

Electronic Authority - Advanced Train Management System (ATMS)

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1 Purpose

To prescribe the rules for using the Electronic Authority, Advanced Train Management System (ATMS) of safeworking in the ARTC Network to maintain safe separation between rail traffic.

These Rules set out how Authorities are formatted and used in ATMS territory, how ATMS Locations are designated, the types of Authorities issued, the Limits of Authority applicable to each type of Authority, and how Authorities are confirmed in use, across the Network.

2 General

The ATMS is an electronic communications-based system of safeworking.

The ATMS is a system of safeworking where Authorities and instructions are delivered, received and displayed electronically on the Driver Machine Interface (DMI) of rail traffic (equipped rail traffic) for Rail Traffic Crew compliance and advice. Authorities and instructions provided to Rail Traffic Crews are recorded electronically by the system.

The movement of all rail traffic is controlled by Authorities issued by the Network Controller who controls that portion of the Network.

Rail traffic (equipped rail traffic) that has a failure of the fitted ATMS equipment (trainborne) or is not fitted with ATMS equipment (unequipped rail traffic) must operate on written Authorities compiled and transmitted by the Network Controller to the Rail Traffic Crew.



Form SW8 is used to deliver written Authorities and instructions to Rail Traffic Crews.

The ATMS prevents more than one rail traffic movement occupying a single electronic block (equipped rail traffic) or block section (unequipped rail traffic) at the same time. The rail traffic or Rail Traffic Crew must be issued with an Authority before entering the block.

Authorities proposed by the Network Controller are validated by the ATMS.

All safeworking decisions are managed by the Network Controller.

A computer-assisted system is used to:

- cross check and formulate proposed Authorities,
- electronically display events,
- prevent the formulation and issue of conflicting authorities,
- set and secure the applicable route for the Authority,
- and
- transmit data between Network Control and equipped rail traffic.

ATMS monitors and controls the:

- trainborne system,
- trackside equipment,
- rail traffic location,
- rail traffic integrity,
- rail traffic speed enforcement,
- rail traffic direction dependent on Authority type,
- and
- limit of Authority if DMI warnings are not responded to by the Rail Traffic Crew.

If the computer assisted ATMS of safeworking is unavailable the Network Controller must:

- manually prevent the issue of conflicting authorities,
- and
- manually issue Authorities.

2.1 Tracking System

A tracking system enables the Network Controller to:

- confirm the location of equipped rail traffic,
- and
- be alerted of any Limit of Authority overrun of equipped rail traffic.

2.2 Train Control Graph

A Train Control Graph is used by the Network Controller, on which are plotted all:

- planned and authorised rail traffic occupancies,
- planned and authorised work on track occupancies,
and
- other conditions or events that may affect the safety of the Network.

The Network Controller must refer to the Train Control Graph, to:

- plan Network rail traffic requirements,
and
- prevent conflicting authorities.

2.3 Rail Traffic Identification

Rail traffic is identified by train number and lead locomotive power unit number.

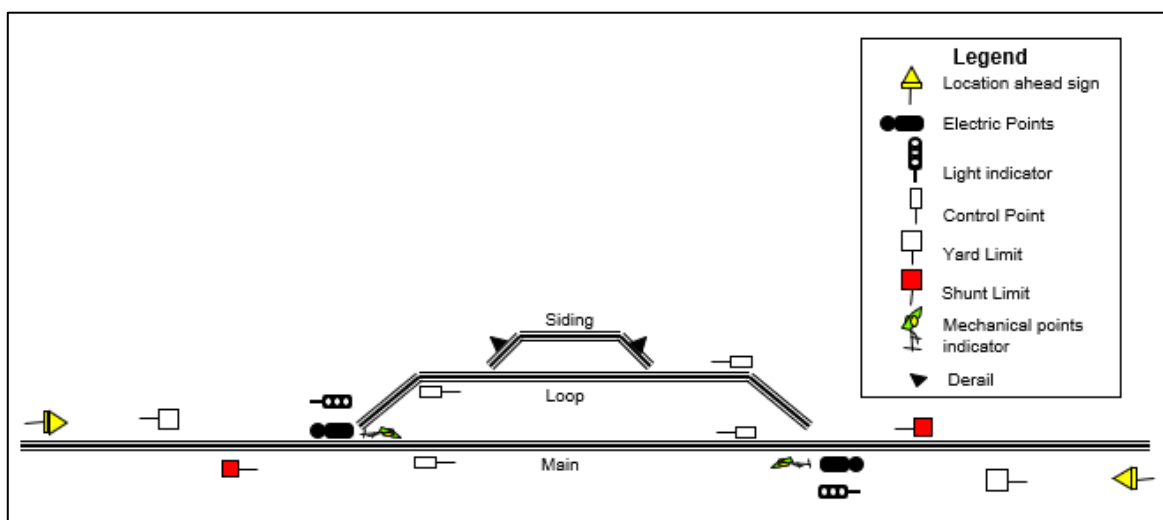
3 ATMS Territory

The ATMS of safeworking is applicable to running lines only.

ATMS territory is identified by BEGIN and END ATMS signs erected at the entrance to or exit from ATMS territory.

Within ATMS territory all points connected to running lines must be secured to prevent unauthorised operation.

3.1 ATMS Yard Layout



Example: Typical ATMS Yard Layout.

Note: Siding is outside of ATMS territory.

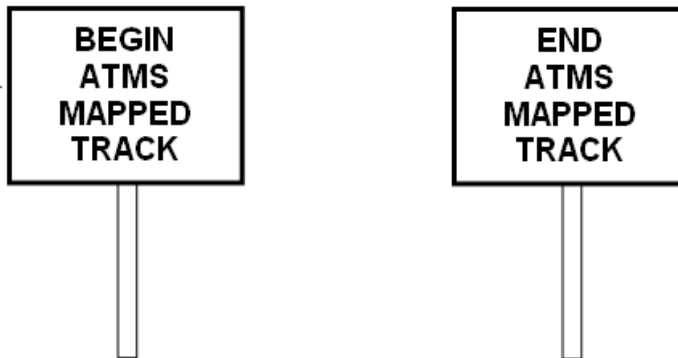
3.2 Trackside Signs

3.2.1 Mapped Tracked signs

ATMS Mapped Track signs show the beginning and end of the territory where the ATMS mapped track applies.

Mapped Track allows equipped rail traffic to be detected by ATMS and the Network Controller on approach to, within and departure from ATMS territory.

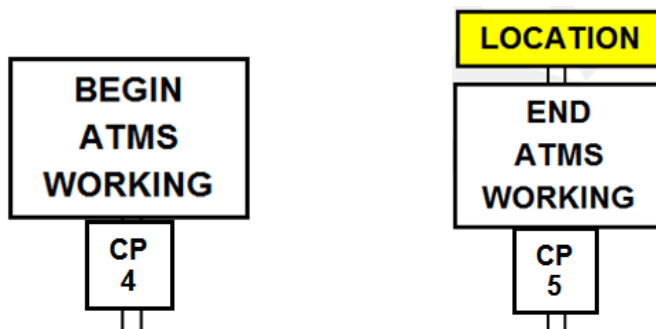
ATMS Mapped Track is track immediately in advance of ATMS territory and may be used by Rail Traffic Crews to activate or deactivate the DMI for ATMS controlled territory.



Example: Begin / End Mapped Track signs for ATMS territory.

3.2.2 Begin / End ATMS Sign

ATMS working signs show the beginning and end of the territory where the ATMS of safeworking applies. Begin / End ATMS signs have a Control Point (CP) sign with an identification number that uniquely identify the sign.



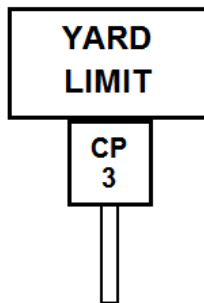
Example: Begin / End ATMS territory signs with Control Point (CP) signs.

3.2.3 Yard Limit sign

A Yard Limit sign is an advice sign:

- indicating the limits of a yard at a Block Location
and
- which an Authority may be issued to or from in ATMS territory.

Yard Limit signs in ATMS territory have a Control Point (CP) sign with an identification number that uniquely identify the sign at Block Locations.



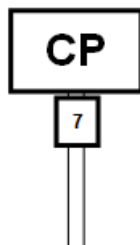
Example: Yard Limit sign with a Control Point (CP) sign.

3.2.4 Control Point sign

A Control Point (CP) sign is an advice sign to which an Authority can start or finish in ATMS territory.

The sign may also indicate the clearance point of the Main Line and Crossing Loop Line at a Block Location.

Control Point signs have identification numbers that uniquely identify the sign at Block Locations.



Example: Control Point sign in ATMS territory.

3.3 Entering ATMS Territory

3.3.1 Equipped Rail Traffic

Rail Traffic Crew

Without a scheduled stop

The Rail Traffic Crew of equipped rail traffic on running lines that will enter ATMS territory without a scheduled stop between the BEGIN ATMS MAPPED TRACK sign and the BEGIN ATMS WORKING sign must:

- switch the DMI in the lead end of the leading locomotive to the START / BYPASS position,
- confirm that the trainborne equipment on the rail traffic is activated and operating correctly for ATMS operation,
- switch the DMI to the RUN position,
- complete the Departure Test on the DMI,
and
- accurately input the correct rail traffic details into the DMI before or at the BEGIN ATMS MAPPED TRACK sign.

After a scheduled stop

The Rail Traffic Crew of equipped rail traffic that will enter ATMS territory:

- after a scheduled stop between the BEGIN ATMS MAPPED TRACK sign and the BEGIN ATMS WORKING sign,
- from a Yard or Terminal,
or
- Siding or Intermediate siding,

before proceeding towards the BEGIN ATMS WORKING sign must:

- switch the DMI in the lead end of the leading locomotive to the START / BYPASS position
- confirm that the trainborne equipment on the rail traffic is activated and operating correctly for ATMS operation,
- switch the DMI to the RUN position
and
- accurately input the correct rail traffic details into the DMI.

Prior to equipped rail traffic entering ATMS territory, the Rail Traffic Crew must have an Authority to proceed.

The Rail Traffic Crew must ensure the trainborne equipment remains active until departure from ATMS territory, unless instructed otherwise by the Network Controller.

Network Controller

Before issuing an Authority for rail traffic to enter ATMS territory, the Network Controller must:

- confirm the rail traffic details are correct,
and
- resolve and correct any errors or mismatched data.

