

# Network Safeworking Rules and Procedures

## Train Order Working

Rule Number: 5017

---

Arc Infrastructure maintains the master for this document and publishes the current version on the Arc Infrastructure website. All changes and updates to the Network Safeworking Rules and Procedures are authorised by the Arc Infrastructure Rule Book Committee. This document is uncontrolled when printed.

---

#### Document History

Version	Effective Date	Pages updated	Reasons for change
2.0	03 02 2020	All	Major Review

## Table of Contents

1.	Purpose.....	4
2.	General .....	4
2.1	Network Controller.....	4
2.2	Network Control Diagram .....	4
3.	Authority types .....	5
4.	Station Limits.....	5
4.1	Crossing Stations .....	5
4.2	Non-Crossing Stations.....	6
5.	Designation Limit of Authority.....	7
5.1	Limit of Authority Start Point .....	7
5.2	Limit of Authority End Point .....	7
5.2.1	Station limits sign as the end point.....	7
5.2.2	A location within a station as the end point .....	8
5.2.3	A Station as the end point.....	9
6.	Operating with Authorities .....	10
6.1	Reporting.....	11
6.1.1	Progress .....	11
6.1.2	Prior to Crossing.....	11
6.2	Rail Traffic Working Advice .....	11
6.3	Competent Workers Receiving Authorities .....	12
6.4	Identification Numbers.....	12
6.5	Challenging an Authority .....	12
6.6	Proceed Authority.....	12
6.7	Conditional Proceed Authority .....	13
6.7.1	Failure of Network Control System.....	13
6.7.2	Crossing instructions .....	13
6.8	Check of Crossings with the Network Controller .....	15
6.9	Shunt Authority.....	15
7.	Crossings .....	16
7.1	Communications Available .....	16
7.1.1	Crossing Rail Traffic .....	16
7.1.2	Passing Rail Traffic.....	17
7.2	Communications not Available .....	17

7.2.1	Crossing Rail Traffic .....	17
7.2.2	Passing Rail Traffic.....	18
8.	Change of Crossing Station .....	18
9.	Issuing an Advance Train Order.....	18
10.	Cancelling an Authority .....	19
11.	Fulfilling an Authority.....	19
12.	Keeping records .....	19
13.	References.....	19
14.	Effective date .....	19

# 1. Purpose

The purpose of this rule is to describe the operation of the *Train Order Working System of Safeworking* used in the *Network*.

## 2. General

*Train Order Working* is a *System of Safeworking* where *Train Orders* are issued as *Movement Authorities* and are delivered, or dictated, over communications equipment, to *Rail Traffic Crews* and recorded in written form on a *Movement Authority* form in accordance with Rule 9016 Authorities and Forms.

The movement of all *Rail Traffic* is controlled by *Authorities Issued* by the *Network Controller*.

The objective of the *Train Order Working* system is to prevent more than one *Rail Traffic* movement between any two *Authorised Train Order Crossing* or *Non-Crossing Stations* at the same time.

The *Rail Traffic Crew* must have a valid *Authority* before entering a *Section*.

### 2.1 Network Controller

The *Network Controller* must:

- efficiently manage *Network* activities;
- formulate, *Authorise* and *Issue Authorities*;
- record *Occupancies*; and
- to avoid conflicts when formulating new *Authorities*, refer to the *Network Control Diagram*, the *Network Control* system where available, and existing *Authorities*.

### 2.2 Network Control Diagram

The primary tool for operational safety is a *Network Control Diagram*, which details:

- planned, *Authorised* and actual *Rail Traffic Occupancies*;
- planned, *Authorised* and actual *Track Occupancies*; and
- events or conditions that may affect safety.

The *Network Control Diagram* is the primary *Safeworking* tool and should be kept up to date.

The *Network Controller* must refer to the *Network Control Diagram* in order to:

- plan *Network Rail Traffic* requirements; and
- avoid *Occupancy* conflicts.

## 3. Authority types

The *Network Controller* Issues the following *Authorities* for *Occupation of Running Lines*:

- *Proceed Authority*,
- *Conditional Proceed Authority*, or
- *Shunt Authority*.

## 4. Station Limits



**NOTE:** Signs are described in Rule [6007 Signs](#).

The start and end of *Train Order Territory* is identified by signs:

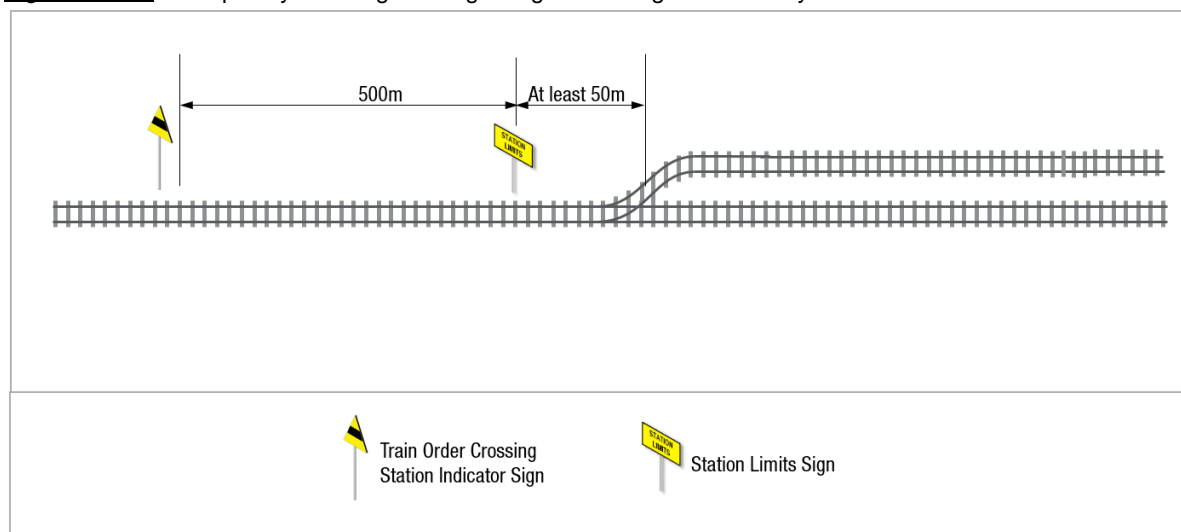
- a commencement of *Train Order Territory* sign will identify the start of *Train Order Territory*; and
- an End of *Train Order Territory* sign will identify the end of *Train Order Territory*.

