

Tram Rule Book

Manual

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Definitions

Term	Definitions
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Adelaide Tram Network Tram Rules

Volume 1 – General Tram Rules

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1 Scope

1.1 Purpose of this section

This section describes the scope of the Adelaide Tram Network Tram Rules.

1.2 General

Adelaide Metro Operations is the accredited Rail Infrastructure Manager and Rolling Stock Operator for the Adelaide Tram Network.

This document comprises the rules that apply to the Adelaide Tram Network. Irrespective of their employer, Rail Safety Workers (RSWs) who manage or operate tram services, manage, or perform maintenance and construction work on the tram network or access the tram network other than as a passenger on public services, must comply with these Tram Rules.

1.3 Extent of the Tram Network

The Tram Network currently extends from the intersection of King William Street and North Terrace, Adelaide, to:

- the Festival Plaza Tram Stop at King William Road, Adelaide; and
- the Botanic Gardens Tram Stop at North Terrace, Adelaide; and
- the Glenelg Tram Stop at Moseley Square, Glenelg; and
- the Adelaide Entertainment Centre Tram Stop at Port Road, Hindmarsh.

Any extensions to the Tram Network will operate to these Tram Rules. See Figure 1 for a map of the Tram Network.

1.3.1 Safeworking Management of the Tram Network

The Safeworking of the Tram Network is managed by Tram Controllers.

The maintenance of safe tram separation on the Tram Network is based on the principle of an unobstructed line-of-sight between a subject and object.

Tram Controllers can view tram locations utilising a Tram Tracking Systems and the electrical network using the Supervisory Control and Data Acquisition (SCADA) system.

Tram Controllers must authorise access to the Tram Network as applicable, in accordance with the requirements detailed in the Tram Rules.

1.3.2 Tram movements

Tram movements towards Adelaide Rail Station and Festival Plaza are designated as UP movements.

Tram movements away from Adelaide Rail Station and Festival Plaza are designated as DOWN movements.

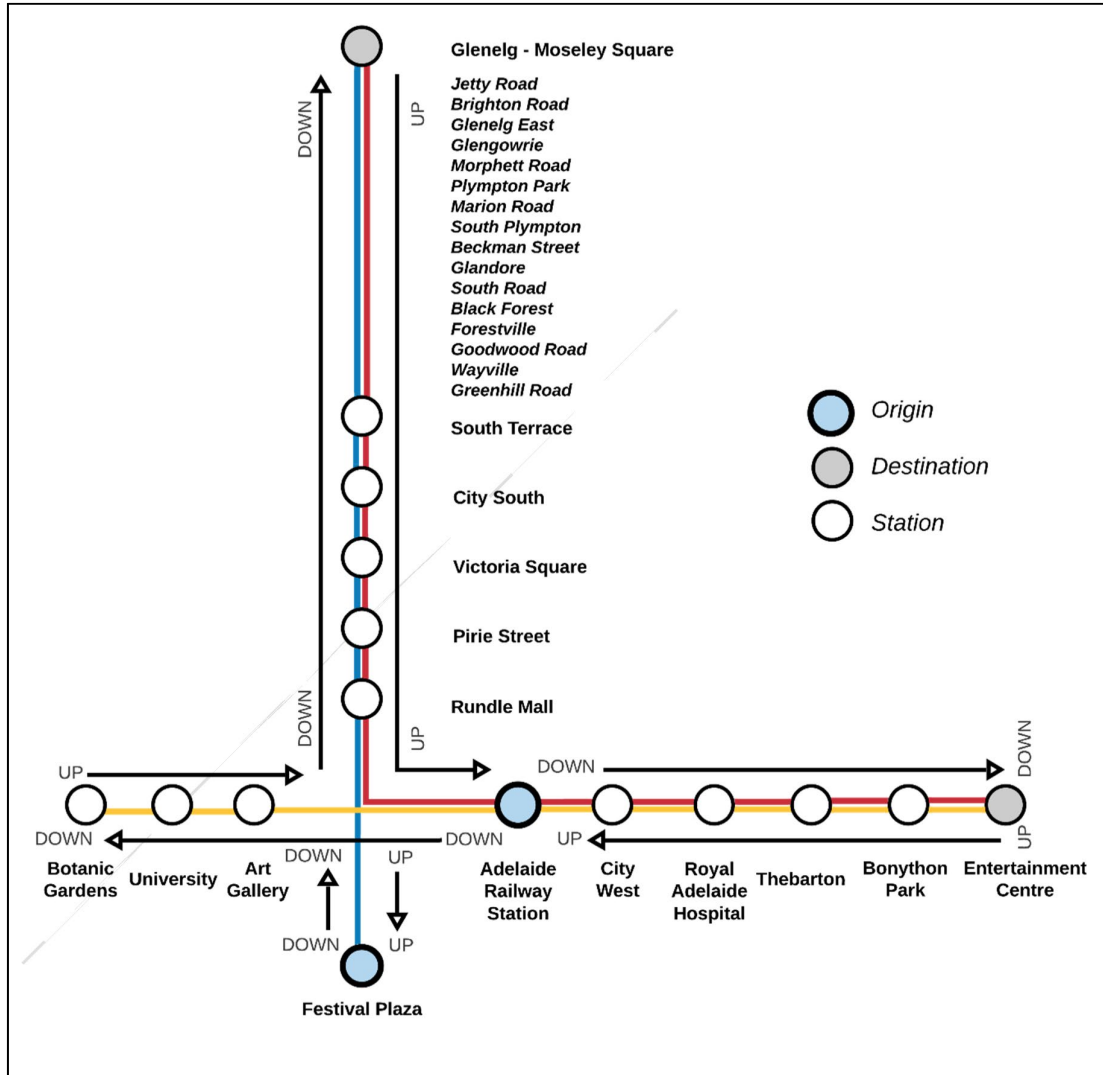


Figure 1: Tram Movements on the Tram Network

Normal tram movements observe unidirectional left-hand side running. Bidirectional running is permitted for:

- arriving and departing from a terminating location; and
- access to Glengowrie Depot; and
- for tram movements traversing sidings or crossovers; and
- within the Glengowrie Depot.

Other bidirectional running may be advertised when required in the Daily Tram Notice.

Tram Notice No. 348 - 14/12/2021 (Tuesday) - Version A										
Reason	From Nearest Location	From Nearest Pole	To Nearest Location	To Nearest Pole	Direction	Max Speed	From Duration	To Duration	Instructions	
F Track Occupancy Authority	Festival Plaza Tram Stop	Pole P16	Festival Plaza Tram Stop	Pole P1	Up and Down	-	01:30	04:00	Drain Cleaning / Track Sweeping	
F Track Occupancy Authority	Botanic Gardens Tram Stop	Pole M35	Adelaide Railway Station Tram Stop	Pole M1	Up and Down	-	01:30	04:00	Drain Cleaning / Track Sweeping	
F Track Occupancy Authority	Adelaide Railway Station Tram Stop	Pole G1	South Terrace Tram Stop	Pole G71	Up and Down	-	01:30	04:00	Drain Cleaning / Track Sweeping	
F Track Occupancy Authority	Plympton Park Tram Stop No.11	Pole G234 (Aerial Switch)	Glenelg East Tram Stop No. 14	Pole G316 (Aerial Switch - Down)	Up and Down	-	01:30	04:00	OHW Maintenance	
F Track Occupancy Authority	Entertainment Centre Tram Stop	Pole H97	Adelaide Railway Station Tram Stop	Pole H1	Up and Down	-	01:30	04:00	Drain Cleaning / Track Sweeping	
Precaution	Moseley Square Tram Stop No.17	Pole G349	Moseley Square Tram Stop No.17	Pole G353	-	10	00:00	23:59	Buses Turning	
Precaution	South Terrace Tram Stop	Pole G69	Entertainment Centre Tram Stop	Pole H59	Up and Down	-	01:30	04:00	Track Sweeping	
Precaution	Brighton Road Tram Stop No. 15	Pole G324	Moseley Square Tram Stop No.17	Pole G353	Up and Down	-	01:30	04:00	Track Sweeping	
Precaution	Festival Plaza Tram Stop	Pole P1	Festival Plaza Tram Stop	Pole P16	Up and Down	-	01:30	04:00	Track Sweeping	
Precaution	Botanic Gardens Tram Stop	Pole M35	Adelaide Railway Station Tram Stop	Pole M1	Up and Down	-	01:30	04:00	Track Sweeping	
Speed Restriction	South Terrace Tram Stop	Pole G69	South Terrace Tram Stop	Pole G72	Down	15	00:00	23:59		
Speed Restriction	Morphett Road Tram Stop No.12- Down	Pole G278	Morphett Road Tram Stop No.12- Down	Pole G284	Down	10	00:00	23:59	Condition of track	
Speed Restriction	Morphett Road Tram Stop No.12- Down	Pole G284	Morphett Road Tram Stop No.12- Down	Pole G287	Down	20	00:00	23:59	Condition of track	
Speed Restriction	South Road Tram Stop No.6	Pole G165	South Road Tram Stop No.6	Pole G184	Up and Down	30	00:00	23:59	Condition of track	
Speed Restriction	Adelaide Railway Station Tram Stop	Pole M1	Adelaide Railway Station Tram Stop	Pole G6 (Aerial Switch - Up)	Up and Down	15	00:00	23:59	Speed Restriction Union Straight Moves	

1.3.3 Application of Road Traffic Act 1961

The *Road Traffic Act 1961* and subordinate legislation, road rules and standards also apply to Tram Traffic:

- from the King William Street and North Terrace intersection to the end of line at the Festival Plaza Tram Stop; and
- from the North Terrace and King William Street intersection to the end of line at the Botanic Gardens Tram Stop; and
- from the King William Street and North Terrace intersection to the entrance to the closed tram corridor at South Terrace, Adelaide; and
- at level crossings within the closed corridor; and
- from the entrance to the closed corridor at Brighton Road, Glenelg to the entrance to Moseley Square, Glenelg; and
- from the North Terrace and King William Street intersection to the entrance to the Adelaide Entertainment Centre Tram Stop.

Within the Shared Tram Corridor, some tram tracks are designated and signed as Tram Lanes. Tram Lanes form part of the road and are defined in Rule 155 of the *South Australia Australian Road Rules under the Road Traffic Act 1961*.

1.3.4 Emergency vehicles

Tram Traffic within the Shared Tram Corridor must give way to emergency vehicles operating with emergency warning devices active.

Emergency vehicles may travel along Tram Lanes when operating with emergency warning devices active.

Tram Traffic must stop and allow emergency vehicles unrestricted travel and should remain clear of any intersection in case the emergency vehicle needs to enter or turn at the intersection.

At level crossings emergency vehicles are required to give way to Tram Traffic.

1.4 Structure and management of the Tram Rules

1.4.1 Structure

The Tram Rules comprises a Master Contents, and four Volumes:

- Volume 1 – General Tram Rules; and
- Volume 2 – Tram Network Rules; and
- Volume 3 – Tram Operating Rules; and
- Volume 4 – Work on Track Rules and Procedures.

1.4.2 Accessibility

The Tram Rules must be maintained electronically and available for access and download by authorised users.

The Rules are uncontrolled when printed.

1.4.3 Amendments

Amendments to the Tram Rules must be authorised by the General Manager, or their delegate.

Amendments must be marked up to facilitate tracking of changes.

1.4.4 Altered working arrangements

Should a situation arise necessitating working beyond the limits prescribed in these Tram Rules, the General Manager, or their delegate, may authorise altered working arrangements.

Any such altered arrangements must be in writing and be advertised to staff in advance where practicable.

Any such altered working must ensure that every reasonable precaution for the safe movement of trams has been taken and that normal Tram Rules are adopted wherever possible.

1.5 Intent

The Tram Rules are intended to provide uniform, coordinated, and repeatable work practices to enhance safety on the Tram Network.

The Tram Rules support other functional areas of the Tram Network including:

- worker health and safety;
- rail worker competence;
- interface coordination;
- incident management;
- infrastructure standards; and
- rolling stock standards.

1.6 References

The Tram Rules address the requirements of, or draws on material contained in:

- Rail Safety National Law (South Australia) Act 2012;
- Rail Safety National Law National Regulations 2012;
- Work Health and Safety Act 2012;
- Work Health and Safety Regulations 2012;
- The Australian Road Rules under the Road Traffic Act 1961; and
- RISSB Australian National Rules and Procedures suite.

2 Glossary of Terms

Term	Definitions
access	A designated safe way into, along, across or out of the Tram Network for the performing of work.
Access Provider	An organisation that provides and manages the Tram Network and the safe method of entry to that network for Access Users Torrens Connect is the Access Provider for the Tram Network.
Access User	An organization that has an agreement with Torrens Connect to enter and use the network to perform work.
active control level crossing	A road or pedestrian level crossing where warning equipment warns road users and pedestrians about approaching Tram Traffic by devices such as flashing lights or barriers.
adjacent	Near to; close to; alongside.
adjoining	In contact with, connected to.
advertise	To give written or electronic notice, usually in advance, of planned activities (see also Daily Tram Notice).
Advisory Tram Speed Sign	Signage allocated on the Tram Network defining the track speed for a particular section.

Term	Definitions
All Clear	A hand signal that is given to advise Tram Operator that workers are aware of approaching Tram Traffic.
aspect	The displayed pattern or position of lights used to give a signal indication.
audible warning device	A device, such as a gong, bell, horn, or hooter, fitted to Tram Traffic and used to give warning.
Australian Road Rules	The model Rules adopted under the Road Traffic Act 1961 that defines how road users operate safely on the road network.
authority	A generic term for permission.
Authority	Formal authority name.
authorise	To give formal written, spoken or signalled authority for an action.
Barrier fencing	Fencing used to provide a physical barrier between workers or their equipment and tram traffic, and which is physically capable of maintaining separation between them.
bidirectional	Allowing for normal travel in either direction.
Block Post	A location where Tram Traffic must STOP, and the Tram Operator must obtain authority from the Tram Controller, or from the Competent Worker at the Block Post, to pass the BLOCK POST sign.
bond	A cable or other electrical conductor which electrically connects items of equipment. See also rail bond.
cab/cabin	The part of a Tram that houses the Tram Operator and the controls necessary for the Tram's operation.
cancel	To withdraw permission for, or to end previously authorised activities, such as an Authority, without completing them.
catenary	The overhead wire system used to send electricity to a tram.
cantilever arm	The boom tube and supporting parafile cables extending from a pole, to which overhead wiring is attached and supported.
caution	To take additional care and attention in undertaking the task.
CAUTION PROCEED	<p>A form of PROCEED aspect displayed on a Fixed Tram Signal that indicates:</p> <ul style="list-style-type: none"> that at a set of points the Tram Traffic can PROCEED across the turnout at 15 Km/h, and then PROCEED at NORMAL SPEED once the Tram Traffic has fully cleared the points and turnout; or

Term	Definitions
	<ul style="list-style-type: none"> that at a Main Line Fixed Tram Signal the Tram Traffic can PROCEED, prepared to STOP at the next Fixed Tram Signal which may be displaying a STOP aspect.
certify	<p>To assess and classify a worker as competent. To classify infrastructure or rolling stock as fit for purpose.</p>
civil infrastructure	<p>The track, track formation and drainage, and fixed structures besides, over or under the track. This includes supports for overhead electric traction equipment and supports for signalling and telecommunications equipment, but not the equipment itself.</p>
clamp	Refer to points securing device.
clear & complete	Tram Traffic where the vehicle or the last vehicle in a consist has passed beyond a location.
Closed Tram Corridor	The portion of the Tram Network where other road vehicles and pedestrians are excluded from entering, except at designated level crossing locations and Access locations.
closely approaching	Travelling towards a location or other Tram Traffic at a speed such that Tram Operators are aware of the location of Tram Traffic ahead of them and can reasonably be expected to react in sufficient time to stop their Tram Traffic.
commission	To formally place into active service or use.
communication device	A device that supports effective communication between Competent Workers.
Competent Worker	A worker trained and assessed as competent to carry out the relevant task.
consist	Two or more Tram Traffic vehicles operating coupled together either in multiple unit operation or as powered and non-powered vehicles.
converging	Lines meeting and joining to become one line.
convoy	A group of track vehicles not coupled but travelling closely together under a single Authority.
couple/coupling	The mechanism for joining two rail vehicles.
crossing location	May consist of a single or double ended portion of track connected to a main track that is used to hold Tram Traffic to permit other Tram Traffic to cross or pass.
Crossing Keeper	A Competent Worker who manually protects a level crossing.
crossover	A portion of track and associated points that is used to divert Tram Traffic from one continuing track to another.

Term	Definitions
Daily Tram Notice	A notice or notices issued that contain Safeworking and network information for Tram Operator and other workers.
Danger Zone	Everywhere within 3m horizontally from the nearest rail and any distance above or below this unless a safe place exists or has been created.
Defined Location	The Defined Location on the Tram Network is the centre of the Tram Stop at Adelaide Railway Station. Is used as the central datum location for determining DOWN and UP Tram Traffic movements.
Delegate	A Competent Worker authorised and designated to act in place of another.
demarcation fencing	Easily seen, continuous worksite safety boundary markers.
Derail device	A device intended to guide the wheels of Tram.
Disabled	Tram Traffic that is unable to travel due to a defect.
Diverging	A Track separating to become more than one track.
divided tram traffic	Tram Traffic becoming uncoupled in route (Also known as parting in some Networks).
DOWN	The direction of travel of Tram Traffic proceeding away from the Defined Location the Tram Network.
Driver supervisory system	Devices such as vigilance control or warning systems used to aid Tram Operator vigilance.
DIT	The South Australian Department for Infrastructure and Transport.
Earth	Directly connected to the ground to maintain the effective dissipation of electrical energy.
Effective communication	The ability to successfully send, receive and understand information. The communication does not need to be continuous.
electrical infrastructure	Equipment and systems for supplying and distributing electricity for traction purposes.
Electrical Representative	A person with the appropriate delegated authority and electrical engineering competence to make judgments about electrical safety.
Emergency	An incident requiring urgent action. The incident might involve death or serious injury, health or safety effects, significant damage to property or infrastructure, or have an environmental impact.
exclusive occupancy	Sole occupancy (of a portion of the track).

Term	Definitions
facing points	Those points over which one track diverges into two.
fit for purpose	Able to be used for the function required.
Fixed Tram Signal	A Tram Signal that is located permanently near the track.
Fixed Work Location	A work location with boundaries that are fixed and defined for the duration of the work.
foul	In a position to obstruct Tram Traffic on adjacent tracks.
Fouling Point	A sign or marker which shows the fouling.
Fulfill	To complete the instructions on, and associated activities for, a Tram Track Closure Authority, and to close out the Tram Track Closure Authority with the Tram Controller allowing the track to be returned to an operational status.
gauge	The space between the two running rails. On the Adelaide Tram Network, this is a measured distance of 1435mm (standard gauge).
GPS	Global Positioning System
GRN	The Government Radio Network, a digital closed channel communications radio.
hand signal	A signal given by hand movements, flags, or lights. To give a signal by hand.
hazard light	An amber, yellow, or orange flashing light fitted to a vehicle to provide warning.
Headlights	White lights fitted at the front of Tram Traffic to provide visibility for the Tram Operator and visibility of the Tram Traffic.
infrastructure	See civil infrastructure; electrical, infrastructure; Fixed Tram Signaling and telecommunications infrastructure.
Infrastructure Booking Advice (IBA)	A formal system for advising of the booking of infrastructure into or out of service.
In effect	Active, current, in force.
Intersection	A location on the Tram Network where the track and a road or pedestrian walkway cross paths on the same level that is managed in accordance with the Australian Road Rules.
issue	To give or send copies of authorities, warnings, notices and Network publications to affected Competent Workers by voice, hand delivery or electronic means.
joint occupancy	Simultaneous occupancy of the same portion of track.

Term	Definitions
junction	A block location where two or more Main Lines meet.
Leading cab	The forward most cab in the direction of travel.
Leading Vehicle	The forward most vehicle in the direction of travel
level crossing	A location within the Closed Tram Corridor where the track and a road or pedestrian walkway cross paths on the same level and has a level crossing sign on the road at each entrance to the area.
life threatening emergency	A situation that threatens imminent loss of life.
Light, powered hand tool	An internally powered tool that can be carried easily by one person, without mechanical assistance.
Light, battery powered tool or device	An internally powered tool or device that can be easily carried by one person and can be immediately removed from track.
Light Rail or Tram Authority Exceeded (LRTAE)	Any incident where tram traffic, operating on the Tram Network exceeds the limits of authority.
Light track vehicle	A track vehicle, generally a road-rail vehicle, which has been specified as light.
Limit of Authority	A location to which Tram Traffic may travel as directed on the Daily Tram Notice, or by instruction from a Tram Controller. The limit must be defined by pole numbers and may be identified with signage.
line section	The track between one Tram Stop location and another Tram Stop location.
live	Electrical infrastructure where potentially dangerous voltages may exist.
Local Control facility	An interlocking facility that may be switched to and from local or remote control.
Local Possession Authority (LPA)	Local Possession Authority (LPA)
location	A place in the Network with a designated name, identification number, kilometre reference or pole number.
Lookout	A Competent Worker responsible for keeping watch of approaching tram traffic, and for warning other workers to stand clear of the line before tram traffic arrives.
Lookout Working	A method of safeworking undertaken by Competent Workers to carry out work on track without a formally issued work on track authority.

Term	Definitions
Low Speed	A speed that allows Tram Traffic to stop short of an obstruction within half the distance of clear track that is visible ahead. Movements travelling at Low Speed must not exceed 25 Km/h.
low visibility	Any condition that does not allow a worker to view the distance required to work safely.
Main Line	The running track normally used for running Tram Traffic through and between locations.
Maintenance Representative	An authorised employee of Torrens Connect, or an organisation contracted to Torrens Connect, responsible for maintaining network infrastructure.
Must	The word 'must' indicate that a statement is mandatory.
Network	A combination of track and other infrastructure controlled by one or more Access Providers.
Network Time	Australian Central Standard Time (ACST).
Normal direction	The normal direction of travel on unidirectional tracks.
Normal Speed	A speed that does not exceed the speed limit currently in effect for the location and type of Tram Traffic. Where no lesser speed applies Tram Traffic movements on the Tram network must not exceed 60 Km/h.
obstruct	To make a track unsafe for the passage of Tram Traffic.
occupancy	Presence of Tram Traffic or competent track workers on track.
Occupancy Authority	A formal authority that allows occupancy of a portion of track by tram traffic or for work on track.
Open-channel	A communications system that allows all radio users to take part in all conversations.
overhead wiring (OHW)	An arrangement of wires suspended over the tram lines, for supplying electricity to Tram Traffic. OHW also includes associated fittings, insulators and other attachments including feeders, switches, and jumpers.
pantograph	An apparatus fixed to the roof of electric traction vehicles to draw current from the overhead supply.
permanent record	A record made in writing or in an electronic system and kept for reference and audit.
Permit to Work	A management system used to ensure work conducted on Torrens Connect assets is undertaken safely and efficiently.

Term	Definitions
Pilot	A Competent Worker who accompanies, directs, and advises Tram Operators, and tells them about local conditions and operating restrictions on running tracks and at worksites.
pilot	The actions of a Competent Worker to accompany, direct and advise Tram Operators about local conditions and operating restrictions on running tracks and at worksites.
platform	A raised area next to the track at a Tram Stop that allows people to enter and leave trams.
points	A track component consisting of paired pieces of tapered rail that can be moved and set to allow tracks to diverge or converge.
Points securing device	A device approved by Access Providers used to prevent movement of points from the required position. (e.g. – Clamp or Clip).
points indicator	An indicator showing the position of the points.
pole	A pole or mast that is used to support a cantilever arm or overhead wiring.
pole length	The distance between two poles (see <i>pole</i>).
pole number	A unique identification number given to each pole.
Police	Officers of South Australia Police, or the Australian Federal Police, or the Royal Australian Corps of Military Police.
Possession limit marker	A sign used to indicate a Local Possession Authority limit.
Possession Protection Officer	The Competent Worker responsible for the coordinating protection of worksites under a Local Possession Authority.
PPE	Personal Protective Equipment
Pre-Work Safety Assessment	The pre-work assessment process used to identify hazards for all work planned for the Tram Corridor and its potential to intrude on the Danger Zone.
Procedure	The described process for the safe conduct of work on the Tram Network; to be read in conjunction with associated Rules.
PROCEED	A signal aspect that permits the Tram Traffic to pass the signal.
protection	The means used to prevent Tram Traffic from entering a worksite or other portion of track, or the method to prevent or protect road or pedestrian traffic from entering a worksite.
Protection Officer	The Competent Worker responsible for managing the rail safety component of worksite protection.

Term	Definitions
Provisional STOP	A track marking consisting of three (3) white reflectors centred between the tracks define the location at which Tram Traffic must STOP to remain clear of Tram Traffic in advance that is traversing a set of points. See Section – Vol 2. 1.4.3.
push	To push disabled Tram Traffic in a forward direction using other Tram Traffic or another vehicle.
rail bond	A cable fixed across a break or joint in one rail, or between two rails, to provide a path for traction return current or track-circuits. See also bond .
Rail Infrastructure Manager	The person who has effective control and management of the rail infrastructure of a railway, whether or not the person: <ul style="list-style-type: none"> owns the rail infrastructure; or has a statutory or contractual right to use the rail infrastructure or to control, or provide, access to it.
Rail Safety Work	Any work that includes, but is not limited to, receiving or relaying communications, the operations of Tram Traffic, Fixed Tram Signals and equipment, work on or about tram infrastructure and rolling stock relating to design, construction, repair, modification, maintenance, or associated works and equipment. (see also the legislated definition in the <i>Rail Safety National Law (SA) Act 2012</i>).
Rail Safety Worker	A person who has carried out, is carrying out, or is about to carry out Rail Safety Work. (see also the legislated definition in the <i>Rail Safety National Law (SA) Act 2012</i>).
restrain	To prevent movement of Tram Traffic with the issue of a Restraint Authority.
Restraint authority	An Authority that directs Tram Traffic not to depart a location irrespective of any available Proceed Authority.
road-rail vehicle	A vehicle designed for both on-track and off-track use. See also rolling stock and Tram Traffic .
Road Traffic Act 1961	The legislation that adopts the Australian Road Rules as the applicable Rules for the road network in South Australia.
rolling stock	A vehicle, whether or not self-propelled, that operates on or uses a railway including a locomotive, carriage or monorail vehicle. On the Tram Network this may include Trams, track machines and other vehicles including heavy-rail rolling stock brought onto the Tram Network to undertake infrastructure maintenance.
Rolling stock Maintainer	See Competent Worker
route	The path from one limit of authority to the next.

Term	Definitions
RSNL	The rail safety legislation applicable in South Australia, including the <i>Rail Safety National Law (SA) Act 2012</i> and the <i>Rail Safety National Law National Regulations 2012</i> .
Rule	A mandated requirement for safe operation in the Network. See also Tram Rule.
Running line	A track (other than a siding) that is used for through movement of Tram Traffic.
Safe Place	A place where workers and equipment cannot be struck by Tram Traffic.
Safe Approach Distance (SAD)	A safe distance of three (3) metres between workers and equipment and exposed electrical wires and equipment.
Safety assessment	The pre-work assessment process used to identify hazards for all work planned for the Tram Corridor and its potential to intrude on the Danger Zone.
Safeworking	See system of Safeworking.
SCADA	Supervisory Control and Data Acquisition.
Secure	To place and keep something in a known or prepared place or position to safeguard it against accidental or unauthorised access or movement.
Set back	To move in the direction opposite to that authorised by a Proceed Authority.
Shared Tram Corridor	The portion of the Tram Network where Tram Traffic shares the road network with road vehicles and pedestrians in accordance with the Australian Road Rules, or where it shares a publicly accessible space with pedestrians.
Shunt	To move Tram Traffic for purposes other than a through movement.
Shunting Mark	A track marking consisting of one yellow bar halfway across the track from the outermost rail (field side) to define the location at which Tram Traffic is clear of a set of points and can now be reversed to shunt across the set of points. See Section – Vol 2. 1.4.3.
siding	A portion of track where Tram Traffic can be placed clear of the running tracks.
Sighting distance	The distance that someone can clearly see along the track
Signals Maintenance Representative	A worker competent and authorised to perform Fixed Tram Signal maintenance.

Term	Definitions
Special working	Working Tram Traffic using an Alternative Proceed Authority or pilot staff working.
stable	To leave Tram Traffic unattended and secured, usually in a siding or stabling yard.
Stopping Place	A track marking consisting of three white reflectors halfway across the track from the outer-most rail (field side), or a sign, that defines the location at which Tram Traffic must STOP for operational reasons, such as holding or triggering a priority traffic light indicator, or to align with boarding facilities at a tram stop or platform to ensure all passengers can board or alight safely. See Section – Vol 2. 1.4.3
Suitable safety footwear	Footwear as defined in procedure PR-SR-RM- 825 Personal Protection Equipment.
substation	A place containing high-voltage electrical equipment.
sufficient warning time	The minimum time needed for workers to react to a Lookout's warning and move themselves and equipment to a safe place, including time for the Lookout's reaction and a margin for safety.
substation	A place containing high-voltage electrical equipment.
sufficient warning time	The minimum time needed for workers to react to a Lookout's warning and move themselves and equipment to a safe place, including time for the Lookout's reaction and a margin for safety.
Suspend	A practice where a work on track Authority is suspended, and re-instated at a later time.
system of Safeworking	An integrated system of operating procedures and technologies used on the Tram Network for the safe operation of Tram Traffic and the protection of people and property.
tail lights	Red lights used to designate the end of Tram Traffic.
Temporary Speed Restriction (TSR)	An imposed reduction of the Normal Speed for a portion of track.
Torrens Connect	A joint venture between JHG and UGL contracted by the South Australian Government to operate the Adelaide Tram Network.
Tow	To haul disabled Tram Traffic in a forward direction using other Tram Traffic or another vehicle.
track	The combination of rails, rail connectors, points, crossings, sleepers, ballast, bitumen, and mass concrete.
track-circuit	An electric circuit where current is carried through the rails and used to detect the presence of trams. Track circuits are used in

Term	Definitions
	the operation and control of points and Fixed Tram Signalling equipment.
track machine	Refer to track vehicle, rolling stock and tram traffic.
track marking	Any kind of device or material that is used to convey official information such as painted lines and/or reflectors.
Track Occupancy Authority (TOA)	A formal authority for Competent Workers and their equipment to occupy a defined portion of track for a specified period.
track speed	The allowed maximum speed for a portion of track.
track vehicle	A vehicle, usually self-propelled, used for inspecting and/or maintaining infrastructure.
track work	Construction, maintenance, or repair work on or around infrastructure in the Tram Corridor.
Track Workers	Competent Rail Safety Workers whose primary duties are associated with work on or around infrastructure in the Tram Corridor, including work on track, Fixed Tram Signals, electrical and other tram infrastructure.
Track Work Authority (TWA)	A formal authority for non-exclusive occupancy of track by workers within specified limits.
traction return current	The electric current returning from the overhead power supply through the rails to sub-stations.
traffic lights	Traffic lights include bicycle crossing lights, B lights, overhead lane control signals, pedestrian lights, T lights, traffic arrows, traffic lights or twin red or yellow lights.
trailing points	Those points over which two tracks converge into one.
Tram	A light self-propelled passenger carrying rail vehicle, alone or coupled to other similar vehicles, which may also travel on rails along a roadway. Refer to Tram Traffic.
Tram Control	The functional area within the Rail Operations Centre that manages the Tram Network.
Tram Controller	A Competent Worker who authorises and issues Occupancy Authorities, and who manages Tram Traffic paths to ensure safe and efficient transit of Tram Traffic in the Network.
Tram Corridor	The land on which the tramway is built, comprising the Closed Tram Corridor and Shared Tram Corridor. Refer to Closed Tram Corridor and Shared Tram Corridor.

Term	Definitions
Tram Depot	A facility consisting of a system of tracks that may also contain a Tram Workshop, in which Tram Traffic is stabled and from where it departs to enter service.
Tram lanes	As defined in the South Australian Road Rules under the Road Traffic Act 1961: A tram lane is a part of a road with tram tracks that: (a) is between a tram lane sign and an end tram lane sign; and (b) is marked along the left side of the tracks (when facing the direction of travel of a tram on the tracks) by a continuous yellow line parallel to the tracks.
Tram Infrastructure	Infrastructure including but not limited to track, overhead wires, overhead poles, Tram Stop platforms and shelters, fencing and Fixed Tram Signals, that is the responsibility of Tram Network to maintain.
Tram Network	Comprising of four Running Lines: Glenelg Botanic Festival Hindmarsh That facilitates the operation of Trams.
Tram Operator	Competent Workers managing the safe operation of Tram Traffic operating on the Tram Network.
Tram Rule	A mandated requirement for safe operation on the Tram Network. See also Rule.
Tram running information	Information about tram traffic movement and frequency provided for a particular location.
Tram Stop	A designated location, next to the track, that allows people to enter and leave Tram Traffic.
Tram Tracking System	A GPS based system that is used to track the location of Tram Traffic.
Tram Traffic	Trams, track vehicles or other rolling stock travelling on track on the Tram Network.
Tram Traffic crew	See Tram Operator.
Tram Traffic information	Information about Tram Traffic movement and frequency provided for a particular location.
Tram Traffic movement	Transit or travel of Tram Traffic on the Network.
Tram Warning Device	See whistle.
Tram Workshop	A designated location where maintenance work is carried out on Tram Traffic.

Term	Definitions
transit	Through movement along a portion of track.
transponder	A unit usually mounted in the track and used to transmit information between track and tram at short range radio frequencies.
travel	Planned or purposeful movement from one location to another.
trip number	A number used to provide unique identification of scheduled or timetabled Tram Traffic movements in the Working Timetable.
turnout	See Points.
unauthorised	Not given approval, or exceeding the limit of authority.
unidirectional	Allowing for normal travel in one direction only according to the infrastructure and system of Safeworking in use.
UP	The direction of travel of Tram Traffic proceeding away from the Defined Location the Tram Network.
Walking in the Danger Zone	Walking from place to place in the Danger Zone and doing no work other than placing or removing protection for a worksite or tram traffic.
Work Authority	A formal authority that allows Tram Traffic to move in either direction between specified locations.
work on track	To perform work in the Tram Corridor.
Working Timetable	A document referencing all scheduled Tram Traffic movements on the Tram Network.
Yard	A system of tracks within Yard Limits.
Yard Limit	A defined operational limit on a running track.

3 General Responsibilities of Worker

3.1 Purpose of this section

This section describes the Tram Rules for the general responsibilities of all workers on the Tram Network.

3.2 General

Safety is the most important element in performing duties, and all workers must be responsible for it.

All users of the Tram Network must comply with their duty of care for the safety and wellbeing of themselves and others at all times.

Complying with the Tram Rules is essential to on-job safety.

In case of doubt or uncertainty, workers must take the safest course of action.

3.3 Working on the Tram Network

Before starting work, workers must:

- assess the risks associated with their proposed actions; and
- ensure they have the equipment required to carry out their work; and
- plan their work using Torrens Connect Procedures and Processes to avoid injury; and
- have reference to the Daily Tram Notice for the day and any other applicable notices; and
- be aware of the location of structures or obstructions where clearances are close.

Whilst performing work, workers must:

- be alert and attentive to prevent injury to themselves or others; and
- expect the movement of Tram Traffic at any time, on any track, and in either direction; and
- not stand on the track in front of approaching Tram Traffic, or other moving equipment; and
- not engage in activities that may divert their attention, or that of other workers, from safety-related duties; and
- not use electronic communications, video or audio devices not related to their duties.

3.4 Use of mobile phones and Government Radio Network (GRN)

Tram Operators must not use a mobile phone while operating Tram Traffic. If required to make or receive a phone call, to the Tram Depot or Tram Control, the Tram Operator must ensure that the Tram Traffic is secured against movement in a parked condition.

Workers inside of the Danger Zone or have the potential to intrude on the Danger Zone, must move to a Safe Place and remain in that location while using their mobile phone.

Mobile phones are not to be used in preference to communication using the GRN.

Use of the GRN must be in accordance with all local policies and procedures.

3.5 Fatigue

Workers must make all reasonable efforts to:

- not present themselves for duty or continue to perform Rail Safety Work whilst fatigued; and
- manage their off-duty time and preparation for duty to minimise the possibility of becoming fatigued whilst on duty.

3.6 Tram Network time

All workers must observe Network time which is a GPS time synchronised with Tram Control.

On first communication with Tram Control, workers must check to ensure that their time is coordinated with Network time or the GPS time located on the Rail Control Unit (RCU) is functional.

3.7 Reporting unsafe conditions

Workers must report to Tram Control, by the first available means:

- any accidents or personal injuries; or
- defects in tracks, bridges, signals, or tram traffic; or
- any other condition that may affect the safety or security of the network.

3.8 Tools and equipment

Workers must:

- ensure the safe condition of equipment and tools they use to perform their duties; and
- report any defects in accordance with organisational procedures; and
- not use equipment or tools that are safety defective.

3.9 Incidents

NOTE:

Incident Management is undertaken in accordance with the Tram Operations Incident Management Manual supported by the following Tram Rules.

3.9.1 Incidents involving injuries

If people are injured, workers must do everything within their reasonable capacity to care for them.

