Glossary

access

A designated safe way into, along, across or out of a Rail Corridor.

Access Provider

An organisation that provides and manages a rail Network and safe method of entry to that Network for Access Users.

accredited and non-accredited persons

Accredited persons are those persons performing non-electrical work at or above track level in the vicinity of live electrical equipment, have completed the Rail Industry Safety Induction (RISI) course and have received additional Electrical Awareness training and demonstrated competence to perform such non-electrical work in the vicinity of live electrical equipment safely.

Non-accredited persons are those persons who have not received training in, or demonstrated competency in, the specific hazards and risks associated with working around electrical equipment at station platform or track level. Non-accredited persons include those persons who have completed the RISI course and no other electrical awareness training or electrical courses.

Refer to the *MTS Electrical Safety Rules* for further detail and description.

adjacent

Next to, near to, close to.

adjoining

In contact with, connected to.

advertise

To give written or electronic notice, usually in advance, of planned activities.

affected signal

A signal not available for normal use.

Glossary

airbrake

A braking system activated by change in air pressure.

alarm

The method of alerting operators about system events requiring reaction or response by the designated recipient.

aspect

The displayed pattern or position of lights used to give a signal indication.

ATC

See Automatic Train Control.

ATC Bypass

A method of EMU operation that requires a Train Operator to switch the EMU to RM mode, then set the ATC Bypass switch to “Bypass” position to manually control the movement of a train without control or input from the signalling system.

ATO

See Automatic Train Operation.

ATP

See Automatic Train Protection.

ATR

See Automatic Train Regulation.

Glossary

ATS

See Automatic Train Supervision.

ATS workstation

A rail traffic control workstation which enables Qualified Workers to monitor the MTS Network, regulate and control rail traffic movements, and control the operation of individual signals and points.

audible warning device

A device, such as a whistle, siren, horn or hooter, used to give warning.

authority

A generic term for permission. A formal authority name.

authorise

To give formal written, spoken or signalled authority for an action to be performed.

Authorised Person

Persons who perform electrical work on, near and in the vicinity of equipment that forms part of the MTS Electrical Network are specifically authorised to perform this work.

Refer to the *MTS Electrical Safety Rules* for further detail and description.

Automatic Train Control (ATC)

The Automatic Train Control system is sub-system of the CBTC Signalling System, comprises of the following:

- Automatic Train Operation (ATO)
- Automatic Train Protection (ATP)

Glossary

Automatic Train Operation (ATO)

Automatic Train Operation is a system which controls the regulation of acceleration, coasting, braking and station stopping of a train.

Automatic Train Protection (ATP)

Automatic Train Protection is a system which continuously compares actual train speed with maximum safe speed and ensures safe and adequate separation of rail traffic as per system parameters.

Automatic Train Regulation (ATR)

Automatic Train Regulation is a centralised system for automatically regulating the operation of trains.

Automatic Train Supervision (ATS)

Automatic Train Supervision is a centralised system for loading timetables and for automatically setting routes accordingly.

axle counter

Equipment used in conjunction with the Communications Based Train Control system as a Secondary Detection Device. Axle counters detect the presence of rail vehicles by counting the number of axles entering or leaving a location. They may be used to operate signalling or other infrastructure equipment.

axle counter evaluator

The axle counter evaluator is installed in the local interlocking equipment room or Signalling Equipment Room at stations. It saves and stores Computer Based Interlocking information. When the CBTC signalling system is re-set after a failure or a shut down, the ATS system will obtain all last known information about the network from the axle counter evaluator and use the information to locate trains and obtain the status of signals and position of points.

Glossary

axle counter territory

The portions of line where axle counters are used for the Communications Based Train Control system of Safeworking.

Battery Electric Locomotive (BEL)

A dual power source self-propelled locomotive that can operate using the 1500V DC overhead power supply or an on-board battery power supply. BEL are operated in pairs (push/pull) when used to haul rail traffic on the main line of the MTS Network.

BEL

See Battery Electric Locomotive.

bidirectional

Allowing for normal movement of rail traffic in either direction according to the infrastructure and system of Safeworking in use.

block

A portion of line with defined limits between which only one rail traffic movement is permitted at any one time.

block train

A train required to travel under manual block working block work

See manual block working.

blocking facility

ATS Workstation command/s used by Traffic Controllers and Engineering Controllers to prevent either the unintended issue of an Occupancy Authority, or the operation of points or signalling equipment.