### 4.1 Crossing Stations

*Crossing Stations* are designated by:

- *Crossing Station* indicator signs, located at least 500 metres from the *Station Limits* sign; and
- A *Station Limits* sign, located at least 50 metres before the first *Points*. The *Station* name is displayed on, and below, the *Station Limits* sign.

**Figure 5017-1** Example layout of signs designating a *Crossing Station*. Only one end is shown.



## 4.2 Non-Crossing Stations

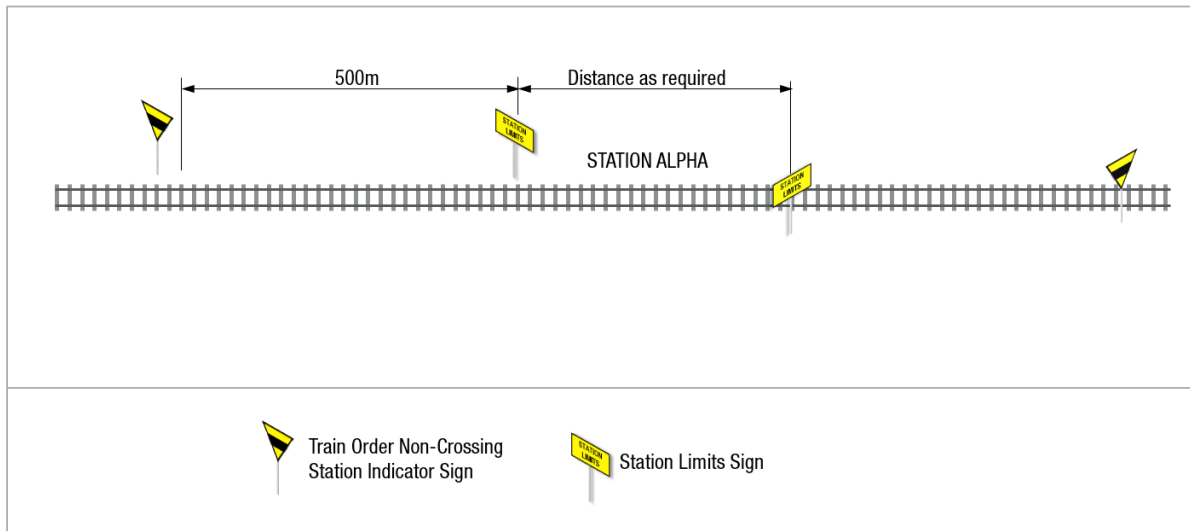
Non-Crossing Stations are designated by:

- Non-Crossing Station indicator signs, located at least 500 metres from the Station Limits sign; and
- the Station name, which will be displayed on the Station Limits sign.



**NOTE:** The distance between the Station Limits signs at Non-Crossing Stations will be determined by operational requirements, such as the length of Rail Traffic Consists.

Figure 5017-2 Example layout of signs designating a Non-Crossing Station.



# 5. Designation Limit of Authority

The start and end points of the *Limit of Authority* must be specified.

The *Limit of Authority* must be designated by specifying the *Locations* between which the movement is *Authorised*.

## 5.1 Limit of Authority Start Point

The start point of a *Train Order* will be:

- the *Location* where the *Train Order* is received; or
- in the case of an *Advance Train Order*, the *Location* nominated on the *Train Order*.



**NOTE:** An *Advance Train Order* is a *Proceed Authority* or *Conditional Proceed Authority* that is *Issued* before the current *Train Order* is *Fulfilled* or *Cancelled*.