If an incident on Tram Traffic or Tram Infrastructure has caused a person to become injured, or resulted in a situation where there is a possibility of injury, workers must:

- notify the Tram Controller of the incident; and
- notify the Tram Controller of any emergency services required to respond to the incident; and
- render assistance within reasonable capacity to any injured persons.

3.9.2 Incidents not involving injuries

If an incident on Tram Traffic or Tram Infrastructure does not result in an injury, or where assistance is declined by the person, workers must:

- notify the Tram Controller of the incident; and
- notify the Tram Controller if assistance was declined by a person.

3.9.3 Incidents between Tram Traffic and road traffic

If an incident between Tram Traffic or Tram Infrastructure involves road traffic, workers must:

- notify the Tram Controller of the incident; and
- notify the Tram Controller of any emergency services required to respond to the incident; and
- render assistance within reasonable capacity to any injured persons; and
- record details of the incident, including location and direction of travel; and record details of road traffic involved in the incident.

3.9.4 Evacuation of Tram Traffic

If an incident requires the evacuation of persons from Tram Traffic, the Tram Operator must:

- report the incident to the Tram Controller and advise the need to evacuate passengers; and
- where possible, stop the Tram Traffic at a Tram Stop or a location where passengers can safely alight; and
- calmly and assertively communicate to passengers to evacuate, identifying the exits to use and the route to take when exiting; and
- ask the Tram Controller to call emergency services as required; and
- assist passengers if safe to do so; and
- where possible, maintain communication with the Tram Controller.

3.9.5 Witnesses and evidence

Accurate evidence must be obtained following incidents to help determine a cause and prevent a repetition.

The worker in charge of the incident site must make all reasonable attempts to:

- obtain identification details of the injured person and the nature of the injury; and
- obtain identification details of any witnesses; and
- Note any details that may have contributed to the injury.

Under the Rail Safety National Law (RSNL), workers must preserve an incident site and evidence as far as possible, until clearance is given to commence recovery or to otherwise proceed.

NOTE:

The preservation of the incident site is of secondary importance to the rescue and treatment of personnel, or the prevention of environmental damage.

3.9.6 Damage to property

If infrastructure or Tram Traffic are damaged as a result of an incident, these must be inspected by a Competent Worker before further use.

Following a derailment, the track at the site and Tram Traffic involved each must be inspected by a Competent Worker to ensure safe travel.

3.9.7 Conflicting direction from the Tram Controller and Police

If involved in an incident where a tram is obstructing traffic flow, a Tram Operator may receive direction from Police to move the tram if Police believe that the tram is causing an obstruction to traffic, causing, or creating an imminent risk of serious harm to public safety, the environment or road infrastructure.

This direction from Police may conflict with directions received from the Tram Controller and the requirement under the RSNL.

If directed by Police to move the tram, advise Police of the RSNL requirement and that it may not be safe for the tram to be moved until it is inspected by a Competent Worker to ensure safe travel.

If Police require the tram to be moved, tell the Tram Controller you are being directed by Police to move the tram and comply with Police direction.

Where possible, obtain the Police Officer's name or ID number and tell the Tram Controller the details.

3.9.8 Reporting and recording of incidents

Workers must ensure all incidents or near miss incidents are reported to the Tram Controller.

3.10 Rules

Workers must:

- comply with Tram Rules and instructions when performing their duties; and
- report to Tram Control, any negligent practice or violation that circumvents the Tram Rules; and
- ask their supervisor for an explanation of any Tram Rule, regulation, or instruction of which they are uncertain.

Workers governed by the Tram Rules must be able to refer to them while on duty.

3.11 Competence

Torrens Connect must ensure all workers are:

- trained, assessed, and currently competent in the duties associated with the performance of their work; and
- provided with reasonable evidence of their competence.

Torrens Connect must ensure that a worker's required competencies do not lapse.

Workers must not undertake work that they are not currently deemed competent to perform.

3.12 Drugs and alcohol

Workers must not:

- report for duty, remain on duty or be on Tram Network property with a blood alcohol concentration level of 0.001% or more;
- report for duty, remain on duty or be on Tram Network property while under the effect of illegal drugs, illegal narcotics or any illegal substances;
- use over the counter or prescription drugs, narcotics, controlled substances, or medication that may adversely affect safe performance; or
- use prescribed medication that has the capacity to impair judgments and affect safe conduct, even when used as prescribed.

4 Responsibilities of Tram Operators

4.1 Purpose of this section

This section prescribes the rules outlining the general responsibilities of Tram Operators on the Tram Network.

4.2 General

The primary responsibility of Tram Operators is to manage the safe operation of Tram Traffic so that they do not put at risk their safety or that of the public, other Tram Traffic or other workers on the Tram Network.

Tram Operators must be competent:

- to operate Tram Traffic of which they are in control; and
- in the systems of Safeworking relevant to their area of operation; and
- to operate on the route over which they travel.

Tram Operators must make sure their Tram Traffic can be operated safely before they enter and during travel in the Tram Network.

Tram Operators must advise the Tram Controller if their Tram Traffic is defective and could potentially damage or affect Tram Infrastructure.

Tram Operators must follow reasonable directions by Tram Control, Pilots, or other authorised persons, in the performance of their duties.

4.3 Tram Operator performance

Tram Operators must:

- observe that the track is safe and set for the direction of travel; and
- not engage in any activity that distracts their attention, or the attention of others; and
- make sure that any driver supervisory system in place is working; and
- be prepared to stop or reduce speed if required; and
- not exceed speed limits; and
- reduce Tram Traffic speed if it is considered that the conditions prevent safe operation at normal speed; and
- stop, if braking equipment is not considered to be operating as expected; and
- operate services to timetable unless otherwise authorised; and

- promptly report incidents and breaches of Rules or Procedures to the Tram Controller and their supervisor; and
- pay particular attention:
 - when instructions are being received from the Tram Controller; and
 - when reporting their position; and
 - when visibility is impaired for any reason; and
 - when approaching:
 - a crossing or passing location; or
 - points and Fixed Tram Signals; or
 - other Tram Traffic; or
 - track workers; or
 - intersections; or
 - pedestrian crossings; or
 - level crossings.

4.4 Display of Authority

If the Authority currently in effect is in written or data format, it must be displayed in clear and conspicuous view of the Tram Operator at the controls of the Tram Traffic.

4.5 Tram Operator changeover

Tram Operator must advise a relieving Tram Operator about any conditions that could affect the operation of the Tram Traffic.

Tram Operator handover must include, but is not limited to:

- any faults currently existing on the Tram Traffic, and if the faults have been reported and who to; and
- details of any passengers on board who require assistance to alight; and
- any instructions in place from Tram Control; and
- any other information relevant to the safe operation of the Tram Traffic.

4.6 Examination of Other Tram Traffic

Tram Operators must check the other Tram Traffic as effectively as the circumstances allow for any visible irregularities or defects.

If a defect or unsafe condition is detected, Tram Operators must tell the Tram Controller, who will then communicate with the affected Tram Operator.

4.7 Infrastructure defects

If the Tram Operator detects a Tram Infrastructure defect on the Tram Network, the Tram Operator must tell Tram Control.

4.8 Cabin protocol

Tram Operators and all workers in the driver's cabin (cab) of Tram Traffic must adhere to Torrens Connect tram traffic cab protocol procedures.

- Tram Operators are not permitted to converse with other persons/anyone in the cab of the Tram Traffic unless the Tram Traffic is stationary, or the conversation is required as part of the Safeworking of the Tram Traffic.
- Tram Operators or other Competent Workers must consider the prevailing operational conditions and location of the service. This may include any instructions or information that directly relates with the safe operation of the Tram Traffic at that time, with particular attention to high traffic density locations and junctions.
- Tram Operators must not talk to passengers while the Tram Traffic is in motion. Tram Operators must wait until the Tram Traffic is brought to a stop and secured before talking to or responding to questions from passengers.

4.9 Tram Traffic door operation

Tram Operators must ensure that door operation only occurs for the Tram Traffic doors adjacent to the tram stop platform.

Tram Operators must operate Tram Traffic doors in a manner that ensures Network Safety.

Tram Operators who need to exit Tram Traffic for operational reasons must whenever possible select a door that allows them to exit away from road traffic or other Tram Traffic.

4.10 Maintaining a Safe distance

When Tram traffic is following other Tram traffic and road traffic they must observe all applicable Tram Rules and Road Rules.

Tram traffic must not be closer than five (5) pole lengths when travelling in the same direction in the Closed Tram Corridor. During wet conditions, this distance is increased to seven (7) pole lengths.

In the Shared Tram Corridor, Tram traffic travelling in the same direction must not be closer than two (2) pole lengths. In wet conditions this distance is increased to three (3) pole lengths.

Tram traffic may be moved closer than the above distance to a stationary tram ensuring that a safe distance is maintained, and the tram proceeds no closer than one (1) metre of that stationary tram in front of them. To do so the Tram Operator must approach at LOW Speed and:

- be prepared to brake and/or stop if any event arises that may impact on the ability to perform the movement safely (e.g., slippery track conditions); and
- ensure that when moving in close proximity to stationary tram traffic, their tram does not block or encroach intersections or pedestrian crossings, or activated level crossings or intersections; and
- observe any fouling point signs in the network; and
- anticipate poor space judgement, competitive behaviour from road traffic and pedestrian behaviour, and be prepared to stop or give way to avoid a collision; and
- anticipate road traffic opening doors and compromising clearance space. If unsure of the clearance space the Tram traffic must come to a stop. In no circumstance should Tram Traffic enter a space that has insufficient clearance or be forced in advance of other road traffic.

Under changing road traffic and weather conditions, make observance of defensive driving principles at all times. Tram traffic differs in braking capacity, with passenger loadings being a contributing factor to increased braking distances. The heavier the loading the longer the tram will take to stop.

Note: If required to couple two trams, then authority to proceed closer than the one (1) metre specified will be done so under the direction of a Competent Worker on site.

4.11 Fixed Tram Signals and points

Tram Operators must never anticipate that the Fixed Tram Signal that they are approaching will clear and should always slow the Tram Traffic on approach and be prepared to stop safely prior to the Fixed Tram Signal.

Tram Operators must remain clear of points until they are correctly set for the intended movement. Tram Operators must ensure that points are correctly set for the intended route before traversing.

4.12 Traffic lights

On display of a green traffic light or a white T indication for Tram Traffic, Tram Operators should be prepared for road traffic or pedestrians illegally entering or remaining foul of the intersection.

Tram Traffic must approach traffic lights at a speed that anticipates that the Tram Traffic will be required to stop and be able to do so in a safe and smooth manner.

4.13 Using the Tram Warning Device

When Tram Traffic is moved from a stationary position at tram stop platforms or within the Tram Depot, the Tram Operator must sound the Tram Warning Device and accelerate in a smooth manner, not exceeding the speed limit for that location.

When entering tram stop platforms and other highly populated areas, or areas of limited peripheral visibility, the Tram Operator should slow the Tram Traffic to a safe speed and sound the Tram Warning Device if passengers or pedestrians are sighted, being prepared to stop safely if required.

All tram stop platforms are high risk areas and need to be treated as such. People are not always standing on the tram stop platform waiting for a tram and may move off the tram stop platform in front of the approaching Tram Traffic.

4.14 Tram preparation

Tram Operators are responsible for preparing the Tram Traffic for service and ensuring that the Tram Traffic has no critical defects and that all the necessary equipment is present and in good working order.

4.15 Road and track repairs

Tram Operators should remain vigilant to work occurring on or near the road and track, including work on side roads that may also affect traffic or pedestrians.

Tram Traffic must be slowed to the speed limit in place or a lesser safer speed and be prepared to stop if necessary.

5 Responsibilities of Track Workers

5.1 Purpose of this section

This section describes the rules, outlining the general responsibilities of Track Workers on the Tram Network.

5.2 General

The primary responsibility of Track Workers is to manage their work to ensure that they do not lessen their own safety or that of Tram Traffic on the Tram Network.

A Track Worker may be responsible for one or more of the following:

- performing track maintenance or construction work under supervision; or
- supervising track maintenance or construction workgroups; or
- coordinating track maintenance or construction workgroups and associated Tram Traffic; or
- managing or conducting vegetation control; or
- monitoring and responding to the effects of extreme weather conditions on Infrastructure; or
- monitoring the safety of Tram Infrastructure and responding appropriately; or
- monitoring the overall security of the Tram Network and reporting possible breaches or hazards; or
- assisting with recovery from incidents; or
- operating track machinery; or
- liaising with Tram Control; or
- obtaining Authorities; or
- determining safety measures required for occupation of the track; or
- managing protection of a Fixed Work Location; or
- managing Tram Traffic passage through Fixed Work Locations.

5.3 Interface between two work sites on track

An interface between work sites on track occurs where two or more work sites on track are physically adjacent.

5.3.1 Information sharing

If a work on track Authority interfaces with another, the Competent Worker in charge must frequently share information concerning:

- anticipated movement of Tram Traffic; and
- Tram Traffic identification details.

Before authorising Tram Traffic to proceed to a location managed by another Competent Worker, permission must be obtained from that Competent Worker.

5.4 Passing Tram Traffic

5.4.1 Standing clear

WARNING!

Workers positioned on the ground must be in a safe place, and at a distance well clear of passing Tram Traffic.

This must take into account the speed of the passing Tram Traffic and other road traffic.

As Tram Traffic approaches a Fixed Work Location, track workers must:

- move to and remain in a safe place as the Tram Traffic passes; and
- make no movement that may be mistaken by Tram Operators as movement into the path of the Tram Traffic; and
- unless responsible for displaying hand signals to Tram Operators, make no movement or gestures that may be mistaken for a hand signal; and
- observe passing Tram Traffic for any visible irregularities or defects.

5.4.2 Reporting faults or unsafe conditions

If a defect or unsafe condition is detected, the track worker must advise Tram Control, who will then advise the Tram Operators.

6 Responsibilities of Tram Control

6.1 Purpose of this section

This section describes the rules, outlining the general responsibilities of Tram Control to the Tram Network.

6.2 General

The primary responsibility of Tram Control is to safely coordinate Tram Traffic on the Tram Network.

6.2.1 Management

Tram Control must monitor, coordinate, set priorities for, and manage:

- Tram Traffic services; and
- Work on track Authorities and methods; and
- liaison with relevant Tram Operators, Track Workers, and external services during incident management; and
- the safe and prompt restoration of Tram Traffic services, following disruption.

6.2.2 Responsibilities

Tram Control must:

- make sure accurate time is maintained and used; and
- not engage in any activity that distracts their attention from their Safeworking duties, or cause distraction in the Operations Control Centre; and
- authorise and issue work on track Authorities; and
- introduce methods of special working during failure of normal working; and
- as necessary, provide Tram Traffic details to affected workers on the Tram Network; and
- tell their supervisors about Tram Traffic movements that become delayed or are running out-of-course; and
- promptly report incidents and breaches of Rules or Procedures in accordance with reporting and legislative requirements.

6.2.3 Area of control

Tram Network boundaries define the geographic areas of responsibility for each Tram Controller.

Tram Controllers must only authorise or manage Tram Traffic or activities within their area of control.

6.2.4 Tram Control handover

A Tram Controller must advise the relieving Tram Controller about any conditions that could affect the operation of the Tram Network.

The relieving Tram Controller and the Tram Controller being relieved must jointly verify the status of any Authorities in effect, and make sure that they are accurately recorded.

The Tram Controller being relieved must not depart until the relieving Tram Controller understands conditions that could affect the operation of the Tram Network.

6.2.5 Interface between Control Boundaries

Tram Controllers must share information concerning activities adjacent to a location that is managed by another Tram Controller that may affect Tram Traffic in the adjacent Tram Controller's area of control.

6.3 Managing Information

Tram Control must:

- manage information regarding delayed, unscheduled or additional services; and
- frequently check movements of Tram Traffic on the Global Positioning System (GPS) monitoring system for potential delays; and
- record work on track Authorities and methods; and
- complete the transmission, verification and recording of each Authority and work on track occupancy before commencing any other activity.

6.4 Overdue Occupation

Where the agreed or expected reporting or clearance times are exceeded for work on track Authorities or methods, the Tram Controller must:

- contact the Competent Worker in charge of the work on track activities; or
- contact the Tram Traffic crew.

If this should fail, the Tram Controller must initiate emergency procedures.

6.5 Keeping Records

Tram Control must keep a permanent record about relevant conditions and movements on the Tram Network.

7 Safe Access to Tram Corridors

7.1 Purpose of this section

This section provides definitions for the Tram Corridors, track, and Danger Zone, and sets out the principles for safe access to the track on the Tram Network.

7.2 General

The following meanings apply on the Tram Network:

7.2.1 The Shared Tram Corridor

The portion of the Tram Network where Tram Traffic shares the road network with road vehicles and pedestrians in accordance with the Australian Road Rules, or where it shares a publicly accessible space with pedestrians.

7.2.2 The Closed Tram Corridor

The Closed Tram Corridor is all land, track, and infrastructure between boundary fences in the dedicated tram corridor that extends from South Terrace, Adelaide to Brighton Road, Glenelg.

7.2.3 The Danger Zone

Unless a Safe Place can be created or is available, on or near the track, the Danger Zone is:

- all horizontal space within three (3) metres from the nearest rail; and
- any distance above or below this space

7.2.4 The Track

The track is within the Danger Zone.

The track is the combination of rails, rail connectors, sleepers, ballast or concrete infill, points, and crossings.

The track may be:

- active and subject to regular Tram Traffic; or
- inactive and not presently subject to Tram Traffic.

Tram Traffic may travel in both directions on any given portion of track or may travel only in one direction.

NOTE:

The track may run along or cross a roadway. Tram Traffic that run along or cross a roadway are also subject to the Road Rules under the Road Traffic Act 1961.

7.2.5 Safe Place

WARNING!

A Safe Place created in front of, or alongside, stationary Tram Traffic may be safe for the Tram Operator but may not be safe for other workers.

A Safe Place is a location where workers and equipment cannot be struck by Tram Traffic or other road traffic.

This may be within the Danger Zone, and may include:

- on Tram Stop platforms behind clearance lines; or
- within a purpose-built refuge or shelter; or
- an overbridge or underpass; or
- immediately in front (departure side) of permanent infrastructure such as an equipment box, mast, or Fixed Tram Signal; or
- within Tram Traffic; or
- immediately in front of stationary and secured Tram Traffic; or
- in a location identified in the Pre-Work Safety Assessment to be a Safe Place (refer to ENG-FRM-PTW-0001 - Pre-work Safety Assessment and Safeworking Plan)

A Safe Place can be a location on a Tram Stop platform.

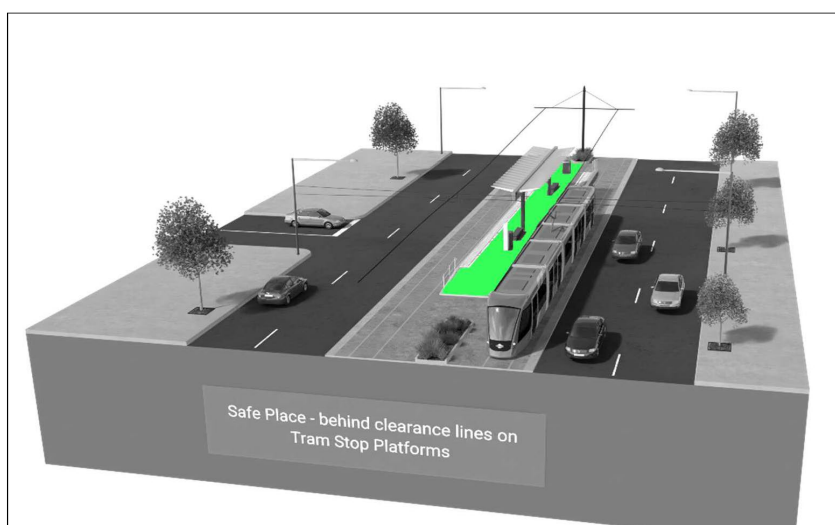


Figure 2: Example of Safe Places on Tram Stop Platforms – Shared Tram Corridor

A Safe Place can be a location behind the clearance lines on a Tram Stop platform.



Figure 3: Example of Safe Places on Tram Stop Platforms – Closed Tram Corridor

A Safe Place can be a location immediately in front of permanent infrastructure.

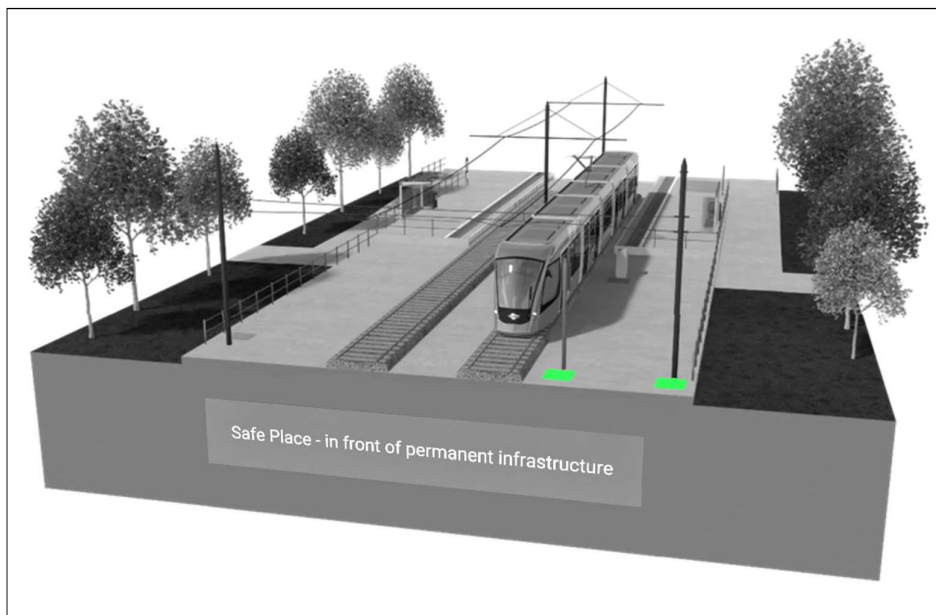


Figure 4: Example of Safe Places in front of permanent infrastructure

Within the Closed Tram Corridor, a Safe Place can be within Tram Traffic.



Figure 5: Example of a Safe Place within Tram Traffic

Within the Closed Tram Corridor, a Safe Place can be a location immediately in front of a stationary and secured Tram Traffic.



Figure 6: Example of a Safe Place immediately in front of stationary and secured Tram Traffic

Within the Closed Tram Corridor, a Safe Place can be an identified location at least three (3) metres from the nearest rail.

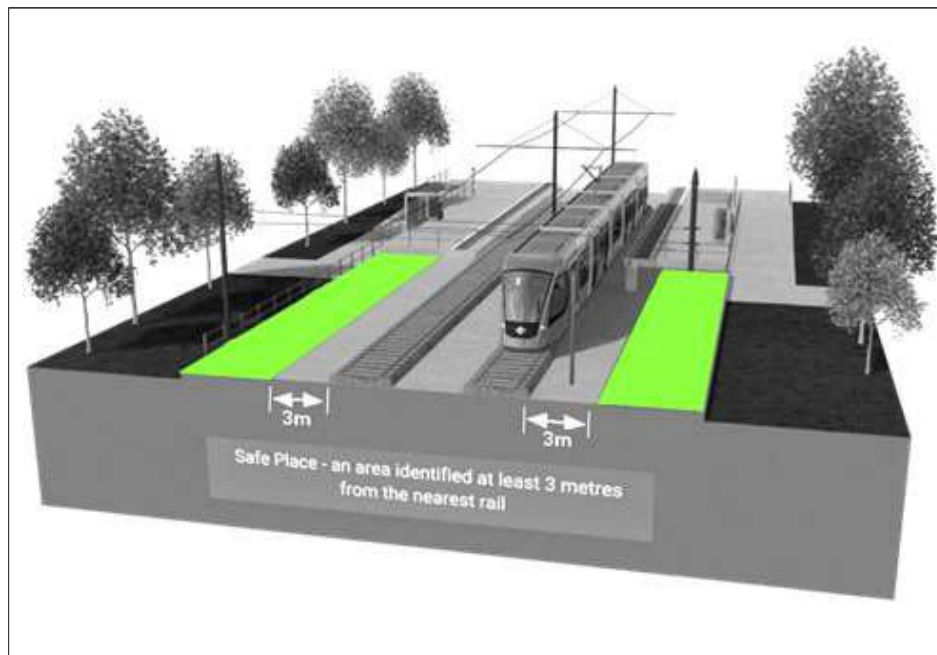


Figure 7: Example of identified Safe Places at least three (3) metres from the nearest rail

7.3 Principles for access

The Shared Tram Corridor allows public access to the Tram Network, and Tram Operators must be aware of this interaction and operate Tram Traffic in a manner that expects this interaction.

The Closed Tram Corridor is not open for public access except at designated crossings. Tram Operator must report persons who are trespassing within the Closed Tram Corridor to the Tram Controller.

All access to the Tram Network is managed and authorised by Tram Control. Any access to the Tram Network is a joint agreement between Tram Control and the Competent Worker conducting the activity.

7.3.1 Requirements for access

Workers who access the Tram Corridor must:

- be authorised and competent to work in the Tram Corridor; and
- have any applicable Health Assessment and be fit for the duties they are to perform; and
- use appropriate personal protective equipment (PPE) for the task and conditions.

Appropriate PPE includes, but is not limited to:

- Orange high-visibility clothing; and
- suitable safety footwear; and
- suitable lighting, at night, or when visibility is low.

7.3.2 Walking in the Danger Zone

Walking in the Danger Zone is:

- walking from place to place in the Danger Zone; and
- doing no work other than placing or removing protection for a worksite or tram traffic.

Workers must not:

- walk in the Danger Zone if it can be avoided; or
- step on rails, points, or interlocking equipment.

Workers must:

- make sure that they can see that tracks are clear of approaching Tram Traffic, before entering the Danger Zone; and
- be vigilant for approaching Tram Traffic in any direction, at any time; and
- make sure that an easily reached safe place is available; and
- where possible, walk in a direct line to their destination.

7.3.3 Communication

If effective communication between Rail Safety Workers and the Tram Controller cannot be maintained, workers must proceed to a Safe Place outside of the Danger Zone.

7.3.4 Planning and advice

Wherever possible work must:

- be planned and the applicable Permit to Work process completed; and
- be advertised on the Daily Tram Notice.

Tram Control must be advised before workers enter the Tram Corridors to commence work.

7.3.5 Assessment of risks

Before accessing the tram corridors, the Competent Worker in charge of the work must:

- assess the risks associated with the work; and
- complete a Pre-Work Safety Assessment; and
- ensure that a Safe Place is identified that can be easily reached by workers; and
- liaise with Tram Control to establish traffic requirements; and
- determine if the activity requires:
 - signs to warn Tram Operators on adjoining tracks; or
 - the exclusion of Tram Traffic; or
 - occupancy of the track between Tram Traffic movements; or
 - joint occupancy of the track with Tram Traffic.

7.4 Access by Tram Operators

Tram Operators may need to access and walk in the Danger Zone to perform tasks associated with the operation of Tram Traffic.

This includes, but is not limited to:

- operation of Fixed Tram Signals, points and associated infrastructure; and
- shunting; and
- vehicle examination, including preparation for traffic; and
- light repairs, in route; or
- driving Tram Traffic.

7.4.1 Assessment of risks

Tram Operators must assess the risks associated with accessing the Danger Zone.

These may include risks associated with:

- the required tasks; or
- road traffic around the Tram Traffic; or
- Tram Traffic on adjacent lines; or
- the ability to communicate with Tram Control; or
- the ability to communicate with other workers in the vicinity; or
- operation of the Tram Traffic.

7.4.2 Authority required

Tram Operators must get authority from Tram Control to exit or allow passengers to exit Tram Traffic mid journey.

Tram Operators do not need to get authority from the Tram Controller to exit Tram Traffic in a Tram Depot, at a terminus, or at a location where the Working Timetable or Daily Tram Notice requires them to exit Tram Traffic as part of their duty.

Tram Operators do not require a formal Authority to access the Danger Zone in the immediate vicinity of their Tram Traffic movement, unless their activities may conflict with:

- operations on adjoining tracks; or
- joint occupancy of a single track in a single section; or
- other workers jointly occupying the section.

If a conflict or possible conflict exists, Tram Operators must:

- liaise with Tram Control; and
- obtain an appropriate Authority for access to the Danger Zone; or
- liaise with the other workers if applicable.

Adelaide Tram Network Tram Rules

Volume 2 – Tram Network Rules

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1 Signs

1.1 Purpose of this section

This section sets out the Tram Rules for the type and meanings of tramway-specific signs used in the Tram Network.

1.2 General

Signs are used to convey information about operating conditions to Tram Operators and other access users.

Generally, signs provide:

- a STOP signal; or
- a warning of a condition or location, ahead; or
- safety critical instructions; or
- advice or instruction; or
- system of Safeworking or area of control.

The colour and shape of a sign provides additional information about its meaning and must be uniform in appearance to help with their recognition.

Signs may be temporarily or permanently erected.

1.2.1 Road signs

In addition to the signs included in these Tram Rules, road signs under the Road Traffic Act 1961 also apply, as applicable, to Tram Traffic when operating on the Shared Tram Corridor.

This includes observing temporary speed limits that are displayed for road traffic and observing and complying with directions given by a traffic controller who is controlling road traffic and tram traffic.

1.3 Sign properties

1.3.1 Placement

Signs must be placed where they can be clearly seen by the intended viewer and must be displayed facing the oncoming Tram Traffic.

Signs may be:

- affixed to a signpost; or
- affixed to an overhead mast; or
- suspended from the tram overhead catenary above the track; or
- displayed as a ground marker between the running rails.

If advice or warning signs are placed before a location where tracks diverge, text or arrows must be used to indicate if the condition ahead applies to all or only some of the diverging routes.

1.3.2 Appearance

Signs on the Network must be:

- reflective; and
- clearly distinguishable

A border may be used to improve visibility and assist in making signs more distinguishable.

1.3.3 Size

A sign, and characters upon it, must be as large as practicable to allow clear sighting and interpretation by Tram Operators approaching it at the maximum speed permitted.

A sign that is referenced under the Road Traffic Act 1961 must meet the size requirements specified for the sign in the Department of Infrastructure and Transport (DIT) Standard Road Sign Index.

1.3.4 Orientation

Signs must be oriented horizontally, unless limited by clearances between tracks, rail vehicles and structures.

Words and numbers on signs must be oriented horizontally.

1.3.5 Colour

The background colour of a sign indicates its purpose.

A sign with a background that is mainly:

- RED, indicates STOP; or
- YELLOW, conveys a WARNING; or
- WHITE, conveys information or advice.

1.3.6 Unreadable or unidentifiable signs

Signage that has become unreadable or unidentifiable through deterioration or vandalism must be reported to Tram Control.

The Tram Operator must seek confirmation of the sign and its meaning before proceeding.

1.4 Permanent Network Signs

1.4.1 Permanent STOP signs

Permanent STOP signs tell Tram Operators that they have arrived at a point where tram traffic must stop prior to the STOP sign.

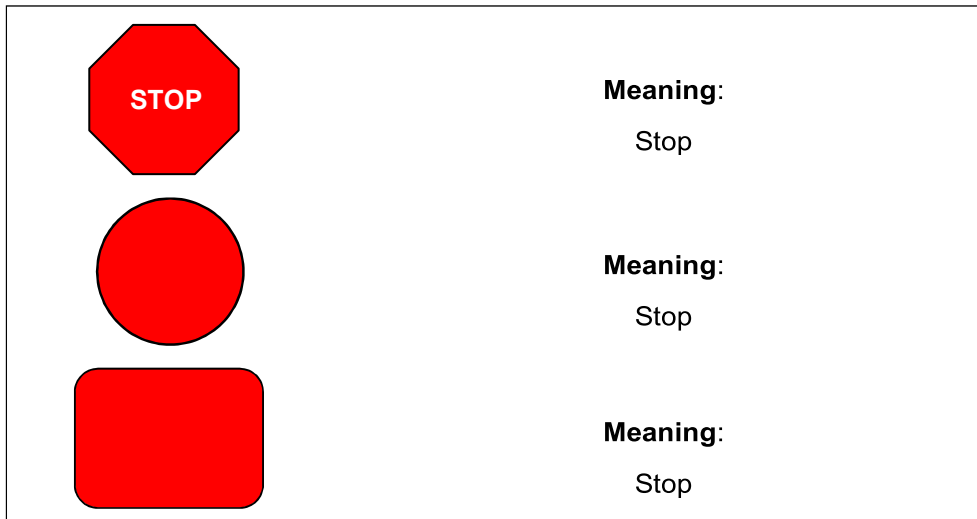


Figure 8: Example STOP signs

Permanent STOP signs:

- must be reflective RED in colour on both sides; and
- may be octagonal, rectangular, or round; and
- may be located to the track side or on a gate or barrier across the track.

Tram Operator must stop their Tram Traffic movement before it passes a STOP sign, and then, only once the appropriate authority has been received, can the STOP sign be passed.

1.4.2 Advisory Tram Speed Sign

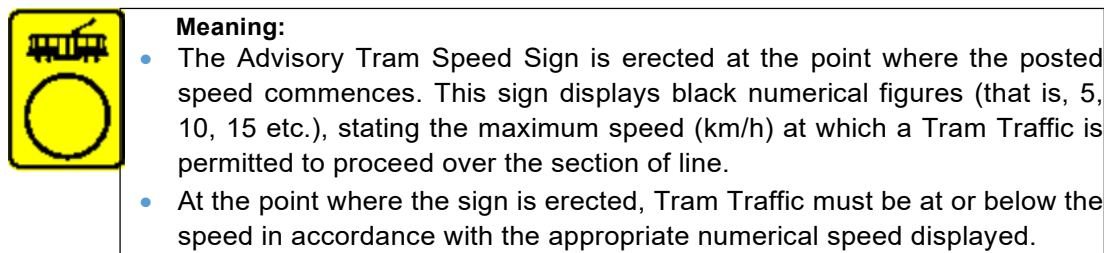


Figure 9: Example Speed Board signs

Advisory Tram Speed Boards are posted throughout the Tram Network. The purpose of this signage is to advise Tram Operators of the maximum speed within a particular section of track.

1.4.3 Advice Signs and Markers

Advice signs inform Tram Traffic about conditions or Safeworking limits ahead, and must:

- Display BLACK characters on a reflective WHITE background; and
- advise of the condition applicable to Tram Traffic beyond the sign.

On sighting an Advice sign, Tram Operators must be sure that they can comply with the conditions of which the sign advises.

YARD LIMITS

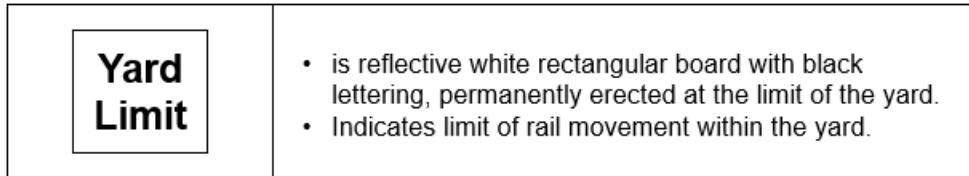


Figure 10: Example Yard Limit sign

SHUNT LIMITS

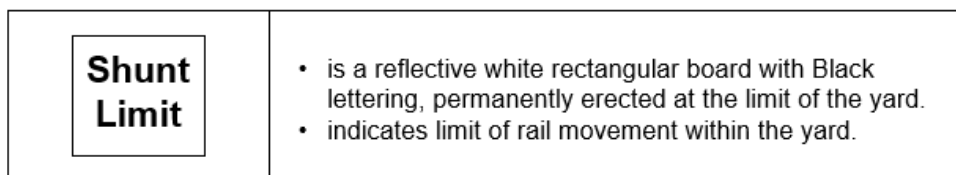


Figure 11: Example Shunt Limit sign

SHUNTING MARK TRACK MARKINGS

Shunting Mark track markings consisting of one yellow bar halfway across the track from the outermost rail (field side) to define the location at which Tram Traffic is clear of a set of points. Yellow reflectors may also be used to assist visibility of the Shunt Mark track marking.

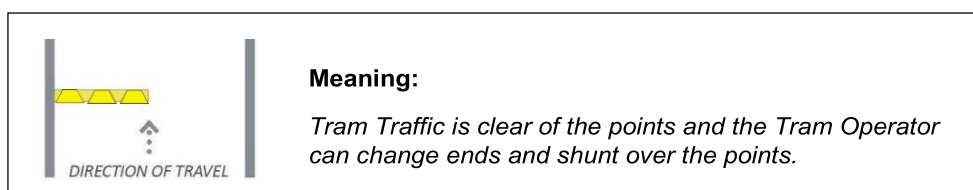


Figure 12: Shunting Mark track

PROVISIONAL STOP TRACK MARKING

Provisional STOP track markings consisting of three (3) white reflectors centred between the tracks define the location at which Tram Traffic must Stop to remain clear of Tram Traffic in advance that is traversing a set of points.