3.3.2 Unequipped Rail Traffic

Rail Traffic Crew

Prior to unequipped rail traffic entering ATMS territory, the Rail Traffic Crew must give the correct rail traffic details to the Network Controller using verbal communications.

Prior to unequipped rail traffic entering ATMS territory, the Rail Traffic Crew must have an Authority to proceed.

Network Controller

The Network Controller must accurately input the rail traffic details into the Train Control System (TCS) workstation.

Before issuing an Authority for rail traffic to enter ATMS territory, the Network Controller must:

- confirm the rail traffic details are correct,
and
- resolve and correct any errors or mismatched data.

3.4 Within ATMS Territory

3.4.1 Consist Changes

Rail Traffic Crew

If the rail traffic consist changes for any reason, the Rail Traffic Crew must update the rail traffic details before obtaining Authority to depart a location by:

- using the DMI, if the rail traffic is equipped,
or
- if the rail traffic is unequipped, the Rail Traffic Crew must advise the correct updated changes to the Network Controller.

Network Controller

The Network Controller must accurately input the changes into the TCS workstation before allowing unequipped rail traffic to depart a location.

The Network Controller must confirm that the rail traffic details are correct before issuing an Authority.

3.5 Departing ATMS Territory

Rail Traffic Crew

The Rail Traffic Crew must:

- make sure that the trainborne equipment on equipped rail traffic is switched OFF when the rail traffic is clear and complete beyond the END ATMS Mapped Track sign,
or
- for unequipped rail traffic, report to the Network Controller when the rail traffic has passed clear and complete beyond the END ATMS WORKING sign.

Where equipped rail traffic is departing ATMS territory and the lead vehicle has passed beyond the END ATMS MAPPED TRACK sign and the rear vehicle has not passed beyond the END ATMS WORKING sign, the Rail Traffic Crew must report to the Network Controller when the rail traffic has passed clear and complete beyond the END ATMS WORKING sign.

Network Controller

The Network Controller must accurately input the departure time into the TCS workstation for unequipped rail traffic.

4 Authorities

The Network Controller must use the TCS workstation to request Authorities to be issued for rail traffic to occupy the running lines.

4.1 Numbering of Written Authorities

Safeworking forms generated by the TCS workstation and issued as a written Authority will have the number generated by the ATMS.

Safeworking forms authorised and issued as a written Authority must be numbered consecutively, commencing with number 1 at 0001hrs each day.

4.2 Authority in Effect

An Authority is in effect when:

- received and displayed on the DMI of equipped rail traffic,
or
- for unequipped rail traffic, when the Network Controller advises the receiver of the “Read Back Correctly” time.

An Authority remains in effect until fulfilled or cancelled.

4.3 Designated Limits of Authority

The start location and end limit of an Authority and track must be specified.

An Authority may be issued over multiple consecutive sections within ATMS territory.

Limits of Authority must be designated by the specific limits between which occupancy is authorised, by:

- control point sign,
- a Yard Limit sign at a location,
- Block Point sign,
- a signal capable of displaying a STOP indication,
or
- a specific kilometre location.

4.4 Electronic and Written Authorities

Rail traffic must operate on electronic Authorities whenever practicable.

If an electronic Authority cannot be issued by the Network Controller through the ATMS, a written Authority must be used. Where a written Authority is issued to the Rail Traffic Crew, the Authority type must include the abbreviation MA (Manual Authority).

Proceed Authorities, Proceed Restricted Authorities and Restraint Authorities are issued to:

- equipped rail traffic electronically,
or
- unequipped rail traffic in written form.

Where equipped rail traffic is operating on electronic Authorities:

- rail traffic speed,
- direction,
and
- limit of Authority,

are enforced by stopping the rail traffic if DMI warnings are not responded to by the Rail Traffic Crew.

4.4.1 Proceed Authority

Rail traffic may be authorised to move on the Network by a Proceed Authority.

The Proceed Authority is used for rail traffic to proceed from one specified limit to another specified limit, in the forward direction under normal operating conditions.

4.4.2 Proceed Restricted Authority

Rail traffic may be authorised to move on the Network by a Proceed Restricted Authority.

The Proceed Restricted Authority is used for rail traffic to proceed at restricted speed in the forward direction to a specified limit and must include special instructions.

4.4.3 Restraint Authority

The Restraint Authority is issued to rail traffic to remain stationary at its current location.

An electronic Restraint Authority is enforced by ATMS.



A Restraint Authority must only be issued to stationary rail traffic.

4.5 Written Authorities for Equipped and Unequipped Rail Traffic

Equipped and unequipped rail traffic may be issued the following written Authorities for the occupation of running lines.



Form SW8 is used by Rail Traffic Crews to record a Written Authority.

4.5.1 Shunt Authority

Rail traffic may be authorised to move on the Network by a Shunt Authority.

A Shunt Authority allows rail traffic to move in either direction and occupy tracks in addition to the main line at that location.

Rail traffic may be issued with a Shunt Authority to:

- shunt between the location's SHUNT LIMIT signs,
 - where SHUNT LIMIT signs are not provided, shunt between the location's YARD LIMIT signs,
- or
- where the rail traffic is required to go beyond the Yard Limit sign up to the departure end LOCATION AHEAD sign.

The Shunt Authority must state:

- the limits of Authority,
and
- any applicable clearance time.

Rail traffic may proceed only as far as the departure end LOCATION AHEAD sign when issued a Shunt Authority to the Location AHEAD sign. A Proceed Authority must be issued from within the Block Location limits if the rail traffic is to proceed through the section.

The Rail Traffic Crew in possession of a Shunt Authority may allow additional rail traffic shunting movements to occur within the Shunt Authority limits. The Rail Traffic Crew in possession of the Shunt Authority must be able to manage more than one rail traffic movement within the Shunt Authority limits. If the Rail Traffic Crew is not able to manage more than one rail traffic movement within the Shunt Authority limits, then only the rail traffic with the Shunt Authority may be authorised to move.

Before shunting is to commence, the additional Rail Traffic Crew and the Rail Traffic Crew in possession of the Shunt Authority must reach a clear understanding about:

- the Authority limits,
- the movements to take place,
- applicable clearance times,
and
- any Track Work Authorities in effect.



An Authority to pass the departure end SHUNT LIMIT sign or YARD LIMIT sign must not be issued if opposing rail traffic has been authorised to proceed towards that location.

Unless specifically stated, a Shunt Authority does not authorise rail traffic to pass signals or indicators at STOP.

Rail Traffic Crew

The Rail Traffic Crew must obtain a Shunt Authority from the Network Controller before commencing shunting at a location.

The Rail Traffic Crew must:

- obtain a Shunt Authority,
- obtain authorisation from the Network Controller to take local control of running line points,
- where required, obtain authorisation from the Network Controller to pass signals or indicators at STOP,
and
- attend to security and derail devices.

On completion of shunting, the Rail Traffic Crew must:

- advise the Network Controller that local control of the points is no longer required,
- attend to security and derail devices,
- advise the Network Controller of the track where all rail traffic is located,
and
- fulfil the Shunt Authority.

Network Controller

Before issuing a Shunt Authority, the Network Controller must make sure:

- that there is no rail traffic approaching the location where shunting is to take place,
or
- where rail traffic is approaching the location where shunting is to take place the rail traffic is stationary and is issued with a Restraint Authority.

The Network Controller must:

- place blocking facilities on the location where shunting is to take place and, on the section either side of the location,
and
- issue a Shunt Authority to the Rail Traffic Crew.

At the completion of shunting, the Network Controller must:

- confirm the location of all rail traffic at the location,
- confirm the Rail Traffic Crew has updated the rail traffic details or for unequipped rail traffic update the TCS workstation,
- issue the Rail Traffic Crew a Restraint Authority,
- fulfil the Shunt Authority,
and
- remove blocking facilities for the Shunt Authority.

4.5.2 Work Authority

Rail traffic may be authorised to move on the Network by a Work Authority.

A Work Authority allows rail traffic to move in either direction between specified limits for work associated with infrastructure maintenance or the recovery of disabled rail traffic.

4.5.2.1 Recovery of Disabled Rail Traffic

The Network Controller issues a Work Authority to the assisting Rail Traffic Crew to provide assistance to disabled rail traffic. The Rail Traffic Crew of the disabled rail traffic must be issued a Restraint Authority before a Work Authority is issued to the assisting rail traffic.

The Network Controller must issue a Work Authority to the Rail Traffic Crew of the assisting unequipped rail traffic at the entrance to the block section in which the disabled rail traffic is located. A Work Authority may be issued to the Rail Traffic Crew of the assisting equipped rail traffic movement that is located in the electronic block following the disabled rail traffic.

A Work Authority used to recover disabled rail traffic must state:

- the identification details of the rail traffic already occupying the block,
 - that the block is already occupied,
 - the kilometre location of the front or rear of the rail traffic depending on the direction from which the rail traffic assisting is to arrive,
 - if the disabled rail traffic has been protected using detonating signals,
 - the location in advance or to the rear, to which the disabled rail traffic is to be assisted,
- and
- the track to be taken at the location and if required, crossing or passing instructions.

Network Controller

Before issuing a Work Authority to recover disabled rail traffic, the Network Controller must:

- cancel the current Authority by issuing a Restraint Authority to the disabled rail traffic,
 - place blocking facilities on the section the disabled rail traffic is located inclusive of the location the rail traffic will be taken,
- and
- where equipped rail traffic is in the section following the disabled rail traffic that will not be used to assist the disabled rail traffic, cancel the current Authority by issuing the rail traffic with a Restraint Authority.

The Network Controller must:

- issue a Work Authority to the rail traffic to recover the disabled rail traffic,
 - for equipped disabled rail traffic, authorise the Rail Traffic Crew to switch the DMI OFF once the assisting rail traffic has been amalgamated with the disabled rail traffic,
- and
- fulfil the disabled rail traffic Restraint Authority.



Where an equipped rail traffic movement following the disabled rail traffic is to be issued a Work Authority to provided assistance, the Work Authority must cancel the current Proceed Authority.

At the completion of the disabled rail traffic recovery, the Network Controller must:

- confirm the location of all rail traffic at the location,
- for equipped disabled rail traffic, advise the Rail Traffic Crew to switch ON the DMI,
- confirm the Rail Traffic Crews have updated the rail traffic details or for unequipped rail traffic update the TCS workstation,
- issue a Restraint Authority to the disabled rail traffic and assisting rail traffic,
- fulfil the Work Authority,
and
- remove the blocking facilities for the Work Authority.