Glossary

braking distance

Distance required by a train to stop under normal braking conditions, taking into account track gradient, train weight and speed.

buffer stop

A fixed or friction-sliding device at the end of a siding or overrun track to prevent a train running beyond.

CAN

See Condition Affecting the Network.

cancel

To withdraw permission for, or to end previously authorised activities, such as Occupancy Authorities, without completing them.

(Written authorities have the word **CANCELLED** written diagonally across them, between two parallel lines).

car-borne controller

The onboard computer that controls the EMUs interface with the CBTC signalling system and wayside devices to safely manage the operation of the train in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode.

catch points

Single or double-bladed points used to derail rail traffic that might enter or foul an adjacent running line.

catenary

Wires forming part of the overhead line equipment from which trains obtain power through contact by pantographs.

Glossary

CAUTION handsignal

A handsignal given by a Qualified Worker to indicate the need for rail traffic to proceed being prepared to stop.

CBI

See Computer Based Interlocking.

CBTC

See Communications Based Train Control.

certify

To classify a worker as competent.

To classify infrastructure or rolling stock as ‘fit for purpose’.

Change of Ends (CoE) Zone

A location on the network where trains can change travel direction either in normal operations or during degraded operations.

clearance location

A location that, once clear of rail traffic, allows a following movement.

closely approaching

Going towards a location at a speed such that Rail Traffic Operators could not be expected to react in sufficient time to stop.

coast

Action of running a train without the traction motors powering.

Glossary

CoE

See Change of Ends (CoE) zone.

commission

To formally place into active service or use.

Communications Based Train Control (CBTC)

A continuous, automatic train control system utilizing high-resolution train location determination, independent from track circuits; continuous, high-capacity, bidirectional train-to-wayside data communications; and train-borne and wayside processors supporting the implementation of:

- Automatic Train Protection (ATP), and
- Automatic Train Operation (ATO) and
- Automatic Train Supervision (ATS) functions, including Automatic Train Regulation (ATR).

Computer Based Interlocking (CBI)

Computer based equipment used to operate or control interlocked points and signals.

Condition Affecting the Network (CAN)

A situation or condition that affects or has the potential to affect the safety of the Network.

consist

A listed order of the vehicles arranged to make up a complete train.

converging

(Lines) meeting and joining to become one line.

Glossary

convoy

A group of track vehicles not coupled but travelling closely together under a single Occupancy Authority.

Coordinating Protection Officer

A Coordinating Protection Officer is a Protection Officer who is responsible for managing:

- the protection arrangements of a coordinated worksite, and
- rail traffic movements into and within the coordinated worksite.

coordinated worksite

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

cross

To go past other rail traffic travelling in the opposite direction.

crossover

A portion of line that is used to divert rail traffic from one running line to another.

Danger Zone

Everywhere within 3m horizontally from the nearest rail, and any distance above or below this 3m, unless a safe place exists or has been created.

DCC

See Depot Control Centre.

Glossary

dead end siding

A portion of line connected to a running line or other siding, with points at one end only.

defined clearance point

A unique and clearly identifiable physical Rail Corridor location, such as a specific station platform headwall or tailwall, a PPI signal, a set of points, a kilometre point identified by a marker board attached to MTS infrastructure.

Delegate

A Qualified Worker authorised and designated to act in place of another.

demarcation fencing

Easily seen, continuous worksite safety boundary markers.

Depot

A series of connected tracks and dead end stabling roads, used primarily for stabling, servicing and maintaining the MTS passenger fleet, and to stable and maintain MTS engineering vehicles.

Depot Control Centre (DCC)

The SMTF located at 47 Tallawong Road, Rouse Hill is controlled and monitored from an ATS Workstation in the Depot Control Centre, located within the SMTF main maintenance building.

A Traffic Controller uses the ATS Workstation to control and monitor train movements and other maintenance activities.

Depot Operations Manager (DOM)

The Qualified Worker managing stabling and maintenance activities on a 24 x 7 basis within a Sydney Metro Trains Facility (SMTF).

Glossary

derail device

A device intended to guide the wheels of rail traffic off rails.

detrainment

Process of having all passengers alight from a train at a platform.

direct

To give instructions.

disabled

Unable to travel due to a defect.

discrete channel

A system in which only the intended participants in a radio or telephone conversation can take part in the conversation.

Drivers Safety Device (DSD)

Device to ensure alertness when a train is operated manually, which when released, causes an emergency brake application.