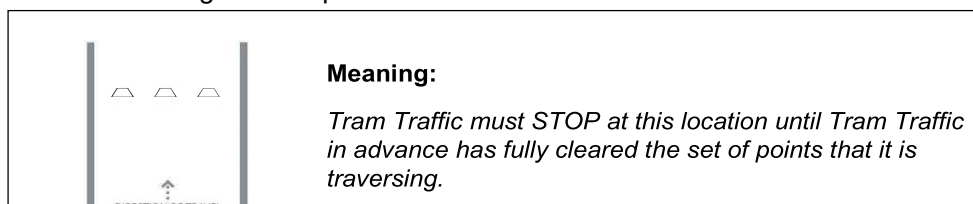


Figure 13: Provisional STOP track marking

COMPULSORY STOP TRACK MARKING AND SIGN

A Compulsory Stop track marking consists of two yellow bars between the two running rails and define a location at which Tram Traffic must STOP. Yellow reflectors may also be used to assist visibility of the Compulsory STOP track marking. A Compulsory Stop sign consists of yellow and black alternating vertical bars. A Compulsory Stop sign consists of yellow and black alternating vertical bars.

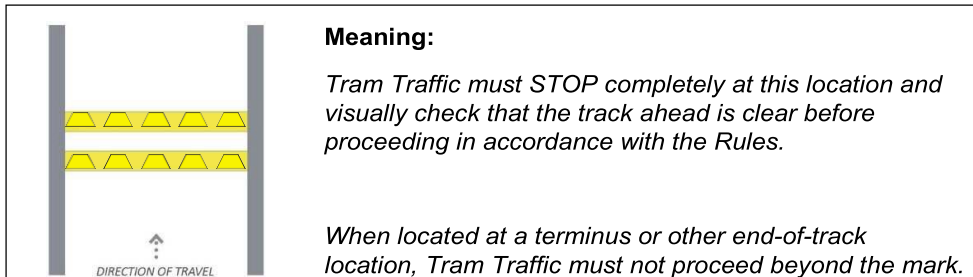


Figure 14: Compulsory Stop track marking

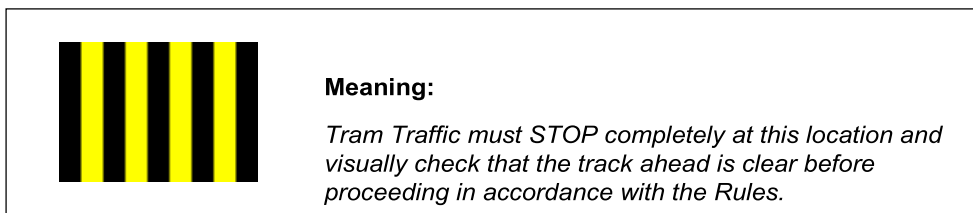


Figure 15: Compulsory Stop sign

INDUCTION LOOP (ROUTE SELECTION)

Locations where route selection can be made are identified with a Points Induction Loop advice sign. Tram Traffic must be stationary when the Tram Operator is making a route selection.



Figure 16: Induction Loop (route selection) sign

STOPPING PLACE TRACK MARKING AND SIGN

A Stopping Place track marking consisting of three (3) white reflectors halfway across the track from the outermost rail (field side) in the normal running direction defines the location at which Tram Traffic must STOP for operational reasons, such as holding or triggering a priority traffic light indication, or to align with boarding facilities at a tram stop or platform to ensure all passengers can board or alight safely.

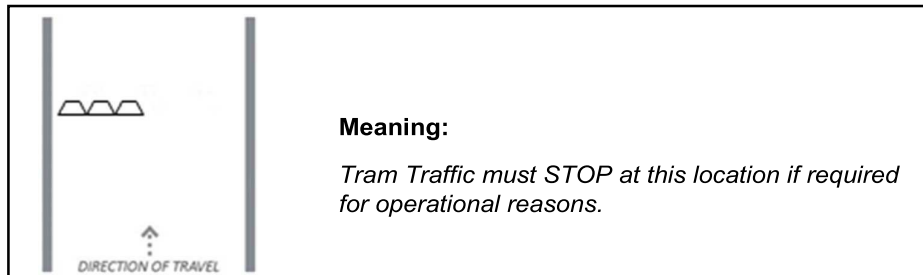


Figure 17: Stopping Place track marking

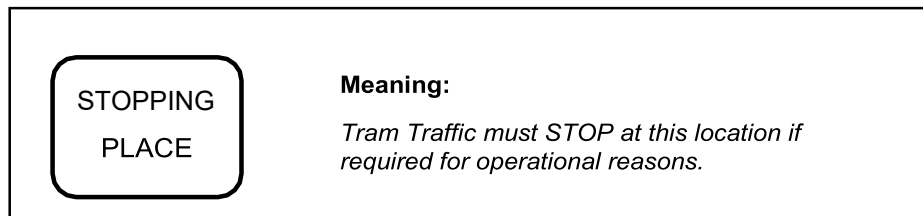


Figure 18: Stopping Place sign

POLE NUMBERS

Pole numbers are affixed to each overhead catenary pole to provide a method of identifying the pole and its location.

Pole numbers consist of a letter and number. The letter signifies the route that the pole is servicing, and the number is the consecutive number of the pole away from the defined location at Adelaide Railway Station.

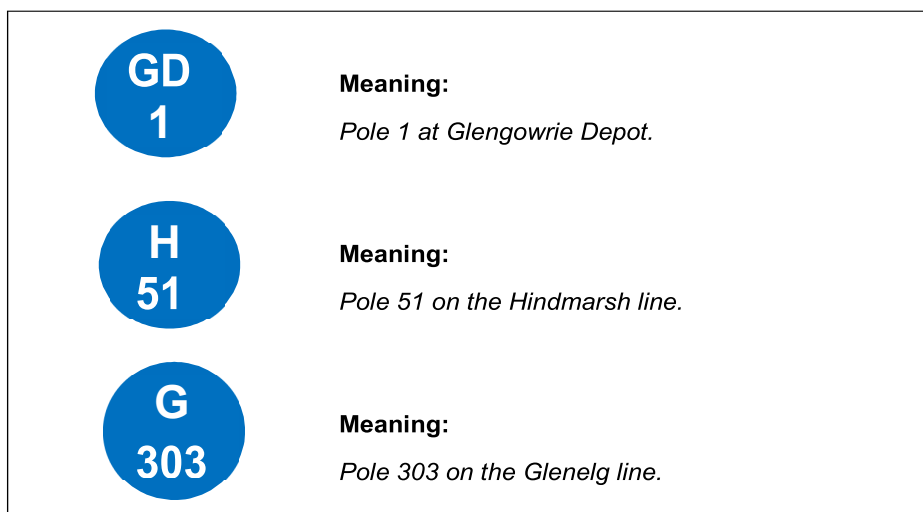


Figure 19: Example Pole Number signs

1.5 Temporary Signs

1.5.1 STOP Signs

Temporary STOP signs inform Tram Operators that they have arrived at a point where Tram Traffic must, for the time being, stop, and must be:

- of the same appearance as permanent STOP signs; and
- erected between the rails, in the gauge of the affected track.

1.5.2 BLOCK POST Signs

A BLOCK POST sign tells Tram Operators that they have reached a Block Post and that they must stop.

- BLOCK POST signs must display;
- BLACK characters on a reflective WHITE background; and
- the word STOP, in WHITE characters on a reflective RED band.

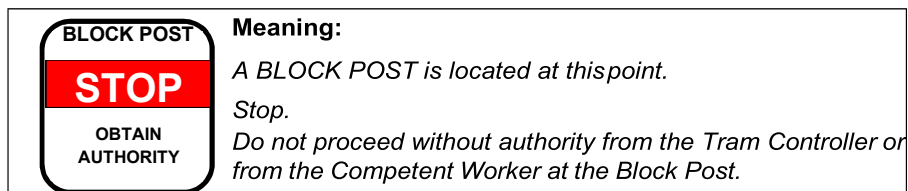


Figure 20: Example Block Post sign

A Block Post sign must be erected at a Block Post.

On sighting a Block Post sign, Tram Operators must ensure that Tram Traffic is stopped before passing the sign.

The Tram Operator must obtain authority from the Tram Controller or the Competent Worker at the Block Post to pass the Block Post sign.

1.5.3 WARNING Signs

STOP AHEAD

A Stop Ahead sign tells Tram Traffic crews that a temporary STOP sign is ahead, and must display:

- BLACK characters and a RED octagonal STOP symbol on a reflective YELLOW upward pointing triangle; and
- the distance to travel to the STOP sign; and
- where applicable, an arrow or text to signify that a STOP sign is located on a diverging route.



	<p>Meaning: A STOP sign is located 200m ahead</p>
	<p>Meaning: A STOP sign is located 200m ahead on the diverging route to the right</p>

Figure 21: Example STOP ahead signs

If necessary, an additional reminder STOP AHEAD sign must be placed on the departure side of the last stopping place before the STOP sign.

On sighting a Stop Ahead sign, Tram Operators must react and slow down, prepared to stop before passing the STOP sign ahead.

Tram Operators must regard this as a warning to the approach of an obstruction ahead.

1.5.4 BLOCK POST AHEAD signs

A BLOCK POST AHEAD sign tells Tram Operators that a Block Post is located ahead, and must display:

- BLACK characters on a reflective YELLOW upward pointing triangle; and
- the distance remaining to the Block Post.

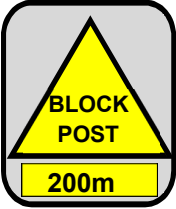
	<p>Meaning: WARNING – A Block Post is 200m ahead. Slow down and prepare to stop.</p>
---	---

Figure 22: Example Block Post Ahead sign

A BLOCK POST AHEAD sign must be erected 200m before a BLOCK POST sign.

On sighting a BLOCK POST AHEAD sign, Tram Traffic must slowdown in preparation to stop at the Block Post ahead.

1.6 TEMPORARY SPEED RESTRICTION Signs

1.6.1 TEMPORARY SPEED RESTRICTION AHEAD sign

A TEMPORARY SPEED RESTRICTION AHEAD sign informs Tram Traffic that a Temporary Speed Restriction is ahead, and must display;

- BLACK characters on a reflective YELLOW upward pointing triangle; and
- the speed to be observed by Tram Traffic; and
- the distance to the TEMPORARY SPEED RESTRICTION START sign; and
- where applicable, an arrow or text to signify that a temporary speed restriction applies to a diverging route.

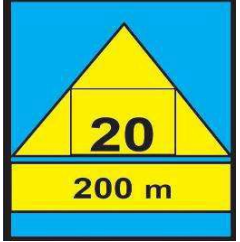
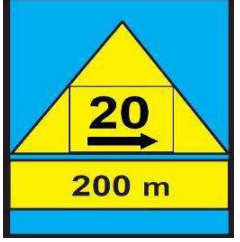
	<p>Meaning:</p> <ul style="list-style-type: none"> • A temporary speed restriction start sign is ahead at 200 metres. • The maximum speed permissible for all Tram Traffic over the affected portion of track is 20km/h
	<p>Meaning:</p> <ul style="list-style-type: none"> • A temporary speed restriction of 20km/h is 200 metres ahead and applies to the diverging route in the direction of the arrow.

Figure 23: Example Temporary Speed Restriction Ahead Sign

WARNING!

If no speed is clearly visible on TEMPORARY SPEED RESTRICTION AHEAD sign Tram Traffic must slow in preparation to pass the TEMPORARY SPEED RESTRICTION START sign at a speed of 5 km/h if necessary.

The TEMPORARY SPEED RESTRICTION AHEAD sign must be erected before the TEMPORARY SPEED RESTRICTION START sign, a distance of no less than 200m.

If necessary, an additional reminder TEMPORARY SPEED RESTRICTION AHEAD sign must be placed on the departure side of the last Stopping Place before the TEMPORARY SPEED RESTRICTION START sign.

On sighting a TEMPORARY SPEED RESTRICTION AHEAD sign, Tram Traffic must slow down, prepared to pass the TEMPORARY SPEED RESTRICTION START sign ahead at the speed shown on the TEMPORARY SPEED RESTRICTION AHEAD sign.

1.6.2 TEMPORARY SPEED RESTRICTION START Sign

TEMPORARY SPEED RESTRICTION START signs tell Tram Traffic that they have arrived at the start of a temporary speed restriction and the speed to be observed.

TEMPORARY SPEED RESTRICTION START signs must display:

- BLACK characters on a reflective YELLOW downward pointing triangle; and
- the speed to be observed by Tram Traffic; and
- where applicable, an arrow or text to signify that a temporary speed restriction applies to a diverging route.

A TEMPORARY SPEED RESTRICTION START sign must be erected at the start of the Temporary Speed Restriction.

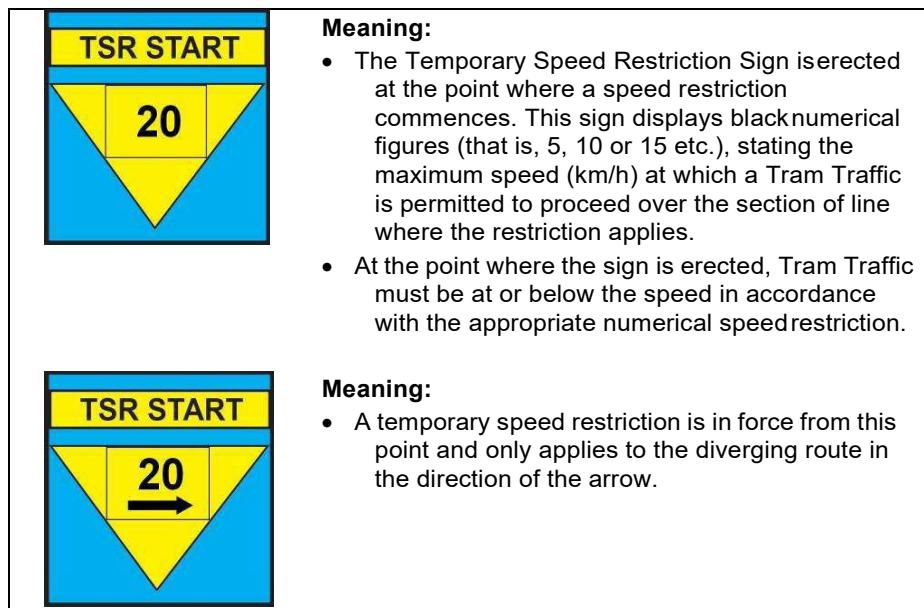
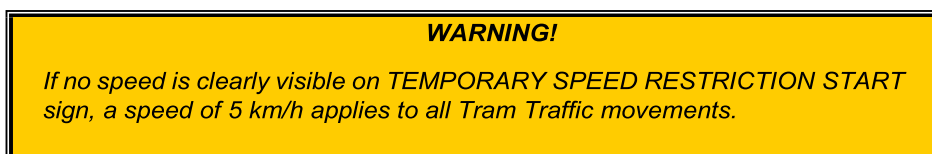


Figure 24: Example Temporary Speed Restriction Start Sign

Before passing a TEMPORARY SPEED RESTRICTION START sign, Tram Operators must ensure that Tram Traffic speed has been reduced to the speed shown on the TEMPORARY SPEED RESTRICTION START sign.



1.6.3 TEMPORARY SPEED RESTRICTION END Sign

A TEMPORARY SPEED RESTRICTION END sign tells Tram Operators that the end of a temporary speed restriction has been reached.

TEMPORARY SPEED RESTRICTION END signs display:

- BLACK characters on a WHITE reflective background; and
- if necessary, any speed restriction to be observed by Tram Traffic

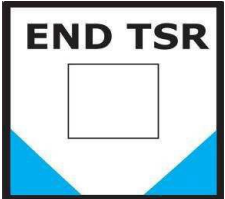

	<p>Meaning:</p> <ul style="list-style-type: none"> • A temporary speed restriction ends here • All Tram Traffic may increase to normal speed when completely past this point
	<p>Meaning:</p> <ul style="list-style-type: none"> • A temporary speed restriction ends here • All Tram Traffic may increase to the speed indicated past this point

Figure 25: Example End Temporary Speed Restriction sign

A TEMPORARY SPEED RESTRICTION END sign must be erected at the end of the affected portion of track.

When Tram Traffic has completely passed a SPEED RESTRICTION END sign, Tram Operators may increase to the speed indicated, or to normal speed if no speed is shown.

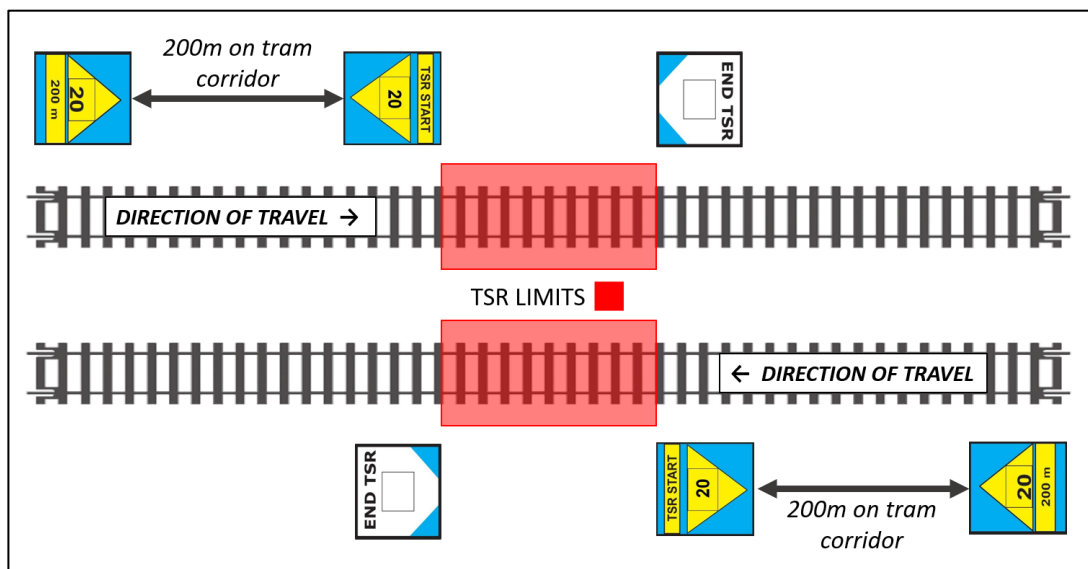


Figure 26: Example of general arrangement of a Temporary Speed Restriction

2 Fixed Tram Signals

2.1 Purpose of this section

This section sets out the Tram Rules for the type, arrangement, and meanings of Fixed Tram Signals in the Tram Network.

2.2 General

Fixed Tram Signals authorise and regulate the movement of Tram Traffic at locations on the Tram Network. Fixed Tram Signals only apply to Tram Traffic.

Traffic lights that incorporate indicators for Tram Traffic are not Fixed Tram Signals, but may utilise Fixed Tram Signal indications as aspects on the traffic light mast.

Fixed Tram Signals must be uniquely identified.

2.2.1 Location of Fixed Tram Signals

Relative to the track to which it applies, a Fixed Tram Signal must be located:

- where it enables Tram Operators to clearly see it and respond in sufficient time to safely control Tram Traffic movements; and
- to provide sufficient safe overlap; and
- So far as is reasonably practicable:
 - on the left side adjacent to the line to which it applies; or
 - directly over the line to which it applies

NOTE:

Fixed Tram Signals may only be placed on the right-hand side when it is not safe to place them on the left or above the line to which they apply

2.3 Fixed Tram Signal indications

Fixed Tram Signal indications are displayed by single or multiple lights of RED, YELLOW, GREEN or WHITE colours.

Fixed Tram Signal indications may consist of a round light aspect, a 'T' aspect or a directional bar.

Fixed Tram Signal indications may convey information about:

- an Authority to PROCEED; or
- the condition of the section ahead; or
- the route setting.

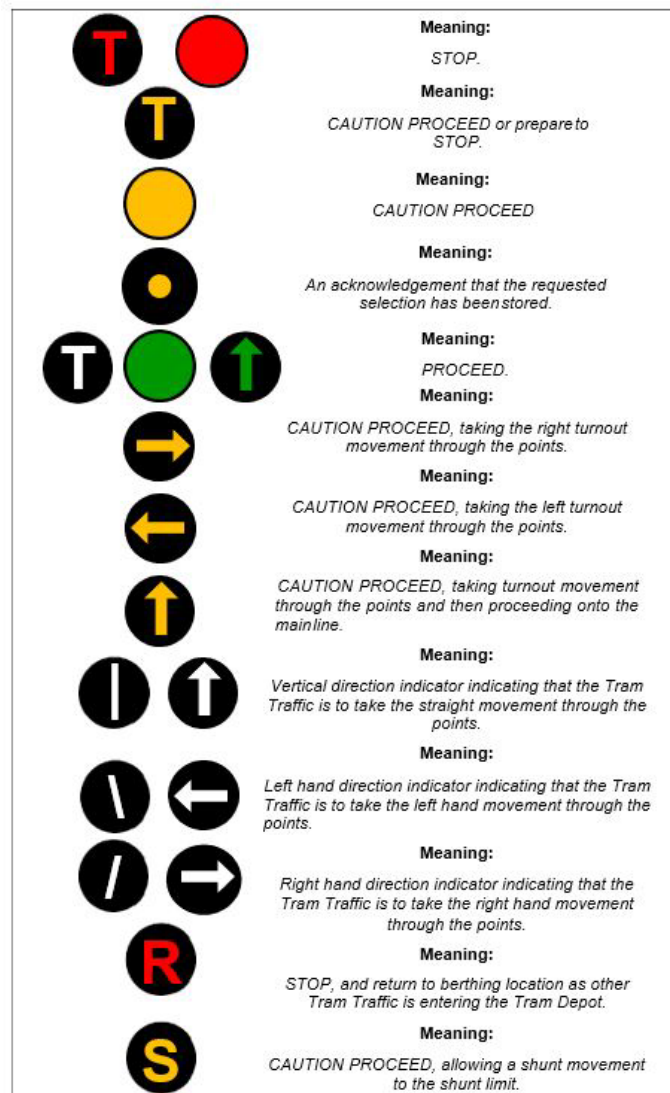


Figure 27: Fixed Tram Signal Aspects

2.3.1 Authority to proceed

If a Fixed Tram Signal displays a RED light indication or no light at all, it does not convey an Authority for Tram Traffic to PROCEED.

The Authority to PROCEED must be conveyed by a PROCEED signal which may be an aspect that is YELLOW, GREEN or WHITE.

NOTE:

A following tram must not proceed on the signal indication displayed for a tram immediately in front.

2.3.2 Condition of the track section ahead

A Fixed Tram Signal may convey the condition of the track section ahead and tell Tram Operators if the track section is clear of or is occupied by Tram Traffic.

2.3.3 Route setting

A Fixed Tram Signal at a turnout or crossover must convey the setting of the route to Tram Operators.

2.4 Illegal Indications

A Fixed Tram Signal displaying an Illegal Indication must be treated as a STOP signal.

An Illegal Indication may be:

- the absence of an aspect where one should be displayed; or
- multiple aspects wrongly displayed simultaneously on a single signal head; or
- an aspect that is flickering or changing; or
- an indistinguishable aspect display.

Tram Operators must:

- stop before passing the Fixed Tram Signal displaying an Illegal Indication; and
- report the circumstances to the Tram Controller.

2.5 Traffic light irregularity

If traffic lights at the intersection are not operating, or the traffic lights are showing only a flashing yellow traffic light, Tram Traffic must proceed in accordance with the *Road Traffic Act 1961*.

2.6 Non-commissioned Fixed Tram Signals

WARNING!

A non-commissioned Fixed Tram Signal display must not be visible to an approaching Tram Operator under any circumstances.

Fixed Tram Signals may be put in place prior to commissioning or may remain in place after being de-commissioned.

Non-commissioned Fixed Tram Signals must be identified to prevent them being mistakenly interpreted by a Tram Operator as an active Fixed Tram Signal by:

- an obscuring cover placed over the Fixed Tram Signal; or
- an obscuring white cross affixed to the front of the Fixed Tram Signal; or
- a SIGNALS NOT OPERATING sign [T1-SA116 sign] affixed below the unlit Fixed Tram Signal or traffic light; or
- turning the Fixed Tram Signal head away so that it cannot be viewed from approaching Tram Traffic.

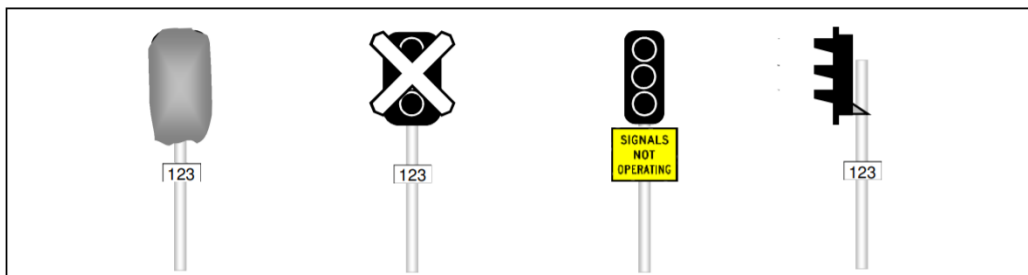


Figure 28: Examples of non-commissioned Fixed Tram Signals

2.7 Testing Fixed Tram Signals

A Fixed Tram Signal or other signalling equipment must not be tested if Tram Traffic is closely approaching, and the testing could change the Fixed Tram Signal indication.

If Tram Traffic is standing at a Fixed Tram Signal at STOP, before testing the Fixed Tram Signal the Competent Worker undertaking the testing must contact the Tram Controller to advise of the test. The Tram Controller must then tell any affected Tram Operator that:

- the Fixed Tram Signal is about to be tested; and
- Tram Traffic must not move until authorised.

After testing the Fixed Tram Signal, the Competent Worker must advise the Tram Controller that the testing is complete. The Tram Controller must then:

- tell the affected Tram Operator that the testing is complete; and
- authorise the affected Tram Operator to PROCEED once the Fixed Tram Signal displays a PROCEED aspect.

2.7.1 Recording testing

The Tram Controller and Competent Workers undertaking the testing must make a permanent record of the Fixed Tram Signal testing.

3 Points Indicators

3.1 Purpose of this section

This section outlines the Tram Rules for Points Indicators on the Tram Network.

3.2 General

Points Indicators are provided to indicate the setting of points on running tracks.

Points Indicators must be covered with a reflective material for night use.

Points Indicators may be located on either side of the line to which they apply, depending on the direction of approaching Tram Traffic.

3.3 Points – Main Line

The following indications are provided on Main Line Points Indicators.

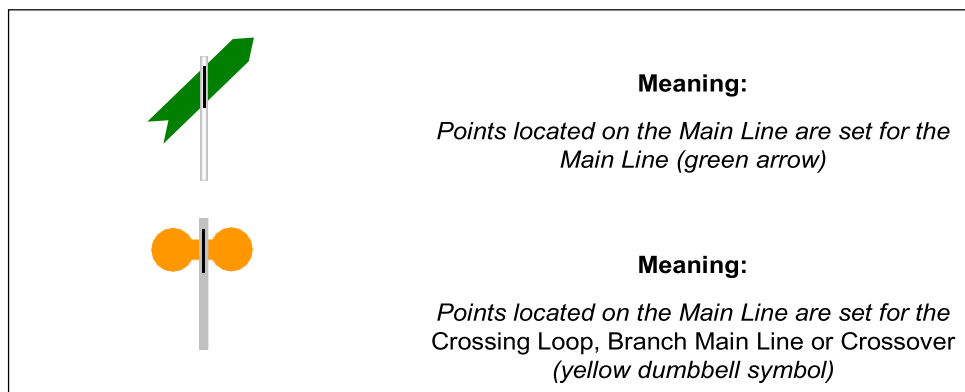


Figure 29: Examples of Main Line Points Indicators

4 Yard Limits

4.1 Purpose of this section

This section prescribes the rules for safe movement of Tram Traffic within Yards on the Network.

4.2 General

Yard Limits are established to clearly define and separate locations from the Main Line.

4.3 Running tracks

Tram Traffic movements into or within Yard Limits must be authorised by Fixed Tram Signals where available, or a verbal authority, if Fixed Tram Signals are not available.

Unsignalled movements must travel at Low Speed.

4.4 Shunting yards and sidings

Movements within shunting yards and sidings must be directed by a Competent Worker.

Competent Workers directing movements must ensure that they do not authorise conflicting movements.

4.5 Departing Yard Limits

Tram Traffic departing Yard Limits must be authorised by Fixed Tram Signals where available.

If Fixed Tram Signals are not available, Tram Traffic must be authorised to depart Yard Limits by a verbal or written authority, issued by the Tram Controller.

5 Tram Network Communication

5.1 Purpose of this section

This section outlines the Tram Rules for Safeworking communications in the Tram Network.

5.2 General

Effective communication between Workers, Tram Operators and Tram Control must be used to ensure safe and efficient operation of the Tram Network.

The standard terms and protocols contained in the Tram Rules must be used.

Communication on the Tram Network must be:

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

Communications may be spoken, written or electronic transmission.

When communicating, workers must use the 24-hour clock to give times.

5.2.1 Communications equipment

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

5.3 Confirmation of communication

WARNING !

Competent Workers must not assume that a receiver has understood a message until the receiver confirms that the message has been understood.

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

- an Occupancy Authority for the occupation of the track; and
- an Authority to proceed; or
- an instruction restraining Tram Traffic or Workers from proceeding; or
- Tram Traffic Information; or
- special working; or
- a condition affecting the safety of the Tram Network
- an instruction for Tram Traffic to proceed; or
- safety critical information or instruction.

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

5.3.1 Relaying communications

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

The content of a message must be relayed exactly as it was received.

5.4 Emergency communications

Emergency communications use whatever communication method is available.

If there is an emergency message on an open-channel radio, other users of the channel must stop transmission immediately. See section 6.7 for identifying when an emergency message is being broadcasted.

5.5 Spoken communication protocols

Workers conducting spoken communications must use the standard terms and protocols.

Spoken communication must be acknowledged promptly.

If spoken communication is not understood:

- the receiver must ask that it be repeated; and
- if necessary, the sender and receiver must use the phonetic alphabet (defined in Section 6.3) and spoken numbers to clarify and confirm the message; or
- arrange alternative means to communicate with the sender.

NOTE:

The standard phonetic alphabet is used widely in safety-critical transport communication and its use at all times is encouraged. Find this in Section 6.3

5.5.1 Recording spoken communications

Spoken communication recording equipment must be used to record all Tram Control communications.

The recordings must be kept for audit and investigative purposes for a minimum of 90 days.

5.5.2 Radio use

Competent Workers using radios must:

- except in an emergency, check that the channel is not already in use before starting a transmission; and
- if a reply is expected use the term “Over” to end each statement; and

- use the term “Out” to end each transmission.

NOTE:

Radio communication on the Tram Network uses the Government Radio Network and is subject to the protocols and conventions applicable for its use.

6 Spoken and Written Communication Protocols

6.1 Purpose of this section

This section sets out the protocols for conducting Safeworking communications on the Tram Network.

6.2 Introduction

Effective radio and telephone communication is essential for safety in the Tram Network.

6.3 Phonetic alphabet (spoken letter names)

If it is necessary to spell words, use the spoken letter names in the following table:

FOR THIS	SAY THIS	FOR THIS	SAY THIS	FOR THIS	SAY THIS
A	ALPHA	J	JULIET	S	SIERRA
B	BRAVO	K	KILO	T	TANGO
C	CHARLIE	L	LIMA	U	UNIFORM
D	DELTA	M	MIKE	V	VICTOR
E	ECHO	N	NOVEMBER	W	WHISKEY
F	FOXTROT	O	OSCAR	X	X-RAY
G	GOLF	P	PAPA	Y	YANKEE
H	HOTEL	Q	QUEBEC	Z	ZULU
I	INDIA	R	ROMEO		

Table 1: Phonetic Alphabet

6.4 Spoken numbers

Use the spoken numbers in the following table, stressing the syllables in capital letters.

For a decimal point, say “point”.

FOR THIS	SAY THIS
0	ZEE-roh
1	WUN
2	TOO
3	Thuh-REE
4	FO-wer
5	FI-viv
6	SIX
7	SEV-en
8	ATE
9	NINE-er

Table 2: Spoken Numbers

6.5 Standard terms

Use only these standard terms to convey these meanings:

TERM	MEANING
Emergency, Emergency, Emergency	This is an emergency
Correct	Yes. You are right.
I read back	I am going to repeat all, or part, of your statement exactly as I received it.
I say again	I am going to repeat all, or part, of my last statement.
I spell	I am going to use the phonetic alphabet.
Loud and clear	Your signal is strong, and every word is understood.
Message received	I clearly received and understood your message.
Negative	No. Not permitted. Not correct.
Out	My transmission is complete – no response is required.
Over	I have finished speaking, and I am waiting for a reply.
Read back	Repeat all, or a specified part, of my message back to me exactly as you received it.
Receiving	I acknowledge your call. Proceed with the message.

TERM	MEANING
Roger	All your last statement is received and understood.
Say again	Please repeat your last statement.
Speak slower	Repeat what you said, speaking more slowly. It is hard to understand you.
Stand by	Wait. I will be back soon.

Table 3: Standard Spoken Terms

6.6 Open-channel communications

Communications must begin with identification of the receiver, followed by identification of the sender.

Sender

- Start your message with the Safeworking designation, location and/or tram number or trip number, as appropriate, of the person you are calling.

Identify yourself by your Safeworking designation, location and/or tram number or trip number, as appropriate.

Say: “(Receiver) this is (Sender), over”.

Receiver

- Start your reply with the Safeworking designation, location and/or tram number or trip number, as appropriate, of the person calling you.

Identify yourself by your Safeworking designation, location and/or tram number or trip number, as appropriate.

Say: “(Sender) this is (Receiver), over”.

Sender

- Make your statement, ending with “Over”.

Receiver

- Reply, ending with “Over”.

Sender and Receiver

- Use standard terms as required in the communication.

Sender or Receiver

- At the end of the communication say “Out”.

Short Identification

A short identification may be used, after making an initial positive identification for shunting or similar operations within a yard or terminal.

6.7 Emergency radio communications

Use whatever communication method is available.

6.7.1 If an Emergency button is fitted

Competent Worker

- Press the Emergency button.
- If there is no immediate answer, follow the steps for 'If an Emergency button is not fitted'.
- When the Receiver answers, give your location and the emergency message.
- Exchange necessary information and directions.

6.7.2 If an Emergency button is not fitted

Competent Worker

- Say: "Emergency, emergency, emergency."
- This is (your identification)".
- Give brief details about the emergency.
- If the radio is open-channel, users other than the Sender and Receiver must immediately stop transmission.
- If there is no immediate answer, pause.
- Repeat Step 1, and Step 2 if necessary, until you are answered.
- When a Receiver answers, give your location and the emergency message.
- Exchange the necessary information and directions.

7 Hand and Verbal Signals

7.1 Purpose of this section

This section sets out the types of hand and verbal signals used on the Tram Network.

7.2 General

Hand signals must be given:

- in a clear and timely manner; and
- so that they will be received and acted upon only by those who are being signalled.

A Competent Worker displaying hand signals must:

- be in or have access to a safe place; and
- be in clear view of those who are being signalled; and
- as required, have effective communication with:
 - Tram Controllers; and
 - Tram Operators; and
 - Protection Officers and Possession Protection Workers; and
 - other workers.

Verbal signals are used where a worker cannot be seen by a Tram Operator and require the use of a communications system to convey the message.

7.3 Responding to hand signals and verbal commands

If the meaning of a hand signal or verbal command is not understood, a Tram Operator must stop to find out the meaning.

A Tram Operator must:

- obey hand signals and verbal commands; and
- acknowledge hand signals and verbal commands. See Section 9.3.1, *Response to Hand Signals*.

7.4 Use of hand signals and verbal commands

A Tram Traffic movement must be directed by regular verbal commands or continued hand signals.

Hand signals must be given using:

- flags or hands during daylight; or
- lights during darkness and low visibility

NOTE:

Flags are not used for displaying hand signals during shunting work.

7.4.1 Hand signal or verbal command not received or repeated

Where a hand signal or verbal command is not received or repeated when it should be, or the Tram Operator loses sight of the hand signal, the Tram Operator must:

- sound the Tram Warning Device; and
- bring the movement to a stop; and
- not move again until regular hand signals or verbal commands are again established.

When verbal commands are used for shunting, Tram Operators must be told the direction and distance to be travelled.

Other than when shunting, a hand signal must be displayed until acknowledged by the Tram Traffic crew.

7.4.2 Standing clear of Fixed Tram Signals

A Competent Worker displaying signals must stand well away from Fixed Tram Signals.

7.5 STOP signals

7.5.1 Hand signal

The following STOP hand signals may be used in all circumstances where a movement needs to be stopped.

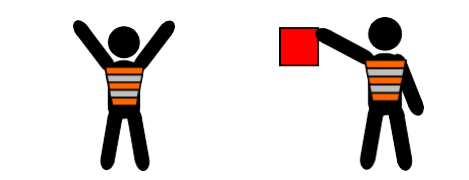
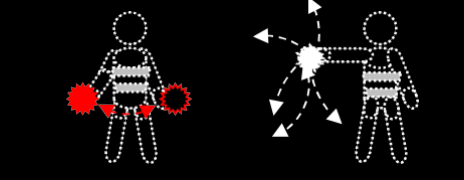
DAY	NIGHT
	
<p>Both hands held above shoulders OR A RED Flag</p>	<p>Steady or waved RED light OR A WHITE light waved violently or erratically (NOT in a circular motion)</p>

Figure 30: Stop Hand Signals

Any light waved erratically or violently, or hands waved erratically or violently must be regarded as an urgent STOP or DANGER hand signal.