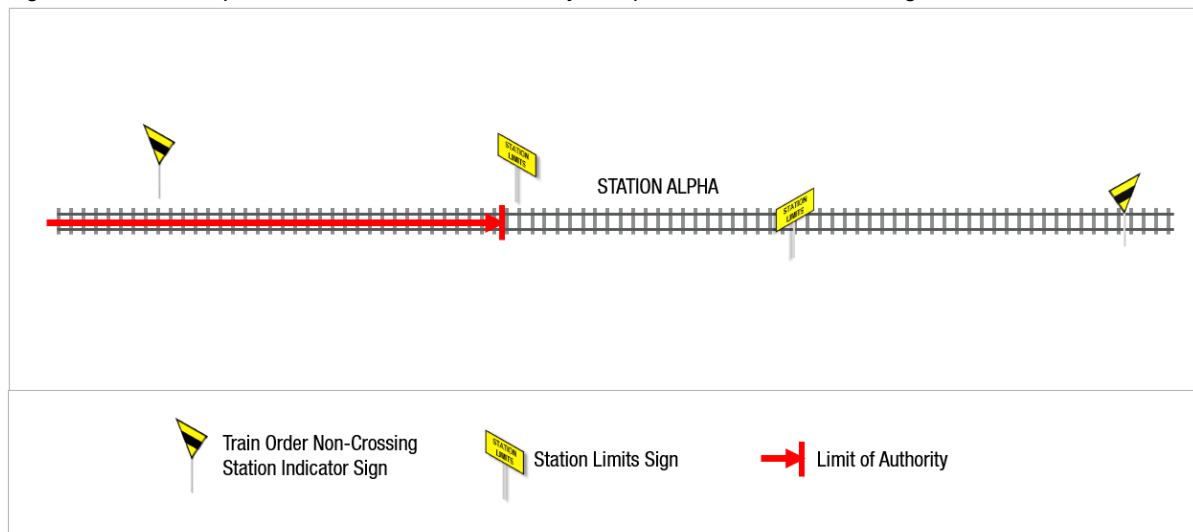
## 5.2 Limit of Authority End Point

A *Limit of Authority* end point must be designated as follows.

### 5.2.1 Station limits sign as the end point

If a *Station Limits* sign is designated as the end *Location* of a *Train Order*, the *Limit of Authority* extends to the arrival end *Station Limits* sign at that *Station*.

Figure 5017-3 Example of where the *Limit of Authority* end point is a *Station Limits* sign.



### 5.2.2 A location within a station as the end point

If a specified *Location* at a *Station*, such as *Main Line*, *Loop* or *CBH Siding*, is designated as the end *Location* of a *Train Order*, the *Limit of Authority* extends to the *Clearance Point* at the departure end *Points*.

The *Clearance Point* is defined by a *Clearance board* or *Catch Points*. Where there is no *Clearance board* or *Catch Points*, *Rail Traffic Crews* must stop their *Rail Traffic* short of the *Converging line* so other *Rail Traffic* has safe passage onto the *Adjacent line*.

Figure 5017-4 Example of where the *Limit of Authority* end *Point* is a *Main Line*.

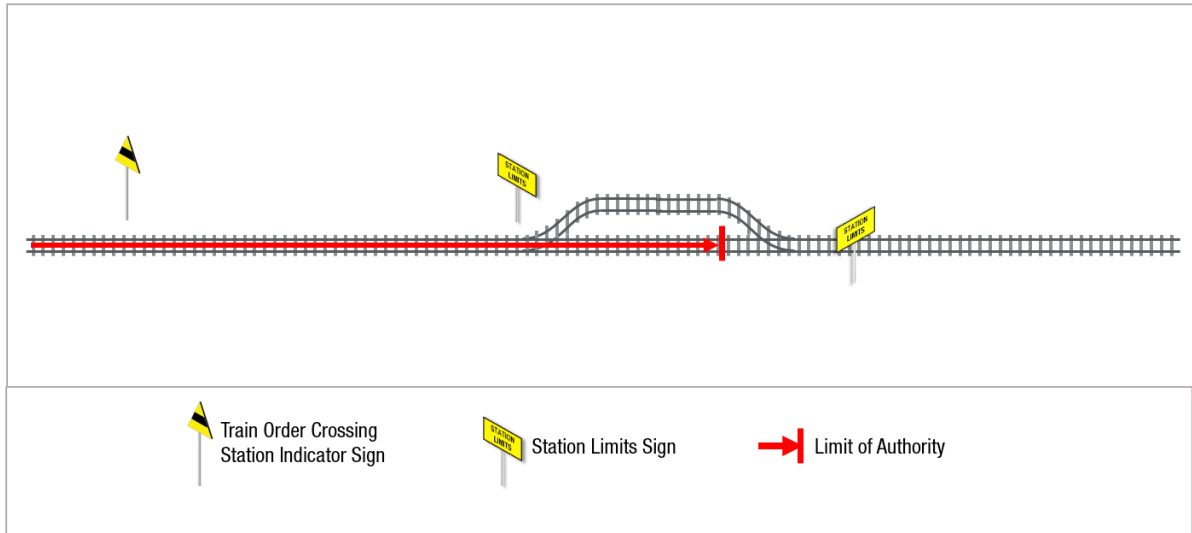
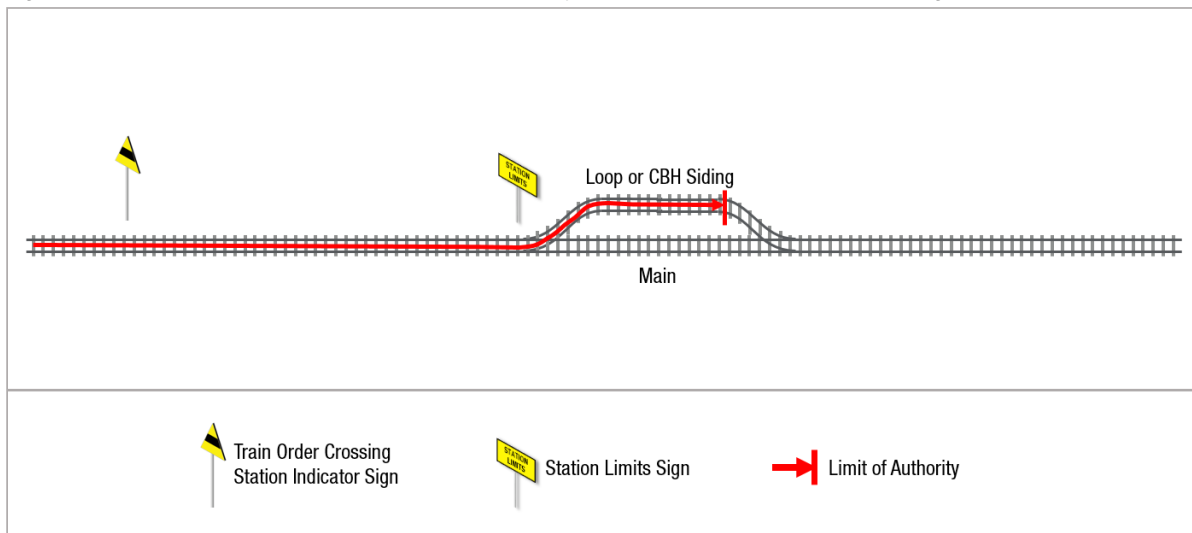