Disabled Rail Traffic Crew

The Rail Traffic Crew must advise the Network Controller the rail traffic is disabled and unable to proceed without assistance. The Rail Traffic Crew must obtain a Restraint Authority from Network Controller before recovery operations commence.

The Rail Traffic Crew must:

- protect the disabled rail traffic,
- obtain a Restraint Authority from the Network Controller,
- amalgamate the disabled rail traffic with the assisting rail traffic,
- for equipped rail traffic, the Rail Traffic Crew must switch OFF the DMI,
- fulfil the Restraint Authority,
and
- at the completion of the disabled rail traffic recovery for equipped rail traffic, Rail Traffic Crew must switch ON the DMI.

Assisting Rail Traffic Crew

The Rail Traffic Crew must obtain a Work Authority from the Network Controller before recovery operations commence.

The Rail Traffic Crew must:

- obtain a Work Authority from the Network Controller,
- proceed in accordance with the Work Authority,
- proceed to the Block Location in advance or to the rear, to which the disabled rail traffic is to be assisted to,
- advise the Network Controller when the work has been completed,
- obtain a Restraint Authority on arrival at the location,
and
- fulfil the Work Authority.

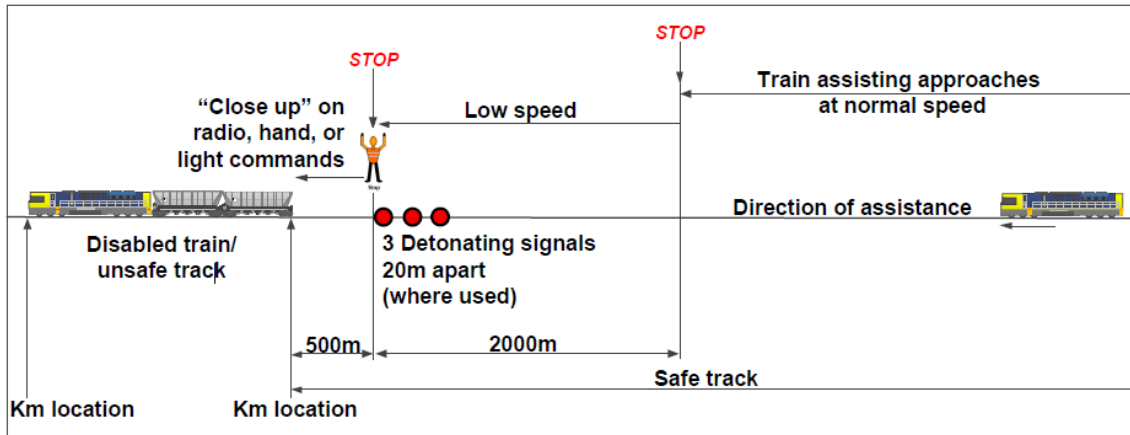
The Rail Traffic Crew of the assisting rail traffic may proceed in accordance with the Work Authority at normal track speed, to a point 2500 metres short of the disabled rail traffic.

On reaching this point the Rail Traffic Crew must proceed as follows:

- STOP, establish and maintain verbal communications with the Rail Traffic Crew of the disabled rail traffic,
- proceed at low speed and STOP a second time not less than 500 metres from the disabled rail traffic,
- explode any detonating signals or remove them from the track once the rail traffic has stopped,
- proceed beyond this point under radio, hand signal or light commands as provided by the Rail Traffic Crew or Qualified Worker at the disabled rail traffic,
- attach to the disabled rail traffic and prepare the rail traffic for departure,
- confirm the DMI has been switched OFF with the Rail Traffic Crew of disabled equipped rail traffic,
- confirm the Restraint Authority has been fulfilled with the Rail Traffic Crew of the disabled rail traffic before moving,
- proceed in accordance with the Work Authority,
and
- maintain verbal communication with the Network Controller, as needed, to enable the recovery process to be monitored.

The assisting Rail Traffic Crew must:

- report rail traffic clear and complete of section to the Network Controller,
- obtain a Restraint Authority from the Network Controller,
and
- fulfil the Work Authority.



Example: Rail Traffic assisting Rail Traffic disabled in the section.

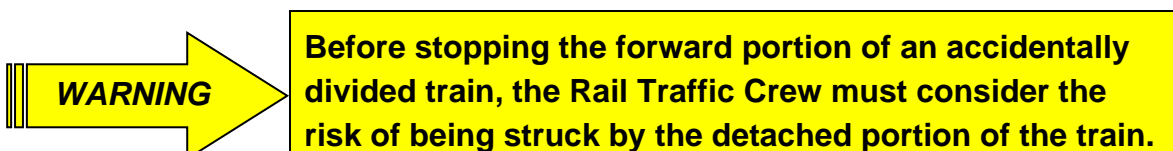
4.5.2.2 Rail Traffic Divided in the Section

Rail traffic may divide in the section due to rolling stock failure, insufficient locomotive power to haul the rail traffic without reducing the load, or due to rolling stock becoming uncoupled.

Rail Traffic Crew

If the Rail Traffic Crew becomes aware that it is necessary to divide the rail traffic into portions for removal from the section or the train has accidentally divided the Rail Traffic Crew must:

- STOP the train,
and
- tell the Network Controller about the requirement to divide the rail traffic into portions or the rail traffic has accidentally divided and, if possible, the location of the detached vehicle.



4.5.2.2.1 Accidental Division

Network Controller

A Work Authority may be issued to the Rail Traffic Crew to push back the forward portion of the train to re-couple accidentally detached vehicles.

If the rail traffic has become uncoupled but can be re-coupled and continue the Network Controller must:

- act in accordance with Addendum Rule 40 Reporting and Responding to a Condition Affecting the Network,
- where equipped rail traffic is fleeing in the section following the rail traffic that has become accidentally divided, cancel the current Authority by issuing the equipped fleeing rail traffic with a Restraint Authority,
- place blocking facilities on the block section the rail traffic is located,
and
- issue a Work Authority, that also cancels the current Authority to the accidentally divided Rail Traffic Crew to push back the forward portion of the train to re-couple the accidentally detached vehicles.

When advised by the Rail Traffic Crew that the rail traffic has been re-coupled, the Network Controller must:

- confirm the location of all rail traffic,
- issue a Restraint Authority to the rail traffic,
- fulfil the Work Authority,
- remove the blocking facilities for the Work Authority,
and
- issue an Authority to the rail traffic to proceed.

Rail Traffic Crew

The Rail Traffic Crew must:

- tell the Network Controller the rail traffic has accidentally divided,
- confirm the detached vehicles are secured and will not move,
- obtain a Work Authority, from the Network Controller that cancels the current Authority and push back the forward portion of the rail traffic to re-couple the accidentally detached vehicles,
- push back at low speed,
- re-couple to the rear portion using hand, radio or light commands,
- advise the Network Controller when the rear portion has been re-attached to the front portion,
- obtain a Restraint Authority,
- fulfil the Work Authority,
and
- request an Authority from the Network Controller to proceed.

4.5.2.2.2 Dividing and removing train

Network Controller

A Work Authority may be issued to the Rail Traffic Crew to take the front portion of the rail traffic to the location in advance and return for the second and subsequent portions of the rail traffic.

If it is necessary to divide rail traffic into portions for removal, the Network Controller must decide what kind and direction of assistance is needed to clear the portions from the section.

If it is necessary to take the front portion of the rail traffic to the location in advance, the Network Controller must:

- where equipped rail traffic is fleeing in the section following the disabled rail traffic, cancel the current Authority by issuing the rail traffic with a Restraint Authority,
- place blocking facilities on the block section the rail traffic is located inclusive of the location the rail traffic will be taken,
and
- issue a Work Authority, that also cancels the current Authority to the disabled Rail Traffic Crew to take the front portion of the rail traffic to the location in advance and return for the second and subsequent portions of the rail traffic.

If the current Authority includes crossing instructions for the location in advance, the Network Controller must advise the Rail Traffic Crew of the rail traffic to be crossed of the situation.

At the completion of the recovery of the second and subsequent portions of the rail traffic, the Network Controller must:

- confirm the location of all rail traffic at the location,
- confirm the Rail Traffic Crew has updated the rail traffic details or for unequipped rail traffic update the TCS workstation,
- issue a Restraint Authority to the rail traffic,
- fulfil the Work Authority,
- remove the blocking facilities for the Work Authority,
and
- if required, issue an Authority to proceed.

Rail Traffic Crew

When dividing the rail traffic, the Rail Traffic Crew must:

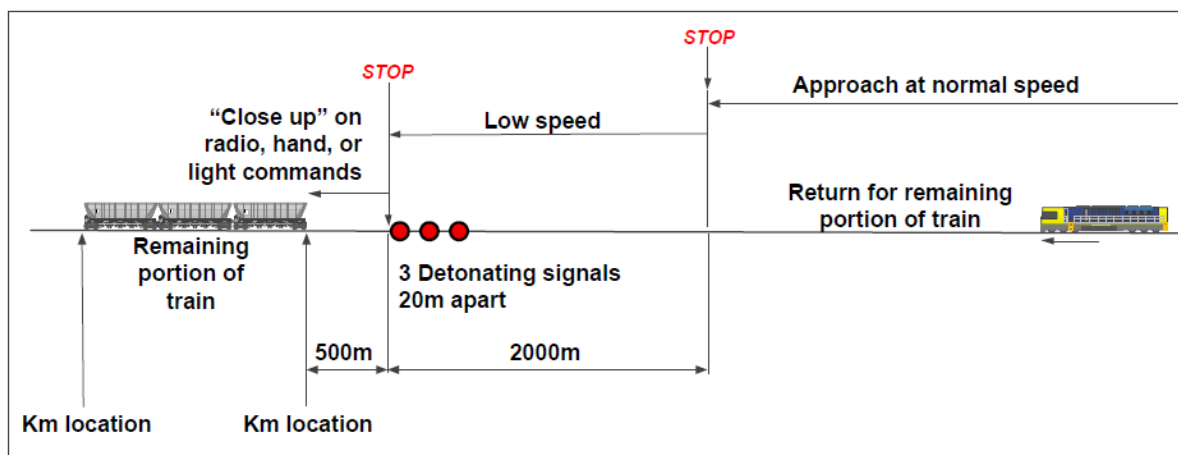
- secure the rear portion of the rail traffic by full application of sufficient handbrakes to hold the rail traffic, taking into account rail traffic length, tonnage, track gradient and the weather conditions,
- record the number of the last vehicle of the front portion,
- record the exact location and number of the lead vehicle of the rear portion and report the information to the Network Controller,
- obtain a Work Authority, that also cancels the current Authority, from the Network Controller to take the front portion of the rail traffic to the location in advance and return for the second and subsequent portions of the rail traffic,
- protect the front vehicle of the rear portion using detonating signals,
- when the front portion has arrived complete at the location in advance, report to the Network Controller,
- proceed to the point 2500 metres short of the rear portion of rail traffic to be recovered and STOP,
- proceed at low speed and STOP a second time, not less than 500 metres from the rear portion of rail traffic to be recovered,
- explode any detonating signals or remove them from the track once the train has stopped,
- move beyond this point under radio, hand signal, or light commands,
- attach to the rear portion of the rail traffic,
and
- maintain communication with the Network Controller, as needed, to enable the recovery process to be monitored.