7.5.2 Voice command

The voice command for a Tram Traffic movement to stop is the spoken words “(Driver of [ID]) STOP”.

7.5.3 Shunting signals

Commands for the control of shunting movements are communicated by hand signals or spoken commands.

7.5.4 Ease Up – Couple Up Hand Signal

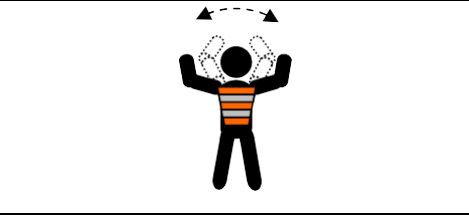

DAY	NIGHT
	
<p>Both hands up and outwards and repeatedly bring hands together to form an arch over the head</p>	<p>GREEN light waved slowly across the body</p>

Figure 31: Ease up - couple up hand signal

7.5.5 Verbal Shunting Commands

Table 4: Verbal Shunting Commands

Command	Spoken words
Move Away	"Driver of (ID) move away"
Move Away Slowly	"Driver of (ID) move away slowly"
Move Towards	"Driver of (ID) move towards"
Move Towards Slowly	"Driver of (ID) move towards slowly"
Ease Up or Couple Up	"Driver of (ID) ease up"

7.6 Hand Signals – Not Shunting Signals

Commands for the control of movements on running tracks are communicated by flag signals or spoken commands.

7.6.1 Proceed at Normal Speed

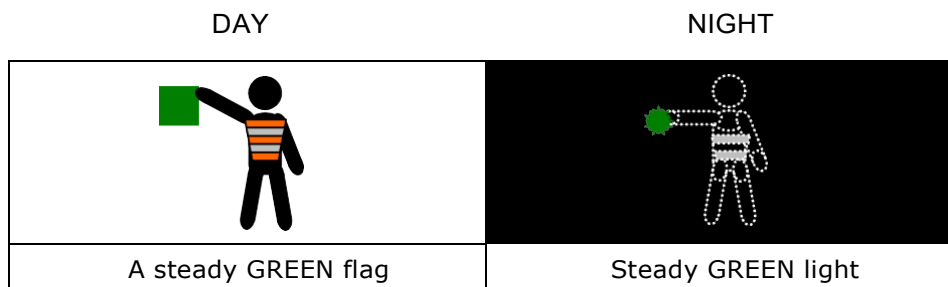


Figure 32: Proceed at Normal Speed Hand Signals

7.6.2 All Clear

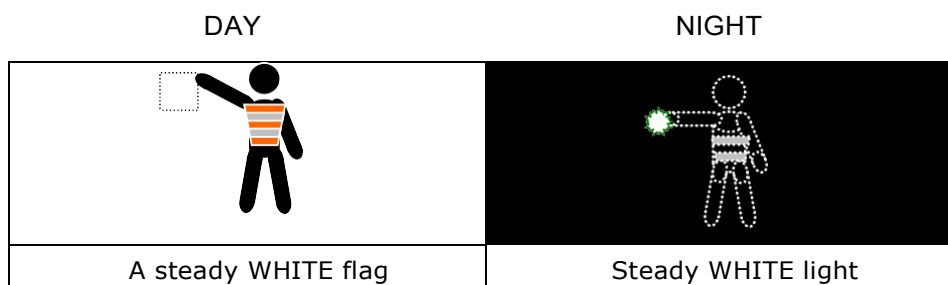


Figure 33: All Clear Hand Signals

7.6.3 Verbal commands for running track movements

Table 5: Verbal commands for running track movements

Command	Spoken words
Proceed with Caution	"Driver of (ID) – Proceed with Caution"
Warning – Stop ahead	"Driver of (ID) Slow down – Stop ahead"
Proceed at Normal Speed	"Driver of (ID) Clear to proceed at Normal Speed"

8 Tram Traffic Lights

8.1 Purpose of this section

This section describes the Tram Rules for the use of Tram Traffic headlights and taillights, and management of their failure on the Network.

8.2 General

Headlights provide forward visibility for Tram Operators during darkness, and increased visibility of Tram Traffic for persons on or near the Tram Network.

Taillights provide visibility of the Tram Traffic to vehicles approaching it from the rear.

Turn indicators and hazard lights signal the intention of Tram Traffic to other Tram Traffic or road traffic.

Tram Traffic must not enter service unless all headlights, taillights, indicators, and hazard lights are functioning.

8.3 Use of Headlights

When a tram is operating on the Tram Network, the headlights must be switched on in the direction of travel.

Normally low beam is utilised whenever Tram Traffic is moving on the Tram Network however high beam may be used within the Closed Tram Corridor if there is low visibility. Low beam must be used when another tram or vehicle is approaching, when following closely behind another tram, or when operating in the Shared Tram Corridor.

8.3.1 Using headlights for warning

If necessary, Tram Operators may flash headlights or operate the hazard lights to give a warning.

8.4 Failed headlights

8.4.1 Response to failure

Arrangements must be made to effect repairs to failed headlight or for the Tram Traffic to be replaced in service.

8.4.2 Failed headlights

All cases of total headlight failure must be reported to the Tram Controller.

If the Tram Operator's visibility is good, Tram Traffic may proceed in passenger service towards the nearest Depot or repair facility, or to a terminus or siding as directed by the Tram Controller. A Tram Operator must operate the Tram Traffic at a controlled speed that allows the movement to stop within the range of visibility.

Tram Traffic must reduce to LOW SPEED approaching:

- level crossings or intersections; and
- locations where workers or other personnel may be present on the ground; and
- locations where passengers may be waiting to board Tram Traffic.
- When visibility is low, Tram Traffic must travel at LOW SPEED.

NOTE:

Where headlights have failed, Tram Operators may need to make additional use of the Tram Warning Devices to compensate for the lack of visual warning

8.5 Tram Traffic taillights

Tram Traffic taillights must be displayed at the rear of Tram Traffic.

8.5.1 Response to failure

Arrangements must be made to effect repairs to failed taillights or for the Tram Traffic to be replaced in service.

8.5.2 Running with a failed taillight

All cases of total taillight failure must be reported to the Tram Controller.

If visibility is good, Tram Traffic may proceed in passenger service towards the nearest Tram Depot or repair facility, or to a terminus or siding as directed by the Tram Controller. A Tram Operator must operate the hazard lights on the Tram Traffic if other Tram Traffic or other vehicles are approaching the rear of the Tram Traffic that has a failed taillight.

When visibility is low, Tram Traffic must travel at LOW SPEED with the hazard lights operating continuously.

8.6 Other Lighting

8.6.1 Interior lights

For passenger visibility, interior lights should be switched on during service.

Tram Traffic must not be operated in passenger service unless sufficient interior lights are available for passenger visibility and safety. During daylight hours, sunlight may be adequate.

8.6.2 Hazard lights

Hazard lights must be switched on when needed to provide warning of a hazard on or near the Tram Traffic.

Arrangements must be made to effect repairs to failed hazard lights or for the Tram Traffic to be replaced in service.

8.6.3 Turn indicator lights

Turn indicator lights must be used when operating on the Shared Tram Corridor to signal the intention to turn at an intersection or when Tram Traffic shunts at a crossover.

Arrangements must be made to effect repairs to failed turn indicator lights or for the Tram Traffic to be replaced in service.

9 Tram Warning Devices

9.1 Purpose of this section

This section describes the Tram Rules for the use of Tram Warning Devices, and management of their failure on the Network.

9.2 General

Tram Warning Devices must be used to give audible warning. Tram Warning Devices may consist of a bell, gong, or horn.

Tram Warning Devices are also used to acknowledge hand signals on running tracks.

Before Tram Traffic enters the Tram Network, Tram Warning Devices must be working correctly.

Tram Warning Devices must be sounded with appropriate intensity, length, and repetition for the circumstances.

Where more than one Tram Warning Device is fitted, the Tram Warning Device with the least volume or intensity must be used in preference, with the other Tram Warning Devices used in order of increase in intensity and volume to convey urgency or hazard.

9.3 Using Tram Warning Devices

Tram Warning Devices must not be sounded unless a valid reason exists. Unless otherwise prohibited, Tram Warning Devices must be sounded:

- where necessary for safety; or
- to acknowledge hand signals; or
- when entering and exiting a building, tram barn or other location of restricted visibility; or
- when passing a stationary tram on the opposite Main Line; or
- before starting a movement within a depot; or
- as otherwise required by the rules.

9.3.1 Response to hand signals

Tram Warning Devices must be sounded in response to a hand signal displayed in association with:

- worksite protection; and
- an obstruction or Operational Response; and
- operation of points or crossovers by a Competent Worker.

If an expected response or acknowledgment to the Tram Warning Device is not received the Tram Operator must repeat the sounding of the Tram Warning Device and, if necessary, attempt to stop the Tram Traffic.

9.4 Failed Tram Warning Device

A Tram Operator must report all cases of Tram Warning Device failure to the Tram Controller.

9.4.1 Response to failure

Arrangements must be made to effect repairs to failed Tram Warning Devices or for the Tram Traffic to be replaced in service.

9.4.2 Running with a failed Tram Warning Device

If a Tram Warning Device fails and cannot be repaired, the Tram Operator must:

- continue movement with the headlight on and using other available Tram Warning Devices that are available; and
- flash the headlight to attract attention where necessary.

If the Tram Operator's visibility is good, Tram Traffic may proceed in passenger service towards the nearest Tram Depot, or to a terminus or siding as directed by the Tram Controller. The Tram Operator must operate the Tram Traffic at a controlled speed that allows the movement to stop within the range of visibility.

Tram Traffic must reduce to LOW SPEED approaching:

- level crossings or intersections; and
- locations where workers or other personnel may be present on the ground; and
- locations where passengers may be waiting to board Tram Traffic.
- when visibility is low.

9.4.3 Total Tram Warning Device failure

All cases of total Tram Warning Device failure must be reported to the Tram Controller. The Tram Traffic must be removed from passenger service and must travel at LOW SPEED to the nearest terminus or siding where it can be removed from the running track.

9.5 Tram Warning Device and Headlights failed

If the Tram Warning Devices and headlights have both failed, the Tram Traffic must not be moved until repairs are effected or alternate interim arrangements made to safely allow movement of the Tram Traffic to a terminus or siding.

10 Tram Traffic Speeds

10.1 Purpose of this section

This section sets out the Tram Rules for Tram Traffic speeds on the Tram Network.

10.2 General

Tram Traffic must be operated at a speed at or less than the speed limit for the portion of track, and at a speed that would allow Tram Traffic to stop in normal circumstances with the application of normal service braking. Tram Traffic speed should be adjusted according to track, weather, and traffic conditions, and slowed in areas of high pedestrian or vehicle activity.

The following speed definitions are also applicable on the Tram Network:

10.2.1 Low Speed

Low Speed is a speed that allows Tram Traffic to stop short of an obstruction within half the distance of clear track that is visible ahead.

Movements travelling at Low Speed must not exceed 25 km/h or a lesser posted speed.

10.2.2 Normal Speed

Normal Speed is a speed that does not exceed the speed limit currently in effect for the location and type of Tram Traffic.

Where no lesser speed applies, Tram Traffic movements on the Tram Network must not exceed 60 Km/h.

10.2.3 Descending gradients or overpasses

When descending an overpass, a Tram Operator must cut-off power at the top of the gradient or overpass and brake slightly to have a retarding effect so that the Tram Operator is controlling the speed of the Tram Traffic going down the gradient or overpass.

If Tram Traffic must stop on a gradient or overpass owing to a power failure or breakdown, the Tram Traffic must be secured by applying the parking brake before notifying the Tram Controller.

Adelaide Tram Network Tram Rules

Volume 3 – Tram Operating Rules

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1 Passing Fixed Tram Signals and Traffic Lights at STOP

1.1 Purpose of this section

This section prescribes the Tram Rules for passing Fixed Tram Signals or traffic lights at STOP on the Tram Network.

1.2 General

A Fixed Tram Signal is at STOP if displaying:

- a clear STOP indication; or
- an illegal Signal Indication.

Tram Traffic must not pass a Fixed Tram Signal at STOP, unless authorised to proceed by:

- the Tram Controller; or
- the Possession Protection Officer, if the Fixed Tram Signal is at the entrance to, or within the limits of a Local Possession Authority; or
- a Competent Worker controlling a local control facility.

A traffic light is at STOP when displaying a clear STOP indication.

Tram Traffic must not pass a traffic light at STOP, unless authorised to proceed:

- by Police; or
- the Possession Protection Officer, if the traffic light is at the entrance to, or within the limits of a Local Possession Authority; or
- under the direction of a Tram Controller.

1.3 Response to Fixed Tram Signal or traffic light at STOP

Tram Operators must stop before any part of a Tram Traffic movement passes a Fixed Tram Signal at STOP.

The Tram Operator must contact the Tram Controller if a Fixed Tram Signal at STOP does not clear.

The Tram Operator must tell the Tram Controller:

- the Tram Traffic identification; and
- the Fixed Tram Signal identification number; and
- the location of the Fixed Tram Signal.

The Tram Operator must stop before any part of a Tram Traffic movement passes a traffic light at STOP. Tram Traffic must approach traffic lights at a speed where the Tram Traffic can be safely stopped if the traffic light indicator displays a STOP indication.

The Tram Operator must contact the Tram Controller if a traffic light at STOP does not clear.

The Tram Operator must tell the Tram Controller:

- the Tram Traffic identification; and
- the location of the traffic light; and
- the traffic light identification number if known.

1.4 Condition of the portion of track ahead

The Tram Controller must get available information about the condition of the portion of track ahead before authorising a Tram Operator to pass a Fixed Tram Signal at STOP.

The Tram Controller must be assured that:

- the route is, or will be set correctly for the movement; and
- facing points have secured for Tram Traffic movements.

1.4.1 Condition of the portion of track is known

If the condition of the portion of track is known, the Tram Controller must tell the Tram Operator details about the portion of track.

If the portion of track is known to be occupied or obstructed, the Tram Controller must tell the Tram Operator that the portion of track is known to be occupied or obstructed, and give the Tram Operator details of:

- Tram Traffic within the portion of track; or
- the location of any obstructions in the portion of track.

If the portion of track is known to be clear, the Tram Controller must tell the Tram Operator that the portion of track is clear, including:

- the location of the last Tram Traffic to exit the portion of track, if applicable; and
- details of the known cause of the Fixed Tram Signal at STOP.

If Tram Traffic is to enter the portion of track to provide assistance to disabled Tram Traffic, the Tram Controller must provide details of:

- the location of the disabled Tram Traffic, and
- the assistance to be given to the disabled Tram Traffic.

1.4.2 Condition of the portion of track is not known

If the condition of the portion of track is not known, the Tram Controller must tell the Tram Operator that the condition of the portion of track is not known.

The Tram Controller must authorise the Tram Operator to:

- pass the Fixed Tram Signal at STOP; and
- proceed at LOW SPEED until the whole of the Tram Traffic movement has passed the affected portion of track.

The Tram Operator must:

- report the condition of the portion of track to the Tram Controller as soon as practicable; and
- report when the Tram Traffic has passed the affected portion of track.

1.5 Condition affecting a traffic light

The Tram Controller must get available information about the condition affecting the traffic light before authorising a Tram Operator to pass a traffic light at STOP.

If the condition affecting the traffic light is known, the Tram Controller must tell the Tram Operator details about the condition.

1.6 Authority to pass a Fixed Tram Signal or traffic light at STOP

Unless a Fixed Tram Signal is located at the entrance to, or within the limits of a Local Possession Authority, or under the control of a local control facility, the Authority to pass a Fixed Tram Signal at STOP must be a verbal authority issued by the Tram Controller.

If the Fixed Tram Signal is located at the entrance to, or within the limits of a Local Possession Authority, the authority to pass a Fixed Tram Signal at STOP must be given by Possession Protection Officer.

If the Fixed Tram Signal is under the control of a Competent Worker operating a local control facility, the authority to pass a Fixed Tram Signal at STOP must be given by the Competent Worker.

Tram Traffic must only pass a traffic light at STOP once:

- received an authority to proceed by the Tram Controller; or
- received an authority to proceed by Police; or
- if the traffic light is located at the entrance to, or within the limits of, a Local Possession Authority, received authority to proceed by the Possession Protection Officer; and
- only once the Tram Operator visually checks to ensure that it is safe to proceed.

1.7 Within work-on-track authority limits

Within the limits of a Local Possession Authority, Tram Operators must get the Possession Protection Officer's authority to pass Fixed Tram Signals at STOP.

Within the limits of a Track Occupancy Authority or Track Work Authority, Tram Traffic operators must get the Tram Controller's authority to pass a Fixed Tram Signal at STOP.

1.8 Records

Where an authority to pass a Fixed Tram Signal or a traffic light is given by a Tram Controller, the Tram Controller must make a permanent record of these details.

2 Overrun on limit of Authority

2.1 Purpose of this section

This section prescribes the Tram Rules for managing an authority overrun on the Tram Network. Any incident where Tram Traffic operating on the Tram Network exceeds the limits of authority, it is referred to as a Light Rail or Tram Authority Exceeded (LRTAE).

2.2 General

An authority overrun occurs when:

- Tram Traffic exceeds its permitted limits; or
- workers move beyond the defined limits of their permitted occupancy when working on or around the track.

2.2.1 Tram Traffic

A LRTAE occurs when Tram Traffic:

- passes a Fixed Tram Signal at STOP without authority; or
- passes a STOP sign or Block Post sign without authority; or
- exceeds the authorised limits of travel as detailed in the Daily Tram Notice; or
- exceeds any limit of travel instructed by a Tram Controller; or
- enters a portion of track under the control of a Possession Protection Officer, or a Competent Worker, without authority; or
- does not comply with the directions given by a Possession Protection Officer, or a Competent Worker, while traversing an Occupancy Authority under the control of the Possession Protection Officer, or Competent Worker.

2.2.2 Track Occupancy

Workers operating under a work on track Authority exceed their limit of Authority when:

- work is conducted beyond the limits specified by the work on track Authority; or
- work is conducted on a track not specified within the work on track Authority; or
- tracks are accessed without any Authority.

2.3 Response

If an authority overrun occurs, those involved must respond as follows.

2.3.1 Tram Traffic

If a Tram Operator exceeds their limit of authority, they must:

- immediately stop the Tram Traffic movement; and
- immediately contact tram control; and
- take steps as required to protect against any immediate danger.

2.3.2 Track Workers

If workers exceed their Limit of Authority, they must:

- stop all work or travel; and
- immediately evacuate themselves and if possible, their equipment from the Danger Zone; and
- protect against any immediate danger; and
- broadcast an emergency transmission.

2.3.3 All authority overruns

After carrying out the actions set out above, all Tram Operators and workers must:

- tell the Tram Controller the details of the overrun; and
- remain in communication with the Tram Controller until:
 - normal operation can be resumed under the authority of the Tram Controller; and
 - relevant Authorities are cancelled or issued as appropriate.

2.3.4 Tram Controller actions

The Tram Controller must take steps to protect the Tram Traffic movement or the workers that have overrun their limit of authority, and any Tram Traffic that may be affected by the overrun.

The Tram Controller must:

- contact any Tram Traffic near the location that may be on a conflicting course with the Tram Traffic movement or the workers that have overrun; and
- advise each movement to:
 - stop immediately; and
 - remain in voice communication with Tram Control until normal operation can be resumed, and relevant Authorities are cancelled or issued as appropriate.

After the Tram Operator or workers have been protected against any immediate danger, the Tram Controller must:

- report the details of the overrun, and

WARNING!

If there is any doubt as to the capacity of the Tram Operator or worker to continue to perform their Rail Safety Work duties, the Tram Operator or worker must not resume work until a safety assessment is completed.

2.3.5 Signal overrun

If Tram Traffic passes a Fixed Tram Signal displaying STOP, or passes STOP signage, it may be authorised to move forward or set back as required by the Tram Controller.

If the Tram Traffic is to move forward, verbal authority to proceed must be given to the Tram Operator by the Tram Controller.

If the Tram Traffic is to set back the movement must be made in accordance with the Tram Rules contained in Tram Rules Vol 3 - 4 Active Control Level Crossing Management.

3 Setting Back or Propelling on Running Tracks

3.1 Purpose of this section

This section prescribes the Tram Rules for Tram Traffic to set back or propel on running track across the Tram Network.

3.2 General

Set back movements are movements on running tracks, conducted in the opposite direction to that normally travelled by Tram Traffic movements.

Tram Traffic may need to set back if:

- it cannot continue in the forward direction; or
- an unsafe condition is encountered; or
- a stopping place has been partially or completely overrun, and it is necessary to return to the stopping place; or
- the transponder selection for a set of points has not been successful; or
- shunting operations are required on running tracks.

Tram Traffic setting back must be driven from the leading cab in the direction of movement where possible.

3.3 Authority to set back or propel

The authority of the Tram Controller must be obtained to set back in the opposite direction to that normally travelled by Tram Traffic movements.

The authority to set back is given verbally by the Tram Controller to the Tram Operator.

The authority issued to Tram Traffic for a set back movement must:

- specify the conditions under which travel is authorised; and
- specify the location to which travel is authorised; and
- specify the route and track to be taken.

3.4 Assurances

Before authorising any movement to set back in the wrong-running direction, the Tram Controller must:

- ensure the portion of track into which the movement is to set back is clear of Tram Traffic and will remain so; and
- inform any approaching Tram Traffic of the set back movement and issue a Restraint Authority to the approaching Tram Traffic if required; and
- ensure work on track Authorities in the affected line section are cancelled or fulfilled, or worksites are protected; and
- where possible, advise workers who are using lookout Working.

3.5 Conditions for setting back or propelling

3.5.1 Tram Controller

The Tram Controller must:

- be assured that the movement can be conducted safely; and
- give authority to the Tram Operator for the movement; and
- record of the details of the Authority if required.

3.5.2 Tram Operator

The Tram Operator must:

- unless setting back due to a life-threatening emergency, ensure that the movement is authorised; and
- drive from the leading cab in the direction of movement; and
- if not driving from the leading cab in the direction of movement, ensure a Competent Worker accompanies or precedes the leading vehicle to direct the movement; and
- ensure that the brake can be applied from the leading cab or the leading vehicle; and
- make sure that the set back movement does not exceed its limit of Authority.

3.5.3 Speed

When setting back, Tram Traffic must travel at Low Speed.

3.6 Intersections and level crossings

Setting back or propelling movements approaching an intersection or level crossing must:

- STOP immediately prior to the intersection or level crossing; and
- not proceed over the level crossing before it is safe to do so; and
- be directed by a Competent Worker if necessary; and
- not exceed 10 Km/h while crossing the intersection or level crossing.

At intersections, a set back movement must not proceed unless the traffic light displays an indication applicable for the movement, the intersection is clear, and there is no pedestrian traffic.

At active control level crossings, a set back movement must not proceed unless warning equipment is operating or level crossing protection is in place.

At passive control level crossings, a set back movement must not proceed unless the crossing is clear, and road or pedestrian traffic has been stopped.

3.7 Fixed Work Location to the Rear

Before Tram Traffic is permitted to set back towards a Fixed Work Location to the rear, the Tram Controller must advise the Competent Worker, or Possession Protection Officer, at the Fixed Work Location of the details and circumstances of the movement.

3.8 Setting Back in a life threatening emergency

Tram Traffic may need to set back on a running track, due to a life threatening emergency such as:

- Tram Traffic threatened by fire; or
- the imminent collapse of the track foundation, cutting side wall, or a bridge.

The Tram Operator must attempt to contact the Tram Controller for authority before setting back in a life threatening emergency.

Tram Traffic may, however, set back or propel in a life threatening emergency without an appropriate authority, and without the leading cab being occupied.

An emergency radio transmission must be broadcasted as frequently as possible whilst the Tram Traffic is setting back.

Tram Traffic setting back must travel at a speed as low as practicable and set back no further than necessary to escape immediate danger.

4 Active Control Level Crossing Management

4.1 Purpose of this section

This section sets out the Tram Rules governing how active level crossings are tested, and how faulty or potentially faulty active level crossings and wrong-direction movements are managed over active level crossings on the Tram Network.

4.2 General

Level crossings are provided to allow access across the Closed Tram Corridor by road vehicles or pedestrians.

All road level crossings are provided with active-control warning equipment, operated by the approach of Tram Traffic.

Pedestrian level crossings may be provided with active-control warning equipment.

If faulty active-control level crossing equipment is detected, it must be immediately reported to the Tram Controller.

4.3 Testing active protection equipment

Active-control road and pedestrian level crossing warning equipment must be periodically tested by:

- authorised on-site testers; or
- remote monitoring.

The warning equipment must be tested at a time when all equipment will operate.

A permanent record must be made of the periodical test results.

4.3.1 On-site testing

Unless periodical testing is suspended, warning equipment that is tested on-site must be tested according to the relevant specified intervals.

Periodical testing may be suspended only on the authority of the Rail Infrastructure Manager.

If periodical testing is suspended, the Rail Infrastructure Manager must tell the Tram Controller.

If Tram Traffic needs to use a level crossing that has not been tested within 7 days of last active operation, Tram Controllers must treat the level crossing as potentially faulty and arrange for safety measures to be put in place.

4.3.2 Authorising testing

The Tram Controller must authorise each test before it is done.

Before authorising a test, the Tram Controller must make sure that there is no Tram Traffic closely approaching the level crossing.

4.3.3 Remote monitoring

Competent Workers required to monitor equipment must regularly check and act on display indications.

4.3.4 Extended operation of warning equipment

If Tram Traffic is stopped on the controlling track-circuit of an active control level crossing, the Tram Operator must promptly tell the Tram Controller if the Tram Traffic:

- will be delayed for an extended time; or
- is disabled and cannot be moved.

The Tram Controller must arrange for a Crossing Keeper to attend to manage Tram Traffic only, and for:

- emergency services to attend and control road and pedestrian traffic; or
- road traffic authority representatives to attend and control road and pedestrian traffic.

4.4 Faulty or potentially faulty level crossings

If made aware that an active control level crossing is faulty, or is potentially faulty, the Tram Controller must:

- urgently warn approaching Tram Operators; and
- arrange, as necessary, for a Crossing Keeper to manage Tram Traffic movements; and
- arrange as necessary, for emergency services or road traffic authority representatives to manage road traffic; and
- arrange for a Signals Maintenance Representative to attend; and
- make a permanent record about the details.

4.4.1 Tram Operator

When warned about a faulty or a potentially faulty level crossing, the Tram Operator must:

- approach the faulty or potentially faulty level crossing at Low Speed; and
- make sure that:
 - the level crossing warning equipment is operating correctly; or
 - a Crossing Keeper is in attendance.

If active-control level crossing warning equipment is operating correctly, the Tram Operator may proceed normally.

If a Crossing Keeper is in attendance, the Tram Operator must follow the Crossing Keepers directions.

If the active-control level crossing warning equipment is not operating correctly or a Crossing Keeper is not in attendance, the Tram Operator must:

- stop short of the level crossing; and
- contact tram control and seek authority to proceed over the level crossing
- manually operate the level crossing if possible, or arrange to stop approaching road and pedestrian traffic; and
- proceed over the level crossing only if it is safe to do so sounding the warning device continuously.

The Tram Operator must report the status of the level crossing warning equipment to the Tram Controller as soon as possible.

NOTE:

Fixed Tram Signals and Traffic Fixed Tram Signals and Traffic Lights must only be passed at STOP in accordance with Tram Rules Vol 3. 1 Passing Fixed Tram Signals and Traffic Lights at STOP Lights must only be passed at STOP in accordance with Tram Rules Vol 3. 1 Passing Fixed Tram Signals and Traffic Lights at STOP

4.5 Tram Traffic that may not activate track- circuits

If Tram Traffic needs to use an active control level crossing operated automatically by track-circuits or induction loops, but the Tram Traffic cannot be relied upon to activate the crossing, the Tram Operator must:

- stop the Tram Traffic short of the level crossing; and
- manually operate the level crossing if possible, or arrange to stop approaching road and pedestrian traffic; and
- only if safe to do so, proceed over the level crossing sounding the warning device continuously.

Track-circuit cables must not be used to activate level crossing warning equipment.

4.6 Protection by Crossing Keeper

WARNING ! *Competent Workers must not manage the passage of road traffic over a level crossing at which warning equipment is operating.*

A Competent Worker may be appointed to manage road, pedestrian, and Tram Traffic over a level crossing. This worker is known as a Crossing Keeper.

Whilst acting as a Crossing Keeper, a Competent Worker must be satisfied that other work will not interfere with level crossing protection duties.

If one Crossing Keeper cannot safely protect a level crossing, additional Crossing Keepers must be used.

If more than one Crossing Keeper is used to protect a level crossing, only one of them may authorise the Tram Operator to proceed over the crossing.

Crossing Keepers must liaise with the Tram Controller to determine the requirements for Tram Traffic movements.

Before authorising Tram Traffic to use level crossings, Crossing Keepers must make sure that all road and pedestrian traffic has been stopped.

Crossing Keepers must have access to appropriate equipment to enable the proper discharge of their duties.

4.7 Isolating active-control level crossing equipment

WARNING !

Active level crossing warning equipment may be isolated only after the Tram Controller has confirmed that no Tram Traffic is closely approaching.

If the Tram Controller directs a Competent Worker to do so, and no Tram Traffic is closely approaching, active-control level crossing equipment may be isolated to allow road or pedestrian traffic to cross the level crossing.

Isolated active-control level crossing warning equipment must be reinstated in sufficient time to allow Tram Traffic to approach and pass over the level crossing safely.

4.7.1 Manually protecting a level crossing

If active-control level crossing equipment is faulty, and is not operating, a Crossing Keeper must, wherever possible, manually protect the level crossing.

4.8 Resuming normal operation

If told that active-control level crossing warning equipment has been repaired, tested and is working correctly, the Tram Controller must:

- tell Competent Workers that normal working can be resumed; and
- tell Tram Operators, if necessary; and
- make a permanent record of the details.

5 Crossing Keepers

5.1 Purpose of this section

This section prescribes the Tram Rules for the use of Crossing Keepers on the Tram Network.

5.2 General

A Crossing Keeper's primary duty is to maintain the safe separation of road or pedestrian traffic and Tram Traffic at a level crossing.

Road and pedestrian traffic must be stopped in sufficient time to allow Tram Traffic to approach and pass over the level crossing safely.

Crossing Keepers are appointed to manually control the passage of traffic over level crossings, usually because of the failure of active control level crossing equipment.

Crossing Keepers must liaise with and work under the direction of Tram Control.

5.2.1 Responsibilities

Whilst acting as a Crossing Keeper, a Competent Worker must be satisfied that other work will not interfere with level crossing protection duties.

A Crossing Keeper must:

- liaise with the Tram Controller about Tram Traffic requirements; and
- stop road or pedestrian traffic in sufficient time to avoid delays to Tram Traffic; and
- advise the Tram Operators by display of hand signal or other means, that the level crossing is safe; and
- not open a level crossing for road or pedestrian traffic unless certain that no other Tram Traffic is approaching; and
- not allow the passage of road or pedestrian traffic over an active controlled level crossing if the level crossing equipment is operating; and
- not isolate active control level crossing equipment unless specifically directed to do so by the Tram Controller; and
- not leave the level crossing unless authorised to do so by the Tram Controller; and
- obtain details, if possible, of road users who disregard the Crossing Keepers lawful directions and tell the Tram Controller.

5.2.2 Equipment

A Crossing Keeper must be provided with:

- distinct identification; and
- equipment to enable communications with the Tram Controller; and
- RED and GREEN flags and lights for providing hand signals to Tram Operators; and
- if necessary, equipment to enable communications with Tram Traffic; and
- a hand held STOP sign and RED light to stop road or pedestrian traffic; and
- if necessary, STOP AHEAD and STOP signs, to stop Tram Traffic.

6 Protection of Track Obstruction

6.1 Purpose of this section

This section prescribes the Tram Rules for the protection of track obstructions across the tram network.

6.2 General

The track is obstructed if it becomes unavailable for the passage of Tram Traffic because of:

- unsafe track conditions; or
- disabled Tram Traffic; or
- workers on or near the track.

An obstruction must be protected in each direction from approaching Tram Traffic.

NOTE:

The protection of workers on track is addressed in Volume 4 – Work on Track Rules and Procedures.

6.3 Unsafe track conditions

Unsafe track conditions which obstruct the track may be caused by conditions such as:

- an accident or incident; or
- broken, missing or deformed track; or
- unstable track structure; or
- flooded or washed-out track; or
- a physical obstruction of the track; or
- fire.

An unsafe track condition may require that Tram Traffic be excluded from the obstructed track.

Tram Controllers must communicate to Tram Operators about the unsafe track condition and if necessary, restrain Tram Traffic from entering the affected section.

Where practicable, Tram Traffic must be stopped at the preceding tram stop and not permitted to proceed towards the obstruction.

6.4 Types of protection

Protection of a track obstruction is provided using one or more of the following:

- Competent Workers displaying hand signals; or
- signs; or
- communication by the Tram Controller to the Tram Operator to STOP.

6.4.1 Competent Workers

If necessary, Competent Workers must protect an obstruction in urgent or unforeseen circumstances by displaying hand signals until more formal protection measures can be implemented.

Competent Workers must use hand signals to give Tram Operators a WARNING or tell them to STOP.

6.4.2 Signs

Signs provide a dependable means for the protection of obstructions.

Signs give the Tram Operator a WARNING or tell them to STOP.

6.5 Placement of Protection

6.5.1 STOP signal

NOTE:

A STOP signal may be a STOP sign or a Competent Worker displaying a STOP hand signal, red flag, or red light.

A track obstruction must be protected by a STOP signal located at least 200 metres ahead of the obstruction.

NOTE:

A WARNING of the protection of an obstruction may be provided by a STOP AHEAD sign

6.5.2 WARNING of protection for an obstruction

A WARNING of the protection of an obstruction must be provided to Tram Operators approaching the track obstruction.

The WARNING must be displayed at least 200 metres ahead of the STOP signal in the direction of approaching Tram Traffic.

7 Disabled Tram Traffic

7.1 Purpose of this section

This section prescribes the Tram Rules for management and recovery of disabled or divided Tram Traffic on the Tram Network.

7.2 General

If Tram Traffic fails or is divided in a section, it may need to be:

- propelled from the section from the rear; or
- hauled from the section from the front; or
- divided, and cleared from the section in portions.

WARNING!

If disabled or divided Tram Traffic causes an immovable obstruction of one or more lines it must be protected until the track is restored as safe for the passage of Tram Traffic.

7.3 Tram Traffic failure

Until otherwise determined when Tram Traffic fails it must always be assumed that Tram Traffic:

- have become divided; or
- have derailed; or
- have dewired; or
- are foul of adjoining lines.

7.3.1 Responding to unexpected Tram Traffic failure

The Tram Operator must:

- advise the Tram Controller of disablement, the exact location and to warn any other approaching Tram Traffic; and
- switch on hazard lights; and
- ensure their own safety and the safety of passengers; and
- investigate the cause; and
- confirm with the Tram Controller whether an obstruction does or does not exist; and
- follow the instructions as given by the Tram Controller; and
- if suspecting that the Tram Traffic has derailed or dewired, seek authorisation from the Tram Controller to attempt to lower the pantograph.

NOTE:

*If Tram Traffic is derailed or dewired, it must be treated as an obstruction.
A Tram Operator must not attempt to lower the pantograph or to rerail a derailed tram unless authorised by the Tram Controller.*

The Tram Controller must:

- advise all approaching Tram Traffic to travel at Low Speed in the vicinity of the disabled Tram Traffic and, if necessary, STOP; and
- de-energise the electrical supply to the affected location if a derailment or dewirement is reported; and
- authorise the Tram Operator to attempt to lower the pantograph; and
- if it is confirmed that an obstruction exists, protect the obstruction and the response workers in accordance with *Tram Rules Vol 3. 7 Disabled Tram Traffic* and enact incident response procedures; and
- if it is confirmed that no obstruction exists, arrange for Tram Traffic to be cleared from the section.

8 Temporary Speed Restrictions

8.1 Purpose of this section

This section prescribes the Tram Rules for the establishing and managing of Temporary Speed Restrictions on the Tram Network.

8.2 General

A Temporary Speed Restriction:

- makes it safe for Tram Traffic to pass over track that may not be safe for passage at Normal Speed; and
- overrides any existing higher track speed; and
- does not override any existing lower permanent speed.

The Temporary Speed Restriction may be imposed because of:

- infrastructure conditions; or
- safety risks to track workers; or
- weather conditions; or
- other safety precautions.

8.2.1 Advice of Temporary Speed Restrictions

Tram Operators are advised about Temporary Speed Restrictions by:

- a Temporary Speed Restriction advice in the Daily Tram Notice; or
- a verbal advice issued to the Tram Traffic; and
- Temporary Speed Restriction signs.

If it is not possible to place Temporary Speed Restriction signs before the arrival of the Tram Traffic, the Tram Operator must be advised of the Temporary Speed Restriction before entering the affected section.

8.3 Temporary Speed Restriction signs

If a Temporary Speed Restriction is in place, then three (3) types of Temporary Speed Restriction signs must be used:

TEMPORARY SPEED RESTRICTION AHEAD signs.

TEMPORARY SPEED RESTRICTION START signs.