Figure 5017-5 Example of where the *Limit of Authority* end *point* is a *Loop* or *CBH Siding*.





### 5.2.3 A Station as the end point

If a *Station* is designated as the end *Location* of a *Train Order*, the *Limit of Authority* extends to the departure end *Limit of Shunt* sign, or where a *Limit of Shunt* sign is not provided to the departure end *Station Limits* sign.

Figure 5017-6 Example of where the *Limit of Authority* end *Point* is a *Station* with a *Limit of Shunt* sign.

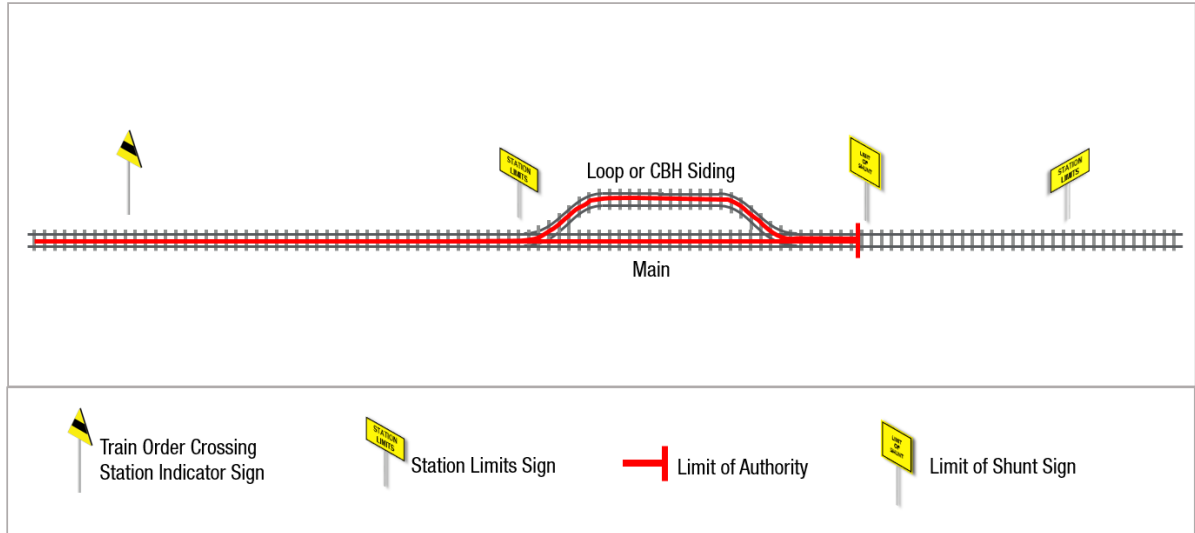
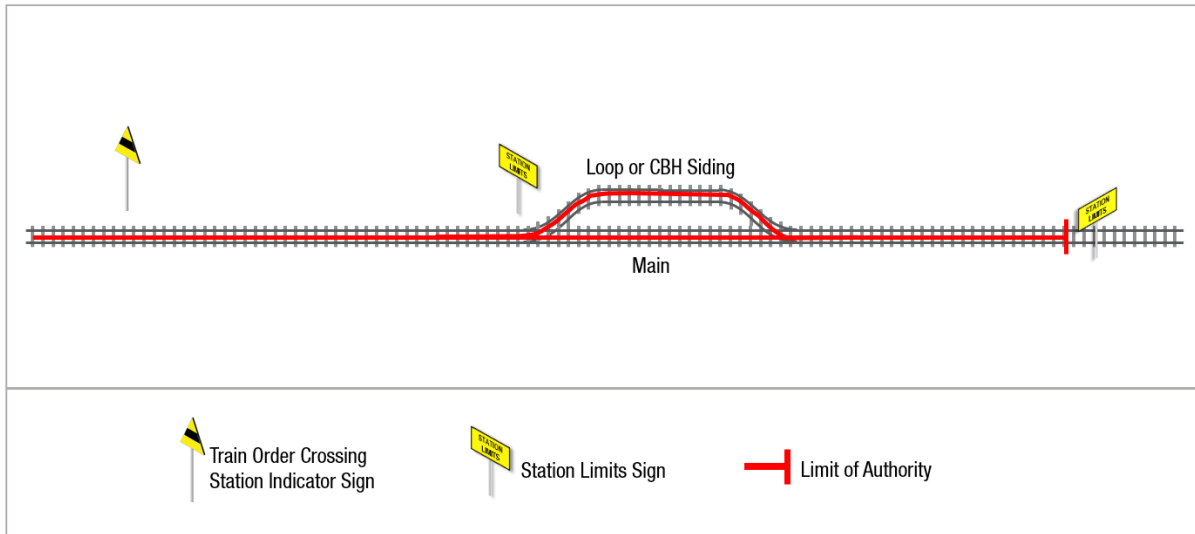


Figure 5017-7 Example of where the *Limit of Authority* end *Point* is a *Station* without a *Limit of Shunt* sign.