DSD

See Drivers Safety Device.

EC

See Engineering Controller.

ECS

See Environmental Control System.

Glossary

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.

Electrical Safety Rules

Instructions provided by the MTS Electrical Maintenance Representative for work on or near electrical infrastructure. May also be referred to as the "*Maintenance Representative's Electrical Safety Instructions*".

emergency

Incident requiring urgent action. The incident might involve death or serious injury, health or safety effects, significant damage to property or infrastructure, significant train service disruption, or environmental impact.

empty train

An EMU operating on a running line without passengers onboard.

Electric Multiple Unit (EMU)

An electric multiple unit or EMU is a multiple unit train consisting of self-propelled carriages, using electricity as the motive power. In the MTS network, the term EMU refers to 6-car and 8-car passenger trains.

Glossary

EMU

See Electric Multiple Unit.

end-of-train marker

A device, including tail lights, fitted to the trailing end of the last vehicle of a rail traffic consist to indicate the end of the consist.

Engineering Controller (EC)

The OCC person responsible for managing the Network electrical system and authorising the removal and restoration of overhead supply.

Engineering Hours

A period of time allocated to perform maintenance works on the MTS Network. During Engineering Hours, no passenger service is permitted to operate.

Environmental Control System (ECS)

System of ventilation of tunnels and ventilation and air-conditioning of stations.

evacuation

Process of having all passengers alight from a train at a location other than a platform.

Evacuation Zone

A CBTC track protection feature that inhibits all Unattended Train Operation (UTO) mode and Protected Manual (PM) mode train movements within a pre-defined area of protection.

An Evacuation Zone is implemented as follows:

a) automatically generated by the signalling system if an alarm is triggered that indicates the potential for unauthorised persons to enter the track area. E.g. A Platform Screen Door open with no train at the platform.

Glossary

b) manually applied by Traffic Controllers in accordance with the requirements of Railway Operations Manual procedures.

event

A change of state that affects the operation of the system.

exclusive occupancy

Sole occupancy of track within defined limits.

facing points

Points with the switch blades facing approaching rail traffic.

failsafe

Designed such that failure results in a safe outcome.

fit for purpose

Able to be used for the function required.

fixed signal

A signal that is located permanently near the line, for the control of manually operated rail traffic.

fixed worksite

A worksite with boundaries that are fixed and defined for the duration of the work.

foul

In a position to obstruct rail traffic on adjacent lines.

Glossary

fouling point

The position, indicated by a fouling point marker or indicator, on a converging, diverging or crossing line beyond which the encroachment of any part of a vehicle would infringe the required passing clearance for a vehicle on the other line.

four-foot

The area between the rails of a railway track.

fulfil

To complete the instructions on, and associated activities for an Occupancy Authority.

(Written authorities have the word **FULFILLED** written diagonally across them, between two parallel lines.)

Functional Speed Restriction (FSR)

A Functional Speed Restriction is a speed restriction automatically triggered by the activation of the Intrusion Detection System and applied to a predefined portion of track automatically through the CBTC system.

Trains within or closely approaching the zone of protection automatically apply the service brake to reduce train speed to the prescribed speed.

Functional Speed Restrictions are manually removed by Traffic Controllers using an ATS workstation command.

GAMA

See Geographical Automatic Mode Authorisation.

Geographical Automatic Mode Authorisation (GAMA)

Pre-defined part of track inside a Zone Controller (ZC) sector. The Operator may authorize or forbid movements of trains in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode inside a GAMA zone. When GAMA is authorised, UTO and PM mode rail traffic movements are enabled.

Glossary

GoA

See Grade of Automation.

Grade of Automation (GoA)

The MTS Network's CBTC system is a Level 4 Grade of Automation (GoA-4) passenger rail network, featuring Unattended Train Operation (UTO) where starting and stopping, operation of doors and handling of specified emergencies are fully automated without any on-train staff.

gradient

Slope of a line measured against a level datum and usually quoted as a percentage.

handbrake

A mechanical device used to secure a rail vehicle against movement. Includes spring parking brakes.

handsignal

A signal given by hand movements, with or without flags or lights. To give a signal by hand.

Handsignaller

A Qualified Worker who gives handsignals to Rail Traffic Operators.

haul

To move rail traffic using a motive power source at the leading end.

hazard light

Amber or orange flashing light fitted to a vehicle to provide warning.