TEMPORARY SPEED RESTRICTION END signs.

TEMPORARY SPEED RESTRICTION AHEAD signs indicate:

- that a temporary speed restriction is ahead; and
- the distance to the TEMPORARY SPEED RESTRICTION START sign; and
- the maximum speed permissible for each Tram Traffic type over the affected portion of track.

TEMPORARY SPEED RESTRICTION START signs indicate:

- that a temporary speed restriction has been reached; and
- the maximum speed permissible for each Tram Traffic type over the affected portion of track.

TEMPORARY SPEED RESTRICTION END signs indicate:

- that the end of a Temporary Speed Restriction has been reached; and
- the new temporary maximum speed permissible for each Tram Traffic type.

8.3.1 Placement of Temporary Speed Restriction signs

A TEMPORARY SPEED RESTRICTION AHEAD sign must be erected no less than 200 metres ahead of the TEMPORARY SPEED RESTRICTION START sign.

Where required, additional reminder TEMPORARY SPEED RESTRICTION AHEAD signs may be placed between the first TEMPORARY SPEED RESTRICTION AHEAD sign and the TEMPORARY SPEED RESTRICTION START sign.

A TEMPORARY SPEED RESTRICTION START sign must be erected at the start of the affected track.

A TEMPORARY SPEED RESTRICTION END sign must be located at the end of the affected track.

8.3.2 Reacting to Temporary Speed Restriction signs

On sighting a TEMPORARY SPEED RESTRICTION AHEAD sign, Tram Operators must ensure that Tram Traffic is slowed and travels at or below the speed restriction displayed, before passing the TEMPORARY SPEED RESTRICTION START sign.

On sighting a TEMPORARY SPEED RESTRICTION START sign, Tram Operators must ensure that Tram Traffic travels at or below the speed restriction displayed.

After the whole of the Tram Traffic consist has passed the TEMPORARY SPEED RESTRICTION END sign, Tram Operators may allow Tram Traffic to resume Normal Speed if applicable but must observe any other speed restriction in place.

9 Shunting

9.1 Purpose of this section

This section prescribes the Tram Rules for shunting on the Tram Network.

9.2 General

Shunting is moving Tram Traffic at Low Speed to:

- move Tram Traffic in a Depot, siding, or terminus for other than through-movements.

When performing shunting operations, Tram Traffic must only be moved with the authority of the Tram Controller or a Competent Worker directing the shunting operations.

Shunting must be performed with care to prevent damage to Tram Traffic, personnel, or infrastructure.

9.2.1 Shunting over points

The Tram Operator must ensure that points are set and secured for the intended route.

9.3 Shunting on running tracks

Shunting on running tracks must be authorised by the Tram Controller.

On running tracks, Tram Traffic being shunted must be equipped with operating brakes.

The Tram Controller must be told when shunting movements on running tracks have been completed.

9.4 Shunting methods

9.4.1 Shunting under power

Shunting under power is the movement of Tram Traffic where an attached Tram Traffic controls movement and braking of the Tram Traffic consist.

9.4.2 Shunting with a road vehicle

Shunting with a road vehicle may be undertaken at locations where the track surface permits the operation of a road vehicle. The road vehicle must be securely coupled to the Tram Traffic and have braking capable of stopping the Tram Traffic. If required, a Competent Worker must be in the Tram Traffic being Towed or Pushed to operate the brake on that Tram Traffic if directed to by the road vehicle operator.

9.4.3 Shunting using winches

Within a Tram Workshop, Tram Traffic may be positioned using winching equipment designed for the task in accordance with Safeworking methods for the task.

9.5 Tram Traffic under repair

Tram Traffic “Do Not Move” tags, signs or lights must not be moved, be shunted against, or have other Tram Traffic or road vehicles attached to them unless:

- the “Do Not Move” tags, sign or lights are first removed by the workers who put them there; and
- no work is being done on or near the Tram Traffic; or
- the movement is required by the workers undertaking the work on the Tram Traffic; and
- it is safe to move the Tram Traffic.

9.6 Stabling Tram Traffic

9.6.1 On running tracks

Tram Traffic may be stabled on running tracks only if:

- it has been authorised by the Tram Controller; and
- advertised, when required; and
- unauthorised access to Tram Traffic controls is prevented; and
- it is secured against unintended movement.

If the Tram Traffic is stabled on the main line within a section, the Tram Traffic must be considered to be an obstruction and protected as such.

9.7 Restoring equipment

After completion of shunting, the Tram Operator or a Competent Worker directing shunting must restore points, Fixed Tram Signals and other equipment to their normal positions.

Points must be restored to protect running tracks and standing Tram Traffic.

The Tram Operator or the Competent Worker directing shunting must report to the Tram Controller that equipment has been restored.

10 Operation of Points

10.1 Purpose of this section

This section prescribes the Tram Rules for the operation of points on running tracks on the Tram Network.

10.2 General

WARNING !

Competent Workers required to inspect or hand operate points must make sure that safety measures are in place before commencing the task, and that there is an easily reached safe place nearby.

The points over which Tram Traffic is to pass must be set and secured.

Points must be:

- operated only by Competent Workers who are trained in their use; and
- operated in accordance with the Working Timetable or under the direction of the Tram Controller; and
- set to protect Tram Traffic operating on the main line.

10.3 Setting Points

10.3.1 Indications of points setting

The setting of points must be communicated to the Tram Operator by:

- Fixed Tram Signal indication; or
- points indicators; or
- direct observation of the points.

Hand operated points must be examined to ensure that they are:

- set for the intended route; and
- secured against movement or unintended operation.

10.3.2 Hand operated points

If not already included in the Working Timetable, the Tram Controller must authorise the operation of points on running tracks.

10.3.3 Restoring points

Points and locking mechanisms must be restored to their normal position after use unless the points are designed to be trailable, or unless otherwise instructed by the Tram Controller.

10.3.4 Wrong point selection

If a Tram Operator incorrectly selects points and traverses the points that are not set for intended direction of travel, the Tram Operator must stop the Tram Traffic, contact the Tram Controller, and follow the instructions given by the Tram Controller.

10.4 Movement over points

WARNING !

While Tram Traffic is moving over or standing on points, they must not be operated.

Tram Traffic movements must not change direction while located over a set of points.

The maximum allowable speed for Tram Traffic traversing a set of points is 15 km/h.

10.4.1 Tram Traffic to remain clear

Tram Traffic must remain clear of the points until they are correctly set and secured for the movement.

10.4.2 Competent Worker

A Competent Worker operating the points must stand in a safe place well clear of points and operating mechanisms when Tram Traffic is passing through them.

10.4.3 Trailing points

Tram Traffic must not trail through points not specifically designed for the purpose.

If Tram Traffic trails through points not set for the movement, the initial speed of the movement over the points must not exceed 15 km/h.

If Tram Traffic trails through, but only partially completes a movement through trailable points, the movement must continue clear of the points before changing direction.

The setting of trailed points must be confirmed and checked as set by a Competent Worker before a facing movement is made over them.

10.5 Damaged points

If points are found to be defective or damaged, the Tram Controller must be advised, and they must not be used for Tram Traffic until:

- they are inspected by a Competent Worker and found safe for the intended movement; or
- a Competent Worker makes the route safe for the Tram Traffic movement by mechanically securing the points; or
- the points are inspected and repaired by a Maintenance Representative.

10.6 Mechanically securing points

Facing points on running tracks must be secured against moving as Tram Traffic passes over them.

Points must be mechanically clamped or otherwise secured if:

- they cannot be electrically locked; or
- they cannot be electrically isolated; or
- it cannot be assured that they will remain in the correct position; or
- if points have been damaged by a run-through movement.

Points may be mechanically secured using a special clamp to hold the point blade securely against the stock rail.

Manually operated points must be visually checked to ensure that they are set, safe and secured, before the passage of Tram Traffic over them.

11 Local Control of Points

11.1 Purpose of this section

This section prescribes the Tram Rules for the local operation of points on the Tram Network.

11.2 General

Points on the Tram Network are normally operated by transponder commands given by the Tram Operator when the Tram Traffic is at a detection location.

If necessary, the Tram Controller may direct a Competent Worker to institute local control of a location, by use of a local control facility at locations where this facility is available.

Local control facilities must be operated:

- only by Competent Workers, and
- only under the direction of the Tram Controller.

12 Unplanned Removal of Overhead Supply

12.1 Purpose of this section

This section prescribes the rules for the removal of overhead electrical supply on the network in life threatening emergencies, or when urgent infrastructure work is required.

12.2 General

WARNING !

Unless told otherwise by an Electrical Representative, all personnel must treat electrical equipment, wiring and infrastructure as live.

Overhead supply must be removed only in accordance with the requirements specified in the applicable procedure.

Preservation of human life must take priority over operational considerations.

12.3 Rescue operations

In life-threatening situations, rescue operations must not be attempted before Tram Control or an Electrical Representative says that it is safe to do so.

12.4 Removing supply

The Tram Controller must:

- agree about the timing and the extent of overhead wiring sections to be isolated; and
- coordinate removal of electrical supply; and
- make a permanent record about the removal of electrical supply.

Tram Controllers must tell Tram Operators and affected parties about the affected portions of line.

12.4.1 Life threatening incidents

In life-threatening situations, the Tram Controller may remove electrical supply immediately

12.5 Protecting the isolated overhead wiring section

Unplanned removal of the overhead electrical supply must be treated as a track obstruction as per *Tram Rules Vol 3. Section 6 Protection of track obstruction*.

12.6 Restoring electrical supply

The Tram Controller must coordinate the restoration of the electrical supply.

Electrical supply must be restored in accordance with the requirements specified in the applicable procedure.

13 Planned Removal of Overhead Supply

13.1 Purpose of this section

This section prescribes the rules for planned removal of overhead electrical supply on the network.

13.2 General

Tram Controllers must approve the planned removal of overhead electrical supply.

The overhead electrical supply must be removed only:

- if all prescribed approvals have been obtained; and
- in accordance with the requirements specified in the Maintenance Representative's electrical safety instructions.

13.3 Advertising overhead electrical supply removal

Planned removal of overhead electrical supply must be advertised.

Removal of the supply from an overhead wiring section must be authorised or notified by the Electrical Maintenance representative.

13.4 Removing overhead electrical supply

The Tram Controller must make a permanent record about the removal of overhead electrical supply before giving approval.

13.5 Protecting the isolated overhead wiring section

Protection of the isolated overhead wiring section is provided using one or more of the following:

- Competent Workers displaying hand signals; or
- signs; or
- communication by the Tram Controller to the Tram Operator to STOP.

WARNING !

If a raised pantograph bridges isolated and live overhead electrical wiring sections, it will re-energise the isolated section.

13.6 Restoring overhead electrical supply

Overhead electrical supply must be restored in accordance with the requirements specified in the applicable procedure.

Adelaide Tram Network Tram Rules

Volume 4 – Work on Track Rules and Procedures

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1 Planning Work in the Tram Corridor

1.1 Purpose of this section

This section describes the rules for assessing work on track safety and determining appropriate method of protection, when working within the Tram Corridor.

1.2 General

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

Workers who access the Tram Corridor or track must be authorised and competent to work in the Tram Corridor and must hold a valid permit to undertake those works.

Work in the Danger Zone must not:

- be carried out unless there is a Safe Place that can be easily reached; and
- begin until the required safety measures are in place.

Wherever possible, planned work in the Tram Corridor must be advertised before being undertaken.

Work in the Danger Zone must be carried out using one of the protection methods listed below.

- Local Possession Authority; or
- Track Occupancy Authority; or
- Track Work Authority; or
- Lookout Working.

The protection method and competent workers required will be determined by the Permit to Work Coordinator as part of the Permit to Work application process.

The level of safety must not be reduced:

- to allow Tram Traffic movements; or
- because of a lack of trained workers.

Workers in the Tram Corridor must wear approved high visibility clothing.

Effective communication between Tram Controllers and Competent Workers must be maintained.

The Competent Worker must contact the Tram Controller before workers enter the Tram Corridor to exchange information about the work, Tram Traffic and other authorities in effect for the location.

1.3 Permit to Work Coordinator

The Permit to Work Coordinator is a Competent Worker, who administers, reviews, and coordinates the Permit to Work process and determines the protection method and resources required for the Permit to Work.

1.4 Protection Officer

Is a Competent Worker. When required, they must be present at the location of work for the duration of the work.

Their primary duty is to keep workers and Tram Traffic safe from conflict with each other and they must be satisfied that other work will not interfere with protection duties.

They must:

- perform a pre-work safety assessment; and
- brief workers about Safeworking and protection arrangements for the location of the work; and
- make sure that Safeworking equipment is fit for purpose; and
- make sure that the work is done safely; and
- keep records about the Safeworking and protection arrangements; and
- communicate with the Tram Controller about the work.

1.5 Person in Charge

Is a Competent Worker, responsible for supervising and holding the Permit to Work at the work location.

1.6 Assessing safety

When making a pre-work safety assessment, Competent Workers must consider, amongst other factors, if:

- work will affect track under the control of other Access Providers; and
- appropriate numbers of other Competent Workers are available to protect the work; and
- easily-reached Safe Places are available for workers; and
- the sighting distance and the speed of approaching Tram Traffic allows sufficient warning time to be given by Lookouts; and
- it is possible to close the affected line during the work; and
- it is possible to reduce the speed of Tram Traffic during the work; and
- there will be Tram Traffic on adjacent lines; and
- there will be Tram Traffic between and/or within the location of work; and
- Fixed Tram Signals are available to protect the location of work; and
- other work on track will affect the safety of the location of work; and
- there is safe passage to and from the location of work; and
- there is a risk to workers from road traffic; and
- the work will intrude on level crossings; and
- the line is electrified; and
- the line is track-circuited; and
- the formation of the line and the location will affect the work; and
- effective communication is available; and
- equipment used in the work will intrude into the Danger Zone; and
- there is a risk to safety arrangements or workers due to public accessibility; and
- other groups need to be told about or involved in the work; and
- the level of noise at the work location will be excessive.

The Competent Worker must reassess safety measures if conditions such as visibility or work locations change.

1.7 Level crossings

If work on track at level crossings will intrude on level crossings or affect their operation, the Competent Worker must arrange for the protection of level crossings to ensure the safety of workers and road, pedestrian, and Tram Traffic.

1.8 Protecting Track worker safety

Appropriate methods must be selected for arranging, managing, and protecting work on track in various areas.

1.8.1 Work in yards and depots

Attended yards and depots

If Tram Traffic needs to be excluded from a work area within an attended shunting yard or terminal, the Competent Worker must receive permission from the person in charge of the attended yard or terminal.

The Competent Worker must make arrangements to prevent unauthorised Tram Traffic entry into the work area.

The person in charge of the yard or terminal must tell the Competent Worker and other affected workers about the protection arrangements.

Unattended yards and depots

Where there is not a person in charge of the yard or terminal, the Competent Worker must make arrangements with the Tram Controller.

The Competent Worker must tell affected workers about the protection arrangements.

1.8.2 Work on running tracks

WARNING!

Each method of work on track protection has mandatory minimum safety measures; however, extra safety measures must be applied where available.

Work in Danger Zone on running tracks may be carried out by using a :

- Local Possession Authority; or
- Track Occupancy Authority; or
- Track Work Authority; or by use of
- Lookout Working.

NOTE :

Local Possession Authorities, Track Occupancy Authorities or Track Work Authorities provide the highest levels of protection to track workers against Tram Traffic movements and are preferred methods of protection.

1.9 Local Possession Authority

A Local Possession Authority is an authority that:

- closes a defined portion of track for a specified period; and
- gives total responsibility for the control of a portion of track to the Possession Protection Officer for the agreed period; and
- is issued to the Possession Protection Officer.

A Local Possession Authority must have a Possession Protection Officer for the duration of the work.

A Possession Protection Officer is the Competent Worker responsible for coordinating protection of Fixed Work Locations under a Local Possession Authority.

Work within the portion of track included in the Local Possession Authority limits must only be done with the Possession Protection Officers' agreement.

A number of work groups, associated Tram Traffic and equipment may occupy the portion of the track defined by a Local Possession Authority.

The track may be broken or obstructed.

Unless authorised by the Permit to Work Coordinator, the intention to take a Local Possession Authority must be advertised.

On site protection of the limits of the Local Possession Authority and of Fixed Work Locations must be provided.

1.10 Track Occupancy Authority

A Track Occupancy Authority is an authority that:

- authorises occupation of the track within specified limits, for work on track for an agreed period; and
- authorises occupation of the track within specified limits, for track vehicle movement in either direction, for an agreed period; and
- excludes Tram Traffic from entering the affected portion of track; and
- is issued to the Competent Worker for the agreed period of the occupancy. The track may be broken or obstructed.

Unless points can be physically secured to prevent Tram Traffic entry to the limits of the Track Occupancy Authority, on site protection must be provided.

On site protection of adjoining work locations within the limits of the Track Occupancy Authority must be provided.

1.11 Track Work Authority

A Track Work Authority is an authority that:

- authorises the obstruction of a defined portion of track between tram movements; and
- may result in Tram Traffic being stopped or delayed; and
- does not give exclusive occupancy of the line; and
- is issued to the Competent Worker who must manage the passage of Tram Traffic through the limits of the Track Work Authority.

The track may be broken or obstructed but must be restored and cleared for Tram Traffic transit as necessary.

On site protection of the limits of the Track Work Authority must be provided.

1.12 Lookout Working

WARNING!

If the pre-work safety assessment shows that a work on track authority is necessary, work must not be done using the Lookout Working method of protection.

Lookout Working uses Competent Workers (Lookouts) to protect workers when they are undertaking limited work on track.

When using Lookout Working, only light hand tools which can be easily and immediately removed from the track by one person without mechanical assistance may be used for work.

Workers must be able to immediately remove themselves, tools and materials to a safe place when required.

Lookouts are the only safety measure used to provide protection for workers on track.

Tram Traffic crews may be alerted to the presence of workers working under Lookout Working by signs, lights, or written advice.

1.13 Working in the Tram Shared Corridor

When working in the Tram Shared Corridor, work must be carried out in accordance with Lookout Working, Track Work Authority or Track Occupancy Authority except that Stop Ahead Sign, Stop Sign need not be erected.

When working in the Tram Shared Corridor the worksite is protected by a yellow high visibility flashing light and red flag, or red light stop signal.

Competent Worker

Protection Officer must:

- Comply with all Work on Track Rules & Procedures when relevant; and
- Before the running track is fouled, ensure the worksite is protected by a yellow high visibility flashing light erected at the worksite and is visible to all approaching tram movements; and
- When work commences, operate the yellow high visibility flashing light and ensure that red stop signals are displayed when the running track cannot be cleared and made safe for an approaching tram movement.

Driver of Tram Movements

Drivers of Tram Movements must:

- Comply with all Work on Track Rules & Procedures when relevant; and
- When within the Tram Shared Corridor and a yellow high visibility flashing light is in operation, immediately sound the whistle, approach the worksite at low speed and be prepared to bring the tram movement to a stop should a red stop signal be displayed; and
- When the all clear signal is received from the Competent Worker, low speed and any hand signals displayed by the Competent Worker must be observed until the whole of the tram movement has passed the worksite.

Tram Controller

The Tram Controller must comply with all Work on Track working instructions relevant to the work Authority that is in effect.

2 Safeworking Forms and Authorities

2.1 Purpose of this section

This section sets out the Tram Rules for the issue of Tram Safeworking forms and Authorities on the Tram Network.

2.2 General

Written Authorities and Forms are used:

- in all Systems of Safeworking in certain circumstances; and
- to make sure Safeworking instructions and information are issued with integrity and uniformity.

Tram Operators and Competent Workers must establish effective communication with the Tram Controller.

Written Authorities and forms may be:

- transmitted using voice communication and recorded in written form; or
- sent via electronic means.

Fulfilled or cancelled written Authorities must be retained and submitted for audit.

2.3 Protocols for issue

2.3.1 Preparation of an Authority

Authorities must:

- be authorised and issued by the Tram Controller; and
- be uniquely identifiable; and
- contain only information or instructions essential to track Occupancy and
- be compiled and recorded in an approved format; and
- be compiled and recorded without erasures, alterations, or additions; and
- not contain any letters, words or numerals surrounded by circles, brackets or other characters; and
- contain only authorised abbreviations.

2.3.2 Assurances

Before preparing an Authority, the Tram Controller must ensure all information is up to date relating to:

- Tram Traffic identification; and
- Authorities currently in effect; and
- Status of unfulfilled Authorities; and
- The location of Tram Traffic; and

- The location of worksites; and
- The integrity of the route; and
- Track conditions; and
- Any temporary speed restrictions or other warnings for which advice is required.

2.3.3 Authority format

The following information must be recorded in the spaces provided on the Authority form:

- the Authority type; and
- the identification number of Authority; and
- the date of issue; and
- the identity of Tram Traffic, Competent Worker or work group for which the Authority is intended; and
- location names in upper case BLOCK LETTERS; and
- the limits of the Authority; and
- name of the Tram Controller; and
- the time of issue; and
- the identity of the recipient of the Authority; and
- any other instructions; and
- the time at which read back is confirmed correct.

2.3.4 Compiling forms

Competent Workers compiling Safeworking forms, Authorities and records must:

- complete all required items; and
- delete items or sections not used; and
- write clearly in permanent ink; and
- write numbers in numerals, not words, using for example “12” instead of “twelve”; and
- compile a new form if an error is made.

If Safeworking forms include items that have a checkbox before them, Competent Workers must:

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

If forms include options, text that does not apply must have a single line drawn through it.

2.3.5 Transmission

When dictating an Authority, the Tram Controller must dictate it at a speed that allows the recipient to record it during transmission.

The Tram Controller must:

- clearly pronounce all information; and
- pronounce each digit individually (e.g., ONE – SIX – TWO); and
- spell location names immediately after they are spoken (e.g., GOODWOOD, G-O-O-D-W-O-O-D); and
- pause if conditions do not allow the transmission to continue clearly.

2.3.6 Error during transmission

If an error is made during transmission of the Authority, the Tram Controller must:

- cease issuing the Authority; and
- write “NOT ISSUED” in upper case BLOCK LETTERS diagonally across the face of the Tram Controller’s copy; and
- tell the recipient to write “NOT ISSUED” in upper case BLOCK LETTERS diagonally across the face of each copy of the partially prepared form; and
- issue a new Authority.

NOTE :

Where the system allows it, the new Authority may be issued with the same number as the one marked NOT ISSUED.

2.4 Receipt of Authority

During transmission, the recipient must legibly record:

- the Authority as it is being transmitted; and
- location names in upper case BLOCK LETTERS; and
- details as they are being transmitted and not from memory, presumption or notes.

2.4.1 Challenging errors

If an error or inconsistency is identified or suspected during transmission of an Authority, the recipient must:

- challenge the Authority; and
- seek clarification.

2.4.2 Error during receipt

If the recipient makes an error during receipt of the Authority the recipient must:

- Cease recording the Authority; and
- Advise the Tram Controller that an error has been made; and
- When advised to do so, write “NOT ISSUED” in upper case BLOCK LETTERS diagonally across the face of each copy of the partially prepared form; and
- Prepare to receive another authority.

2.4.3 Electronically transmitted forms

If an Authority or form is delivered via electronic means, the recipient must:

- Make sure that the Authority or form is clearly legible; and
- Make sure the Authority or form contains no omissions; and
- Read back the copy of the Authority to the Tram Controller to confirm its accuracy.

The Tram Controller must advise the time at which the read back is confirmed as correct.

2.4.4 Read back of manually transmitted forms

The recipient must read back the copy of the Authority or form. The Tram Controller must:

- during the read back, verify that the Authority or form matches that which has been transmitted; and
- underline or electronically verify each word as it is read back; and
- advise the time at which the read back is confirmed as correct.

2.4.5 Error during read back

If an error is made during read back of the Authority or form, the Tram Controller must ask that the Authority or form be read back again.

If it is confirmed that the Authority or form contains an error, the Tram Controller must:

- tell the recipient of the error; and
- tell the recipient to write “NOT ISSUED” in upper case BLOCK LETTERS diagonally across the face of each copy of the form; and
- re-issue the Authority or form.

2.5 Abbreviations in written Authorities

Workers must use only the abbreviations contained in the following table.

Term	Abbreviation
Hours	Hrs
Kilometre	Km
Kilometres per hour	Km/h
Meters	m
Minutes	Mins
Number	No
Temporary Speed Restriction	TSR

Table 6: Abbreviations in written Authorities

2.6 Authority in effect

An Authority:

- becomes in effect at the time of confirmation of correct read back; and
- once in effect, must not be re-written or copied; and
- remains in effect until it is fulfilled or cancelled.

2.6.1 Lost Authority

If a written Authority is lost, or becomes mutilated, the holder of the Authority must immediately report the loss to the Tram Controller.

The Tram Controller must:

- tell any approaching Tram Operator to stop immediately to protect the affected occupancy; and
- cancel the lost Authority; and
- issue a replacement Authority.

2.7 Fulfilling an Authority

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

When an Authority is fulfilled, the Tram Controller and Competent Worker must:

- write “FULFILLED” in upper case BLOCK LETTERS diagonally across the face of each copy; and
- advise the Tram Controller of the time and date that the Authority was FULFILLED.

When advised that a manually prepared Authority is fulfilled, Tram Controllers must write “FULFILLED” in upper case BLOCK LETTERS diagonally across the face of their copy.

2.8 Cancelling an Authority

If it is not possible to carry out all of the instructions contained within an Authority, it must be cancelled.

If used to enable a form of special working, an Authority may need to be cancelled in order to reinstate normal working.

A replacement Authority may simultaneously:

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

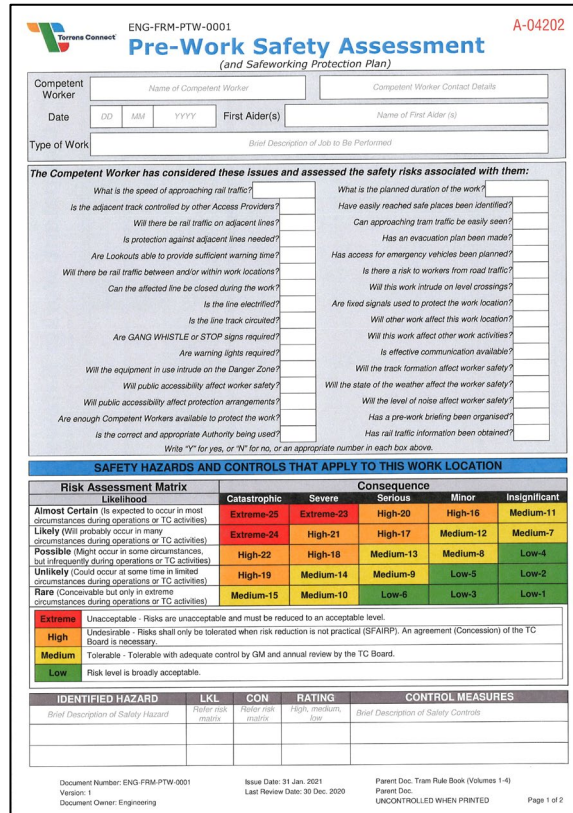
When an Authority is cancelled the Tram Controller must:

- write “CANCELLED” in upper case BLOCK LETTERS diagonally across the face of the Tram Controller’s copy of a manually prepared Authority; and
- tell the recipient to write “CANCELLED” in upper case BLOCK LETTERS diagonally across the face of each copy.

2.9 Forms used for Work on Track

The following forms are used in association with work on the track:

- Form ENG-FRM-PTW-0001 – Pre-work Safety Assessment and Safeworking Protection Plan.



ENG-FRM-PTW-0001 A-04202

Pre-Work Safety Assessment
(and Safeworking Protection Plan)

Competent Worker: Name of Competent Worker Competent Worker Contact Details

Date: DD MM YYYY First Aider(s) Name of First Aider (s)

Type of Work: Brief Description of Job to Be Performed

The Competent Worker has considered these issues and assessed the safety risks associated with them:

What is the speed of approaching rail traffic? What is the planned duration of the work?

Is the adjacent track controlled by other Access Providers? Have easily reached safe places been identified?

Will there be rail traffic on adjacent lines? Can approaching tram traffic be easily seen?

Is protection against adjacent lines needed? Has an evacuation plan been made?

Are Lookouts able to provide sufficient warning time? Has access for emergency vehicles been planned?

Will there be rail traffic between and/or within work locations? Is there a risk to workers from road traffic?

Can the affected line be closed during the work? Will this work intrude on level crossings?

Is the line electrified? Are fixed signals used to protect the work location?

Is the line track circuited? Will other work affect this work location?

Are GANG WHISTLE or STOP signs required? Will this work affect other work activities?

Are warning lights required? Is effective communication available?

Will the equipment in use intrude on the Danger Zone? Will the track formation affect worker safety?

Will public accessibility affect worker safety? Will the state of the weather affect the worker safety?

Will public accessibility affect protection arrangements? Will the level of noise affect worker safety?

Are enough Competent Workers available to protect the work? Has a pre-work briefing been organised?

Is the correct and appropriate Authority being used? Has rail traffic information been obtained?

Write "Y" for yes, or "N" for no, or an appropriate number in each box above.

SAFETY HAZARDS AND CONTROLS THAT APPLY TO THIS WORK LOCATION

Risk Assessment Matrix	Consequence				
	Catastrophic	Severe	Substantial	Minor	Insignificant
Almost Certain (Is expected to occur in most circumstances during operations or TC activities)	Extreme-25	Extreme-23	High-20	High-16	Medium-11
Likely (Will probably occur in many circumstances during operations or TC activities)	Extreme-24	High-21	High-17	Medium-12	Medium-7
Possible (Might occur in some circumstances, but infrequently during operations or TC activities)	High-22	High-18	Medium-13	Medium-8	Low-4
Unlikely (Could occur at some time in limited circumstances during operations or TC activities)	High-19	Medium-14	Medium-9	Low-5	Low-2
Rare (Conceivable but only in extreme circumstances during operations or TC activities)	Medium-15	Medium-10	Low-6	Low-3	Low-1

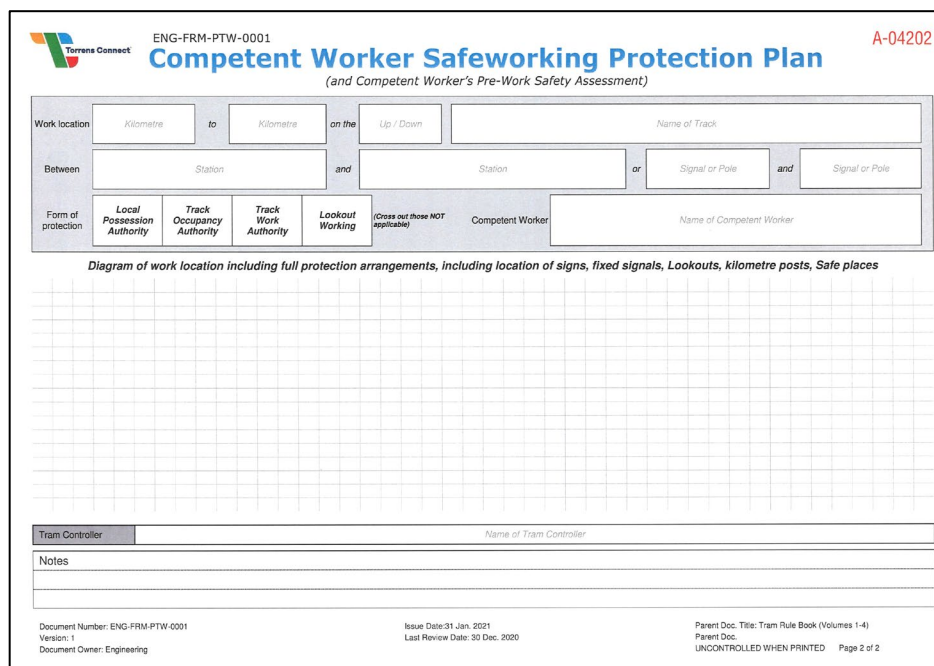
Legend:

- Extreme:** Unacceptable - Risks are unacceptable and must be reduced to an acceptable level.
- High:** Undesirable - Risks shall only be tolerated when risk reduction is not practical (SFAIRP), An agreement (Concession) of the TC Board is necessary.
- Medium:** Tolerable - Tolerable with adequate control by GM and annual review by the TC Board.
- Low:** Risk level is broadly acceptable.

IDENTIFIED HAZARD	LKL	CON	RATING	CONTROL MEASURES
Brief Description of Safety Hazard	Risker risk matrix	Risker risk matrix	High, medium, low	Brief Description of Safety Controls

Document Number: ENG-FRM-PTW-0001 | Issue Date: 31 Jan. 2021 | Parent Doc. Title: Tram Rule Book (Volumes 1-4)
 Version: 1 | Last Review Date: 30 Dec. 2020 | Parent Doc. UNCONTROLLED WHEN PRINTED | Page 1 of 2
 Document Owner: Engineering

Figure 34: Form ENG-FRM-PTW-0001 Pre-work Safety Assessment and Safeworking Protection Plan - Front Page



ENG-FRM-PTW-0001 A-04202

Competent Worker Safeworking Protection Plan
(and Competent Worker's Pre-Work Safety Assessment)

Work location: Kilometre to Kilometre on the Up / Down Name of Track

Between Station and Station or Signal or Pole and Signal or Pole

Form of protection: Local Possession Authority Track Occupancy Authority Track Work Authority Lookout Working (Cross out those NOT applicable) Competent Worker Name of Competent Worker

Diagram of work location including full protection arrangements, including location of signs, fixed signals, Lookouts, kilometre posts, Safe places


Tram Controller: Name of Tram Controller

Notes

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 Document Owner: Engineering

Figure 35: Form ENG-FRM-PTW-0001–Pre-work Safety Assessment and Safeworking Protection Plan-Back Page

- Form ENG-FRM-PTW-0002 – Competent Workers Worksite Protection Brief.



ENG-FRM-PTW-0002

Competent Worker's Worksite Protection Brief

B-05301

Work Details	SCOPE AND LOCATION OF WORK								
Date	DD	MM	YYYY	First Aid Available	LOCATION OF FIRST AID KITS	NAMES OF FIRST AIDER(S)			
Emergency Assembly Point	LOCATION OF EMERGENCY ASSEMBLY POINT			Safe Places	LOCATION(S) OF SAFE PLACES				
Competent Worker	NAME OF COMPETENT WORKER FOR THIS WORKSITE	RIW Card ID Number	CARD NUMBER	RIW Card Expiry	DD	MM	YYYY	Contact	COMPETENT WORKER CONTACT DETAILS (PHONE / RADIO CHANNEL / LOCATION)

HAZARDS IDENTIFIED AT THIS SITE	SAFETY CONTROLS IN PLACE


Document Number: ENG-FRM-PTW-0002
Version: 1
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Parent Doc: Tram Rule Book (Volumes 1-4)
Parent Doc: OPS-MAN-NTW-0002
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Page 1 of 2

Figure 36: Form ENG-FRM-PTW-0002 – Competent Workers Worksite Protection Brief – Front Page



ENG-FRM-PTW-0002

Competent Worker's Worksite Protection Brief

B-05301

Pre-work safety brief conducted by:	NAME OF PERSON CONDUCTING BRIEFING	SIGNATURE OF PERSON CONDUCTING BRIEFING
--	------------------------------------	---

Personal Protective Equipment for this worksite includes Safety Footwear, high-visibility clothing and specific task related PPE as detailed during this briefing. By signing below, you acknowledge that you have been made aware of the on-site hazards and safety control measures, you are fit for work, free of the effects of fatigue, drugs or alcohol, you understand the Competent Worker's Worksite Protection Plan, and you will comply with the Competent Worker's instructions.

NAME	COMPANY	SIGN ON TO BRIEF	CONTACT PHONE NUMBER	RIW CARD ID NUMBER	RIW CARD EXPIRY DATE	SIGN OFF FROM SITE

Document Number: ENG-FRM-PTW-0002
Version: 1
Document Owner: Engineering

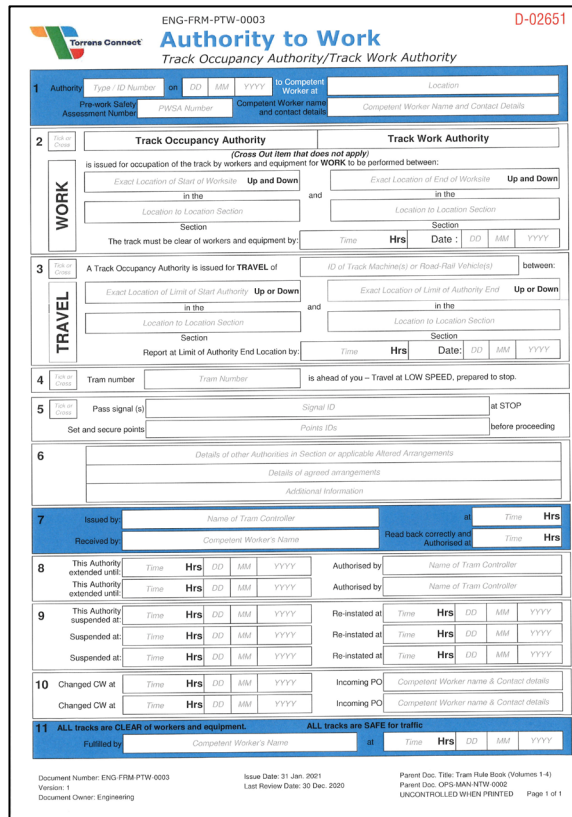
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Parent Doc: Tram Rule Book (Volumes 1-4)
Parent Doc: OPS-MAN-NTW-0002
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Page 2 of 2

Figure 37: Form ENG-FRM-PTW-0002 – Competent Workers Worksite Protection Brief – Back Page

- Form ENG-FRM-PTW-0003 – Authority to Work.