At the completion of the recovery of the second and subsequent portions of the rail traffic, the Rail Traffic Crew must:

- confirm the location of all rail traffic at the location and advise the Network Controller,
 - as required, update the rail traffic details on the DMI or for unequipped rail traffic, advise the Network Controller of changes,
 - obtain a Restraint Authority,
 - fulfil the Work Authority,
- and
- obtain the appropriate Authority to proceed.



If the Network Controller considers it expedient to authorise another locomotive to remove the second and subsequent portions from the section (for example from another train), the procedure to be used is Clause 4.5.2.1, Recovery of Disabled Rail Traffic.



Example: Rail traffic dividing in Section.

4.5.2.3 Work in Section

A Work Authority is used for rail traffic to move in either direction between specified limits for work associated with infrastructure maintenance.

When rail traffic is required to perform work in a block section, the Network Controller must issue a Work Authority to the Rail Traffic Crew at the entrance to the section in which the rail traffic is required to work.

Where a Work Authority is used to perform work, the authority must:

- state the specified limits,
- if required, state that the block is obstructed, and the obstruction is protected using detonating signals,
and
- the track to be taken and if required, crossing or passing instructions.

On completion of the work, the rail traffic may return to either the entry end of the block section or proceed to the exit end of the block section as specified in the Work Authority.

Network Controller

Before issuing a Work Authority to allow rail traffic to perform work, the Network Controller must:

- place blocking facilities on the block section where the work is to be undertaken,
and
- issue a Work Authority to the rail traffic.

At the completion of the work, the Network Controller must:

- confirm the location of all rail traffic at the location,
- issue a Restraint Authority to the rail traffic,
- fulfil the Work Authority,
- remove the blocking facilities for the Work Authority,
and
- if required, issue an Authority to proceed.

Rail Traffic Crew

The Rail Traffic Crew must:

- obtain a Work Authority from the Network Controller,
- complete the work as detailed in the Work Authority,
- when the work has been completed, report rail traffic clear and complete of the block section to the Network Controller,
- obtain a Restraint Authority from the Network Controller,
and
- fulfil the Work Authority.

4.6 Written Authority for Unequipped Rail Traffic Only**4.6.1 Conditional Proceed Authority**

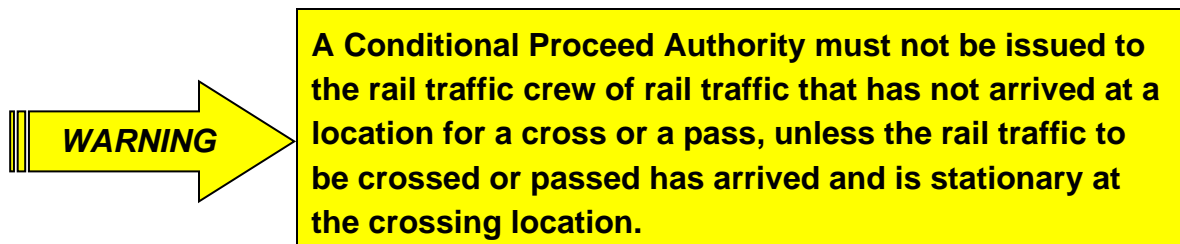
Unequipped rail traffic may be authorised to move on a written Conditional Proceed Authority.

The Conditional Proceed Authority is used for unequipped rail traffic to proceed from one specified limit at a location to another specified limit at a location in the forward direction under normal operating conditions subject to the rail traffic crew first complying with the instructions to cross or pass one or more rail traffic movements.

A single Authority must include only one location as a crossing or passing location with other rail traffic and include the track, train number and lead locomotive power unit number of the rail traffic to be crossed or passed.

A Conditional Proceed Authority must:

- not be issued to the Rail Traffic Crew of rail traffic that has not arrived at a location for a cross or pass, unless the rail traffic to be crossed or passed has arrived and is stationary at the crossing location,
- include crossing or passing instructions for one or more rail traffic movements,
- authorise rail traffic to proceed to a location in advance only after crossing or passing rail traffic,
- state the identification details of the last rail traffic movement to be crossed or passed before proceeding,
and
- not be acted upon until the opposing rail traffic has arrived and has been confirmed to be complete.



5 Managing Authorities

Authorities must be managed in a standard manner concerning their:

- reducing,
 - fulfilment,
 - cancellation,
 - loss,
- and
- reporting requirements.

A written Authority must not be compiled by Rail Traffic Crew members who are operating the controls of a moving vehicle.

5.1 Reducing Authority Limits

The Network Controller before reducing the Authority limits must:

- contact the Rail Traffic Crew and confirm the location of the affected rail traffic,
- and
- confirm with the Rail Traffic Crew that they will be able to comply with the proposed reduced Authority limit.

If there is any doubt that the rail traffic cannot be prevented from exceeding the proposed new limit of Authority, the rail traffic must be stopped, and its exact location determined before an Authority is reduced or cancelled.

5.1.1 Equipped Rail Traffic

When the Network Controller has received confirmation from the Rail Traffic Crew of their location and that the Rail Traffic Crew is able to comply with the proposed reduced Authority limit, the Network Controller must reduce the Authority limit on the TCS workstation, which will be displayed on the Rail Traffic Crews DMI.

5.1.2 Unequipped Rail Traffic

When the Network Controller has received confirmation from the Rail Traffic Crew of their location and that the Rail Traffic Crew is able to comply with the proposed reduced Authority limit, where a written Authority has been issued and the Authority limit is to be reduced, a replacement Authority must cancel the Authority currently in effect and contain altered instructions.

An Authority may be cancelled whilst rail traffic is in motion, provided that:

- the rail traffic is not located past the proposed new Limit of Authority, and
- the rail traffic will not pass the new Limit of Authority.

If a replacement written Authority is to be issued, then the new limit of Authority start point will be the Block Location to the rear that the rail traffic has reported departure from.

When an Authority which is currently in effect is to be cancelled, the cancel location must be included in the cancelling Authority.

The Rail Traffic Crew on receipt of the new Authority must write the word "CANCELLED" including the current location across the entire page in large block letters of the cancelled Authority.

NOTE

Instructions about the cancelled Authority are included in Sections 2 and 9 on Form SW8 of the replacement Authority.

| | | | | | | | |
|----------|-------------------------------------|--------------------|---|-----------|-----------|-----------------|----------------|
| 2 | <input checked="" type="checkbox"/> | After fulfilling | <i>Authority ID</i> | Authority | <i>17</i> | Is CANCELLED at | <i>FOXTROT</i> |
| 9 | <input checked="" type="checkbox"/> | Other Instructions | <i>Authority (this Authority ID) is now in effect</i> | | | | |
| | | | <i>Additional Instructions or Information</i> | | | | |

Example: Text to be shown on replacement Authority.

5.2 Authority Fulfilment

5.2.1 Equipped Rail Traffic

For equipped rail traffic, ATMS performs rollup of electronic Proceed Authorities and Proceed Restricted Authorities. Electronic Authorities are progressively fulfilled by the ATMS as the rail traffic movement proceeds.

Rail Traffic Crews of equipped rail traffic are not required to contact the Network Controller to fulfil an electronic Proceed Authority. The Network Controller may request the Rail Traffic Crew of equipped rail traffic to provide location reports to fulfil an electronic Proceed Authority.

5.2.2 Unequipped Rail Traffic

Rail Traffic Crews of unequipped rail traffic must fulfil an Authority only if the rail traffic is complete and clear of the section for which it was applicable and after all instructions contained within it, have been carried out.

At locations where ATMS terminates, rail traffic must be completely past the END ATMS sign before fulfilling an Authority.

When an Authority is fulfilled, the Rail Traffic Crew must:

- write “FULFILLED” diagonally across their copy,
and
- advise the Network Controller of the fulfilment time.

Network Controller

The Network Controller must:

- confirm the rail traffic identification and location,
- confirm the time advised by the Rail Traffic Crew is reasonable,
and
- accurately input the fulfilment time into the TCS workstation.

5.3 Authority Cancellation

If it is not possible to carry out all of the instructions contained within an Authority, a replacement Authority must cancel the Authority currently in effect and contain altered instructions.

The replacement Authority must:

- cancel the current Authority,
and
- contain the altered instructions.

If the reason for cancelling an Authority is to alter the crossing location, the Authority for the rail traffic to be held back must be cancelled before the Authority is cancelled for the rail traffic to be advanced.

If a replacement Authority is to be issued, then the new limit of authority start point will be the location to the rear that the rail traffic has reported departure from.

5.3.1 Unequipped Rail Traffic Only

When an Authority which is currently in effect is to be cancelled, the cancel location must be included in the cancelling Authority.

When an Authority is cancelled, the Rail Traffic Crew must write "CANCELLED" diagonally across their copy.

5.4 Lost Authority

Unequipped Rail Traffic

Rail Traffic Crew

Rail Traffic Crews must immediately report the loss of a current Authority to the Network Controller.

If an Authority is lost before rail traffic departs from a Block Location, the rail traffic must not depart the location.

If an Authority is lost after rail traffic departs from a Block Location, the rail traffic must not pass the arrival-end Yard Limit sign at the next Block Location.

Network Controller

The Network Controller must cancel the lost Authority and issue a new Authority.

5.5 Location Reporting

5.5.1 Equipped Rail Traffic

For equipped rail traffic, ATMS performs location reporting of electronic Proceed Authorities as the rail traffic movement proceeds, where the trainborne system confirms rail traffic integrity. The Network Controller may request the Rail Traffic Crew of equipped rail traffic to provide location reports.