## 6. Operating with Authorities

An *Authority* may be *Issued* for *Rail Traffic* to proceed through more than one single line *Section*.

The *Authority* to enter and *Occupy* a *Section* is:

- possession of the *Train Order*, and
- where provided, clearing of relevant *Fixed Signals*.

The *Network Controller* must not *Issue* an *Authority* for a following *Rail Traffic* movement until it is confirmed that the previous *Rail Traffic* movement has reported arrival at the *Station* in advance.

Where a *Train Order* has been *Issued* for *Travel* through a *Station* and does not specify a *Track* to be occupied, *Rail Traffic* may *Occupy Tracks* in addition to the *Main Line* at that *Station* for *Shunting* purposes. In this situation, the *Rail Traffic Crew* must advise the *Network Controller* of any *Shunting* requirements before *Shunting* and when *Shunting* is complete.

When required by the *Network Controller*, *Rail Traffic Crews* must confirm their understanding of the *Limit of Authority*.

## 6.1 Reporting

### 6.1.1 Progress

In areas where Radio communications are provided, the *Rail Traffic Crew* must make a general broadcast over the radio of the *Rail Traffic* progress through *Stations* as it occurs, the *Network Controller* will respond to the broadcast wherever possible.

Where radio communications are unavailable, *Rail Traffic Crews* must record and report progress as required by the *Network Controller*, using on-board communications equipment or wayside telephones.

*Rail Traffic Crews* must report to the *Network Controller* when *Shunting* at a *Station* is complete, and:

- the *Siding* is *Secured*; and
- at Annett's locked *Sidings*, the Annett's key is on the *Locomotive* (AKOL).

Departure must be reported only after the rearmost vehicle has cleared the departure end *Station Limits* of the specified *Station*.

Arrival at a *Station* must only be reported after the *Rail Traffic* has *Arrived Complete* within the specified *Station*.

*Rail Traffic Crews* must report to the *Network Controller* on departure from the *Station* prior to the *Limit of Authority* end point.



**NOTE:** Where communications to the *Network Controller* fail and the *Rail Traffic Crew* are unable to report departure, the *Rail Traffic* may continue as directed on the *Train Order*.

### 6.1.2 Prior to Crossing

When a *Crossing* is *Authorised*, *Rail Traffic Crews* must verify with the *Network Controller* their understanding of the *Crossing* instructions before departure from the *Station* prior to the *Station* where a *Crossing* is *Authorised*.

## 6.2 Rail Traffic Working Advice

The *Network Controller* must *Issue* a *Rail Traffic Working Advice* which provides relevant information, including:

- any opposing *Rail Traffic*;
- any preceding *Rail Traffic* which has not terminated;
- the next following *Rail Traffic*;
- *LPAs*; and
- *WoTAs*.



**NOTE:** *Rail Traffic* includes *Track Vehicles*.

### 6.3 Competent Workers Receiving Authorities

Competent Workers may receive Authorities and instructions and deliver them to Rail Traffic Crews.

Competent Workers at attended Stations must keep copies of Authorities received.

If a Rail Traffic Crew does not receive an Authority directly from the Network Controller, the Rail Traffic Crew must verify the Authority, with the Network Controller, before departure.

### 6.4 Identification Numbers

If the leading Locomotive is to be replaced, the Rail Traffic Crew must advise the Network Controller.

The Network Controller must Cancel existing Authorities that contain references to the replaced Locomotive and Issue new Authorities showing the new Locomotive.