Glossary

headlights

White lights fitted at the front of rail traffic to provide visibility for Rail Traffic Operators and to improve the visibility of rail traffic.

headwall

Departure end of a platform in the normal direction of service operation.

headway

Time interval between trains.

High Integrity Level Control (HILC) command

A safety critical system command implemented through an ATS Workstation that requires a five-step exchange process.

HILC

See High Integrity Level Control command.

HMI

Human Machine Interface.

in effect

Activate, become current, in force.

infrastructure

See civil infrastructure; electrical infrastructure; signalling and telecommunications infrastructure.

Glossary

interlocking

Interaction of equipment controlling points and/or signals to prevent conflicting movements, and to make sure that routes are set correctly.

intermediate

Between two others.

isolated 1500V overhead wiring section

A 1500V overhead wiring section disconnected from all possible sources of 1500V supply and made incapable of accidentally being made live.

issue

To give or send copies of authorities, warnings, notices and Network publications to affected Qualified Workers by voice, hand delivery or electronic means.

joint occupancy

Simultaneous occupancy of track within defined limits.

light, battery powered tool or device

An internally powered tool or device that can be easily carried by one person and be immediately removed from the track. The tool must not have potential to distract the operator or impede the ability of the operator to respond to the warning of approaching rail traffic.

light locomotive

One or more locomotives not attached to another vehicle.

Glossary

light, non-powered hand tool

A tool that can be carried and easily removed by one person and is not powered by compressed air, gas, electricity, hydraulics, explosive charge or an internal combustion engine.

light, powered hand tool

An internally powered tool that can be carried easily by one person, without mechanical assistance.

limit of authority

It defines the location to which rail traffic may travel under a Proceed Authority, or the limits of a work on track authority. The limit may be defined by a service stopping point at a station platform, sign, a signal capable of displaying a STOP indication, or a specific kilometrage or change of direction (turn back) point on a line.

line check clear

Utilising the first train services of each day on each line to verify Rolling Stock, Wayside and ATS systems availability and functionality following a period of engineering work that exceeds 4 consecutive hours.

Line check clear trains may run with or without passengers on board; at normal or reduced speed; with or without a train operator onboard; all options subject to MTS requirements.

line clear declaration

A formal declaration made by a Maintenance Representative that a portion of track is clear of persons, tools and materials and that it is safe for trains to run.

line regulation mode

The Traffic Controller can select one of the following line regulation modes using the ATS workstation:

Glossary

- **Schedule** (normal mode: Automatic regulation with timetable): train regulation is performed automatically by the ATS according to the timetable.
- **Constant headway** (degraded mode: Automatic regulation without timetable): the aim is to respect headway between two consecutive departures from a given station (i.e. headway adherence). A train is regulated according to the departure of the previous train.
- **Manual**: The Traffic Controller regulates train arrivals and departures manually.

line speed

Maximum allowable train speed on a portion of track under normal train operation.

loading outline

The maximum height and width to which rail vehicles can be loaded in the MTS Network, as prescribed in the MTS minimum rolling stock requirements and registration conditions.

Local Possession Authority (LPA)

An authority that closes a defined portion of line for a specified period.

location

A place in the Network with a designated name, identification number, signalling reference or kilometrage.

locomotive

Self-propelled, railway vehicles used for hauling other rolling stock. See also Battery Electric Locomotive (BEL).

low visibility

Any condition that does not allow Qualified Workers to view the distance required to work safely.

Glossary

Visibility restricted by fog, mist, rain, dust, snow, low light or other similar cause.

LPA

See Local Possession Authority.

main line

Track outside depot limits or sidings on which trains operate in passenger service.

Maintenance Representative

A Qualified Worker with the appropriate authority to maintain the infrastructure.

major incident

An incident assessed as having a potentially major impact on the Network, human life, property or the environment.

manual block working

A method of special working, which ensures sole occupancy by manually maintaining the block between rail traffic movements.

marker lights

Lights which indicate the front or rear of a train.

marshal

To arrange the order of vehicles in a train consist.

may

The word ‘may’ indicates permission.

Glossary

Metro Commander

A qualified worker that has been appointed to liaise with Emergency Services and manage the rail industry response at an incident site.

mode of operation

The available operating modes for EMUs and specified Engineering Vehicles operating on the MTS network.

Electrical Multiple Units (EMUs):

- Unattended Train Operation (UTO) mode (no requirement for a train operator to be onboard)
- Protected Manual (PM) mode
- Restricted Manual (RM) mode
- Remote Restricted (RRM) mode.

