR 751 Calculating Minimum Warning Time*

*NPR 752 Using Wireless Automatic Track Warning Systems*

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### Effective date

31 October 2021

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.



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## 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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## 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.

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## 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*
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## Effective date

29 September 2019

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work on track

# Work trains

## Purpose

To prescribe the rules for operating work trains in the Network.

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## General

Work trains must work at worksites under the following work on track authorities:

- a Local Possession Authority (LPA), or
- a Track Occupancy Authority (TOA).

Possession Protection Officers, Protection Officers, Pilots and Drivers must maintain effective communication.

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## Movements associated with an LPA or TOA

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

### Entering LPA or TOA limits

Work trains must be piloted into the Authority limits from:

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

### Travelling within an LPA or TOA limits

Work trains must be piloted within the Authority limits.

Within yard limits, Drivers must get the Signallers authority for unsignalled movements.

work on track

## Work trains

### Passing signals at STOP

Signals that cannot be cleared must be passed in accordance with *NSG 608 Passing signals at STOP*.

### Departing

Work trains may depart the limits of an LPA or TOA only on the Signaller's authority.

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## Network Procedures

*NPR 700 Using a Local Possession Authority*

*NPR 701 Using a Track Occupancy Authority*

*NPR 710 Piloting rail traffic*

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## Effective date

04 December 2022

work on track

# Track vehicles

## Purpose

To prescribe the rules for operating track vehicles in the Network.

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## Track vehicle approval

Approved track vehicle types are published in the *Train Operating Conditions (TOC) manual*.

If compatible track vehicles are fitted with approved coupling devices, they must be coupled together during travel.

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## Fitness for travel

Before travelling on the Network, track vehicles must be inspected and certified as fit for travel in accordance with the *Train Operating Conditions (TOC) manual*.

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## Occupying a portion of track

Track vehicles may occupy a portion of track only with the authority of the Signaller responsible for the location.

Track vehicles must enter or be placed on a portion of track only:

- within yard limits, or
- within intermediate sidings, or
- within the limits of a work on track authority, or
- where the approach of rail traffic can be managed by controlled absolute signals.

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## Track vehicles

The Qualified Worker in charge of a movement must tell the Signaller when the rearmost vehicle has:

- entered or cleared a section, or
- cleared the running line, or
- cleared a location nominated by the Signaller.



### **WARNING**

If a track vehicle that does not reliably operate track-circuits is to travel over self-normalising points, and the points are in a position where they can self-normalise, the points must be secured for the passage of the track vehicle.

### Authority to travel

Track vehicles singly, coupled or in convoy, must travel only:

- as a train, or
- under a Track Occupancy Authority (TOA).

Inside an attended location’s yard limits, track vehicles must be worked under manual block working conditions, and travel:

- on the authority of fixed signals, or
- on the Signaller’s verbal authority.

Signallers must be told about:

- the number and types of track vehicles in a movement, and
- the identification number of the last vehicle, or
- the identification numbers of all vehicles in the convoy.



## Track vehicles

### Entering and clearing blocks

Travelling track vehicles must have:

- a Qualified Worker in charge of the movement, and
- in the leading vehicle, a Qualified Worker who is certified as competent in signal recognition.

Track vehicles travelling as a train must have in the rearmost vehicle a Qualified Worker who is certified as competent in the Rail Vehicle Detection (RVD) system of Safeworking.

As necessary during travel, the Qualified Worker in charge of the movement must:

- report to, and obey instructions from, the Signaller, and
  - tell other Track Vehicle Operators in the convoy about conditions relating to the movement, and
  - tell the Signaller when the limits of authority have been cleared, and
  - make sure that points are set correctly and secured for the movements.
- .....

### Travelling as a train

Where practicable, the movement of track vehicles travelling as a train must be advertised.

If the movement of track vehicles travelling as a train has not been advertised, the Network Controller must tell affected Signallers about the movement.

## Track vehicles

In track-circuited territory, track vehicles travelling as a train must be block worked if any of the vehicles is not listed in the TOC manual as reliably operating track circuits.

Track vehicles travelling as a train must not set back without authority.

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### Travelling in convoy

Track vehicles travelling in convoy must travel as closely as is safely practicable, taking into account current track and environmental conditions.

Operators of track vehicles in convoy must maintain effective communication.

If communication is lost, following Track Vehicle Operators must travel:

- at restricted speed until communication is re-established, and
- within sighting distance of the vehicles ahead and behind.

The convoy must close up:

- if the leading vehicle stops, or
- before entering a section, or
- before travelling over an active control level crossing.

Fixed signal aspects displayed to the leading vehicle apply to all track vehicles in the convoy.

---

## Track vehicles

### Overdue track vehicle

If a track vehicle movement is overdue, the Signaller must establish its location.