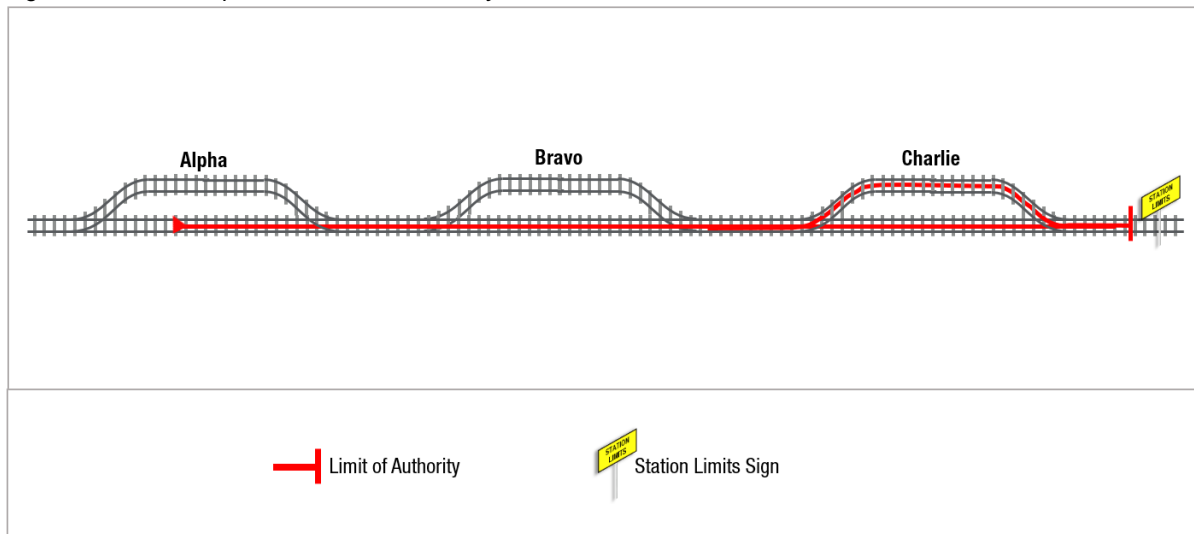
### 6.5 Challenging an Authority

Competent Workers must challenge an Authority if they believe or become aware that the Authority is incorrect.

### 6.6 Proceed Authority

A Proceed Authority is a Train Order that Authorises Rail Traffic to Occupy and proceed on the Main Line or other designated Track, between limits defined on the Authority.

Figure 5017-8 Example of a Proceed Authority.



## 6.7 Conditional Proceed Authority

A Conditional *Proceed Authority* is a *Train Order* that *Authorises Rail Traffic*:

- to proceed to a *Station* in advance in order to *Cross* another *Rail Traffic* movement; and
- after the *Crossing* movement has been completed, proceed to the end limit of the *Authority*.

All *Rail Traffic Crossings* must be included in the *Authority*.

Only one intermediate *Crossing* may be shown on an *Authority*.



**NOTE: An *Authority* may contain more than one *Crossing*. The *Authority's* end point must be at the *Station* of the second *Crossing*.**

*Rail Traffic Crews* approaching a *Station* where a *Crossing* is *Authorised* must confirm with the opposing *Rail Traffic Crew*, the *Crossing* instructions.

### 6.7.1 Failure of Network Control System

Where the *Network Control System* is unavailable, *Conditional Proceed Authorities* are not permitted.

*Train Orders* including a *Crossing* may be issued as *Proceed and Cross* only and must not include instructions to *Proceed* to another *Location* after the *Crossing*.

### 6.7.2 Crossing instructions

A *Crossing* occurs when:

- opposing *Rail Traffic* movements meet at an *Authorised Crossing Station*; or
- a following *Rail Traffic* movement passes a preceding *Rail Traffic* movement at an *Authorised Crossing Station*.

*Rail Traffic* must not depart a *Station* at which a *Crossing* has been arranged until:

- the opposing *Rail Traffic* movement has *Arrived Complete*; or
- an *Authority* has been *Issued* for *Rail Traffic* to depart.

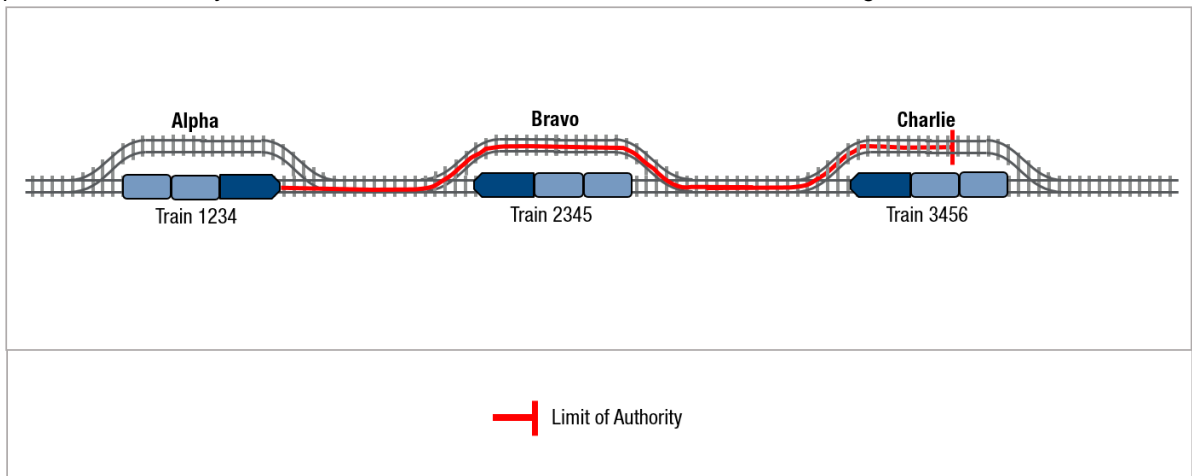
The *Authority* containing the instructions for the *Crossing* movement must include the *Rail Traffic* identification and:

- the leading *Locomotive* identification; or
- all *Track Vehicles* identifications.

Figure 5017-9 Train No 1234 has an Authority to Proceed to Bravo, take Loop, cross Train No 2345 then Proceed to Charlie. The condition to depart Bravo is that Train No 2345 has arrived complete at Bravo.



Figure 5017-10 Train No 1234 has an Authority to Proceed to Bravo, take Loop, cross Train No 2345 (this is the one permitted Intermediate Crossing), then Proceed to Charlie and take Loop, cross Train No 3456. The end point of this Authority must be Charlie as this is the Station of the second Crossing.