ENG-FRM-PTW-0003 D-02651

Authority to Work
Track Occupancy Authority/Track Work Authority

1 Authority Type ID Number on DD MM YYYY To Competent Worker at Location
 Track Safety Assessment Number PWSA Number Competent Worker name and contact details Competent Worker Name and Contact Details

2 WORK
Track Occupancy Authority (Cross Out Item that does not apply)
 is issued for occupation of the track by workers and equipment for WORK to be performed between:
 Exact Location of Start of Worksite Up and Down and Exact Location of End of Worksite Up and Down
 in the and in the
 Location to Location Section and Location to Location Section
 Section Section
 The track must be clear of workers and equipment by: Time Hrs Date: DD MM YYYY

3 TRAVEL
 A Track Occupancy Authority is issued for TRAVEL of ID of Track Machine(s) or Road-Rail Vehicle(s) between:
 Exact Location of Limit of Start Authority Up or Down and Exact Location of Limit of Authority End Up or Down
 in the and in the
 Location to Location Section and Location to Location Section
 Section Section
 Report at Limit of Authority End Location by: Time Hrs Date: DD MM YYYY

4 Train number Train Number is ahead of you – Travel at LOW SPEED, prepared to stop.

5 Pass signal (s) Signal ID at STOP
 Set and secure points Points IDs before proceeding

6 Details of other Authorities in Section or applicable Altered Arrangements
 Details of agreed arrangements
 Additional information

7 Issued by Name of Train Controller at Time Hrs
Received by Competent Worker's Name Read back correctly and Authorised at Time Hrs

8 This Authority extended until: Time Hrs DD MM YYYY **Authorised by** Name of Train Controller
 This Authority extended until: Time Hrs DD MM YYYY **Authorised by** Name of Train Controller

9 This Authority suspended at: Time Hrs DD MM YYYY **Re-instated at** Time Hrs DD MM YYYY
 Suspended at: Time Hrs DD MM YYYY **Re-instated at** Time Hrs DD MM YYYY
 Suspended at: Time Hrs DD MM YYYY **Re-instated at** Time Hrs DD MM YYYY

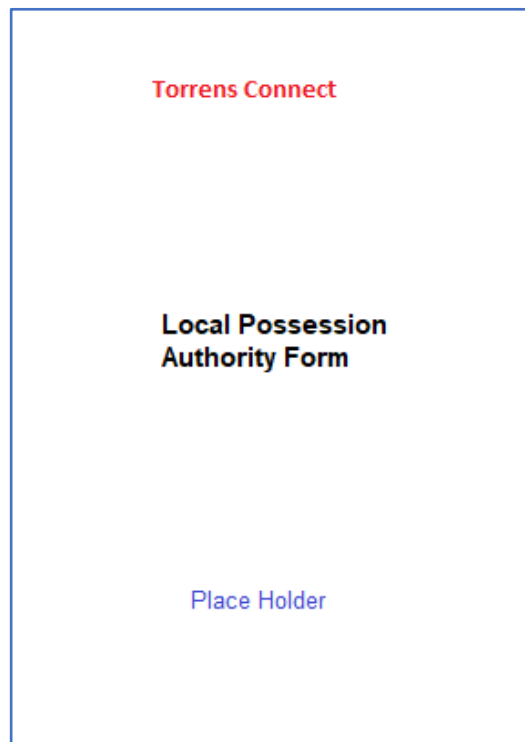
10 Changed CW at Time Hrs DD MM YYYY **Incoming PO** Competent Worker name & Contact details
 Changed CW at Time Hrs DD MM YYYY **Incoming PO** Competent Worker name & Contact details

11 ALL tracks are CLEAR of workers and equipment. ALL tracks are SAFE for traffic
 Fulfilled by Competent Worker's Name at Time Hrs DD MM YYYY

Document Number: ENG-FRM-PTW-0003 Issue Date: 31 Jan 2021 Parent Doc: Title: Train Rule Book (Volumes 1-4)
 Version: 1 Last Review Date: 30 Dec 2020 Parent Doc: OPS-MAN-NTW-0002
 Document Owner: Engineering UNCONTROLLED WHEN PRINTED Page 1 of 1

Figure 38: Form ENG-FRM-PTW-0003 – Authority to Work

- Form ENG-FRM-PTW-0004 – Local Possession Authority.



Torrens Connect

**Local Possession
Authority Form**

Place Holder

Figure 39: Form ENG-FRM-PTW-0004 – Local Possession Authority

- Form ENG-FRM-PTW-0005 – Local Possession Authority Work Permit (Master Copy).

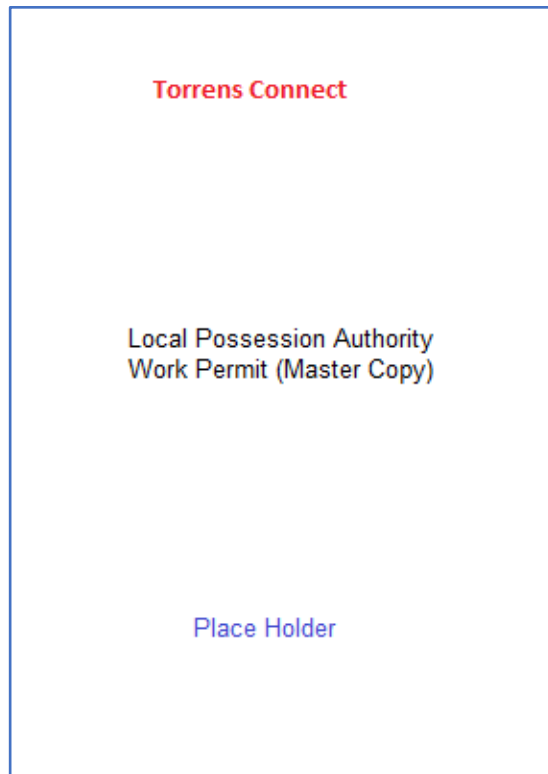


Figure 40: ENG-FRM-PTW-0005 – Local Possession Authority Work Permit (Master Copy).

- Form ENG-FRM-PTW-0006 - Local Possession Authority Work Permit (Field Copy).

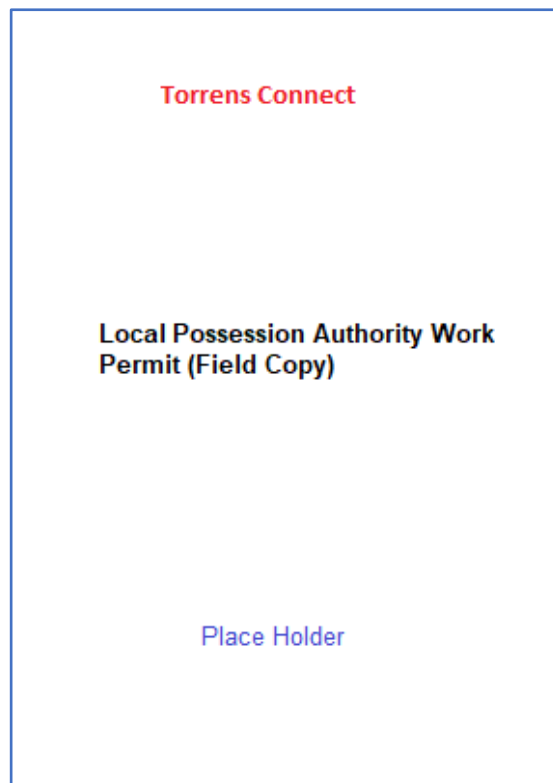
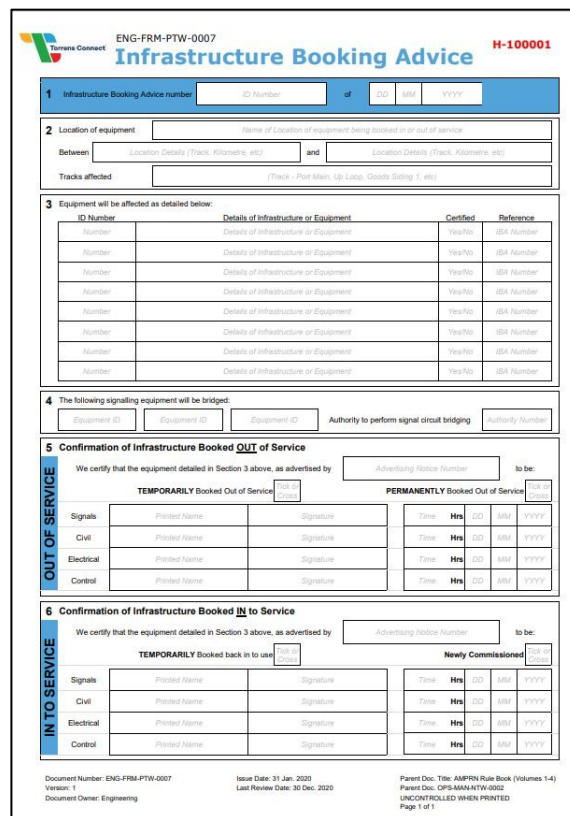


Figure 41: Form ENG-FRM-PTW-0006 - Local Possession Authority Work Permit (Field Copy).

- Form ENG-FRM-PTW-0007 – Infrastructure Booking Advice.



The form is titled 'Infrastructure Booking Advice' with reference number H-100001. It is divided into six main sections:

- Infrastructure Booking Advice number:** A field for the ID Number and a date field (DD, MM, YYYY).
- Location of equipment:** Fields for the location name, location codes (Track, Mileage, etc.), and tracks affected (Track - Port Main, Up Loop, Goods Siding 1, etc.).
- Equipment to be affected:** A table with columns for ID Number, Details of Infrastructure or Equipment, Certified, and Reference. It contains seven rows for equipment details.
- The following signalling equipment will be bridged:** Fields for Equipment ID, Authority to perform signal circuit bridging, and Authority Number.
- Confirmation of Infrastructure Booked OUT of Service:** A section for signing off equipment. It includes a table for 'TEMPORARILY Booked Out of Service' and 'PERMANENTLY Booked Out of Service' with columns for Printed Name, Signature, Time, Hrs, DD, MM, YYYY. Categories include Signals, Civil, Electrical, and Control.
- Confirmation of Infrastructure Booked IN to Service:** A section for signing on equipment. It includes a table for 'TEMPORARILY Booked back in to use' and 'Newly Commissioned' with columns for Printed Name, Signature, Time, Hrs, DD, MM, YYYY. Categories include Signals, Civil, Electrical, and Control.

At the bottom, there is a footer with document information: Document Number: ENG-FRM-PTW-0007, Issue Date: 31 Jan. 2020, Last Review Date: 30 Dec. 2020, Parent Doc. Title: ASP/PS Rule Book (Volumes 1-4), Version: 1, Document Owner: Engineering, Page: 1 of 1.

Figure 42: Form ENG-FRM-PTW-0007–Infrastructure Booking Advice.

2.9.1 Pre-work Safety Assessment, ENG-FRM-PTW-0001

The Pre-work Safety Assessment and Safeworking Protection Plan is used to:

- help identify and assess hazards and risks associated with work on track; and
- record the identified assessed hazards and risks; and
- plan and record the deployment of work on track protection. The form is double sided.

The RED serial number on the form is used to provide an identity for the Pre-work Safety Assessment and enable this to be conveyed to the Tram Controller when required.

The Competent Worker must compile a Form ENG-FRM-PTW-0001 for each Fixed Work Location before work is commenced at any Fixed Work Location.

2.9.2 Competent Workers Worksite Protection Brief, ENG-FRM-PTW-0002

The Competent Worker 's Worksite Protection Brief is used to:

- provide a summary of Safe Places, Emergency Assembly Points, First Aid equipment and contact details for the Fixed Work Location, and
- summarise the hazards identified at the Fixed Work Location, and
- identify safety controls put in place to address the hazards, and
- provide an acknowledgement record of workers who are briefed about Safeworking and protection arrangements for the location of the work.

The form is double sided.

The must compile form ENG-FRM-PTW-0002 for each Fixed Work Location before work is commenced at any Fixed Work Location, and make sure that all personnel on site have signed the form.

2.9.3 Authority to Work, ENG-FRM-PTW-0003

The Authority to Work (on Track) when working using the protection of:

- a Track Occupancy Authority; or
- a Track Work Authority

The form details:

- the Authority type and identification; and
- the Limits of Authority for a Fixed Work Location; and
- the Limits of Authority for track vehicle travel; and
- advice of preceding Tram Traffic in the Section; and
- the identification of the Pre-Work Safety Assessment; and
- the time by which the Authority must be fulfilled; and
- any extension, suspension, or re-instatement of the Authority; and
- any change of the Competent Worker; and
- the time at which the Authority was fulfilled.

The Competent Worker and Tram Controller must jointly compile form ENG-FRM-PTW-0003 for each Fixed Work Location to establish an Authority to work on the track before work is commenced.

The form is divided into sections to accommodate multiple uses, and only applicable sections need to be completed.

When Form ENG-FRM-PTW-0003 is used for a Track Occupancy Authority for a Fixed Work Location:

- Sections 1, 2, 7 and 11 must be completed; and
- Sections 6, 8, 9 and 10 may be completed if required; and
- Sections 3, 4 and 5 do not apply.

When Form ENG-FRM-PTW-0003 is used to authorise track vehicle travel under a Track Occupancy Authority:

- Sections 1, 3, 7 and 11 must be completed; and
- Sections 4, 5, 6, 8, 9 and 10 may be completed if required; and
- Section 2 does not apply.

When Form ENG-FRM-PTW-0003 is used for a Track Work Authority for a Fixed Work Location:

- Sections 1, 2, 7, and 11 must be completed; and
- Sections 6, 8, 9 and 10 may be completed if required; and
- Sections 3, 4 and 5 do not apply.

2.9.4 Local Possession Authority, ENG-FRM-PTW-0004

This form is used to record the authorisation and issue of a Local Possession Authority.

Form ENG-FRM-PTW-0004 enables the recording of:

- the Authority identification number; and
- details of the limits of the Local Possession Authority; and
- details of the anticipated duration of the Local Possession Authority; and
- details of the advertising notice; and
- the name of the Authorising and issuing Tram Controller; and
- details of the receiving Possession Protection Officer; and
- the time and date of authorisation, and receipt; and
- the time to which an extension of fulfilment time is authorised; and
- details of the time of fulfilment of the Local Possession Authority; and
- other conditions imposed.

2.9.5 Local Possession Authority Work Permit (Master copy), ENG-FRM-PTW-0005

The Local Possession Authority Work Permit is used by the Possession Protection Officer to record the location and protection of individual Fixed Work Locations within the limits of the Local Possession Authority. It enables the recording of:

- the Local Possession Authority details; and
- Tram Traffic expected to enter the limits of the Local Possession Authority; and
- details of each individual Fixed Work Location; and
- permission given for work groups to occupy the track; and
- details of the Competent Worker for each Fixed Work Location.

2.9.6 Local Possession Authority Work Permit (Field copy), ENG-FRM-PTW-0006

The Local Possession Authority Work Permit (Field copy) is used by Protection Officers to record the location and protection of the Fixed Work Location under their supervision, within the limits of the Local Possession Authority.

Form ENG-FRM-PTW-0006 enables the Protection Officer for each Fixed Work Location to record:

- the Local Possession Authority details; and
- Tram Traffic expected to enter the limits of the Local Possession Authority; and
- permission to occupy the track; and
- the limits imposed for each Fixed Work Location; and
- details of protection to be provided; and
- occupation and clearance times for each Fixed Work Location.

2.9.7 Infrastructure Booking Advice, ENG-FRM-PTW-0007

The Infrastructure Booking Advice must be used wherever infrastructure is:

- permanently installed or commissioned; or
- permanently decommissioned or removed; or
- temporarily removed from service; or
- returned to service following temporary removal from service.

The Infrastructure Booking Advice is used to record and notify the Tram Controller of temporary or permanent changes to the Network infrastructure.

Maintenance Representatives must:

- send a copy of the Infrastructure Booking Advice form to the Tram Controller; or
- jointly compile the Infrastructure Booking Advice form with the Tram Controller.

The Maintenance Representative must give a copy of the Infrastructure Booking Advice form for:

- work associated with a Local Possession Authority, the Possession Protection Officer; or
- work associated with a Track Occupancy Authority or Track Work Authority, to the Protection Officer.

The Tram Controller and the Maintenance Representatives must keep completed Infrastructure Booking Advice forms and other permanent records.

2.10 Audit and Record Keeping

Unless otherwise specified, Tram Safeworking forms must be submitted for audit following fulfillment or the completion of works and be kept on file for at least 12 months.

3 Local Possession Authority

3.1 Purpose of this section

This section prescribes the rules for authorising, issuing and using a Local Possession Authority.

3.2 General

A Local Possession Authority is used to enable major work, involving the use of multiple work groups, associated Tram Traffic, and equipment to be safely performed, whilst normal Tram Traffic is excluded.

Unless authorised by the Rail Infrastructure Manager or delegate, the intention to take a Local Possession Authority must be advertised in advance.

A Local Possession Authority is an authority that:

- closes a defined portion of track for a specified period; and
- gives total responsibility for the control of a portion of track to the Possession Protection Officer, for an agreed period; and
- is issued exclusively to the Possession Protection Officer.

Tram Traffic and workers must be protected against unauthorised entry to or exit from work locations, or the limits of the Local Possession Authority, by use of protection measures, such as signs.

A number of separate work groups and their associated Tram Traffic and equipment may occupy the portion of track within the limits of the Local Possession Authority.

Work within the limits of the Local Possession Authority must only be done with the agreement of the Possession Protection Officer.

The Tram Controller must not issue any authorities for track within the limits of the Local Possession Authority while the Local Possession Authority is in effect.

3.3 Authorisation and issue

A Local Possession Authority must be authorised and issued by the Tram Controller.

Before doing so, the Tram Controller must:

- be sure that the limits of the proposed Local Possession Authority are completely within the area under their control; and
- be made aware of the protection arrangements; and
- be assured that the Possession Protection Officer has done a pre-work safety assessment.

At the time of issue, the Tram Controller must make a permanent record of the authorisation, issue and details of a Local Possession Authority.

3.4 Possession Protection Officer

At all times there must be a nominated Possession Protection Officer for the Local Possession Authority.

The Possession Protection Officer must be located where the safety of the limits of the Local Possession Authority can be effectively managed.

The Possession Protection Officer's primary duty is to coordinate the work of Protection Officers and keep work locations and workers safe.

Whilst acting as a Possession Protection Officer, one must be satisfied that other work will not interfere with protection duties.

The Possession Protection Officer must:

- get the Local Possession Authority from the Tram Controller; and
- be responsible for the protection of workers from Tram Traffic; and
- make sure that work in the Danger Zone does not begin before the required safety measures are in place; and
- make sure that the limits of the Local Possession Authority are protected against the entry or exit of unauthorised Tram Traffic; and
- make sure that each worksite within the limits of the Local Possession Authority has a Protection Officer while work is being performed; and
- make sure Protection Officers keep the tracks between workers and protection of work locations clear of obstructions; and
- coordinate the protection of all work locations within the limits of the Local Possession Authority; and
- coordinate the movement of Tram Traffic within the Local Possession Authority limits.

3.5 Keeping records

The Tram Controller and Possession Protection Officer must keep permanent records about:

- the Local Possession Authority and protection arrangements, and
- communication about changes to the Local Possession Authority protection arrangements.

The Possession Protection Officer must keep permanent records about protection arrangements for work locations within the limits of the Local Possession Authority.

NOTE :

The Local Possession Authority is recorded using Form ENG-FRM-PTW-0004.

3.6 Protecting limits of the Local Possession Authority

The Tram Controller must prevent unauthorised Tram Traffic from entering into the limits of the Local Possession Authority.

The Possession Protection Officer must make sure that all points of entry into the limits of the Local Possession Authority are protected against unauthorised Tram Traffic movements.

STOP signals must be placed at all points of entry into the limits of the Local Possession Authority or 500m from work locations, if this is more practicable.

NOTE :

A STOP signal may be a STOP sign or a Competent Worker displaying a STOP hand signal, or a red flag, or a red light.

If points have been physically secured in the field to prevent Tram Traffic access to the limits of the Local Possession Authority, STOP signals are not required.

If the Tram Controller tells the Possession Protection Officer that there is no planned Tram Traffic movement between the limits of the Local Possession Authority and the terminating end of the line, STOP signals at the terminating end are not required.

The distance between the STOP signals and a Fixed Work Location must not be less than 500m unless:

- points have been physically secured in the field to prevent access to the limits of the Local Possession Authority; or
- another method of work on track protection is in use, adjoining the entry end limits of the Local Possession Authority for the period of the work.

3.7 Multiple work locations

If the limits of the Local Possession Authority include more than one work location, each work location must have a Protection Officer.

Protection Officers must comply with the Possession Protection Officer's instructions.

Fixed Work Locations must be protected by a STOP signal placed at least 200m from the work location on each side, or at least 500m towards the limits of the Local Possession Authority.

Fixed Work Locations less than 200m apart must be treated as one work location.

If Fixed Work Locations are more than 200m but less than 500m apart a STOP signal must be placed midway between the work locations.

3.8 Protection Officers

Within the limits of the Local Possession Authority, a Protection Officer must be present at each Fixed Work Location for the duration of the work.

A Protection Officer's primary duty is to keep workers and Tram Traffic safe from conflict with each other.

Whilst acting as a Protection Officer, one must be satisfied that other work will not interfere with protection duties.

Protection Officers:

- are responsible for the protection of workers from Tram Traffic; and
- must make sure that tracks between Fixed Work Locations and the protection for the Fixed Work Location, remain unobstructed.

3.8.1 Other duties

Protection Officers must tell members of work groups about the type of and the limits of protection in place:

- before work begins; and
- if the protection arrangements change.

3.9 Tram Traffic

Only Tram Traffic associated with a Local Possession Authority may enter the limits of the Local Possession Authority.

The Possession Protection Officer or delegate must manage all Tram Traffic movement within the limits of the Local Possession Authority.

Before entering the limits of the Local Possession Authority, Tram Traffic crews must verify with the Possession Protection Officer or delegate that the Local Possession Authority is in effect.

3.9.1 Within the limits of the Local Possession Authority

Tram Traffic associated with the Local Possession Authority, entering, and travelling within the limits of the Local Possession Authority must:

- be piloted; or
- receive written or verbal instructions from the Possession Protection Officer.

3.9.2 Crossing limits of the Local Possession Authority

Other Tram Traffic may cross through the limits of the Local Possession Authority to enter or exit a branch line, siding, or pass through on an alternative route, but only with the Possession Protection Officer's agreement.

3.9.3 On adjacent lines

If Tram Traffic can travel on adjacent lines, the Possession Protection Officer must arrange for Protection Officers to implement safety measures to reduce the risk from Tram Traffic on the adjacent lines.

If necessary, the Possession Protection Officer may arrange for the speed of Tram Traffic on adjacent lines to be restricted.

NOTE :

Adjacent lines may be part of another network.

3.9.4 Piloting

Where a Pilot is used, the Possession Protection Officer or a delegated Competent Worker must act as the Pilot.

3.9.5 Departing the limits of the Local Possession Authority

Tram Traffic must depart from the limits of the Local Possession Authority only on the Tram Controller's authority.

3.10 Liaison

3.10.1 Tram Control

The Possession Protection Officer must be the only point of contact between Tram Control and work groups for matters of protection of the limits of the Local Possession Authority.

The Possession Protection Officer must:

- tell the Tram Controller about the protection arrangements at the limits of the Local Possession Authority; and
- tell other affected Controllers about protection arrangements on the lines adjacent to the limits of the Local Possession Authority; and
- arrange for the movement of associated Tram Traffic into and out of the limits of the Local Possession Authority; and
- tell the Tram Controller about work progress; and
- if necessary, seek an extension of time to complete the work.

3.10.2 Change of Possession Protection Officer

An outgoing Possession Protection Officer must tell an incoming Possession Protection Officer about the protection arrangements for the limits of the Local Possession Authority, and work locations within the limits of the Local Possession Authority.

The incoming Possession Protection Officer must:

- tell the Tram Controller about the changed contact arrangements; and
- make a permanent record about the handover of the Local Possession Authority.

3.11 Fulfilling the Local Possession Authority

The Local Possession Authority may be fulfilled only when the Possession Protection Officer:

- arranges for the work to continue under another method of work on track protection; or
- tells the Tram Controller that:
 - the track has been cleared of workers and their equipment; and
 - protection has been removed; and
 - the portion of track in the limits of the Local Possession Authority has been certified as available for use.

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

Where arrangements have been made to continue work under another method of work on track protection, the Possession Protection Officer must ensure that the protection for the limits of the Local Possession Authority are not removed until the new work on track Authority is issued and the required protection is in place.

4 Using a Local Possession Authority

4.1 Purpose of this section

This section prescribes the procedures for using a Local Possession Authority.

4.2 Introduction

A Local Possession Authority is used to close a defined portion of track for a specified period, to enable work to be carried out.

4.3 Obtaining a Local Possession Authority

The Possession Protection Officer obtains a Local Possession Authority from the Tram Controller.

Possession Protection Officer

- Immediately before work under a Local Possession Authority is due to begin, speak to the appropriate Tram Controller.
- Make sure that you and the Tram Controller have a copy of the Local Possession Authority advertisement and amendments or other documentation about the Local Possession Authority.

Tram Controller

- The Tram Controller authorises and issues the Local Possession Authority.

Possession Protection Officer and Tram Controller

- Confirm the permanent record details of the Local Possession Authority, including:
 - the limits of the Local Possession Authority; and
 - the duration of the Local Possession Authority; and
 - the protection arrangements for the Local Possession Authority; and
 - the name of the Possession Protection Officer and contact details; and
 - the name of the issuing Tram Controller; and
 - the time of issue; and
 - the date of issue; and
 - the number of the document advertising the Local Possession Authority

Tram Controller

- Confirm the details of the Local Possession Authority with other affected Controllers as required.
- Make sure that measures have been applied to prevent Tram Traffic entry into the track in limits of the Local Possession Authority.
- Make sure that the track within the limits of the proposed Local Possession Authority is clear of Tram Traffic, other than that associated with the Local Possession Authority.
- Agree with the Possession Protection Officer that the Local Possession Authority is now authorised and issued and record the time of issue.
- Tell other affected Controllers that the Local Possession Authority has been authorised, issued and is in effect.

NOTE :

The Local Possession Authority is recorded using Form ENG-FRM-PTW-0004.

4.4 Protecting the limits of a Local Possession Authority

Possession Protection Officer

- Protect the limits of the Local Possession Authority with STOP signals placed at the specified limits of the Local Possession Authority, or at 500m from the outermost work location if this is more practicable.
- If points have been clamped and locked to give protection, STOP signals are not required.
- If necessary, protect work locations from Tram Traffic on other lines.

NOTE :

A STOP signal may be a STOP sign or a Competent Worker displaying a STOP hand signal, or a red flag, or a red light.

4.5 Protecting multiple work locations in a Local Possession Authority

Workers at work locations within the limits of the Local Possession Authority must be protected from conflict with activities in adjoining work locations.

Possession Protection Officer

- Make sure the Protection Officers place the right protection.
- Tell the Protection Officers if changes are required to the protection of Fixed Work Locations and make sure the changes are carried out.

Possession Protection Officer

- Make sure that STOP signals are placed on each side of all work locations, as shown in the following examples.
- If Fixed Work Locations are more than 500m apart, place the protection 200m from each location.
- If Fixed Work Locations are more than 200m but less than 500m apart, place STOP signals midway between the work locations.
- Treat Fixed Work Locations less than 200m apart as one work location.

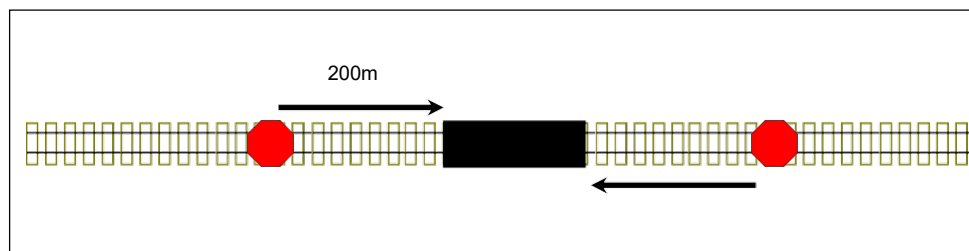


Figure 43 Example of protection arrangements for an individual work location

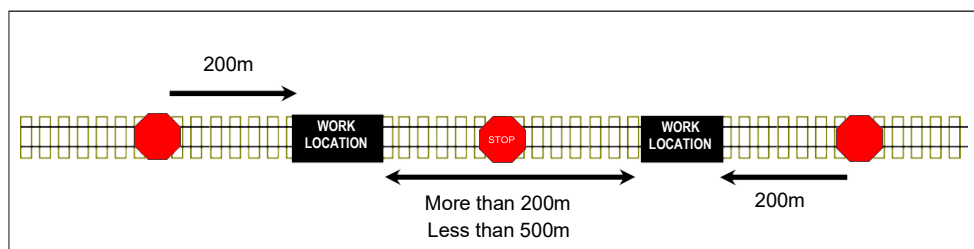


Figure 44 Example of Protection Arrangements for multiple work locations more than 200m but less than 500m apart

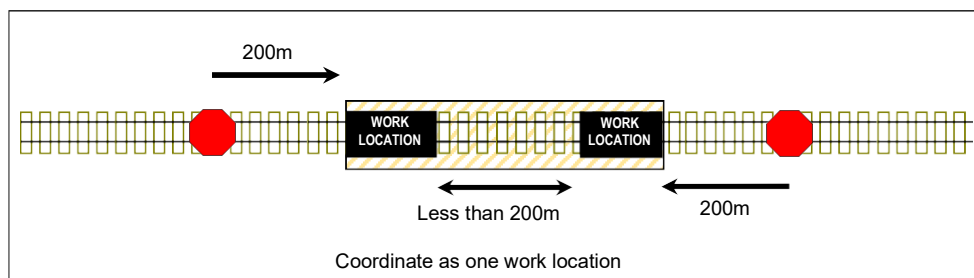


Figure 45 Example of Protection Arrangements for multiple work locations less than 200m apart

4.6 Returning the track to service

Possession Protection Officer and Protection Officers

- Make sure that Tram Traffic and equipment has cleared the track.
- Make sure that all workers have cleared the Danger Zone.
- Make sure that possession limit markers, flags, lights, STOP signs, and point clamps have been removed.

Possession Protection Officer

- Make sure that any points that have been used for protection are returned to and secured in the normal position.
- When advised that the track is certified fit for service, tell the Tram Controller.
- Tell the Tram Controller about any restrictions on track use.
- Tell the Tram Controller that the Local Possession Authority is fulfilled.

4.7 Keeping Local Possession Authority details

Tram Controllers and the Possession Protection Officer must keep details about the Local Possession Authority and protection arrangements.

A Form ENG-FRM-PTW-0004 is used to record the authorisation and issue of a Local Possession Authority

5 Managing Multiple Fixed Work Locations in a Local Possession Authority

5.1 Purpose of this section

This section prescribes the procedures for managing multiple work groups working at separate Fixed Work Locations in the limits of a Local Possession Authority, using a Local Possession Authority Work Permit.

5.2 Introduction

One or more separate work groups may occupy separate work locations within the limits of a Local Possession Authority.

The Possession Protection Officer is responsible for the overall protection of all work groups and work locations under a Local Possession Authority.

Each work location must have a Protection Officer.

5.3 Local Possession Work Permit

A Local Possession Authority Work Permit is required for each work location within the limits of the Local Possession Authority.

Before work starts, Protection Officers must have a Local Possession Authority Work Permit for the work location they will supervise.

NOTE:

- *The Local Possession Authority Work Permit is recorded using Forms ENG-FRM-PTW-0005 and ENG-FRM-PTW-0006.*
- *Form ENG-FRM-PTW-0005 (the Master copy) is maintained by the Possession Protection Officer.*
- *Each Protection Officer maintains Form ENG-FRM-PTW-0006 (the field copy) at the work location.*

Possession Protection Officer

- Tell each Protection Officer about the details of the Local Possession Authority that has been issued.
- Compile a Local Possession Authority Work Permit.
- Record the details of the work location including:
 - the limits of the work location; and
 - the intended start and finish time for the work; and
 - if Tram Traffic movements are associated with the work; and
 - the location of protection for the work location; and
 - the Protection Officer's name and contact details.

Possession Protection Officer

- Confirm that the Protection Officer has signed the Local Possession Authority Work Permit.
- Agree with the Protection Officer that the Local Possession Authority Work Permit has been issued.
- Record the Local Possession Authority Work Permit details on the Master copy of the Local Possession Authority Work Permit.

5.4 Maintaining the Master Local Possession Authority Work Permit

The Possession Protection Officer uses the Master Local Possession Authority Work Permit to:

- maintain a record of the Local Possession Authority Work Permits issued for each work location; and
- record handovers between Protection Officers at work locations.

Possession Protection Officer

- Compile a Master Local Possession Authority Work Permit that includes details about:
 - the reference details of the Local Possession Authority advertisement; and
 - the intended start and finish times of the Local Possession Authority; and
 - the limits of the Local Possession Authority; and
 - the number of work locations included in limits of the Local Possession Authority.

- For each work location, record:
 - the limits of the work location; and
 - the Protection Officer's name and contact details; and
 - if Tram Traffic movements are associated with the work; and
 - the intended start and finish times for the work; and
 - the time and date when the Local Possession Authority Work Permit is issued.
- If the Protection Officer changes, record:
 - the time of handover; and
 - the incoming Protection Officer's name and contact details.

5.5 Extending the Local Possession Authority work permit time

If the work will not be completed within the specified time:

Protection Officer

- Talk to the Possession Protection Officer about an extension of time.

Possession Protection Officer and Protection Officer

If the Possession Protection Officer agrees to an extension:

- Record on the Permit and Master:
 - the new end time; and
 - the time at which the extension was agreed.

5.6 Changing Possession Protection Officer or Protection Officer

- If the Possession Protection Officer or Protection Officers change, the handover must be recorded.

5.6.1 Changing the Possession Protection Officer

Outgoing Possession Protection Officer

- Tell the incoming Possession Protection Officer about current work locations.

Incoming Possession Protection Officer

- Make a permanent record of:
 - the time of the handover of the Local Possession Authority; and
 - the incoming Possession Protection Officer's name and contact details.
- Tell the Tram Controller about the changed contact arrangements.

5.6.2 Changing the Protection Officer

Before the incoming Protection Officer takes charge of the work location:

Incoming Protection Officer

- Confirm the current protection arrangements for the work location with the outgoing Protection Officer.
- Make a permanent record of the time of the work location handover.
- Confirm that the Possession Protection Officer has noted the changed contact arrangements.

Possession Protection Officer

- Record the incoming Protection Officer's name and contact details in the Master Local Possession Authority Work Permit.

5.7 Fulfilling a Local Possession Authority work permit

Protection Officer

- Make sure that Tram Traffic and equipment are clear of the track.
- Make sure that the workgroup has cleared the Danger Zone.
- Make sure that protection has been removed.
- Ensure the portion of track included in the Local Possession Authority Work Permit is certified and available for use.
- Tell the Possession Protection Officer about operating restrictions that have been placed or removed.

Possession Protection Officer

- Confirm the status of the portion of track included in the Local Possession Authority Work Permit with the Protection Officer.

Protection Officer

- Fulfil the Local Possession Authority Work Permit.

Possession Protection Officer

- Use the Master Local Possession Authority Work Permit to record that the Local Possession Authority Work Permit has been fulfilled.

6 Track Occupancy Authority

6.1 Purpose of this section

This section prescribes the rules for using a Track Occupancy Authority to exclude Tram Traffic from a Section, to enable work on track or track vehicle travel to take place.

6.2 General

A Track Occupancy Authority:

- is issued by the Tram Controller to the Competent Worker for an agreed period, and
- authorises occupation of the track within specified limits, and
- may be used to authorise.
- work which may or may not obstruct or break the track or alter track geometry; or
- track vehicles to travel singly or in convoy, in either direction.

Tram Traffic must be prevented from entering a Section in which a Track Occupancy Authority is in effect.

A Track Occupancy Authority must not be issued for a Section already occupied by Tram Traffic, unless to allow:

- light track vehicles travelling on a Track Occupancy Authority to follow unidirectional Tram Traffic through a Section; or
- a Fixed Work Location to be established after unidirectional Tram Traffic has completely passed the proposed location for the work.

A Track Occupancy Authority may be issued for a Section in which a Track Work Authority is in effect, with the agreement of the holder of the Track Work Authority.

Multiple Track Occupancy Authorities may occupy a Section or location.

Track Occupancy Authorities must not overlap, but the limits of one Track Occupancy Authority may adjoin another.

Adjoining Track Occupancy Authority limits must be protected, and only adjoin at a distinct point such as:

- a pole number; or
- Fixed Tram Signal.