Engineering Vehicles:

- Protected Manual (PM) mode
- Restricted Manual (RM) mode

motive power unit

A rail vehicle used to provide the power to move itself or other vehicles.

MTS

Metro Trains Sydney.

must

The word ‘must’ indicates that a statement is mandatory.

net train weight

The weight of vehicles and their load in a train consist.

Glossary

Network

A combination of track and other infrastructure controlled by an Access Provider.

Network Incident Notice (NIN)

A notice used to record and distribute information about incidents on the Network.

Network Forms

Forms issued for use as specified in the Network Rules and Network Procedures.

Network Procedures

Procedures issued for the safe conduct of work on the Network. To be read in conjunction with the Network Rules.

Network Rules

Rules issued to mandate the requirements for safe operation in the Network.

neutral section

An arrangement of wires and insulators in overhead line equipment to ensure that adjacent traction current sections are not connected electrically during the passage of pantographs.

NIAP

See Non-Identified Automatic Protection.

NIN

See Network Incident Notice.

Glossary

Non-Identified Automatic Protection (NIAP)

A NIAP is an automatic “zone of protection” placed downstream and upstream (ahead and behind) of a block section, following a Secondary Detection Device (axle counter) activation. Until the next axle counter in the direction of travel counts out an identical number of axles, the block will show as “occupied” on an ATS workstation.

A NIAP can also be created in times of axle counter failure.

A NIAP can be cleared by two (2) methods:

1. A rail traffic movement through the Secondary Detection Device block in Restricted Manual (RM) mode, or
2. By maintenance staff from the Signalling (or Central) Equipment Room.

normal train operations

Unattended train operations (UTO) on the Network, where the presence of an on-board train operator is not required; and where passenger services operate automatically according to the timetable.

normal

The customary and standard position of points, a switch or other type of control.

normal speed

Normal speed is a speed that does not exceed the speed limit currently in effect for the location and type of rail traffic.

obstruct

To make a line unsafe for the passage of rail traffic.

OCC

See Operations Control Centre.

Glossary

occupancy

Presence of rail traffic or track workers on track.

OHW

See Overhead Wiring.

open channel

A system that allows all radio users to take part in all conversations.

Operations Control Centre (OCC)

A centralised location where control and management of the Network is conducted.

(ORCS)

See Overhead Rigid Conductor System.

Overhead Rigid Conductor System (ORCS)

The overhead traction power conductor system installed in new tunnel areas of the MTS Network, forming part of the overhead line equipment from which trains obtain power through contact by pantographs.

Overhead Wiring (OHW)

An arrangement of wires and rigid conductors installed above tracks for supplying traction current to trains, together with the associated fittings, insulators, structures, foundations, etc. May also be referred to as Overhead Line Equipment.

pantograph

A retractable frame mounted on insulators on the roof of electric multiple units and other electric rail traffic, which presses against the underside of the

Glossary

contact wire or rigid conductor, and through which traction current is collected.

pass

To overtake other rail traffic travelling in the same direction.

Passenger Emergency Alarm (PEA)

A train-borne covered push-button intercom device located near each EMU doorway. Activation of the Passenger Emergency Alarm enables passengers to have “intercom” voice communication with the Traffic Controller, or if in Protected Manual (PM) or Restricted Manual (RM) mode, with the Train Operator onboard. Under certain circumstances, Passenger Emergency Alarm activation will stop the train.

PEB

See Platform Edge Barrier.

PEKS

See Platform Emergency Key Switch.

permanent form

A record made in writing or in a computer system and kept for reference and audit.

Pilot

A Qualified Worker, who accompanies, directs and advises Train Operators and Track Vehicle Operators.

pilot

To direct or guide Rail Traffic Operators and tell them about local conditions and operating restrictions on running lines and at worksites.

Glossary

platform

A raised or level area, next to the line, that allows people to enter and leave trains.

Platform Screen Door (PSD)

A two-leaf sliding door located near to and parallel with a platform edge, operated in conjunction with train passenger doors via the signalling system.

There are two (2) types of platform screen doors in use in the MTS Network:

1. Platform Screen Door (PSD) – see below for description.
2. Platform Edge Barrier (PEB) – see below for description.

Platform Edge Barrier (PEB)

A Platform Edge Barrier (PEB) is a 1.7m partial height sliding door and fixed panel system located on station platforms.