Where the rail traffic integrity cannot be confirmed by the trainborne system, the Rail Traffic Crew will receive a visual and audible warning on the DMI.



Rail Traffic Crews are not required to contact the Network Controller and provide location reports for rail traffic operating on electronic Proceed Authorities where rail traffic integrity is confirmed by the trainborne system.

The Network Controller may request the Rail Traffic Crew of equipped rail traffic to provide location reports when the trainborne system cannot confirm the rail traffic integrity and rollup authorities.

When a location report has been requested from the Network Controller, the Rail Traffic Crew must confirm the rail traffic integrity by manually acknowledging the integrity on the DMI. The Rail Traffic Crew must only acknowledge the integrity of the rail traffic after confirming the rail traffic is complete by:

- a Qualified Worker advising the Rail Traffic Crew that the End-of-Train Device (EoTD) is in its correct position on the last vehicle,
or
- an electronic End-of-Train Device monitoring system, that is independent of the ATMS DMI,
and
- interpretation by the Rail Traffic Crew of indications on the locomotive flow meter (fluctuations).

5.5.2 Unequipped Rail Traffic

Network Controller

For unequipped rail traffic, the Network Controller must:

- as required identify the reporting locations in the written Proceed Authority,
and
- use verbal communication to advise the Rail Traffic Crew of additional reporting locations.

The Network Controller must include the location immediately before the Limit of Authority as a reporting location.

Rail Traffic Crew

The Rail Traffic Crew must, for each reporting location:

- confirm the rail traffic is clear and complete of the reporting location,
and
- contact the Network Controller and advise of the arrival and departure times.

Network Controller

When receiving reports from Rail Traffic Crews, the Network Controller must:

- confirm the rail traffic identification,
- confirm the location reporting arrival and departure times advised by the Rail Traffic Crew is reasonable,
- confirm the Limit of Authority for the current Authority,
and
- accurately input the data into the TCS workstation.

5.5.3 Reporting Unequipped Rail Traffic clear of the Section in ATMS Territory

Rail Traffic Crews before reporting rail traffic clear of the section to the Network Controller, the rail traffic must arrive clear and complete of the section.

Rail Traffic complete is determined by the Rail Traffic Crew with a roll-by inspection conducted, where a Qualified Worker advises the Rail Traffic Crew that the End-of-Train Device (EoTD) is in its correct position on the last vehicle. In the case of track vehicles and machines, rail traffic complete is when those identified on the Authority have arrived clear and complete of the section.

The Roll-by method must be used when:

- crossing or passing other rail traffic,
or
- arriving at attended Block Locations or Terminals.

Where a roll-by inspection is not undertaken, rail traffic complete for the purpose of rail traffic clear of the section is carried out as follows:

- electronically, where electronic End-of-Train devices are provided
and
- interpretation by the Rail Traffic Crew of indications on the locomotive flow meter (fluctuations).

5.5.4 Over-length Rail Traffic

Rail traffic may be too long to be able to stand within the limits of a Block Location.

Over length rail traffic must not enter a Block Location at which a cross is to take place, until the opposing rail traffic has arrived complete, and is standing in clear.

Over length rail traffic is not considered to have arrived until it is clear of the section to the rear.

5.5.5 Rail Traffic Crew changeover

Where Rail Traffic Crew changeover takes place, and the Authority has not been fulfilled or completed, the incoming Rail Traffic Crew must contact the Network Controller and;

- for unequipped rail traffic, read and verify the unfulfilled Authority to the Network Controller,
or
- for equipped rail traffic, verify the unfulfilled Authority displayed on the DMI with the Network Controller.

5.6 Written Authorities for Track Workers

The following written Authorities may be issued to track workers for the occupation of running lines:

- Local Possession,
- Track Occupancy Authority,
and
- Track Work Authority.



As required, Network Controllers must make sure that blocking facilities have been applied at the TCS workstation.



Train Running Information (TRI) may be used by track workers within ATMS territory.

6 Train Control System (TCS) Workstation

The TCS is the Network Controllers ATMS workstation at the Network Control Centre.

The TCS workstation display provides the following information to the Network Controller:

- track configuration,
- route setting,
- location of equipped rail traffic,
- electronically display limits of Authority,
- temporary speed restrictions,
- visual and audible warnings and alarms,
and
- blocking facilities.

6.1 Responding to TCS Warnings

Network Controllers must respond to visual and audible warnings without delay.

7 Driver Machine Interface (DMI)

The DMI is the Rail Traffic Crew's ATMS display screen on equipped rail traffic.

The DMI display screen provides the following information to the Rail Traffic Crew:

- Authority type,
- limit of Authority,
- distance to Authority limit (target to STOP),
- rail traffic current / permitted speed requirements,
- track speed,
- permanent / temporary speed restrictions,
- graphical display of the authority route,
- motor points route setting,
- track configuration,
- gradient,
- train location,
- visual and audible warnings and alarms,
- graphical display of train length,
- ATMS Trainborne status indications,
and
- supplementary information.

Rail Traffic Crews of equipped rail traffic must make sure the DMI in the lead end of the leading locomotive is in the RUN position when entering and operating on ATMS territory.

If equipped rail traffic is operating on ATMS territory and the Rail Traffic Crew switch the DMI from RUN to START / BYPASS or OFF, the Rail Traffic Crew must:

- immediately STOP the rail traffic,
and
- report the circumstances to the Network Controller.

7.1 Responding to DMI Indications

Rail Traffic Crews must:

- comply with the electronic Authority displayed on the DMI,
- respond to visual and audible DMI warnings without delay,
- respond to changed DMI indications without delay,
and
- STOP the rail traffic when a visual and audible DMI warning enforcement occurs and immediately contact the Network Controller.

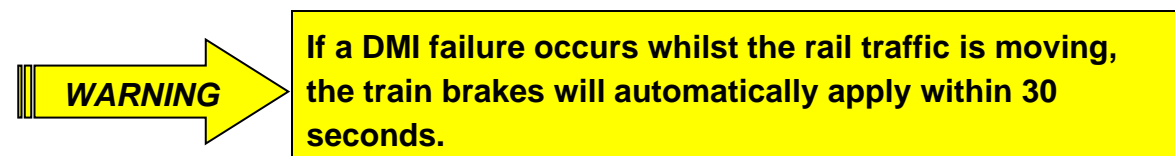
When enforcement has occurred, and the rail traffic is stopped, the rail traffic must not proceed until Authorised by the Network Controller.



7.2 DMI Failure

If a failure of the rail traffic trainborne equipment occurs and the electronic Authority on the DMI is not being displayed to the Rail Traffic Crew, the Rail Traffic Crew must:

- STOP the rail traffic,
and
- immediately report the failure to the Network Controller.



The rail traffic movement must not proceed until:

- the DMI is restored, the correct rail traffic details are accurately inputted into the DMI and the Authority is displayed,
or
- the Rail Traffic Crew is issued a written Authority.

If the DMI is not able to be restored and a written Authority is to be issued, the Proceed from (limit of Authority start point) will be the last confirmed electronic report location (specific kilometre location) to the rear of the rail traffic as provided on the Network Controllers TCS workstation.



The Rail Traffic Crew must STOP the rail traffic movement if the Electronic Authority on the DMI are not understood.

8 Blocking Facilities

Blocking facilities are facilities or devices used by Network Controllers to prevent:

- unintended issue of Occupancy Authorities,
or
- signalling or point equipment operation.

Unless otherwise permitted in the Rules:

- equipment with blocking facilities applied must not be operated,
and
- Network Controllers must not issue Occupancy Authorities for sections that are shown as blocked out of use on Train Control graphs.

Before applying blocking facilities to signals, points or sections of track, Network Controllers must make sure that the affected points are set in the correct positions.

Network Controllers must apply blocking facilities to protect against unauthorised entry into the limits of the following Authorities and conditions affecting the network when Authorities are not issued through the TCS workstation.

Authorities:

- Work Authority,
- Shunt Authority,
- Local Possession,
- Track Occupancy Authority
and
- Track Work Authority.

Conditions affecting the Network:

- Rail vehicles stabled on running lines,
- rail traffic failed on running lines,
- any possibility of adjacent line obstruction or damage following a derailment,
- a suspected running line obstruction,
and
- a suspected running line defect.

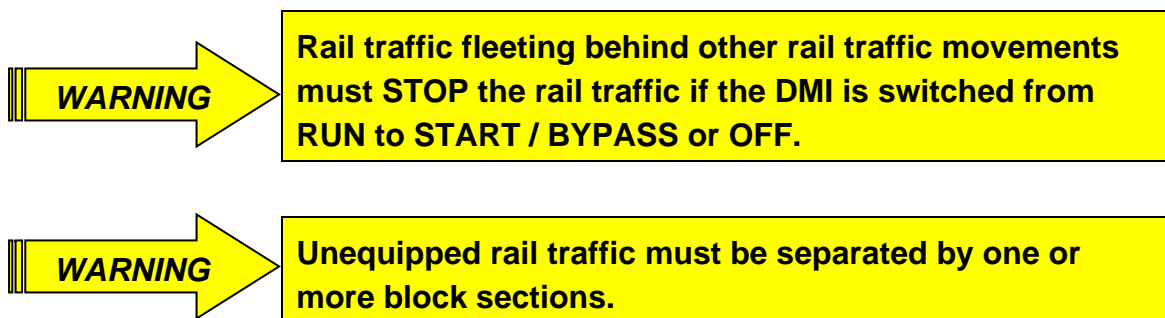
8.1 Removing Blocking Facilities

The Network Controller must maintain blocking facilities until the condition for its application no longer exists.

9 Fleeting

Fleeting is where a following equipped rail traffic movement is able to proceed behind another equipped rail traffic movement in the same section on an electronic Proceed Authority and maintaining safe separation enforced by the ATMS.

The fleeting of rail traffic is only permitted between equipped rail traffic.



10 Temporary Speed Restrictions

Network Controller

The Network Controller must:

- accurately maintain the database of temporary speed restrictions (TSR) in the TCS workstation,
 - when advised of a new TSR imposed or a current TSR has been altered or removed, accurately update the database,
 - issue new and altered TSRs to all affected Rail Traffic Crews operating on written Authorities using the ATMS Authority Form SW8, Section 9, as described in the Rule for Reporting and Responding to a Condition Affecting the Network,
- and
- after a new TSR is imposed or a current TSR is altered, instruct the Rail Traffic Crew of the next equipped rail traffic movement to confirm the signs erected for TSRs and DMI indications for the TSR are the same.