## 6.8 Check of Crossings with the Network Controller

After the read back or confirmation of a *Train Order* including a *Crossing* has been confirmed as correct by the *Network Controller*, the *Rail Traffic Crew*, must:

- ascertain whether the opposing *Rail Traffic* has been *Issued* with a *Train Order* for the intended *Crossings*; and
- request the *Network Controller* to confirm the *Stations* where *Crossings* are to be affected by repeating the particulars of the *Train Order Issued* to the opposing *Rail Traffic*.

The *Network Controller* and the recipient must endorse details of information given on the bottom portion of their *Train Order*.



**NOTE:** It is not necessary for the *Rail Traffic Crew* to prepare a copy of the *Train Order* that has been *Issued* to the opposing *Rail Traffic*.

## 6.9 Shunt Authority

*Rail Traffic* may be authorised to *Travel* on the *Network* by *Issue* of a *Shunt Authority*.

A *Shunt Authority* is a *Train Order* that *Authorises* the *Occupation* of the *Block Section* in advance for *Shunting* requirements at a *Station*.



**WARNING:** *Rail Traffic* must not *Occupy* the *Section* beyond the *Limit of Shunt* sign, unless the *Rail Traffic Crew* are in possession of an *Authority* for the *Section*, even where the *Rail Traffic* movement will not go beyond the *Station Limits* sign.

If there is no *Authority Issued* for *Rail Traffic* to *Occupy* the *Section* in advance, a *Shunt Authority* must be *Issued*. This authorises *Rail Traffic* to *Shunt* beyond the *Limit of Shunt* sign where provided or beyond the *Station Limits* sign where a *Limit of Shunt* sign is not provided.

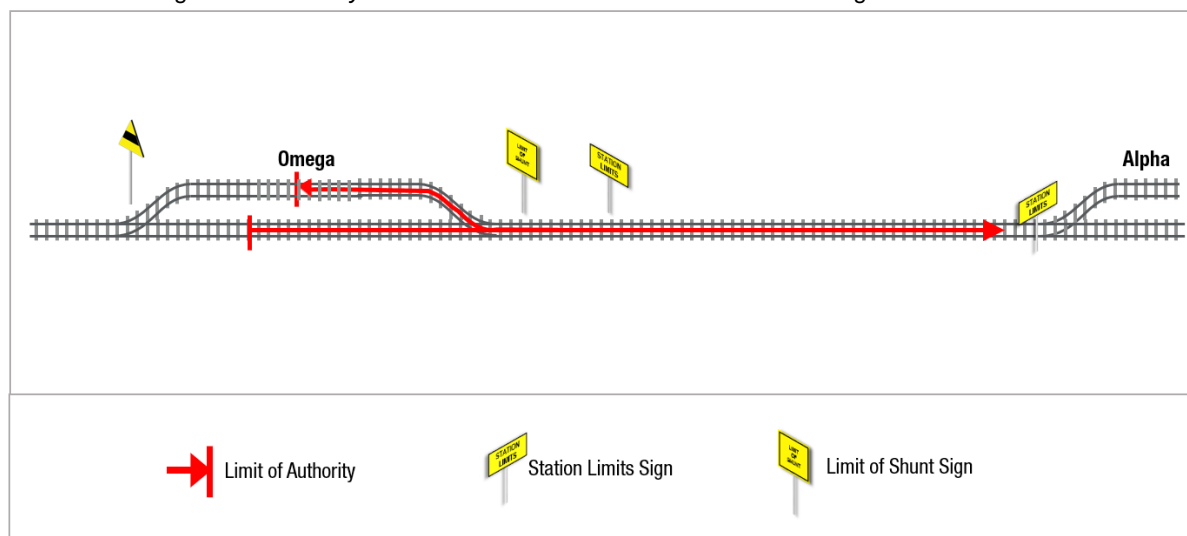
A *Shunt Authority* permits *Rail Traffic* to move in either direction.

*Shunt* movements within *Station Limits* or, where provided, *Limit of Shunt* signs, must be approved by the *Network Controller*. In this circumstance a *Train Order* is not required. Before approving *Shunting* movements within *Station Limits* the *Network Controller* must ensure that:

- no *Authority* has been *Issued* for other *Rail Traffic* into or through that *Station*;
- where the *Network Control* system is available, *Station Blocking Facilities* are applied; and
- after giving approval for a *Shunt* movement, not *Issue* other *Rail Traffic* an *Authority* into or through that *Station*.

The approval to *Shunt* and the application of *Blocking Facilities* must be recorded on the *Network Control Diagram*.

Figure 5017-11 Example of a *Shunt Authority* for a *Rail Traffic* movement beyond the Limit of *Shunt* sign or *Station Limits* sign. This *Authority* is for the *Section* but must be *Fulfilled* at Omega.



## 7. Crossings

The *Network Controller* Issues written instructions about *Crossing* movements, and the line to be *Occupied*, within the *Proceed Authority*.

*Rail Traffic Crews* set *Points* as required.

### 7.1 Communications Available

#### 7.1.1 Crossing Rail Traffic

*Rail Traffic Crews* must:

- comply with instructions provided within the *Authority*; and
- communicate with the *Rail Traffic* to be *Crossed* and reach agreement on which *Rail Traffic* is to enter the *Station* first.