Platform Emergency Key Switch (PEKS)

Field equipment of the Computer Based Interlocking sub-system, whose main function is to inhibit (STOP) the entry of trains operating in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode into a platform track area in an emergency.

Activation of a Platform Emergency Key Switch will also prevent a stationary train in UTO mode and PM mode from departing a platform.

Three (3) Platform Emergency Key Switches are installed on the Up platform and three (3) on the Down platform, making a total of six (6) per station.

Platform Screen Door (PSD)

A Platform Screen Door (PSD) is a full-height (platform floor to roof) automatic sliding door located and fixed panel system located on station platforms.

PM

See Protected Manual mode.

Glossary

PO

See Protection Officer.

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 may be referred to in other networks as “switches” or “turnouts”.

point clip

An approved device for securing points in either the Normal or Reverse position, which is capable of being locked by padlock to prevent unauthorised use.

point detection

An electro-mechanical process by which the position to which points are set is proved.

Points Position Indicator (PPI)

In the MTS Network, a Point Position Indicator is a fixed signal that provides manually operated rail traffic with a STOP/ PROCEED indication, together with an indication of how the upcoming points are positioned (straight ahead, left or right turnout).

During normal train operations, the indications shown on a Point Position Indicator have no direct relevance to trains operating in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode.

possession

Closure of one or more lines to allow work to be carried out in the Danger Zone using a Local Possession Authority or a Track Occupancy Authority.

Glossary

Possession Protection Officer (PPO)

The Qualified Worker responsible for coordinating protection of worksites under a Local Possession Authority. See also Protection Officer.

Power Control System (PCS) Maintenance Engineer

A person with the appropriate delegated authority and High Voltage/ Low Voltage Power Control System engineering competence to make judgments about Power Supply system safety.

PPI

See Points Position Indicator.

PPO

See Possession Protection Officer.

Proceed Authority

An Authority that allows rail traffic to enter and occupy a portion of line and proceed in the forward direction.

propel

To push rail traffic away from the controlling locomotive or motive power unit.

To manage airbrake operation of moving rail traffic from a cab that is not the lead vehicle of a train.

Protected Manual (PM) mode

Protected Manual mode of Rolling Stock operation requires a Train Operator to manually control some or all functions of train operation as follows:

- The train is manually operated by Qualified Staff following speed limitation indicated on the Train Operators console, with full Automatic Train Protection available, and

Glossary

- Train doors and Platform Screen Doors/Platform Edge Barriers opening may be manually controlled by the Train Operator when authorized by the signalling system, and/or
- Train doors and Platform Screen Doors/ Platform Edge Barriers closing may be manually controlled by the Train Operator (through the trains' doors commands), and
- Automatic update of journey information in saloon.

protection

The means used to prevent rail traffic from entering a worksite or other portion of line.

Protection Officer (PO)

The Qualified Worker responsible for managing the rail safety component of worksite protection.

PSD

See Platform Screen Door.

Qualified Worker

A worker certified as competent to carry out the relevant task.

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.

rail-connect

To connect 1500V overhead wiring supply to the traction return rail to ensure the immediate discharge of electricity if the 1500V overhead wiring becomes live.

Glossary

Rail Corridor

The land on which a railway is built, comprising all property between property fences, or if no fences, everywhere within 15m from the outermost rails.

rail traffic

Trains and track vehicle or vehicles travelling on the network.

Railway Operating Manual – Incident Management

A Railway Operating manual issued by Metro Trains Sydney that prescribes rules and procedures to be followed in the event of a major incident.

Remote Restricted Mode (RRM)

Remote Restricted Mode of Rolling Stock operation requires the Traffic Controller to remotely control the movement of the train to re-establish localisation.

Train movement in Remote Restricted Mode is limited to 200m, at a maximum speed of 25 km/hour. Only two (2) attempts are permitted to re-localise the train. If the 2nd attempt is unsuccessful, the train must be manually operated by a Qualified Worker, under the direction of the Traffic Controller.

restrain

To prevent movement of rail traffic with signals, signalling equipment, blocking facilities, or issue of a Condition Affecting the Network form as a warning.

Restricted Manual (RM) mode

Restricted Manual mode of EMU operation allows a Rail Traffic Operator to manually control the movement of a train in the forward or reverse direction, with speed limitation controlled to a maximum of 25 km/hour.

The operation of train doors and Platform Screen Doors/Platform Edge Barriers is manually controlled by the Rail Traffic Operator.