NOTE:

The Track Occupancy Authority is recorded using Form ENG-FRM-PTW-0003.

6.3 Track Occupancy Authority Limits

The limits of a Track Occupancy Authority must be stated as being between nominated locations such as:

- one Yard Limit sign and another Yard Limit sign; and
- defined clearance points wholly within the limits of a single Yard; and
- one pole location to another pole location; or
- between defined Fixed Tram Signals.

A Track Occupancy Authority may extend over one or more Sections.

6.4 Conditions for authorising a Track Occupancy Authority

Before authorising a Track Occupancy Authority, the Tram Controller must make sure that:

- the limits of the Track Occupancy Authority are completely within the area under their control, and
- the location has been verified using, for example:
 - pole number and Section; or
 - points identification; or
 - Fixed Tram Signal identification; or
 - other permanent infrastructure identifier; and
- the Track Occupancy Authority limits are and will remain clear of Tram Traffic; and

- a pre-work safety assessment has been done by the Competent Worker; and
- the limits of the proposed Track Occupancy Authority are unoccupied by Tram Traffic; and
- the Competent Worker knows about existing obstructions or other current occupancies; and
- the Competent Worker understands and agrees to the limits of the Track Occupancy Authority.

6.5 Authorisation and issue

Only Tram Controllers can authorise and issue a Track Occupancy Authority.

Tram Controllers must make a permanent record of the issue of a Track Occupancy Authority.

Before authorising a Track Occupancy Authority, the Tram Controller must make sure that:

- protection measures have been applied to prevent the Tram Traffic entry into the Track Occupancy Authority limits; and
- each Track Occupancy Authority is given a unique identification number.

6.5.1 Additional Track Occupancy Authority

The Tram Controller may authorise and issue multiple Track Occupancy Authorities in a single Section.

Multiple Track Occupancy Authorities must not overlap.

Where Track Occupancy Authorities join, protection must be provided at the point at which they join.

Each Track Occupancy Authority must be recorded separately and have protection measures placed to block the limits of the Track Occupancy Authority.

6.5.2 Occupancy following a unidirectional Tram Traffic movement

Before authorising the Track Occupancy Authority, the Tram Controller must be assured that preceding Tram Traffic:

- is authorised for unidirectional movement only; and
- has been identified by the Competent Worker; and
- has passed Clear and Complete beyond:
 - the limits of the proposed Track Occupancy Authority; or
 - the starting point of the light track vehicle movement.

NOTE:

Only vehicles specified as light track vehicles may travel in a Section following a Tram Traffic movement.

A light track vehicle travelling behind Tram Traffic must travel at a speed at which it can be stopped within half the range of vision of the track ahead.

6.5.3 Joint occupancy with a Track Work Authority

The Tram Controller may authorise and issue a Track Occupancy Authority for a portion of line where there is a current Track Work Authority, only after the Competent Workers have consulted with each other and reached agreement.

6.6 Competent Worker

At all times, a Competent Worker must be present at the location of the work, for the duration of the work.

A Competent Worker's primary duty is to keep workers safe.

One must be satisfied that other work will not interfere with protection duties.

The Competent Worker must:

- get the Track Occupancy Authority from the Tram Controller; and
- protect the limits of the Track Occupancy Authority for which they are responsible; and
- be responsible for the protection of workers from track vehicle movements.

The Competent Worker must tell workers about the limits of the Track Occupancy Authority and protection that is in place:

- before work begins; and
- if the Track Occupancy Authority protection arrangements change.

6.6.1 Keeping records

The Competent Worker must keep permanent records about:

- the Track Occupancy Authority; and
- any protection arrangements for Fixed Work Locations; and
- communication with the Tram Controller about current changes in the protection arrangements.

6.7 Protecting Track Occupancy Authority limits

The Danger Zone must not be occupied before the Track Occupancy Authority is issued and protection is in place.

The Tram Controller must confirm the protection arrangement that will be used to prevent unauthorised Tram Traffic entry into the Track Occupancy Authority limits.

Wherever possible the Competent Worker must ensure that points are secured to prevent access to the portion of track within the limits of the Track Occupancy Authority.

If these points cannot be secured, the limits of the Track Occupancy Authority must be protected by STOP signs.

6.7.1 Work Locations within limits of Track Occupancy Authority

The distance between a Fixed Work Location and the STOP sign designating the limits of the Track Occupancy Authority and the Fixed Work Location must be not less than 500m unless the STOP sign is at the limits between two adjoining Track Occupancy Authorities.

The limits of adjoining Track Occupancy Authorities must be protected by the use of STOP signs.

6.8 Adjacent lines

If Tram Traffic can travel on adjacent lines, the Competent Worker must arrange for safety measures to be taken to reduce the risk to safety from Tram Traffic on the adjacent lines.

The Competent Worker may arrange for the speed of Tram Traffic on adjacent lines to be restricted.

6.9 Track vehicles

Track vehicles may be issued a Track Occupancy Authority to:

- join an existing Track Occupancy Authority; or
- travel through a Section.

Only track vehicles associated with the Track Occupancy Authority may enter the portion of track within the Track Occupancy Authority limits.

Entering and Travelling Through Track Occupancy Authority Limits

Track vehicles entering or travelling through the Track Occupancy Authority limits must:

- be piloted; or
- receive written or verbal instructions from the Competent Worker.

Where a Pilot is used, the Competent Worker must act as the Pilot.

Departing the Track Occupancy Authority

Track vehicles may depart from the Track Occupancy Authority limits only on the authority of the Tram Controller.

6.10 Liaison

6.10.1 Tram Control

The Competent Worker must be the only point of contact between Tram Control and work groups for matters about protection of the limits of the Track Occupancy Authority.

The Competent Worker must:

- tell the Tram Controller about work progress; and
- if necessary, seek an extension of time.

6.10.2 Change of Competent Worker

An outgoing Competent Worker must tell the incoming Competent Worker about the protection arrangements for the Fixed Work Location.

The incoming Competent Worker must:

- tell the Tram Controller about the changed contact arrangements; and
- countersign the Track Occupancy Authority form to acknowledge the handover of the Track Occupancy Authority.

6.11 Suspending and reinstating a Track Occupancy Authority

A Track Occupancy Authority is suspended when the Competent Worker tells the Tram Controller that:

WARNING !

If a Track Occupancy Authority is to be suspended and reinstated, the Track Occupancy Authority limits and protection arrangements for the Track Occupancy Authority must remain unchanged.

- the location of the work has been cleared of workers and their equipment; and
- any protection has been removed; and
- the portion of track included in the Track Occupancy Authority is certified and available for use.

NOTE:

In cases where the Competent Worker is not competent to determine if the portion of track included in the Track Occupancy Authority is certified as safe and available for use, the Competent Worker must receive advice from a worker who is competent to do so, before telling the Tram Controller.

The Competent Worker must tell the Tram Controller about operating restrictions that have been placed or removed.

After the Competent Worker reports the track to be clear, the Tram Controller may admit Tram Traffic into the Section.

The Tram Controller must advise Tram Traffic crews of any speed restriction imposed.

The Competent Worker must not ask the Tram Controller to reinstate the Track Occupancy Authority until the Tram Traffic has completely cleared the location of the work and is not returning.

The Tram Controller must follow the procedures for issuing a Track Occupancy Authority before authorising a Track Occupancy Authority to be reinstated.

6.12 Fulfilling the Track Occupancy Authority

The Track Occupancy Authority may be fulfilled only when the Competent Worker:

- arranges for the work to continue under another work on track Authority; or
- tells the Tram Controller that:
 - the track has been cleared of workers and their equipment; and
 - protection has been removed; and
 - the portion of track in the limits of the Track Occupancy Authority has been certified as available for use.

The Competent Worker must tell the Tram Controller about operating restrictions that have been placed or removed.

Where arrangements have been made to continue work under the new work on track Authority, the Competent Worker must ensure that the protection for the limits of the Track Occupancy Authority are not removed until the new work on track Authority is issued and the required protection is in place.

7 Using a Track Occupancy Authority

7.1 Purpose of this section

This section prescribes the procedures for issuing and using a Track Occupancy Authority.

7.2 Introduction

Track Occupancy Authorities are used to occupy a defined portion of track within specified limits for an agreed period.

Track Occupancy Authorities may:

- allow workers, their equipment and associated track vehicles to occupy the track within the specified limits; or
- be granted for track vehicles to travel either singly or in convoy.

7.3 Obtaining a Track Occupancy Authority

The Competent Worker tells the Tram Controller the details of the proposed Track Occupancy Authority and requests that it be authorised.

Competent Worker

- Tell the Tram Controller:
 - your name and contact details; and
 - the identification number of the Pre-Work Safety Assessment; and
 - the location of the work, including the track name and at least one of the following permanent infrastructure identifiers:
 - pole number and Section location; or
 - station name; or
 - points identification; and if necessary
 - the identification of permanent structures such as bridge, roadway, or overpass
 - the type of work to be done; and
 - the limits of the Track Occupancy Authority; and
 - track clearance method e.g., Level Crossing; and
 - the protection arrangements for the Track Occupancy Authority; and
 - the intended start and finish times.
- If the Track Occupancy Authority is to start after the passage of a unidirectional Tram Traffic movement:
 - watch the Tram Traffic pass beyond the point from which the track is to be occupied; and
 - ensure that the Tram Traffic is complete; and
 - tell the Tram Controller the Tram Traffic leading motive power unit identification number.

Tram Controller

- Confirm the details about the location and proposed limits of the Track Occupancy Authority.
- Make sure that approaching Tram Traffic can be restrained outside of the limits of the Track Occupancy Authority, and:
 - there is no Tram Traffic within the proposed limits of the Track Occupancy Authority; or
 - a unidirectional Tram Traffic movement within the Section has passed complete beyond the proposed location of the work.
- If the Track Occupancy Authority is to start following the passage of a unidirectional Tram Traffic movement, have the Competent Worker state the Tram Traffic leading motive power unit identification number, to ensure the correct Tram Traffic movement has passed.
- Commence compiling and entering details onto the Track Occupancy Authority form.
- Have the Competent Worker read back information about the Track Occupancy Authority.

Competent Worker

- Compile a Track Occupancy Authority form.
- Read back the details of the Track Occupancy Authority form to the Tram Controller.

Tram Controller

- If the read back is correct, confirm the protection arrangements that will be used to prevent unauthorised Tram Traffic entry into the affected Section.
- Authorise and Issue the Track Occupancy Authority.

Competent Worker

- Confirm with the Tram Controller that blocking facilities have been applied to prevent unauthorised entry of Tram Traffic into the portion of track within the Track Occupancy Authority limits.
- Put the required protection in place.

Tram Controller and Competent Worker

- Retain the permanent record of the Track Occupancy Authority details for recording keeping purposes.

NOTE:

The Track Occupancy Authority is recorded using Form ENG-FRM-PTW-0003.

7.4 Jointly with a Track Work Authority

A Track Occupancy Authority may be granted for track vehicle travel through an area where a Track Work Authority is in effect.

Tram Controller

- Tell the requesting Competent Worker to consult with the other Competent Worker holding the Track Work Authority.

Requesting Competent Worker

- Consult with the Competent Worker holding the Track Work Authority.

- Tell the Tram Controller that an agreement has been reached with the Competent Worker holding the Track Work Authority.
- Request that a Track Occupancy Authority be issued.

Tram Controller

- Confirm the protection measures to be used to prevent unauthorised access.
- Authorise and issue the Track Occupancy Authority.

Tram Controller and Competent Worker

- Make a permanent record of the Track Occupancy Authority details.

7.5 Jointly with another Track Occupancy Authority

Additional Track Occupancy Authorities may be granted for a Section where a Track Occupancy Authority is already in effect.

Tram Controller

- Check that limits of Track Occupancy Authorities do not overlap
- Confirm that the Competent Workers have consulted with each other and agree with the arrangements.
- Record the details of the additional Track Occupancy Authority.
- Record each Track Occupancy Authority separately and confirm protection arrangements for each Track Occupancy Authority.
- Authorise and issue the Track Occupancy Authority.

Tram Controller and Competent Worker

- Make a permanent record of the Track Occupancy Authority details.

7.6 Joining with or travelling through an existing Track Occupancy Authority

Tram Controller

- Tell the requesting Competent Worker about any other existing Track Occupancy Authority, through which travel is to occur, or with which the additional Track Occupancy Authority is to join.

Requesting Competent Worker

- The requesting Competent Worker must consult with the Competent Worker of the existing Track Occupancy Authority and:
 - get their agreement to join, or travel through the limits of an existing Track Occupancy Authority; and
 - verify the existing Track Occupancy Authority protection arrangements.
- Tell the Tram Controller that agreed arrangements have been made.

Tram Controller

- Authorise and Issue the Track Occupancy Authority to proceed to the limits of the existing Track Occupancy Authority.

Competent Worker with second Track Occupancy Authority

- Proceed to the limits of the existing Track Occupancy Authority.
- Consult with the Competent Worker of the existing Track Occupancy Authority.
- Obtain permission to enter and if required to travel through the limits of the existing Track Occupancy Authority.
- Fulfill the Track Occupancy Authority once inside the limits of the existing Track Occupancy Authority.
- If travelling through, obtain another Track Occupancy Authority before exiting the limits of the existing Track Occupancy Authority.

7.7 Protecting Track Occupancy Authority limits

Competent Worker

- Make sure that points are secured to prevent Tram Traffic entry, or the limits of the Track Occupancy Authority are protected.
- If the points cannot be secured to prevent Tram Traffic entry, place a STOP signal 500m from the limits of the Track Occupancy Authority.

NOTE:

A STOP signal may be a STOP sign or a Competent Worker displaying a STOP hand signal, a red flag, or a red light.

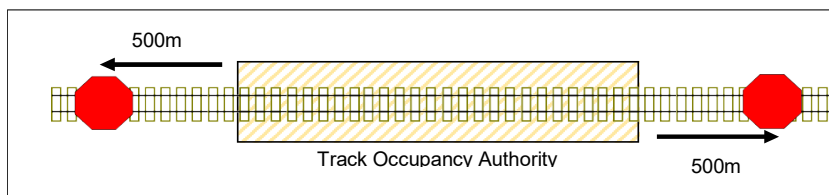


Figure 46 Example of protection arrangements for a Track Occupancy Authority

NOTE:

If points can be secured to prevent Tram Traffic access to the limits of the Track Occupancy Authority, a STOP sign is not required.

- Where two Track Occupancy Authorities join, place a STOP sign where the authority limits adjoin.

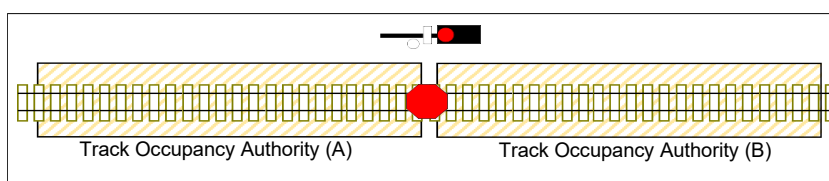


Figure 47 Example of protection arrangements for adjoining Track Occupancy Authorities

7.8 Obtaining an extension of time

Competent Worker

- Ask the Tram Controller for an extension of time.
- Record the new expiry time and the authorising Tram Controller's name on the Track Occupancy Authority form.

Tram Controller

- Tell any other affected Tram Controllers about the new Track Occupancy Authority expiry time.

7.9 Suspending a Track Occupancy Authority

Competent Worker

- Make sure that track vehicles and equipment have cleared the track.
- Make sure that all work groups have cleared the track.
- Make sure that any point clamps and protecting STOP signs have been removed.
- When advised that the track is certified and available for use, tell the Tram Controller.
- Tell affected Tram Controllers about any restrictions on track use.
- Suspend the Track Occupancy Authority.
- Keep a permanent record of the time of suspension.

Tram Controller

- Keep a permanent record of the suspension.
- Permit Tram Traffic to use the portion of track.

7.10 Reinstating a Track Occupancy Authority

Competent Worker

- Tell the Tram Controller that the limits and protection arrangements for the Track Occupancy Authority remain unchanged.
- Ask the Tram Controller to reinstate the Track Occupancy Authority.

Tram Controller

- Reinstate the Track Occupancy Authority in accordance with procedures for issue.
- Tell the Competent Worker the Track Occupancy Authority is reinstated.

7.11 Returning the track to service

Competent Worker

- Make sure that track vehicles and equipment are clear of the line.
- Make sure that all work groups have cleared the track.
- Make sure that any protecting point clamps and STOP signs have been removed.
- When advised that the line has been certified and available for use, tell the Tram Controller.
- Tell the Tram Controller about any restrictions on track use.
- If required, arrange for the work to continue under another method of work on track protection.
- Tell the Tram Controller that the Track Occupancy Authority is fulfilled.

Tram Controller

- Confirm with the Competent Worker:
 - their name, and location, and
 - the Track Occupancy Authority limits, and
 - the Track Occupancy Authority number.
- Fulfil the Track Occupancy Authority.
- Permit Tram Traffic to use the portion of track.

7.12 Keeping Track Occupancy Authority details

Tram Controllers and the Competent Worker must keep permanent records about the Track Occupancy Authority details.

A Form ENG-FRM-PTW-0003 is used to record the authorisation and issue of a Track Occupancy Authority.

8 Track Work Authority

8.1 Purpose of this section

This section prescribes the rules for authorising, issuing and using a Track Work Authority.

WARNING!

On the Adelaide Tram Network, unless a lower Temporary Speed Restriction is necessary, a Temporary Speed Restriction of 20 km/h must be imposed through the limits of the Track Work Authority.

8.2 General

A Track Work Authority:

- authorises occupation of a defined portion of track between Tram Traffic movements; and
- allows Tram Traffic to enter the Section in which the Track Work Authority is in effect; and
- does not give exclusive occupancy of lines or Sections; and
- may require Tram Traffic to be stopped or delayed on the approach to the limits of the Track Work Authority; and
- is requested by and issued to the Competent Worker; and
- is authorised and issued by the Tram Controller; and
- allows work that may or may not break or obstruct the track or alter track geometry or structure.

The Competent Worker must dictate the details of the proposed Track Work Authority to the Tram Controller and request that it be authorised.

Tram Traffic crews must follow instructions given by the Competent Worker or delegate.

8.3 Authorisation and issue

Only Tram Controllers may authorise and issue a Track Work Authority.

Tram Controllers must only authorise a Track Work Authority for track under their control.

A Track Work Authority must not be authorised if the track within the Limits of the proposed Track Work Authority is currently occupied by another work on track Authority.

8.3.1 Joint occupancy with a Track Occupancy Authority

The Tram Controller may authorise a Track Work Authority for a Section where a Track Occupancy Authority is in effect for a Fixed Work Location, provided the Authorities will not overlap.

The Tram Controller may authorise a Track Work Authority for a Section where a Track Occupancy Authority is in effect for right-direction track vehicle travel, provided the track vehicle has:

- passed complete beyond the proposed Track Work Authority limits, and;
- is not returning.

8.3.2 Keeping Records

Competent Workers and Tram Controllers must keep a permanent record of the issue of a Track Work Authority.

NOTE:

The Track Work Authority is recorded using Form ENG-FRM-PTW-0003.

The permanent record must include details about:

- Track Work Authority limits; and
- protection arrangements for the limits of the Track Work Authority; and
- communication with the Tram Controller about Tram Running Information, and changes to the current protection arrangements for the limits of the Track Work Authority.

8.4 Managing Tram Traffic

Competent Workers must manage Tram Traffic approach to, and through the limits of the Track Work Authority.

After the passage of Tram Traffic through the limits of the Track Work Authority, the Competent Worker must make sure that protection has been restored before allowing workers to re-enter the Danger Zone.

8.5 Competent Worker

At all times there must be a nominated Competent Worker for a Track Work Authority. The Competent Worker's primary duty and responsibility is to keep the Fixed Work Location and workers safe.

The Competent Worker must be satisfied that other work will not interfere with protection duties.

The Competent Worker must:

- get the Track Work Authority from the Tram Controller; and
- protect the limits of the Track Work Authority for which they are responsible; and
- be responsible for the protection of workers from track vehicle movements.

The Competent Worker must tell workers about the kinds and limits of protection in place:

- before work begins; and
- if the current protection arrangements change.

8.6 Protecting Limits of Track Work Authority

The Danger Zone must not be occupied before the Track Work Authority has been authorised, and issued, and protection is in place.

Competent Workers must make sure that all points of entry into the limits of the Track Work Authority are protected against unauthorised Tram Traffic.

If the protection arrangements for a proposed Track Work Authority and an existing Track Work Authority will overlap, these must be managed as a single Track Work Authority.

Competent Workers must use STOP AHEAD and STOP signs to protect the limits of the Track Work Authority.

STOP AHEAD signs must be placed in advance of the STOP sign in the direction of approaching Tram Traffic a distance of no less than 200m on Tram Corridors.

STOP signs must be placed more than 50m, and less than 200m from the limits of the Track Work Authority.

The limits of the Track Work Authority must be protected:

- for bidirectional lines, in both directions; or
- for unidirectional lines, for the normal direction of travel.

Effective communication must be maintained between the Competent Worker and:

- workers; and
- the Tram Controller; and
- approaching Tram Traffic crews.

The Competent Worker, in agreement with the Tram Controller, may reduce the number of points of entry to the limits of the Track Work Authority by clamping points to prevent Tram Traffic access to the limits of the Track Work Authority.

8.6.1 Terminating or dead-end lines

If the Tram Controller tells Competent Worker that there is no Tram Traffic between the limits of the Track Work Authority and the end of a dead end or terminating line, protection from that direction is not necessary.

8.6.2 Adjacent Lines

If Tram Traffic can travel on adjacent lines, the Competent Worker must arrange for safety measures to be taken to reduce the risk to safety from Tram Traffic on those lines.

The Competent Worker may arrange for the speed of Tram Traffic on adjacent lines to be restricted.

8.6.3 Additional Warning

If one or more scheduled stopping places are located between the STOP AHEAD sign and the STOP sign, an additional STOP AHEAD sign must be placed at the departure end of the last stopping place, before the limits of the Track Work Authority.

8.7 Affected signals

If Fixed Tram Signals display STOP because they will be affected by work on track, the Competent Worker:

- must tell the Tram Controller about the affected signals before starting work; and
- place STOP signs at the affected Fixed Tram Signals.

8.8 Tram Traffic

8.8.1 Approaching Track Work Authority limits

Tram Traffic crews must not pass the STOP sign and proceed through the Track Work Authority limits unless authorised to do so by the Competent Worker.

Before authorising Tram Traffic to pass the STOP sign and enter the limits of a Track Work Authority, Competent Worker must make sure that:

- workers are in Safe Places; and
- the track is unobstructed and safe for the passage of Tram Traffic.

Temporary Speed Restriction signs must be placed in conjunction with the Track Work Authority to tell Tram Traffic crews the speed to be observed.

NOTE:

In cases where the Competent Worker is not able to determine if the portion of track included in the Track Work Authority is certified as safe and available for use, the Competent Worker must seek advice from a worker who is able to do so, before authorising Tram Traffic to proceed.

8.8.2 Clearing Track Work Authority limits

Tram Traffic clearing limits of the Track Work Authority may resume Normal Speed when:

- the Competent Worker tells Tram Traffic crews that the Tram Traffic has completely cleared the limits of the Track Work Authority; or
- the Tram Traffic has completely passed the END OF TEMPORARY SPEED RESTRICTION sign, placed at the end of the limits of the Track Work Authority.

8.9 Liaison

8.9.1 Tram Control

The Competent Worker must be the only point of contact between the Tram Controller and work groups for matters of Track Work Authority protection.

The Competent Worker must:

- tell the Tram Controller about protection applied to lines adjacent to the Track Work Authority; and
- tell the Tram Controller about work progress; and
- if necessary, seek an extension of time.

8.9.2 Change of Competent Worker

The outgoing Competent Worker must tell an incoming Competent Worker about the protection arrangements for the limits of the Track Work Authority.

The incoming Competent Worker must:

- tell the Tram Controller about the changed contact arrangements; and
- keep a permanent record of the handover.

8.10 Work to continue under another Authority

Where arrangements have been made to continue work under another method of work on track protection, the Competent Worker must ensure that the protection for the limits of the Track Work Authority are not removed until the new work on track Authority is issued and the required protection is in place.

The Tram Controller must ensure that the track within the limits of the proposed work on track Authority:

- is clear of Tram Traffic; or
- is only occupied by associated Tram Traffic permitted under that Authority.

8.11 Fulfilling the Track Work Authority

A Track Work Authority is fulfilled only when the Competent Worker tells the Tram Controller that:

- the limits of the Track Work Authority have been cleared; and
- protection has been removed; and
- the portion of track within the limits of the Track Work Authority is certified as available for use; or
- work is to continue under another method of work on track protection.

The Competent Worker must tell the Tram Controller about operating restrictions that have been placed or removed.

NOTE:

In cases where the Competent Worker is not competent to determine if the portion of track included in the Track Work Authority is certified and available for use, the Competent Worker must receive advice from a worker who is able to do so, before telling the Tram Controller.

9 Using a Track Work Authority

9.1 Purpose of this section

This section prescribes the procedures for issuing and using a Track Work Authority.

9.2 Introduction

Track Work Authorities allow work to be performed on running tracks between Tram Traffic movements.

Tram Traffic must only enter and pass through the limits of a Track Work Authority when it is safe to do so, and under controlled conditions.

Competent Workers manage the approach of Tram Traffic to the limits of the Track Work Authority.

Tram Traffic may need to be stopped before the limits of a Track Work Authority unless it is safe for the Tram Traffic to proceed.

9.3 Obtaining a Track Work Authority

The Competent Worker tells the Tram Controller the details of the proposed Track Work Authority and requests that it be authorised.

Competent Worker

- Prepare a Track Work Authority on Form ENG-FRM-PTW-0003.
- Speak to the Tram Controller to arrange the issue of a Track Work Authority
- Tell the Tram Controller:
 - your name, and contact details; and
 - the identification number of the Form ENG-FRM-PTW-0001 being used; and
 - the Fixed Work Location, including the track name and at least one of the following permanent infrastructure identifiers;
 - pole number and Section location; or
 - station name; or
 - points identification; and if necessary
 - the identification of permanent structures such as a bridge, roadway, or overpass; and
 - the type of work to be done; and
 - the limits of the Track Work Authority; and
 - the track clearance method e.g., Level Crossing; and
 - the protection arrangements for the Track Work Authority; and
 - the identity number of the Pre-Work Safety Assessment; and
 - the intended start and finish times.
- Confirm that the limits of the Track Work Authority will be protected:
 - for bidirectional lines, in both directions; or
 - for unidirectional lines, for the normal direction of travel

WARNING !

Tram Running Information provides only a guide to planned movements and cannot be relied upon.

- Ask the Tram Controller for Tram Running Information about Tram Traffic planned to pass through the limits of the Track Work Authority.
- If the Track Work Authority is to be authorised after a unidirectional Tram Traffic movement:
 - do not allow workers to enter the Danger Zone; and
 - watch the Tram Traffic pass complete beyond the proposed limits of the Track Work Authority; and
 - confirm the correct Tram Traffic identification number with the Tram Controller.
- Request that the Track Work Authority be authorised.

Tram Controller

- Confirm the details about the location, proposed limits of the Track Work Authority and protection arrangements.
- Give the Competent Worker additional Tram Running Information.
- Make sure that there is no Tram Traffic within the proposed limits of the Track Work Authority.
- Identify the Pre-work Safety Assessment using the Form ENG-FRM-PTW-0001 serial number given by the Competent Worker.
- Ask the Competent Worker to read back the Track Work Authority.

Competent Worker

- Record the Tram Running Information provided.
- Read back the Track Work Authority details.

Tram Controller

- If the read back is correct, Authorise and issue the Track Work Authority.

Competent Worker

- After the Track Work Authority is authorised, arrange to protect the limits of the Track Work Authority.

Tram Controller and Competent Worker

- Keep permanent records about the Track Work Authority details, including protection arrangements.

NOTE:

The Track Work Authority is recorded using Form ENG-FRM-PTW-0003.

Jointly with an existing work on track Authority

A Track Work Authority must not be authorised within the limits of a Local Possession Authority.

A Track Work Authority may be authorised in a Section where an existing Track Work Authority or Track Occupancy Authority is current for another Fixed Work Location.

The limits of the two Authorities must not overlap.

A Track Work Authority may be authorised in a Section where a Track Occupancy Authority is in effect for track vehicle travel.

Tram Controller

- Tell the requesting Competent Worker to liaise with the Competent Worker holding the authority already in effect.

Requesting Competent Worker

- Liaise with the Competent Worker holding the authority already in effect.
- Tell the Tram Controller that an agreement has been reached.
- Request that a Track Work Authority be authorised.

Tram Controller

- Authorise and issue the Track Work Authority.

Tram Controller and Competent Worker

- Make permanent records about the Track Work Authority details, including protection arrangements.

9.4 Protecting the limits of the Track Work Authority

Competent Worker

- Protect limits of the Track Work Authority by:
 - managing Tram Traffic approach to limits of the Track Work Authority; and
 - managing Tram Traffic movements through limits of the Track Work Authority; and
 - if necessary, managing Tram Traffic on other lines; and
 - making sure that all protection is correctly placed; and
 - where practicable, reducing the number of points of entry to the limits of the Track Work Authority by securing points, or otherwise disabling or isolating the points.
- Make sure that signs are erected for a Temporary Speed Restriction of 20 km/h (or less, if applicable) through the limits of the Track Work Authority.

9.4.1 Using STOP AHEAD signs and STOP signs

Competent Worker

- Arrange for a STOP AHEAD sign, clearly visible to approaching Tram Traffic crews, to be placed in the direction of approaching Tram Traffic a distance of no less than 200m on tram corridors in advance of the STOP sign.
- Arrange for an additional STOP AHEAD sign to be placed on the departure side of last stopping point located between the first STOP AHEAD sign and the STOP sign.
- Arrange for a STOP sign to be placed outside the limits of the Track Work Authority, in the direction of approaching Tram Traffic.

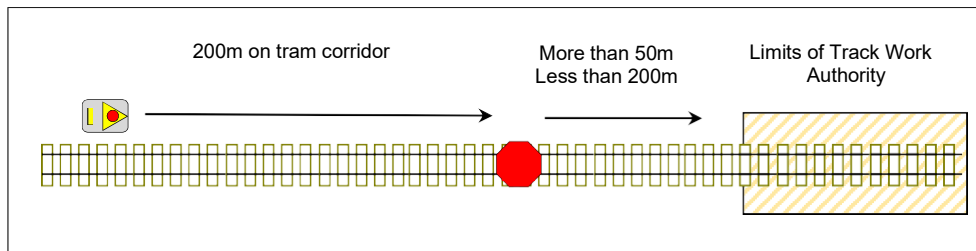


Figure 48 Example of protecting the limits of a Track Work Authority using STOP AHEAD and STOP signs

NOTE:

Temporary Speed Restriction signs are not shown in this diagram.

9.5 Managing Tram Traffic travel through the limits of a Track Work Authority

WARNING!

Workers must be in Safe Places before Tram Traffic is authorised to pass the protecting STOP sign and proceed through the limits of Track Work Authority.

9.5.1 Entry and travel through the limits of a Track Work Authority

Competent Worker

- Decide if it is safe for Tram Traffic to travel through the limits of the Track Work Authority.
- Decide if a Temporary Speed Restriction of less than 20 km/h is required for Tram Traffic to proceed safely.
- Tell the Tram Traffic crew the details of any Temporary Speed Restriction by:
 - using Signs; or
 - direct verbal communication.
- Arrange for:
 - the protecting STOP sign to be removed; or
 - authorise the Tram Traffic crew to pass the protecting STOP sign.
- Authorise the Tram Traffic crew to proceed through the limits of the Track Work Authority.

9.5.2 Tram Traffic departing the limits of a Track Work Authority

Competent Worker

- Tell Tram Traffic crews that their Tram Traffic is clear of the limits of the Track Work Authority by:
 - placing an END OF TSR sign at the departure end limits of the Track Work Authority; or
 - verbal communication with the Tram Traffic crew.

Tram Traffic crew

- Resume Normal Speed when:
 - the rear of the last vehicle has passed the END OF TSR sign at the departure end limits of the Track Work Authority; or
 - told to do so by the Competent Worker.

NOTE:

If it is not safe for Tram Traffic to resume Normal Speed after departing the limits of the Track Work Authority, an adjoining Temporary Speed Restriction must be established.

9.6 Obtaining an extension of time

Competent Worker

- Ask the Tram Controller for an extension of time.
- Record the new expiry time and the authorising Tram Controller's name on the Track Work Authority form.

Tram Controller

- Tell any other affected Controllers about the new Track Work Authority expiry time.

9.7 Returning the track to service

Competent Worker

- Make sure that track vehicles and equipment have been cleared from the line.
- Make sure that all workers have cleared the limits of the Track Work Authority.
- Make sure that STOP AHEAD and STOP signs have been removed.

NOTE:

In cases where the Competent Worker is not competent to determine if the portion of track included in the Track Work Authority is certified and available for use, and any restrictions applicable, the Competent Worker must receive advice from a worker who is competent to do so, before so telling the Tram Controller.

- When advised that the line is certified and available for service, tell the Tram Controller.
- Tell the Tram Controller about any restrictions on track use.
- Make sure that any Temporary Speed Restriction signs have been removed or erected, as necessary.
- If required, arrange for the work to continue under another work on track Authority.
- Tell the Tram Controller that the Track Work Authority is fulfilled.

Tram Controller

- Confirm with the Competent Worker :
 - their name, and location; and
 - the Track Work Authority number.

9.8 Keeping Track Work Authority details

Tram Controllers and the Competent Worker must keep permanent records about the Track Work Authority details.

A Form ENG-FRM-PTW-0003 is used to record the authorisation and issue of a Track Work Authority.

10 Lookout Working

10.1 Purpose

This section prescribes the rules for performing limited work or inspection activities in the Danger Zone, without a work on track Authority, by using Lookouts as the primary safety measure.

10.2 General

WARNING!

If the pre-work Safety Assessment shows that a work on track Authority is necessary, work must not be done using Lookout Working.

Lookout Working must not be used for work on the overhead wiring, work that breaks the track, or alters track geometry or structure.

Lookout Working provides workers with only limited protection and may only be used for minor work or inspection activities.

Lookout Working may be used for:

- minor work at a location of work; and
- work requiring the use of tools which can be easily and immediately removed from the track by a person without mechanical assistance; or
- inspections in the Danger Zone, conducted on foot, where no available alternative is reasonably practicable.

Lookout Working may also be used for work conducted in the Tram Corridor, but outside of the Danger Zone.

10.2.1 Safety Assessment

If a pre-work Safety Assessment shows that it is safe, some kinds of work may be carried out in the Danger Zone without a work on track Authority.

The Competent Worker must reassess safety measures if conditions, such as visibility, change.

10.2.2 Restrictions

The Competent Worker must make sure that Lookout Working is only used where the Lookout's visibility of approaching Tram Traffic, and the location of the work, is good.

If Lookout Working is used between sunset and sunrise:

- it must be used only on unidirectional lines; and

- yellow high visibility flashing lights must be used.

WARNING!

If all the additional safety measures specified below cannot be provided, work using Lookout Working must not be used between sunset and sunrise.

10.2.3 Tools

When using Lookout Working in the Danger Zone, only light hand-held tools and light battery powered tools or devices may be used for work.

The tool or device must not interfere with the ability of the worker to respond to a Lookout's warning.

10.3 Safety measures

The use of one or more Lookouts is the primary safety measure used in this form of working.

The number and location of Lookouts must be determined as part of the Competent Worker pre-work Safety Assessment.

Yellow high visibility flashing lights provide additional safety measures, when used in addition to Lookouts.

10.3.1 Safe Places

An easily-reached Safe Place must be available where Lookout Working is used in the Danger Zone.

Workers must be able to remove themselves, tools, and materials to a Safe Place immediately when told to do so by a Lookout.

10.3.2 Tram Traffic information

WARNING!

Tram Traffic information is provided only as a guide and must not be relied upon

The Competent Worker must liaise with the Tram Controller and obtain information about Tram Traffic that is expected to pass through the location of the work whilst Lookout Working is in effect.

10.3.3 Warning Tram Traffic crews

Tram Traffic crews must be warned of the presence of Lookout Working.

WARNING!

A yellow high-visibility flashing light must provide clearly visible and timely warning to the crews of approaching Tram Traffic that workers are present in the Tram Corridor.

If Lookout Working is planned to be in effect at a location:

- a yellow high-visibility flashing light must be placed at the location of the work on the left side of the track in each direction of approaching Tram Traffic; and
- work must be confined to within a 25-metre radius of the yellow high-visibility flashing light.

WARNING!

A Lookout must not use radio or telephones to warn workers of the approach of Tram Traffic.

A Lookout must be alert for Tram Traffic which is unexpected or comes from the wrong-running direction.

10.4 Competent Worker

A Competent Worker must be present at the location of the work for the duration of the work.

A Competent Worker's primary duty and responsibility is to keep the work location and workers safe.

Whilst acting as a Protection Officer, one must be satisfied that other work will not interfere their duties

A Competent Worker must:

- conduct a pre-work Safety Assessment; and
- determine if any other Lookouts are needed to protect the worksite; and
- identify and tell workers about the locations of Safe Places; and
- be the only person to speak to the Tram Controller about safety arrangements.