The crew of the *Rail Traffic* that is to enter first; must:

- set the *Route*, if required, and enter the *Station* on the specified *Track*;
- report arrival to the *Network Controller* when the *Rail Traffic* has *Arrived Complete*;
- set the *Route* for and admit the opposing *Rail Traffic*;
- obtain an *Authority* to *Proceed* if not in possession of an *Authority*; and
- after the *Crossing* movement has been completed, set the *Route* for departure.



### 7.1.2 Passing Rail Traffic

*Rail Traffic Crews* must comply with instructions provided within the *Authority*.

The crew of the *Rail Traffic* that is to arrive first must:

- set the *Route*, if required, and enter the *Station* on the specified *Track*;
- report arrival to the *Network Controller* when the *Rail Traffic* has *Arrived Complete*; and
- set the *Route* for and admit the passing *Rail Traffic* as required.

The passing *Rail Traffic Crew* must:

- confirm with the *Rail Traffic Crew* to be passed that:
  - the instructions within the *Authorities* are not in conflict; and
  - the *Route* is set or needs to be set.
- If the *Route* is not set, set the *Route*;
- arrive on the specified *Track*; and
- obtain an *Authority* to proceed if not in possession of an *Authority*.

## 7.2 Communications not Available

### 7.2.1 Crossing Rail Traffic

If communications are not available between *Rail Traffic Crews*, the *Rail Traffic* to *Occupy* the *Main Line* must:

- stop at the arrival end *Station Limits* sign; and
- wait to be admitted by the opposing *Rail Traffic Crew*.

The crew of the *Rail Traffic* to *Occupy* the *Crossing Loop* must:

- set the *Route* and enter the *Station* on the specified *Track*;
- set the *Route* for and admit the opposing *Rail Traffic* to the *Main Line*;
- obtain an *Authority* to proceed if not in possession of an *Authority*; and
- after the *Crossing* movement has been completed, set the *Route* for departure.

### 7.2.2 Passing Rail Traffic

If communication is not available between *Rail Traffic Crews*, the *Rail Traffic* to arrive first must:

- set the *Route*, if required, and enter the *Station* on the specified *Track*;
- report arrival to the *Network Controller* when the *Rail Traffic* has *Arrived Complete*; and
- set the *Route* for and admit the passing *Rail Traffic* as required.

The passing *Rail Traffic* must:

- wait to be admitted by the preceding *Rail Traffic Crew*, and
- obtain an *Authority* to proceed if not in possession of an *Authority*.

## 8. Change of Crossing Station

If it is necessary to change a *Crossing Station* specified on **CURRENT** *Authorities*, the *Network Controller* must:

- Where the current *Crossing Location* is the *Limit of Authority* for both *Rail Traffic*, or on a *Conditional Proceed Authority* for the *Rail Traffic* whose journey is to be shortened, then:
  - first, *Cancel* the *Authority* held by the *Rail Traffic* whose journey is being shortened, then *Issue* a new *Authority* with altered *Crossing* instructions; and
  - then, *Cancel* the *Authority* held by the *Rail Traffic* whose journey is being extended and *Issue* a new *Authority* with altered *Crossing* instructions.
- Where the current *Crossing Location* is on a *Conditional Proceed Authority* for the *Rail Traffic* whose journey is to be lengthened, *Cancel* the *Authority* held by both *Rail Traffic* then *Issue* a new *Authority* with altered *Crossing* instructions.

## 9. Issuing an Advance Train Order

An *Advance Train Order* is a *Proceed Authority* or *Conditional Proceed Authority Issued* while *Rail Traffic* is en-route and may be *Issued* while the *Rail Traffic* is in motion.

An *Advance Train Order* must only be issued when the *Rail Traffic* is in the *Section* prior to the end limit of the current *Train Order*.

Where the *Advance Train Order* is to be *Issued* while *Rail Traffic* is in motion, the *Rail Traffic* must be under the control of more than one crew member.

If there is only one *Rail Traffic Crew* member then the *Rail Traffic* must be stationary to receive an *Advance Train Order*.

An *Advance Train Order* will not come into effect until the *Rail Traffic* arrives at the *Limit of Authority end Point* for the current *Train Order*.

Where the current *Train Order* has a Crossing at the *Limit of Authority* end point, that Crossing must also be recorded on the *Advance Train Order*.

## 10. Cancelling an Authority

An *Authority* that cannot be *Fulfilled* must be *Cancelled*.

An *Authority* may be *Cancelled* and a new *Authority Issued* whilst *Rail Traffic* is in motion, provided that the *Rail Traffic*:

- has not passed the proposed *Limit of Authority*;
- will not pass the limit of the new *Authority*; and
- is under the control of more than one crew member.

If there is only one *Rail Traffic Crew* member and the *Authority* is a written *Authority*, then the *Rail Traffic* must be stationary before the *Authority* is *Cancelled*.

If there is any doubt as to whether the *Rail Traffic* cannot be prevented from exceeding the proposed *Limit of the Authority*, the *Rail Traffic* must be stopped, and its *Location* determined before an *Authority* is *Cancelled*.

## 11. Fulfilling an Authority

An *Authority* is *Fulfilled* after all instructions contained within it have been carried out.

*Train Orders Issued* to *Station Limits* signs must not be *Fulfilled* until the *Rail Traffic* has been *Authorised* to enter the *Station* and has *Arrived Complete* within the *Station Limits*.

## 12. Keeping records

*Network Controllers* must keep a *Permanent Record* of relevant details and movements in the *Network*.

## 13. References

[6007 Signs](#)

[9016 Authorities and Forms](#)

## 14. Effective date

3 February 2020