If unable to communicate with the Qualified Worker in charge of the movement, the Signaller must:

- act in accordance with the requirements of *NGE 206 Reporting and responding to a Condition Affecting the Network (CAN)*, and
- treat the line as obstructed, and
- immediately tell the Track Vehicle Operator’s representative.



### Movements associated with a Local Possession Authority (LPA) or Track Occupancy Authority (TOA)

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

#### Entering LPA or TOA limits

Track vehicles must be piloted into the Authority limits from:

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

#### Travelling within LPA or TOA limits

Track vehicles must be piloted within Authority limits.

Within yard limits, Track Vehicle Operators must get the Signallers authority for unsignalled movements.

## Track vehicles

### Passing signals at STOP

Signals that cannot be cleared must be passed at STOP in accordance with *NSG 608 Passing signals at STOP*.

### Departing

Track vehicles may depart the limits of an LPA or TOA only on the Signaller's authority.

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## Track vehicle speed limits

A track vehicle's speed must not exceed the lower of:

- the speed specified in the TOC manual for the track vehicle, or
- the track speed.

If a track vehicle must travel behind a train in a section, it must travel at restricted speed.



### WARNING

Track Vehicle Operators must use speeds that are safe for the prevailing conditions.

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## Whistles

A track vehicle's whistle must be sounded once:

- before moving from stop
- at WHISTLE signs
- to give warning.

## Track vehicles

### Whistle codes

Track Vehicle Operators must use the following whistle codes as warnings:

Code	Meaning
● ● ● ●	If repeated, stop immediately.
● ● ●	Track vehicle is about to move backwards.

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### Headlights

Headlights must be switched on during travel.

Headlights must be dimmed or switched off during approach to:

- rail traffic
  - a platform
  - a location where shunting is in progress
  - a motor vehicle on a nearby road
  - a signal box.
- 

### Tail lights

Track vehicles must have red tail lights lit or an approved end-of-train marker during travel.

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## Track vehicles

### Hazard lights

Track vehicles on the line must have operating hazard lights, or amber or orange flashing lights.

Track vehicle hazard lights must be used in accordance with requirements specified in the TOC manual.

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### Travelling over level crossings

Before proceeding over a level crossing, track vehicle operators must:

- make sure that no road or pedestrian traffic is using the level crossing, and
  - make sure that it is safe to do so, and
  - if possible, manually operate the level crossing warning equipment.
- 

### Stabling track vehicles

Track vehicles may be stabled on running lines only:

- if an authorised publication has advertised the stabling, or
- with the authority of the Network Controller responsible for the location.

Track vehicles stabled on running lines must be removed:

- as soon as possible, or
- as authorised by the Network Controller.

work on track

## Track vehicles

Track vehicles stabled on lines other than running lines must be:

- clear of the running line, and
- secured against unintended movement, and
- if stabled in a siding, be inside derail devices.

A Qualified Worker must pilot other rail traffic into the siding.

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### Track vehicle security

Track vehicles must be secured against unauthorised operation and unintended movement at all times.

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### Network Procedures

*NPR 700 Using a Local Possession Authority*

*NPR 701 Using a Track Occupancy Authority*

*NPR 702 Using a Track Work Authority*

*NPR 721 Spoken and written communication*

*NPR 710 Piloting rail traffic*

*NPR 748 Track vehicle travel*

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### Effective date

04 December 2022

work on track

## Work that affects traction return currents or track-circuits

### Purpose

To prescribe the rules for work that affects traction return currents or track-circuits.

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### General

Work that affects traction return currents or track-circuits must be done in accordance with relevant Engineering Standards.

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### Traction return currents

The Signals Engineer must be consulted before work that could affect traction return currents is started. The Signals Engineer gives details of bonding arrangements and other requirements.

Only the Signals Engineer or delegate may authorise the use of temporary rail bonds.

Authority to use temporary rail bonds is recorded on a *NRF 013 Temporary Rail Bond Approval* form.

An Electrical Representative must be at the worksite, to provide suitable bonding arrangements and deal with other requirements, before:

- an electrical cable which connects rails to a substation is disconnected, or
  - rails near a substation are removed or broken.
-



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## Work that affects traction return currents or track-circuits



### **WARNING**

Unless special precautions are taken, a potentially fatal voltage can develop across rail gaps when the traction return circuit is broken.

Broken or disconnected electrical cables connecting a substation to a rail must be reported immediately to the Electrical System Operator.

Workers must stay clear of the cables until the Electrical System Operator or delegate advises that it is safe.

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### **Track-circuits**

The Maintenance Representative must tell the Signals Engineer before starting work on track that may affect track-circuits.

The Signals Engineer must decide if a Signals Maintenance Representative should attend.