The Network Controller must continue to warn Rail Traffic Crews of rail traffic until the Network Controller has confirmed the TSR signs are in place, advertised and correct.



Equipped rail traffic will receive TSR information on the DMI. A CAN form is not required.

Rail Traffic Crew

Rail Traffic Crews must advise the Network Controller:

- of any variations between TSR signs and DMI TSR indications on equipped rail traffic,
- and
- of any variations between TSR signs and formally advised or published TSR's.

11 Running Line Points

Rail Traffic Crews must comply with their Authority and respond to light and point indicators.

11.1 Light and Point Indicator or Associated Points Failure

Rail Traffic Crew

If a light indicator displays:

- a STOP indication,
 - no light indication,
- or
- does not display the correct route for the Authority,

the Rail Traffic Crew must:

- STOP the movement before the light indicator,
- check the points for defects or obstructions,
and
- contact the Network Controller.



On equipped rail traffic, the DMI may display a warning to the Rail Traffic Crew to STOP and inspect points.

Network Controller

The Network Controller must instruct the Rail Traffic Crew to:

- place the points in hand mode,
- operate the points in hand mode,
- return the points to motor mode operation,
and
- contact the Network Controller when completed.

Rail Traffic Crew

The Rail Traffic Crew must advise the Network Controller of the indication displayed on the light indicator.

Where the light indicator is displaying the correct indication for the Authority, request authority to depart from the Network Controller and then proceed in accordance with the Authority.

Network Controller

If the light indicator does not display the correct route for the Authority, the Network Controller must instruct the Rail Traffic Crew to:

- place points in hand mode,
- if required, operate the points in hand mode for the Authority route,
- clamp the points for the Authority route,
and
- contact the Network Controller and advise of the route set.

Rail Traffic Crew

The Rail Traffic Crew must request authority to depart from the Network Controller and then proceed in accordance with their Authority.

11.2 Subsequent Rail Traffic**Network Controller**

Until advised by the Maintenance Representative that the light indicator and running line points have been inspected and repaired, the Network Controller must CAN warn:

- Rail Traffic Crews,
and
- track vehicle operators operating track machines and road/rail vehicles.

11.3 Temporary Speed Restriction for Points

Where the light indicator does not display an indication and the points have been clamped, the rail traffic must not exceed 70km/h over the points or a lower track speed is posted. The Rail Traffic Crew must observe that the points stand indication at the location displays the correct indication.

Where the points have not been clamped a speed restriction of 20 km/h over the points will apply or a lower track speed is posted. The Rail Traffic Crew must observe that the points stand indication at the location displays the correct indication.

Rail Traffic Crews of unequipped rail traffic must receive Temporary Speed Restrictions for points on the ATMS Authority Form SW8, section 6.

Track vehicle operators operating track machines and road/rail vehicles must receive Temporary Speed Restrictions for points on a CAN form.



Equipped rail traffic will receive TSR information on the DMI. A CAN form is not required.

12 Local Control of Running Line Points

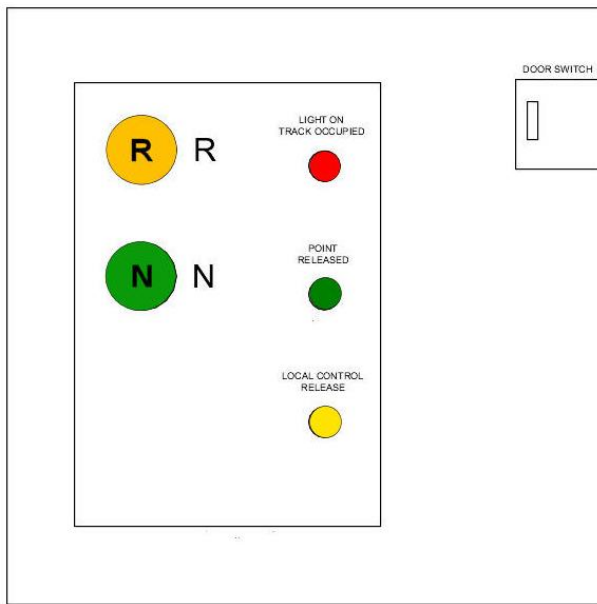
The points at a Block Location (crossing loop) may be operated locally by push buttons controls, located within the local control cabinet attached to the wall of the equipment hut located at each end of the crossing loop.

When required to operate points locally the Qualified Worker must contact the Network Controller to request local control of running line points.

When authorised by the Network Controller, the Qualified Worker may operate the points using local control.

When local control of running line points is no longer required the Qualified Worker must advise the Network Controller.

The Network Controller when advised by the Qualified Worker that local control of running line points is returned, the Network Controller must test the points to ensure they are working correctly.



Example: Local control running line points push button box.

12.1 Status Lights

Status lights are provided within the local control cabinet and display the status of the release and points.

Local Control Release

Orange light, when illuminated indicates the release is provided to operate the points locally.

When the light is not illuminated, indicates local control of points is not available.

Points Released

Green light, when illuminated indicates the points can be operated to the Normal or Reverse position.

When the light is not illuminated, indicates the points are not available to be operated to Normal or Reverse.

Track Occupied

Red light, when illuminated indicates that the point's track-circuit is occupied, and the points are locked.

When the light is not illuminated, indicates the point's track-circuit is not occupied and the points are able to be operated.

12.2 Local Controls

Push buttons are provided within the local control cabinet to locally operate the points.

Normal Push Button (N) When pressed operates the point to the Normal position.

Reverse Push Button (R) When pressed operates the points to the Reverse position.



If the points have been operated to either the Normal or Reverse position and the Qualified Worker requires the points to be restored to the previous position, the Qualified Worker must press and hold the button in for a minimum 1 second.

12.3 Operating Local Control Running Line Points

Opening the door of the local control cabinet activates a 'door detection switch', which prevents the operation of the push buttons until a 90 second time release occurs.



If the door of the local control cabinet is closed and reopened, the 90 second time release will cancel and restart.

Qualified Worker

When required to operate points locally the Qualified Worker must:

- request local control of running line points from the Network Controller,
 - ensure no rail traffic movement is closely approaching the points that may be affected by the operation of the points,
 - ensure that any rail traffic movement is clear of the points track circuit before the operation of the points,
 - ensure workers are clear of the points before the operation of the points,
 - unlock the local control cabinet and open the door,
 - after 90 seconds, observe that the LOCAL CONTROL RELEASE and POINTS RELEASED lights are illuminated,
 - press the required push button (NORMAL or REVERSE) to set the points for the rail traffic movement, confirm the points are in the required position by observing the points,
 - where rail traffic:
 - is only required to enter or depart the crossing loop or main line, close and lock the local control cabinet door,
 - or
 - is undertaking shunting movements, at the completion of the rail traffic movements close and lock the local control cabinet door,
- and
- advise the Network Controller that local control of the points is no longer required.

13 Rail Traffic Crossing or Passing on ATMS Territory

13.1 Equipped Rail Traffic

Where a cross or pass movement is to occur and both rail traffic movements are equipped and operating on electronic Authorities, the Rail Traffic Crews are not required to communicate cross or pass requirements between each other. The Rail Traffic Crews must comply with the Authority displayed on the DMI.

13.1.1 Simultaneous Entry at Block Locations (Crossing Locations)

Simultaneous entry at Block Locations (crossing locations) is only permitted between equipped rail traffic.

When equipped rail traffic is to cross at a Block Location, it is permissible for simultaneous entry from the opposing Yard Limit signs, with one rail traffic movement routed to the crossing loop and one rail traffic movement routed to the main line.

13.2 Unequipped Rail Traffic (At least One)

Where a cross or pass movement is to occur and one or both rail traffic movements are not equipped, the following conditions apply.

Network Controller

The Network Controller when issuing an Authority to rail traffic that includes cross or pass instructions, the Network Controller must tell Rail Traffic Crews if one or both rail traffic movements that are to cross, or pass are unequipped.

Rail Traffic Crews

The Rail Traffic Crews of the opposing rail traffic movements on entering the block section, immediately prior to the crossing location, must contact the Network Controller to confirm their Authority and provide the Network Controller with an estimated time of arrival at the location of the cross.

Where equipped rail traffic is fleeting and are required to cross or pass an unequipped rail traffic movement, the second and subsequent fleeting rail traffic will receive the cross or pass information when the electronic Authority is displayed through the location on the DMI where the cross or pass is to occur.

Fleeting Rail Traffic Crews of equipped rail traffic are not required to contact the Network Controller:

- on entry to the section immediately prior to the crossing location,
and
- when the cross or pass information is displayed on the DMI.

Network Controller

The Network Controller, when contacted by the Rail Traffic Crews of the opposing rail traffic movements, the Network Controller must verify the contents of both Authorities.

Rail Traffic Crews

The rail traffic to take the crossing loop must enter the crossing location first, except when otherwise established with the Network Controller and the opposing Rail Traffic Crew.

When the rail traffic is approximately 5km's from the crossing location the Rail Traffic Crews must attempt to contact the Rail Traffic Crew of the opposing rail traffic by means of the secondary form of communication. Where the Rail Traffic Crews are unable to communicate using the secondary form of communication, the Network Controller must assist in communicating with the opposing rail traffic:

- to confirm crossing and passing details with the opposing Rail Traffic Crew,
- the expected time of arrival at the crossing location,
and
- which rail traffic movement will enter the crossing location first.

When expected times of arrival at the crossing location are similar, the rail traffic to take the main line must slow down to allow time for the rail traffic to take the crossing loop to safely enter the crossing location first.

When approaching a crossing location stipulated in an Authority and no communications are available between the two rail traffic movements and the Network Controller:

- the rail traffic to take the crossing loop must enter the crossing location first,
and
- the rail traffic to take the main line must STOP before the Yard Limit sign and wait for the Rail Traffic Crew of the rail traffic in the crossing loop to advise they are in clear and complete.

The rail traffic waiting at the Yard Limit sign may proceed onto the main line after the Rail Traffic Crew observes the Light Indicator is displaying the correct indication for the main line.

When the Rail Traffic Crew of the first rail traffic movement to arrive has reported arrival clear and complete at the crossing location to the Network Controller, both Rail Traffic Crews may obtain the next Authority for their own rail traffic.

Any further communications between the two Rail Traffic Crews must be by the use of the secondary communications equipment.