The Competent Worker may also act as a Lookout.

10.4.1 Responding to approaching Tram Traffic

When warned of the approach of Tram Traffic, the Competent Worker must:

- respond to the warning given by the Lookout; and
- ensure that all workers, tools and materials are immediately removed from the Danger Zone; then
- display an ALL-CLEAR hand signal to approaching Tram Traffic.

10.5 Lookouts

WARNING!

A Lookout must not use radio or telephones to warn workers of the approach of tram traffic

A Lookout must be alert for Tram Traffic which is unexpected or comes from the wrong running direction.

A Lookout must:

- keep continual watch for Tram Traffic approaching the location of the work from any direction; and
- warn workers immediately if Tram Traffic approaches.

While acting as a Lookout one must not:

- manage the passage of Tram Traffic; or
- do any other work.

10.6 Placing Lookouts

The Competent Worker must make sure that:

- the location of a Lookout and the visibility conditions give the Lookout enough sighting distance, to give a timely warning of approaching Tram Traffic; and

When Tram Traffic approaches, the Lookout can warn workers in time to allow them to:

- respond to the warning given; and
- remove themselves and remove tools and materials to a safe place before the Tram Traffic arrives.

To give sufficient warning time, a maximum of two Lookouts may be used in each direction.

Any additional Lookouts must remain within sight and hearing distance of the Lookout closest to the location of the work.

10.7 On-foot track inspection

On-foot track inspection activities may be performed under Lookout Working.

Lookouts must always remain within audible and visual range of workers.

On-foot inspection activities performed under Lookout Working must not be performed on bidirectional track, unless an approved exemption with additional safety controls has been provided.

Workers performing on-foot track inspections must walk in the opposite direction to approaching Tram Traffic.

The Tram Controller must not permit bidirectional working on unidirectional track to be established if on-foot track inspection under Lookout Working is in effect.

Wherever possible, another form of work on track Authority must be used to protect workers performing on-foot track inspections.

10.8 Communication with Tram Controller

Work in the Danger Zone must not begin until the Competent Worker has spoken with the Tram Controller about the use of Lookout Working.

The Competent Worker must get tram running information for the work location from the Tram Controller.

The Competent Worker must tell the Tram Controller:

- their name and contact details; and
- the location of the work; and
- the type of work to be done; and
- the intended start and finish times.

10.9 Ending Lookout Working

The Competent Worker must tell the Tram Controller when the workers and their equipment are clear of the Danger Zone and work is completed.

10.10 Keeping records

The Competent Worker must keep a permanent record of:

- safety measures for the location of the work; and
- communications with the Tram Controller about safety measures.

The Tram Controller must record the details of the use of Lookout Working.

11 Using Lookouts

11.1 Purpose of this section

This section prescribes the procedures for using Lookouts.

11.2 Introduction

A Lookout keeps a continuous watch for approaching Tram Traffic movements and gives warning to workers.

Workers respond to the Lookout's warning by removing themselves, tools and materials from the Danger Zone before the arrival of Tram Traffic.

11.3 Competent Worker

- Perform a pre-work Safety Assessment for the proposed work.
- Obtain Tram Traffic information for the work location from the Tram Controller.
- Decide how many Lookouts are needed to keep watch for approaching Tram Traffic and give warning.
- Liaise with the Tram Controller regarding the protection arrangements for the location of the work.
- If necessary, place an additional Lookout before the Lookout closest to the location of the work, to give earlier warning about approaching Tram Traffic.

NOTE:

The maximum number of Lookouts in any running direction is two (2).

The additional Lookout must stay within sight and hearing of the Lookout closest to the location of the work.

- Decide on the most effective safe location to place the Lookouts.
- Place a yellow high visibility flashing light at the location of the work.
- Agree with each Lookout about how workers will be warned about the approach of Tram Traffic.
- If the work in the Danger Zone will take place between sunset and sunrise, before commencing work:

- place a yellow high visibility flashing light at the location of the work.

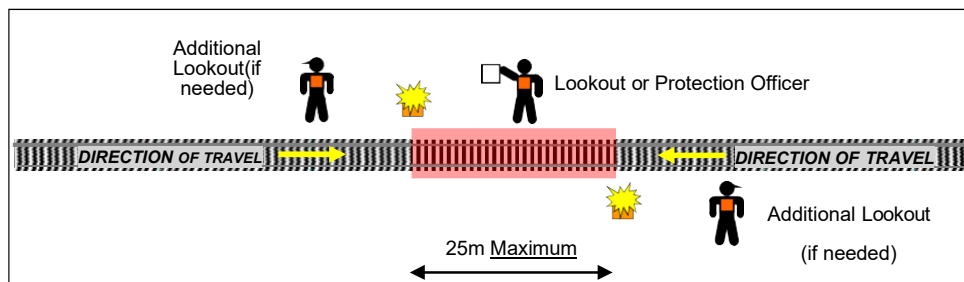


Figure 49 Example of general arrangement of a work location using yellow high visibility flashing light to warn Tram Traffic crews and Lookouts to warn workers

11.4 Lookout

WARNING!

Whilst acting as a Lookout, a Competent Worker must do no work other than look for and give warning about the approach of Tram Traffic.

- Maintain effective communication with workers.
- Stand or walk in a Safe Place within sight and hearing of the workers.
- Stand or walk in a Safe Place where approaching Tram Traffic can be clearly seen in time to give warning to workers.

WARNING!

If you cannot do any of these safely, tell the Competent Worker.

- Make sure that one or more audible warning devices are available for use.

NOTE:

Suitable audible warning devices may include a whistle, air horn or other non-mechanical or non-electrical device.

11.4.1 Giving warning

WARNING !

A Lookout must not use radios or telephones to warn workers.

Lookout

- Agree with the Competent Worker about how workers will be warned about the approach of Tram Traffic.
- Keep a continuous watch for the approach of Tram Traffic.
- If you see or are advised that Tram Traffic is approaching, warn the workers immediately.

Competent Worker

- Ensure that workers, tools and materials are removed from the Danger Zone.
- Face the approaching Tram Traffic and give an ALL CLEAR hand signal to the Tram Traffic crew.
- Wait for the Tram Traffic crew to acknowledge the ALL CLEAR hand signal.

Lookout

- Make sure that the line is clear before telling the Competent Worker that it is safe for work to resume.
- Tell the Competent Worker if you need to move from your designated position, and only move if all workers, tools and materials have been removed from the Danger Zone, or a new Lookout is in position.
- If conditions such as visibility change, tell the Competent Worker.

11.4.2 On-foot track inspection

Competent Worker

- Make sure that the on-foot track inspection is being done only on a unidirectional line.
- Make sure that the on-foot track inspection proceeds towards and faces approaching Tram Traffic.
- Make sure that the Lookout is able to keep a continual watch for approaching Tram Traffic.

Lookout

- Stay within sight and hearing of the workers.
- Walk in a safe place where approaching Tram Traffic can be clearly seen in time to give warning to workers.
- If conditions such as visibility change, warn workers to remove themselves and equipment from the Danger Zone.

11.5 Speed and distance chart

Approaching Tram Traffic will travel over the distances shown, within the times shown at the top of the table, when travelling at the speeds shown on the left.

Speed Km/h	Distance Travelled / Time Taken				
	25 seconds	30 seconds	35 seconds	40 seconds	45 seconds
70	485m	585m	680m	780m	875m
60	420m	500m	585m	670m	750m
50	350m	420m	485m	555m	625m
40	280m	335m	390m	445m	500m
30	210m	250m	295m	335m	375m
20	140m	170m	195m	225m	250m

Table 7 Distance Travelled / Time Taken

12 Track Vehicles

12.1 Purpose

This section prescribes the rules for operating track maintenance or inspection vehicles on the tram network.

12.2 General

Track vehicle types must be approved to travel on the Tram Network.

12.2.1 Conditions for travel

Before travelling on the Network, operators of track vehicles must inspect the vehicle and ensure it is fit and safe for travel.

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

A Competent Worker must be in charge of all track vehicle movements and must ride in the leading vehicle.

12.3 Occupying a running track

If a track vehicle is to occupy a running track it must do so only with the authority of the Tram Controller responsible for the location.

Track vehicles must only enter or be placed on running track:

- within Yard Limits; and
- within the limits of a work on track Authority.

12.3.1 Liaison

The Competent Worker in charge of a track vehicle movement must liaise with the Tram Controller about the movement.

The Competent Worker in charge of a movement must tell the Tram Controller:

- the number and types of track vehicles in a movement; and
- the identification numbers of all vehicles in the convoy; and
- when the rearmost vehicle has:
 - cleared the running track; or
 - cleared a location nominated by the Tram Controller.

12.4 Authority to travel

Track vehicles travelling singly, coupled, or in convoy, must only travel under the authority of a Track Occupancy Authority.

If a track vehicle travel is authorised by a Track Occupancy Authority, the Tram Controller must ensure protection is applied for the route.

12.4.1 Following a tram in a section

A light track vehicle may travel behind a tram in a Section.

The track vehicle must travel under the authority of a Track Occupancy Authority, and travel at a speed at which it can be stopped within half the range of vision of the track ahead.

The track vehicle must not travel over points or crossovers or pass Fixed Tram Signals without the authority of the Tram Controller.

12.4.2 Entering and clearing limits of authority

In a track vehicle travelling singly, or the lead track vehicle in convoy, there must be:

- a Competent Worker in charge of the movement, and
- a Competent Worker who is competent in Fixed Tram Signal recognition.

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

- report to, and obey instructions from, the Tram Controller; and
- tell other track vehicle operators in the convoy about conditions relating to the movement; and
- make sure that points are set correctly and secured for the movements; and
- tell the Tram Controller when the Limits of Authority have been cleared.

12.5 Travelling in convoy

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

Operators of track vehicles in convoy must maintain effective communication.

If communication is lost, following track vehicle operators must:

- travel at Low Speed until communication is re-established; and
- travel within sighting distance of the vehicle ahead and behind. The convoy must close up:
 - if the leading vehicle stops; and
 - before entering a Section; or
 - before travelling over an active control level crossing.

Fixed Tram Signal indications displayed to the first vehicle apply to all track vehicles in the convoy.

12.6 Overdue track vehicle

If a track vehicle exceeds agreed or expected reporting or clearance times by an unreasonable amount, the Tram Controller must attempt to communicate with the overdue track vehicle's crew and establish its location.

If the attempted communication fails, the Tram Controller must:

- enact a response plan; and
- treat the line as obstructed; and
- immediately tell the track vehicle operator's representative.

12.7 Travelling through the limits of a Local Possession Authority or Track Occupancy Authority

12.7.1 Entering or Travelling Through the Limits of the Authority

If track vehicles are required to enter or travel through the limits of a Local Possession Authority or Track Occupancy Authority, the movement must:

- be authorised by the Possession Protection Officer in the case of a Local Possession Authority; or
- be authorised by the Competent Worker in the case of a Track Occupancy Authority.

In either case, the track vehicle must:

- be piloted; or
- receive written or verbal instructions from the Possession Protection Officer or Competent Worker.

12.7.2 Fixed Tram Signals

Within a Track Occupancy Authority

If a track vehicle must pass a Fixed Tram Signal at STOP, the Competent Worker must request the Tram Controller to issue an authority to the track vehicle operator for the movement to pass the Fixed Tram Signal.

Within Local Possession Authority

Within Local Possession Authority limits, Fixed Tram Signals at STOP may be passed at STOP, on the direction of the Possession Protection Officer.

12.7.3 Points

If a track vehicle must pass over points within the limits of a Local Possession Authority, the Possession Protection Officer must authorise the movement.

In all other cases, the Tram Controller must authorise the movement of a track vehicle over points.

12.7.4 Departing the work on track Authority

Track vehicles must only depart the specified limits of the work on track Authority with the Tram Controller's authority.

12.8 Track vehicle speed limits

WARNING!

Track vehicle operators must travel at speeds that are safe for the prevailing conditions.

A track vehicle's speed must not exceed:

- the speed specified for the track vehicle; or
- if it is lower, the indicated track speed.

12.9 Audible Warning Device

A track vehicle's audible warning device must be sounded:

- before moving from stop; and
- to give warning.

12.10 Headlights

Headlights must be switched on during travel. Headlights must be dimmed during approach to:

- Tram Traffic; or
- a platform; or
- a location where shunting is in progress; or
- a motor vehicle travelling in the opposite direction on an adjacent road.

12.11 Tail Lights

Track vehicles must have red tail lights lit or an approved End of Tram Marker during travel.

If track vehicles are travelling in a convoy, the approved end of tram marker must only be attached to the last vehicle.

12.12 Hazard lights

Track vehicles on the line must have operating hazard lights.

12.13 Travelling over active control level crossings

Track vehicles must stop before travelling over a level crossing in all circumstances, whether the level crossing warning equipment is operating, or not.

Track vehicles must travel over a level crossing only after making sure that:

- no road or pedestrian traffic is on the crossing; and
- it is safe to do so.

If the level crossing has not been activated remotely, or by track circuits, the level crossing warning equipment must be manually activated.

12.14 Stabling track vehicles

Track vehicles must not be stabled on running tracks, and must be:

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

If track vehicles are stabled on take-off rails, the take-off must slope away from the running tracks.

12.15 Track vehicle security

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

13 Track Vehicle Travel

13.1 Purpose of this section

This section sets out the procedures when track vehicles travel on the Tram Network.

13.2 Introduction

There are special requirements for track vehicle travel on the Tram Network.

The term track vehicle includes:

- road/rail vehicles; or
- track maintenance machines; or
- overhead wiring maintenance vehicles; or
- track inspection vehicles.

13.3 Preparing track vehicle for travel

Track Vehicle Operator

- Make sure that your vehicle is fitted with properly working:
 - brakes; and
 - headlights; and
 - hazard lights, or amber or orange flashing lights; and
 - taillights or an approved End of Train Marker; and
 - driver vigilance systems.

WARNING:

If an approved End of Train Marker is used, it must only be attached to the rear of the last vehicle.

- Make sure your vehicle carries, or that you have immediate access to:
 - flags; and
 - hand signal lights; and
 - communication devices suitable for the area of operation.

13.4 Travelling track vehicles

Competent Worker in charge of a movement

- Before travel begins, make sure that there is effective communication between the leading track vehicle and:
 - the rearmost track vehicle; and
 - other track vehicles; and
 - other workers; and
 - the Tram Controller.
- Before travel begins, confirm with the Tram Controller details about track vehicles in the movement, including:
 - the number of vehicles and their identification numbers; and

- the order of travel; and
- the speed at which the vehicles will travel; and
- the Authority under which the vehicles are to travel.

NOTE:

If travel is authorised by a Track Occupancy Authority, Form ENG-FRM-PTW-0003 is used by the Competent Worker to record this.

- During travel:
 - ride in the leading vehicle; and
 - report progress to the Tram Controller as the rearmost track vehicle passes nominated locations; and
 - get instructions from the Tram Controller; and
 - if the track vehicles are in a convoy, relay relevant messages from the Tram Controller to the other track vehicle operators in the convoy; and
 - be alert for workers in the Tram Corridor.
- Tell the Tram Controller if the movement has:
 - arrived complete within a location; and
 - departed a location; and
 - cleared running tracks; or
 - been removed from the line.
- Get the Possession Protection Officer's authority before travelling into the limits of a Local Possession Authority.
- Get the Protection Officers authority before travelling into, or through, a location of the work within the limits of a Local Possession Authority.
- Get the Competent Workers authority before travelling into, or through the limits of a Track Occupancy Authority or Track Work Authority.

13.5 Travelling in Convoy

Competent Worker in the leading track vehicle

- Tell the other track vehicle operators in the convoy about the signal indications as your track vehicle approaches them.
- Warn the other track vehicle operators if your track vehicle:
 - slows down or stops; or
 - approaches the protection limits of a Fixed Work Location.
- If you lose communication with other track vehicles:
 - reduce your track vehicle's speed; and
 - allow the convoy to close up.

Track Vehicle Operators

- Tell other track vehicle operators in the convoy:
 - as you reach agreed, easily-identified locations or reference points during the journey; or
 - if you need to slow down or stop your track vehicle.
- Adjust your speed according to messages received from Competent Workers in track vehicles within the convoy.

- If you lose communication with the other track vehicles, or are not sure of the whereabouts of the track vehicle ahead:
 - reduce your track vehicle's speed; and
 - allow the convoy to close up; and
 - travel at a speed which will allow the track vehicle to stop within half the sighting distance.
- If you need to stop your track vehicle, and until your warning is acknowledged, continue to warn following track vehicle operators by:
 - sending two-way radio messages; or
 - flashing your track vehicle's lights; or
 - sounding your track vehicle's whistle repeatedly; or
 - giving a STOP hand signal at a safe braking-distance behind your track vehicle.

13.6 Travelling over a Level Crossing

Competent Worker in the leading track vehicle

- Ensure that the track vehicle stops before travelling over a level crossing.
- Tell the other track vehicle operators:
 - that your track vehicle is approaching a level crossing; and
 - to reduce their track vehicle's speed and be prepared to stop.
- Tell track vehicle operators whether to:
 - close up safely and travel over the level crossing as a group; or
 - stop, then travel over the level crossing on the authority of a Competent Worker in attendance at the level crossing.

14 Protection from Tram Traffic on Adjacent Lines

14.1 Purpose of this section

This section prescribes the procedures for protecting workers from Tram Traffic passing on adjacent lines on the Network.

14.2 Introduction

Tram Traffic on lines adjacent to work on track is a danger to workers. Workers must be protected from Tram Traffic.

Excluding Tram Traffic from adjacent lines gives the highest level of protection.

During the Pre-work Safety Assessment for the work, and as protection needs change, the Possession Protection Officer or the Competent Worker must decide on the best means to reduce the risk from Tram Traffic on adjacent lines.

14.3 Means of Risk Reduction

If the Pre-work Safety Assessment indicates that workers need to be protected from Tram Traffic on adjacent lines, the Possession Protection Officer or the Competent Worker chooses one or more of the following means to reduce risk:

- Local Possession Authority; or

- Track Occupancy Authority; or
- Track Work Authority; or
- Lookout Working; or
- Temporary Restriction of Tram Traffic speed.

14.4 Demarcation Fencing

WARNING!

Demarcation fencing is only a warning that a boundary exists. It may not stop workers from entering a Danger Zone on an adjacent line.

Demarcation fencing is an easily seen, continuous boundary marker. Only approved demarcation fencing may be used on the Adelaide Tram Network.

14.5 Using Demarcation Fencing

Competent Worker

1. Put appropriate protection and safety measures in place to protect workers installing demarcation fencing.
2. Make sure that the demarcation fencing is installed before starting other work.
3. Make sure that demarcation fencing can withstand disturbances caused by passing Tram Traffic.
4. Keep workers and equipment on the safe side of the demarcation fencing.
5. If necessary, place one or more Competent Workers to make sure that workers stay within the demarcation fencing.
6. Make sure that the demarcation fencing is kept in good condition throughout the work.

14.6 Barrier Fencing

Barrier fencing restrains workers or machinery from intruding into the Danger Zone on an adjacent track.

A Barrier Fence must not introduce additional risks of conflict with Tram Traffic to a work location.

Only approved barrier fencing may be used on the Adelaide Tram Network.

15 Working Around Electrical Infrastructure

15.1 Purpose of this section

This section prescribes the rules for workers when working around electrical infrastructure in the Network.

15.2 General

WARNING! *Workers must keep themselves, tools, equipment, and materials at a safe distance from exposed electrical equipment and wires.*

Workers must comply with the requirements specified in the electrical safety instructions for the Network.

Workers in the vicinity of exposed electrical equipment and wires in the Tram Network must keep or be kept at safe distances.

Unless they are formally advised by an Electrical Representative that they are not live, workers must treat all the following as live:

- electrical equipment; and
- cables and fallen electrical wires; and
- vehicles, equipment, or objects in contact with overhead wires or fallen wires; and
- water or fires in contact with electrical infrastructure.

Only Electrical Representatives may remove objects in contact with overhead wires.

15.3 Electrical infrastructure

Electrical infrastructure includes:

- high-voltage and low-voltage wires and cables, and electrical equipment on poles; and
- overhead wiring and associated equipment; and
- electrical conductors carried in above-ground troughs or buried; and
- low-voltage electrical switch rooms; and
- substations.

15.4 Working near electrical equipment

15.4.1 Work near or above electrical equipment

Unless formally authorised to do so by an Electrical Representative, workers must not climb on top of rail vehicles on an electrified track.

Workers must not cause water or debris to come into contact with overhead wiring.

15.4.2 Work tools and equipment

Workers must not use metal or metal-reinforced ladders within the safe distance of overhead wiring or equipment.

Steel tapes, metal-reinforced linen tapes and long steel rules may only be used in accordance with the Maintenance Representative's electrical safety instructions.

WARNING!

Workers must take extra care when handling long objects near overhead equipment.

15.5 Underground services

Workers must not dig, break the ground, or drive anything into the ground before the whereabouts of buried services and underground cables are known.

15.6 Faults in electrical infrastructure

WARNING!

Only workers who are competent to do so should try to extinguish fires near electrical infrastructure and signalling locations.

Workers who see or suspect faults, fallen wires or fires in the electrical infrastructure must immediately tell the Tram Controller.

15.7 Electrical Infrastructure Layout

If possible, refer to these diagrams to report faults, fallen wires or fires in overhead wiring.

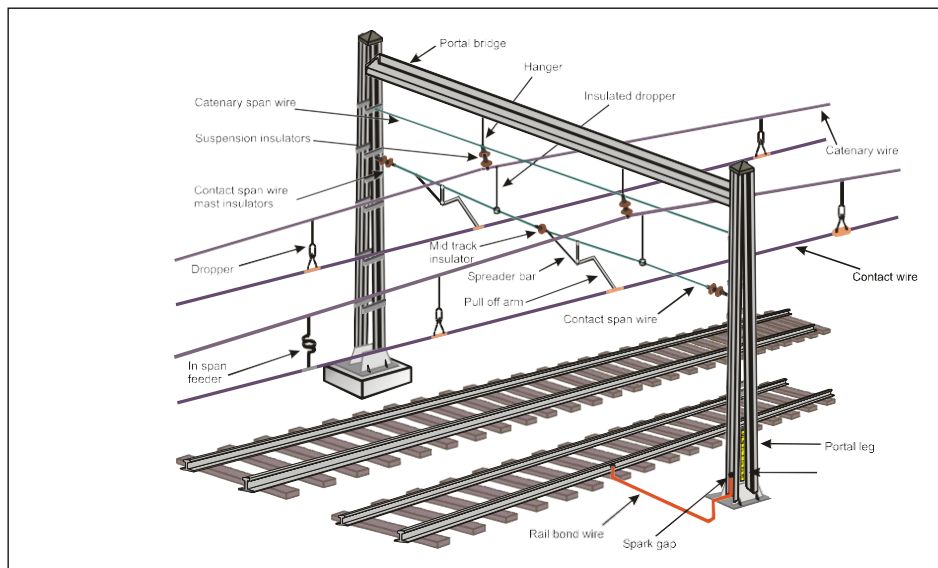


Figure 50-Example of a simple catenary, fixed-anchored, span-wire construction on portal structures

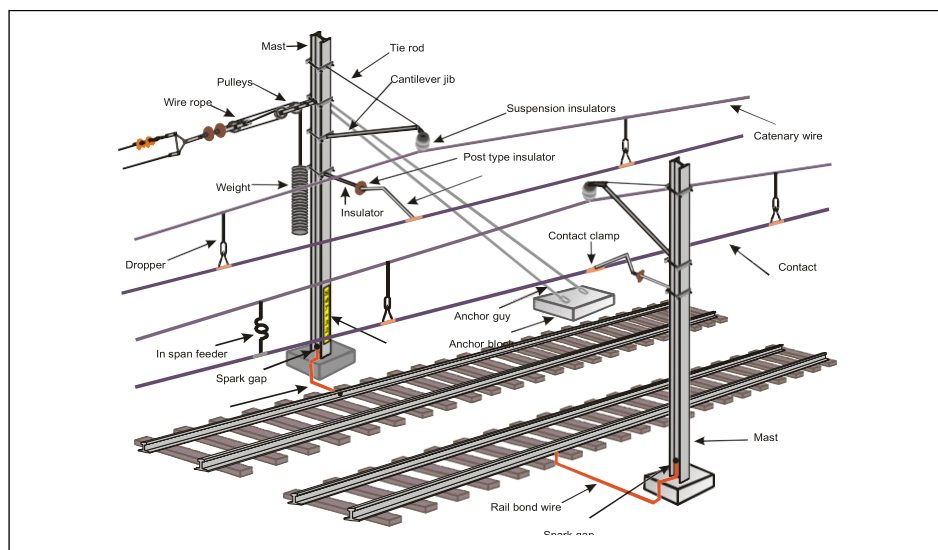


Figure 51 - Example of a simple catenary, fixed-anchored, span-wire construction on portal structures

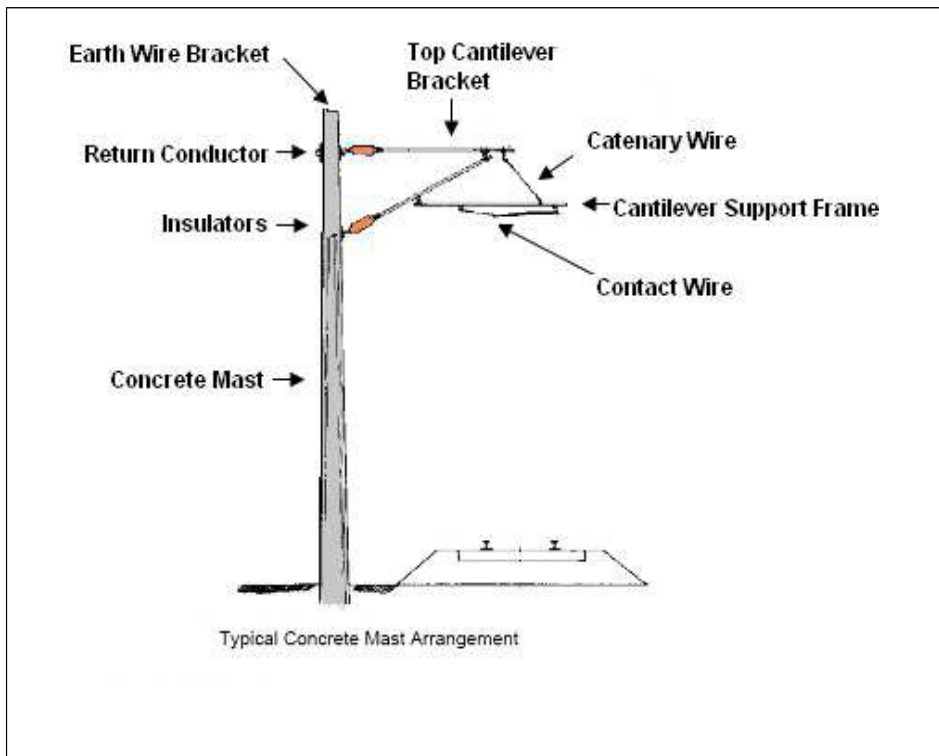


Figure 53 Example of a Typical Concrete mast Arrangement

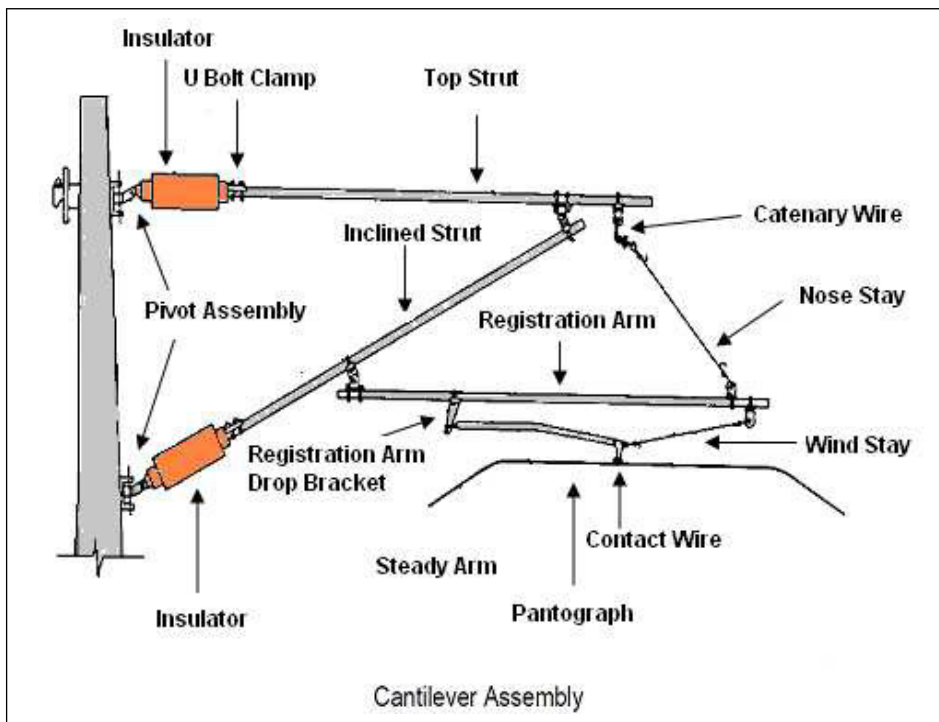


Figure 52 Example of a Typical Cantilever Assembly

16 Work That Affects Traction Return Currents or Track Circuits

16.1 Purpose of this section

This section sets out the rules for work that affects traction return currents or track-circuits.

16.2 General

Work that affects traction return currents or track-circuits must be done in accordance with engineering guidelines for the network.

Work on track must not interfere with track circuits unless this is unavoidable.

16.3 Traction return currents

The Traction Power Supervisor must be consulted before work that could affect traction return currents is started.

Traction Power Supervisor gives details of bonding arrangements and other requirements.

Only the Traction Power Supervisor may authorise the use of temporary rail bonds.

Traction Power Worker may be required to be on site to provide suitable bonding arrangements and deal with other requirements.

A Traction Power Worker may be required to be on site before:

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

Workers must comply with the requirements specified in the electrical safety instructions for the network.

Broken or disconnected electrical cables connecting a substation to a rail must be reported immediately to the Tram Controller.

WARNING!

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

Workers must stay clear of the cables until the Traction Power Supervisor or delegate advises that it is safe.

16.4 Track-circuits

WARNING!

Work that affects track-circuits may affect the signalling system

The Maintenance Representative must inform a supervising Signals Maintainer before starting work on track that may affect track-circuits.

A supervising Signals Maintainer must decide if a Signals Maintainer should attend.

If a Signals Maintainer is needed, work on track must not start before it is authorised by a supervising Signals Maintainer.

NOTE:

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

WARNING!

If work can affect an active level crossing's track-circuits, that level crossing must be protected by a Competent Worker.

17 Infrastructure Booking Advice

17.1 Purpose

This section prescribes the rules for using an Infrastructure Booking Advice form to record and notify the Tram Controller of temporary or permanent changes to the Network infrastructure.

17.2 General

An Infrastructure Booking Advice form must be used wherever infrastructure is:

- permanently installed or commissioned; or
- permanently decommissioned or removed; or
- temporarily removed from service; or
- returned to service following temporary removal from service.

NOTE:

An Infrastructure Booking Advice form is not used for the planned or unplanned removal of overhead electrical supply.

17.2.1 Advertising infrastructure work

Maintenance Representatives must make sure that work on infrastructure that affects the configuration of the Network is documented and advertised.

New infrastructure must be advertised before it is certified and commissioned.

17.3 Compiling Infrastructure Booking Advice form

Maintenance Representatives must compile an Infrastructure Booking Advice form before equipment is removed or commissioned.

The Maintenance Representatives must:

- send a copy of the Infrastructure Booking Advice form to the Tram Controller; or

- jointly compile the Infrastructure Booking Advice form with the Tram Controller.

The Maintenance Representative must give a copy of the Infrastructure Booking Advice form for:

- work associated with a Local Possession Authority, to the Possession Protection Officer; or
- work associated with a Track Occupancy Authority or Track Work Authority, to the Competent Worker.

The Tram Controller and the Maintenance Representatives must keep completed Infrastructure Booking Advice forms or other permanent records.

17.4 Securing infrastructure

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

17.5 Certifying infrastructure

Infrastructure that has been installed or returned to service must be certified on an Infrastructure Booking Advice form:

- compiled by the relevant Maintenance Representatives; and
- acknowledged by the Tram Controller.

17.6 Booking infrastructure back into use

If infrastructure has been certified, the relevant section of the Infrastructure Booking Advice form must be signed.

If some parts of the infrastructure remain unable to be certified at the end of work, they must be booked out of use again using a new Infrastructure Booking Advice form.

The new Infrastructure Booking Advice form must:

- be compiled before the original Infrastructure Booking Advice form is signed; and
- include a reference to the Infrastructure Booking Advice form it replaces.

The fulfilled Infrastructure Booking Advice form must include a reference to the new Infrastructure Booking Advice, for that infrastructure that was not certified.

17.7 Using infrastructure not yet commissioned

Infrastructure that is not yet commissioned may be given limited certification for specific purposes including the movement of Tram Traffic.

Before Non-commissioned infrastructure is used:

- a Maintenance Representative must certify that it is fit for the specific purpose; and
- it must be advertised.

Non-commissioned infrastructure must be:

- unsecured before use; and
- secured after use.

17.8 Completing Infrastructure Booking Advice

An Infrastructure Booking Advice must only be completed when all of the infrastructure detailed within the Infrastructure Booking Advice has been:

- certified; or
- decommissioned; or
- if some of the infrastructure detailed on the Infrastructure Booking Advice form has been included in a replacement Infrastructure Booking Advice.

Completed Infrastructure Booking Advice forms must be endorsed with the word COMPLETED written diagonally across the face of the form.

18 Using Infrastructure Booking Advice Form

18.1 Purpose of this section

This section prescribes the procedures for using an Infrastructure Booking Advice form.

18.2 Introduction

An Infrastructure Booking Advice form is used to tell Tram Controllers that infrastructure is:

- temporarily or permanently removed from service (decommissioned or 'booked out of use'); or
- installed or returned to service (commissioned or 'booked into use').

Maintenance Representatives and Tram Controllers use an Infrastructure Booking Advice form to jointly compile an Infrastructure Booking Advice.

18.3 Compiling Infrastructure Booking Advice

Maintenance Representative

- Tell the Tram Controller about infrastructure on the Tram Corridor that has been or will be permanently or temporarily installed or returned to service, or removed from service.

Tram Controller

- Tell the Maintenance Representative the identification number to be used for the proposed Infrastructure Booking Advice form.

Maintenance Representatives and Tram Controller

In Section 2:

- Record details about the location of the infrastructure and the affected line.

In Section 3:

- Record the type of infrastructure work to be included in the Infrastructure Booking Advice.

In Section 4, 5 or 6:

- Record if the infrastructure or equipment is:
 - existing infrastructure booked temporarily out of use; or

- existing infrastructure permanently removed; or
 - existing infrastructure booked back into use; or
 - new infrastructure installed.
- Record the equipment identification numbers, and provide details about the equipment.
 - If the work was advertised, record the date of the advertisement.
 - Record the time and date, and the name of each representative, against the relevant discipline
 - Sign the Infrastructure Booking Advice on behalf of the discipline that you represent.

18.4 Completing an Infrastructure Booking Advice

18.4.1 Infrastructure is certified

Maintenance Representatives and Tram Controllers

In Section 3:

- Write YES in the Certified column.

In Section 6:

- Record the time and date, and the name of the representative of each discipline certifying the infrastructure as fit to be returned to service.
- Strike through items that do not apply.
- Sign the form to certify the infrastructure on behalf of the discipline that you represent.

18.4.2 Some infrastructure is not certified for return to service

Maintenance Representatives and Tram Controllers

- Compile a new Infrastructure Booking Advice for the infrastructure which is not certified.

On a new Infrastructure Booking Advice form:

In Section 3:

- Detail the infrastructure that is not being certified for return to service
- Write the reference number of the existing Infrastructure Booking Advice in the REFERENCE column, for that infrastructure not being certified.

In Section 5:

- Carry over the date of the relevant advertisement from the existing Infrastructure Booking Advice form.
- Record the time and date and the name of the representative of each discipline certifying the infrastructure as out of service.
- Sign the new Infrastructure Booking Advice on behalf of the discipline that you represent.

On the existing Infrastructure Booking Advice form: In Section 3:

- Write NO in the CERTIFIED column.
- Sign the existing Infrastructure Booking Advice on behalf of the discipline that you represent.

18.5 Records

Tram Controllers and Maintenance Representatives must keep Infrastructure Booking Advice forms.

19 Associated Documents

Table 8: Associated Documents

Document ID	Title
ENG-FRM-PTW-0001	Pre-work Safety Assessment and Safeworking Protection Plan
ENG-FRM-PTW-0002	Competent Workers Worksite Protection Brief
ENG-FRM-PTW-0003	Authority to Work
ENG-FRM-PTW-0004	Local Possession Authority
ENG-FRM-PTW-0005	Local Possession Authority Work Permit (Master Copy)
ENG-FRM-PTW-0006	Local Possession Authority Work Permit (Field Copy)
ENG-FRM-PTW-0007	Infrastructure Booking Advice