If a Signals Maintenance Representative is needed, work on track must not start before it is authorised by the Signals Maintenance Representative.

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### **NOTE**

Areas that are not fully track-circuited may have portions of line that are track-circuited.

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work on track

## Work that affects traction return currents or track-circuits

If work can affect the track-circuits for an automatic level crossing, the level crossing must be protected.



**WARNING**

Work that affects track-circuits affects the signalling system.

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### Network Procedures

*Nil*

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### Effective date

29 April 2017

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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.

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### 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.

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### Rail traffic

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

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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 an 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.

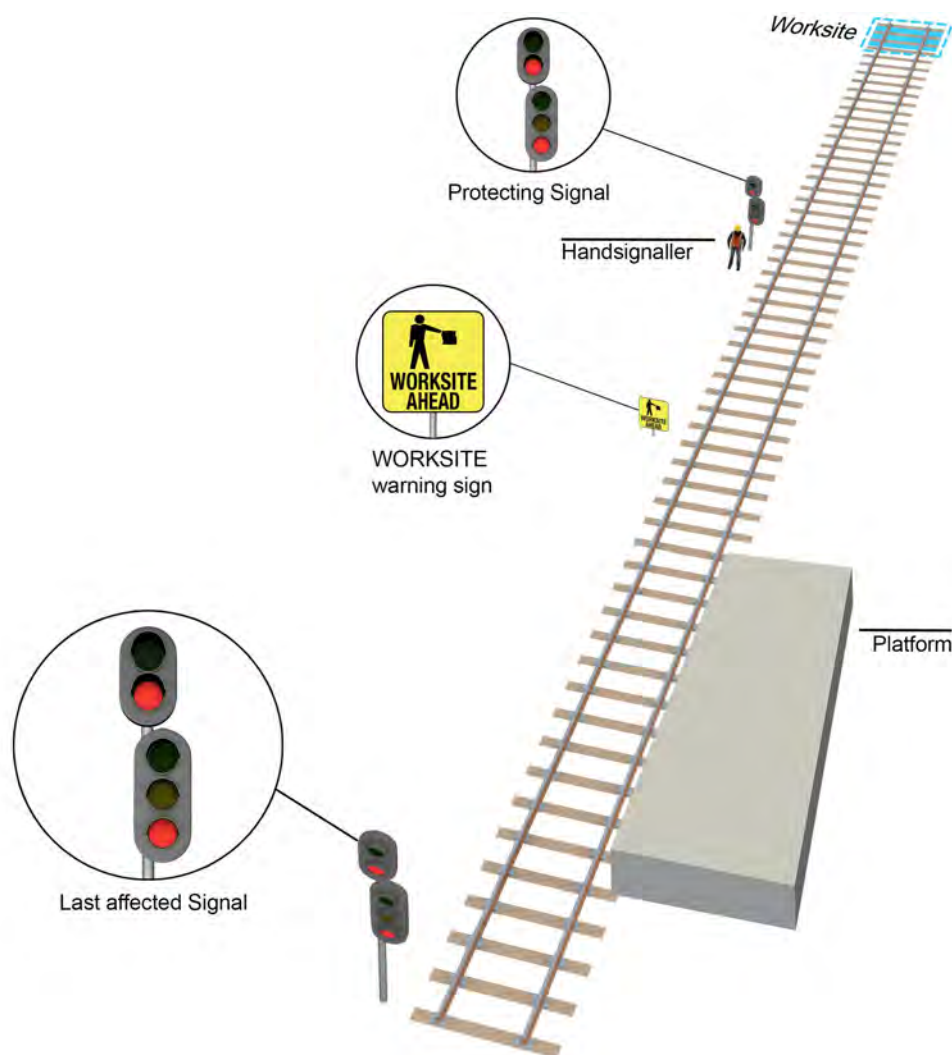
work on track

## 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 between the last affected signal and the protecting signal, a WORKSITE warning sign must be placed beyond the departure end of that platform.



**FIGURE 1:** Example of a WORKSITE warning sign placed beyond the departure end of a platform located between the last affected signal and the protecting signal

work on track

## Signal Key Switch Blocking

### 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.

## 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.



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## 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.

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## 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*

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### Effective date

29 September 2019

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work on track

# Work that affects Automatic Train Protection (ATP) trackside equipment

## Purpose

To prescribe the rules for work that affects Automatic Train Protection (ATP) trackside equipment.

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## General

Work that affects ATP trackside equipment must be done in accordance with Sydney Trains Engineering Standards.

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## ATP trackside equipment

The Signals Engineer must be consulted before work that could affect ATP trackside equipment is started. The Signals Engineer gives details of the requirements to be met.

The Signaller must be told about work that could affect ATP system functions.

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## Network Procedures

*Nil*

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## Effective date

24 March 2019