When crossing or passing both Rail Traffic Crews must confirm rail traffic completeness by verifying that the other rail traffic's "end of train marker" is in place. Where it is noticed that the "end of train marker" is missing, the Rail Traffic Crew in charge of the rail traffic with the missing "end of train marker" and the Network Controller must be advised immediately.

The Rail Traffic Crew of:

- the rail traffic with the "missing end of train marker" must not proceed until the safe integrity of the rail traffic is verified by ensuring that the last vehicle on the rail traffic is the last vehicle on the train with the consist held by the Rail Traffic Crew,
- or
- where provided, by the use of an end of train monitor unit.

Where there is any doubt or discrepancy, the rail traffic must not proceed until the rail traffic can be confirmed as complete.

Rail traffic must not proceed into the section from which a rail traffic movement with a missing "end of train marker" has arrived until the section is confirmed as being clear.

Where safe and practicable to do so, a roll by inspection must be performed by the Rail Traffic Crew of the stationary rail traffic. Where Rail Traffic Crews notice any irregularity, the other Rail Traffic Crew and the Network Controller must be immediately advised. The rail traffic with the irregularity must not proceed until the problem is further investigated and rectified.

When the first rail traffic movement (unequipped only) arrives at a location where a cross or pass is to take place the Rail Traffic Crew must report arrival to the Network Controller.

13.2.1 Rail Traffic Crossing at Block Locations - First Rail Traffic Movement to take Crossing Loop

13.2.1.1 Movement Entering Crossing Loop

When the Rail Traffic Crews have established that the rail traffic to take the crossing loop will enter the location yard first, or when the Rail Traffic Crews involved are not able to communicate, the Rail Traffic Crew of the rail traffic to take the crossing loop must:

- observe that the Light Indicator is displaying a 'flashing yellow', indicating that the points are set for the crossing loop,
- control the movement at a speed that allows it to proceed directly onto the crossing loop,
- enter the crossing loop and ensuring the movement is clear and complete of the main line,
- report rail traffic arrival to the Network Controller (unequipped rail traffic only),
- advise the Rail Traffic Crew of the opposing rail traffic movement that the rail traffic is clear and complete within the crossing loop,
- be prepared to obtain a further Authority from the Network Controller, and
- where safe and practicable to do so, conduct a roll by of the opposing rail traffic movement.

13.2.1.2 Movement Entering Main Line

The Rail Traffic Crew of the opposing movement issued with an Authority to enter the main line must not proceed beyond the Yard Limit sign, until the Rail Traffic Crew of the rail traffic in the crossing loop has advised they are in clear and complete. The Rail Traffic Crew of the rail traffic approaching or waiting at the Yard Limit sign may proceed onto the main line after observing the Light Indicator is displaying the correct indication for the main line.

The Rail Traffic Crew of the opposing movement entering the main line must:

- obtain confirmation that the opposing rail traffic movement is clear and complete within the crossing loop from the Rail Traffic Crew,
- confirm that the Light Indicator is displaying either:
 - a 'GREEN' aspect, indicating that the facing and trailing points are correctly set and locked for the main line,
 - or
 - a 'STEADY YELLOW' aspect, indicating that the facing points are correctly set and locked for the main line and the trailing points are not set and locked for the main line,
- fulfil any other instructions contained on the Authority at the location,
- observe the opposing rail traffic movement on the crossing loop and report any defects,
- if not already received, and where applicable, obtain an Authority to proceed, and
- report departure to the Network Controller (unequipped rail traffic only).

13.2.2 Rail Traffic Crossing at Block Locations - First Movement to take Main Line

13.2.2.1 Movement Entering Main Line

When the Rail Traffic Crews have established that the rail traffic to take the main line will enter the location yard first, the Rail Traffic Crew of the rail traffic to take the main line must:

- observe that the Light Indicator is displaying a 'yellow' aspect, indicating that the facing points are set for the main line,
- control the movement at a speed that allows it to proceed directly onto the main line,
- enter the main line and STOP at the clearance point (control point) at the far end of the location,
- report rail traffic arrival to the Network Controller (unequipped rail traffic only),
- be prepared to obtain a further Authority from the Network Controller,
and
- where safe and practicable to do so, conduct a roll by of the opposing rail traffic movement.

13.2.2.2 Movement Entering Crossing Loop

When the Rail Traffic Crews have established that the rail traffic to take the crossing loop will enter the location yard second, the Rail Traffic Crew of the rail traffic to take the crossing loop must:

- obtain confirmation that the opposing rail traffic movement is clear and complete on the main line from the Rail Traffic Crew,
- observe that the Light Indicator is displaying a 'flashing yellow' indicating that the points are set for the crossing loop,
- control the movement at a speed that allows it to proceed directly onto the crossing loop,
- enter the crossing loop and ensuring the movement is clear and complete of the main line,
- report rail traffic arrival to the Network Controller (unequipped rail traffic only),
- observe the opposing rail traffic movement on the main line and report any defects,
and
- be prepared to obtain a further Authority from the Network Controller.

13.2.3 Movement Departing Crossing Loop

The Rail Traffic Crew of the movement on the crossing loop must:

- confirm that the opposing movement taking the main line has arrived (and or departed) complete by sighting the “end of train marker” or confirmation with the opposing Rail Traffic Crew,
- fulfil any other instructions contained on the Authority at the Block Location,
- if not already received, and where applicable, obtain an Authority to proceed,
- for equipped or unequipped rail traffic crossing equipped rail traffic;
 - the points will operate to the ‘REVERSE’ position in accordance with the Authority
- for equipped rail traffic crossing unequipped rail traffic;
 - the Rail Traffic Crew must acknowledge on the DMI that the opposing movement has arrived complete,
 - the points will operate to the ‘REVERSE’ position in accordance with the Authority
- for unequipped rail traffic crossing unequipped rail traffic;
 - open the door of the control cabinet and observe that the Light Indicator has restored to ‘RED’,
 - once the ‘LOCAL CONTROL RELEASE’ and ‘POINTS RELEASED’ light becomes illuminated, operate the points to the ‘REVERSE’ position,
 - close and lock the control cabinet door and advise the Network Controller,
and
 - re-join the rail traffic
- observe that a yellow dumb bell is displayed on the mechanical point indicator,
- depart the Block Location in accordance with the Authority,
and
- report departure times to the Network Controller (unequipped rail traffic only).



For unequipped rail traffic, local control of running line points will be provided automatically once the opposing rail traffic has cleared beyond the track-circuit over the points to be operated.

Local control of running line points will restore automatically to the Network Controller when the rail traffic departs the crossing loop and clears the track-circuit over the points.

13.3 ATMS Main Line Crossing Speed

At ATMS Block Locations (crossing locations), if:

- both rail traffic movements are confirmed as complete by use of end of train monitor units,
- the Rail Traffic Crew of the rail traffic to take the main line can maintain an uninterrupted view of the Light Indicator at the facing points,
and
- the Light Indicator displays a correct route setting,

the rail traffic to take the main line may travel through the crossing location at Normal Speed.

The rail traffic to take the main line must not exceed 50 km/h onto the main line at the crossing location if:

- both rail traffic movements cannot be confirmed as complete, by the use of end of train monitor units,
or
- the Rail Traffic Crew of the rail traffic to take the main line cannot maintain an uninterrupted view of the indication displayed by the Light Indicator at the facing points.

14 Passing Fixed Signals at STOP

This section prescribes the rules for passing fixed signals at STOP allowing entry to or within ATMS Territory.

14.1 General Requirements

The Authority for passing fixed signals at STOP applies to signals that cannot be cleared for an intended movement.

Rail traffic must not pass a fixed signal at STOP unless it is authorised to do so by the Network Controller.

In addition to standard STOP indications a fixed signal must be considered at STOP where the signal:

- is not understood,
 - is not normally expected,
 - is blacked out (absence of light),
 - displays a white light where a coloured light should be,
- or
- it is improperly, or irregularly displayed.

14.2 Speaking to Network Controller

The Rail Traffic Crew must speak to the Network Controller if a fixed signal at STOP does not clear.

The Rail Traffic Crew must give the Network Controller:

- the rail traffic identification,
- and
- the signal identification and location.

14.3 Condition of the block ahead

Network Controller

The Network Controller must get available information about the condition of the affected block.

The Network Controller must tell the Rail Traffic Crew:

- that the block is clear of rail traffic,
- if the block is occupied and if known, the location of the last rail traffic to enter the block,
- if the track is safe or unsafe,
- the location of any obstructions or failed infrastructure in the block,
or
- that the block has been reported as not obstructed.

Rail Traffic Crew

If the condition of the block is not known, the Rail Traffic Crew of the first rail traffic to transit the block must:

- report the condition of the block to the Network Controller as soon as practical,
and
- report when the rail traffic has exited the block.

Network Controller

The Network Controller must make sure that the route to be taken by rail traffic is:

- set and secured,
or
- will be set and secured by a Competent Worker.

14.4 Passing absolute or permissive signals

Where possible, the Network Controller must place blocking facilities to prevent the inadvertent operation of the signal.

14.4.1 Equipped Rail Traffic

The Rail Traffic Crew must obtain the authority of the Network Controller to pass a fixed signal at STOP.

Network Controller

Before the Network Controller authorises rail traffic to pass a fixed signal at STOP, the Network Controller must confirm the rail traffic has an electronic Authority to proceed by:

- checking the train control graph,
- the TCS workstation,
- and
- requesting the Rail Traffic Crew confirm the Authority limits displayed on the DMI.

The Network Controller must verbally authorise the Rail Traffic Crew to pass the fixed signal at STOP.

A verbal Authority to pass a fixed signal at STOP must include:

- the identity of the rail traffic for which it is intended,
- the identity of the signal to be passed at STOP,
- the location of the signal to be passed at STOP,
- the condition of the block ahead,
- the limit of authority,
- where necessary, instructions to inspect and set points manually,
- and
- the speed to be observed.

The Network Controller must act in accordance with Addendum Rule 40 Reporting and Responding to a Condition Affecting the Network for level crossing warning equipment.

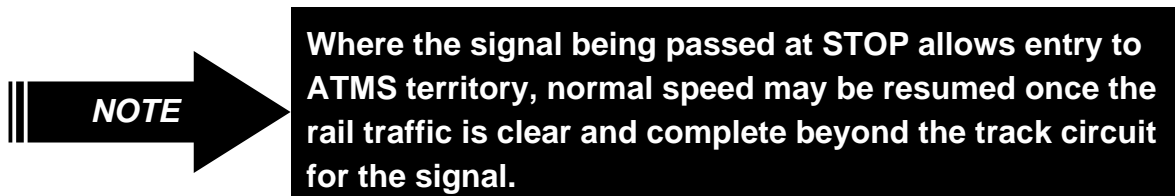
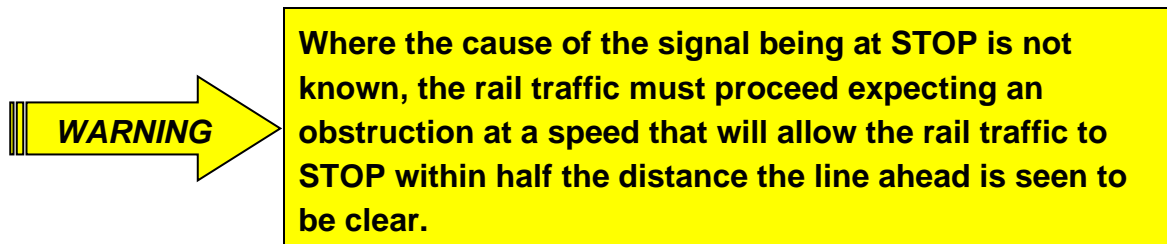
Rail Traffic Crew

The Rail Traffic Crew must only proceed past a fixed signal at STOP:

- when verbally authorised by the Network Controller,
and
- the DMI is displaying an Authority to proceed.

The Rail Traffic Crew must:

- repeat the verbal Authority to pass the fixed signal at STOP,
- any additional instructions back to the Network Controller,
and
- Proceed in accordance with the Authority displayed on the DMI.



Network Controller

Acknowledge that the Rail Traffic Crew has repeated the verbal Authority to pass the fixed signal at STOP and any additional instructions correctly.

14.4.2 Unequipped Rail Traffic

The Rail Traffic Crew must obtain a written Authority from the Network Controller to pass a fixed signal at STOP.

Network Controller

Before the Network Controller authorises rail traffic to proceed passed a fixed signal at STOP, the Network Controller must:

- where possible, place blocking facilities to prevent the inadvertent operation of the signal,
- check the train control graph,
and
- the TCS workstation to make sure there are no conflicting Authorities.

The Network Controller must:

- where a written Authority has previously been issued for the rail traffic to travel through the block section, issue a new Authority, that cancels the current Authority and includes authority for the rail traffic to pass the fixed signal at STOP,
or
- issue a written Authority that authorises the rail traffic to pass the fixed signal at STOP and travel through the block section.

The written Authority to pass a fixed signal at STOP must include details of:

- identity of the rail traffic for which it is intended,
- the identity of the signal to be passed at STOP,
- the location of the signal to be passed at STOP,
- the condition of the block ahead,
- the limit of authority,
- where necessary, instructions to inspect and set points manually,
- level crossing warnings,
and
- the speed to be observed.

Rail Traffic Crew

The Rail Traffic Crew of unequipped rail traffic must only proceed past a fixed signal at STOP when issued a written Authority by the Network Controller that includes additional instructions to pass the fixed signal at STOP.

The Rail Traffic Crew must:

- where a written Authority has previously been issued for the rail traffic to travel through the block section, obtain a replacement Authority, that cancels the current Authority and authorises the rail traffic to pass the fixed signal at STOP,
- or
- obtain a written Authority that authorises the rail traffic to pass the fixed signal at STOP and travel through the block section.



Where the cause of the signal being at STOP is not known, the rail traffic must proceed expecting an obstruction at a speed that will allow the rail traffic to STOP within half the distance the line ahead is seen to be clear.



Where the signal being passed at STOP allows entry to ATMS territory, normal speed may be resumed once the rail traffic is clear and complete beyond the track circuit for the signal.

14.4.3 Active Control Level Crossings

The Rail Traffic Crew must proceed but be prepared to STOP when approaching a crossing equipped with an active level crossing warning system. The Rail Traffic Crew must ensure the warning equipment is operating correctly. If the active level crossings warning equipment is operating correctly proceed over the level crossing only if it is safe to do so.

If the warning equipment is not operating correctly, the rail traffic must be stopped before the crossing and the Rail Traffic Crew (or Qualified Worker) must:

- operate the manual switch (if provided and able to be accessed) to activate the crossing, wait for road traffic and pedestrians to stop before proceeding, or
- if the warning system cannot be activated manually stop all road and pedestrian traffic before proceeding.

15 ATMS Occupancy Rules Table

| | | | | | | | | | | | | | |
|-------------------|----------------|---------------|------------|----------------|-------------|------------|-------------|---------------|-------------|-------------|-------------|---------------------|---------------------|
| Current Authority | PA Written | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | Yes Rule 7 | No | Yes Rule 3 | Yes Rule 4 |
| | PA Electronic | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | Yes Rule 7 | No | Yes Rule 3 | Yes Rule 4 |
| | PRA Written | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | Yes Rule 7 | No | Yes Rule 3 | Yes Rule 4 |
| | PRA Electronic | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | Yes Rule 7 | No | Yes Rule 3 | Yes Rule 4 |
| | WA Written | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | No | No | Yes Rule 3 | Yes Rule 4 |
| | SHA Written | No | No | No | No | No | No | Yes Rule 8 | Yes Rule 8 | No | No | No | Yes Rule 4 |
| | RA Written | No | No | Yes Rule 9 | Yes Rule 9 | Yes Rule 9 | No | No | No | No | Yes Rule 10 | Yes Rule 3 | Yes Rule 4 |
| | RA Electronic | No | No | Yes Rule 9 | Yes Rule 9 | Yes Rule 9 | No | No | No | No | Yes Rule 10 | Yes Rule 3 & Rule 5 | Yes Rule 4 |
| | CPA Written | No | No | No | No | No | No | No | No | No | No | Yes Rule 3 | Yes Rule 4 |
| | LP Written | No | No | No | No | No | No | Yes Rule 11 | Yes Rule 11 | No | No | No | No |
| | TOA Written | No | No | No | No | No | Yes Rule 5 | No | No | No | No | Yes Rule 5 | Yes Rule 4 & Rule 5 |
| | TWA Written | Yes Rule 6 | Yes Rule 6 | Yes Rule 6 | Yes Rule 6 | Yes Rule 6 | Yes Rule 6 | No | No | Yes Rule 6 | No | Yes Rule 4 & Rule 5 | Yes Rule 5 |
| | | PA Electronic | PA Written | PRA Electronic | PRA Written | WA Written | SHA Written | RA Electronic | RA Written | CPA Written | LP Written | TOA Written | TWA Written |

Requested Authority

- Rule 1** Permitted provided the preceding rail traffic is running in the same direction and the requested Authority is permitted provided speed restrictions are placed on the following train.
- Rule 2** Permitted provided the preceding rail traffic is running in the same direction as the shunting movement and has already cleared the shunting limit location.
- Rule 3** Permitted provided it is issued after the rail traffic has passed the proposed worksite and is not returning.
- Rule 4** Permitted provided the Worksite Supervisor is advised of all rail traffic likely to occur during the currency of the Authority.
- Rule 5** Permitted provided the specified limits do not overlap and separated by a safety margin.
- Rule 6** Permitted provided the Worksite Supervisor is advised of all rail traffic movements likely to occur during the currency of the Authority in accordance with Rule 4. If the Worksite Supervisor cannot be advised of the rail traffic, the rail traffic crew must be warned of the location of the track work and advised of the circumstances.
- Rule 7** Permitted provided crossing and passing instructions are included on the Authority of each train.
- Rule 8** Provided the RA is for the same train.
- Rule 9** Permitted provided speed restrictions are placed on the PRA or WA and the Rail Traffic Crew informed of the location of the restrained rail traffic.
- Rule 10** Permitted for overlapping limits and the Rail Traffic Crew, Overall Worksite Supervisor and Network Controller have consulted.
- Rule 11** Permitted provided the work train is located at the boundary of the Local Possession and the Overall Worksite Supervisor, Network Controller and work train Rail Traffic Crew have consulted.

16 ATMS Definitions, Expressions and Acronyms

Authority - a generic term for Proceed Authority (PA), Proceed Restricted Authority (PRA), Work Authority (WA), Shunt Authority (ShA), Restraint Authority (RA), Conditional Proceed Authority (CPA), Local Possession (LP), Track Occupancy Authority (TOA), Track Work Authority (TWA).

Authority Rollup - the progressive electronic fulfilment of a Proceed Authority on equipped rail traffic.

Block section - A portion of line with defined limits, between block locations which only one rail traffic movement is allowed at any one time.

Blocking facility – the facility used by the Network Controller to prevent the unintended:

- issue of an Occupancy Authority,
- operation of points,
or
- operation of signalling equipment.

Control point – the location to which an Authority can start or finish, a control point sign, Yard Limit sign, Shunt Limit sign, Block Point sign or signal that can display a STOP indication.

Driver Machine Interface (DMI) - the Rail Traffic Crew's ATMS display screen in equipped rail traffic.

electronic Authority - an Authority displayed on the Driver Machine Interface (DMI) of an equipped locomotive.

Electronic block – separate portions of track within a block assigned on a continuous basis.

equipped - rail traffic fitted with operational trainborne equipment installed at both ends of the rail traffic necessary for operation on electronic Authorities in ATMS territory.

Enforcement - initiate and hold a brake command until the rail traffic comes to a STOP.

fleeting - The grouping of two or more trains, not coupled but travelling closely together in the same direction using safe separations and operating under individual electronic Proceed Authorities within ATMS territory.

limit of authority – the location and track to which rail traffic may travel under an Authority. It may be a physical control point sign, a sign at a location, a signal capable of displaying a STOP indication, or a specific kilometre location.

occupancy rules - how each possible conflict between Authorities must be resolved by the engineered system and Network Controllers.

rail traffic speed – includes civil speed, temporary speed restrictions and class of train speed.

rail traffic details - the data required by ATMS for rail traffic to operate in ATMS territory. This includes a listed order of vehicles inclusive of locomotives, train length and maximum speed of the train.

situational awareness - understanding the current environment or situation and the ability to anticipate problems to enable an effective response.

trainborne - the ATMS equipment installed at both the front and rear of equipped rail traffic.

Train Control System (TCS) - the Network Controller's ATMS workstation in the Network Control Centre.

unequipped - rail traffic not fitted with trainborne equipment or with failed trainborne equipment which must operate on written Authorities in ATMS territory.

written Authority - an Authority recorded in writing by the Network Controller or recipient on the prescribed safeworking form.