Glossary

restricted speed

A speed that allows rail traffic to stop short of an obstruction within the distance of clear line that is visible ahead.

right running-direction

The normal direction of travel on unidirectional lines.

RM

See Restricted Manual mode.

roll-by inspection

A visual inspection of moving rail traffic to identify equipment, loading security or other defects or failures.

route

The path from one limit of authority to the next in the direction of travel.

Route Blocking

A method used by Qualified Workers to carry out work on track using the ATS Workstation route, signal and location blocking functionality.

Route Blocking prevents rail traffic from entering designated portions of track in automatic Unattended Train Operation mode and Protected Manual mode) and manually operated modes.

RRM

See Remote Restricted Mode.

running line

A line (other than a siding) that is used for through movement of rail traffic. See also main line and siding.

Glossary

running signal

A fixed signal placed near a running line to authorise and control running movements.

safe braking distance

A distance indicated to rail traffic that would allow rail traffic to stop with the application of normal service braking.

SAFE Notice

An authorised notice distributed to give advice in addition to that provided in the Network Rules and Network Procedures.

safe place

A place where workers and equipment cannot be struck by rail traffic.

safety assessment

An assessment process used to identify hazards for all work planned for the Rail Corridor and its potential to intrude on the Danger Zone.

SDD

See Secondary Detection Device.

Secondary Detection Device (SDD)

Axle counters used by the ATS system to define the status of a fixed block (free or occupied).

section insulator

Device in overhead line equipment allowing free passage of a pantograph from one section to another without interrupting current supply whilst isolating electrically the sections on either side.

Glossary

secure

To place and keep something in a known or prepared place or position to safeguard it against accidental or unauthorised access or movement.

Service Hours

A period of time allocated to the operation of passenger services on the MTS Network. During Service Hours, only urgent or emergency maintenance work will be authorised.

Service Stopping Point (SSP)

Service Stopping Points are virtual points on the CBTC Network that determine where rolling stock in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode is to stop. Service Stopping Points are directional, with the front of the train stopping accurately at the Service Stopping Points.

Service Stopping Points are installed at platforms, to correctly align the train with the Platform Screen Doors/ Platform Edge Barriers, at change of direction locations (turn-backs), on the transfer track, at stabling locations and any other locations where a train is required to stop.

set back

To move in the reverse direction to that provided in the current Proceed Authority.

shunt

To move rail traffic, rakes of vehicles, or vehicles on lines for purposes other than through-movement.

siding

A portion of line where vehicles can be placed clear of the running lines.

Glossary

sighting distance

The distance that someone can clearly see along the track.

signal

A Point Position Indicator (PPI) signal that must not be passed at STOP by manually operated rail traffic without the authority of the Traffic Controller.

signalling and communications infrastructure

Signalling equipment and telecommunications equipment used as part of the Safeworking and operating systems of the Network.

Signal Maintenance Engineer

A person with the appropriate delegated authority and signals engineering competence to make judgments about signalling safety.

Site Controller

The lead agency officer or multi agency response police officer appointed by and subject to the direction of an Emergency Operations Controller.

SMR

See Station Management Room.

SMTF

See Sydney Metro Trains Facility.

special working

Working rail traffic using an alternative means of authority to proceed such as manual block working, or verbal authorisation from the Traffic Controller.

Glossary

SPKS

See Staff Protection Key Switch.

SSP

See Service Stopping Point.

stable

To leave rail traffic unattended and secured, usually in a stabling road or siding.

stabling roads

A system of tracks and sidings used primarily to stable rail traffic clear of running lines. MTS passenger rolling stock is positioned on stabling roads, secured then shut down (put to sleep) when not required, then started up (woken up) when required for passenger service or maintenance requirements.

Staff Protection Key Switch (SPKS)

Field equipment of the Computer Based Interlocking sub-system, whose main function is to prohibit the entry of trains operating in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode into a portion of track. Staff Protection Key Switches are installed in SMTF stabling roads and main line sidings to provide protection for staff entering the track area, to join or exit stabled trains.

Station Management Room (SMR)

Each MTS passenger station contains a secure, restricted access Station Management Room, used to monitor numerous safety systems contributing to daily passenger service operations.

When required, Qualified Workers may be requested to take local control of one or more of these systems, and control and monitor the systems in “Local Control”.

Glossary

This includes the ATS workstation, Power Control System backup, Tunnel Ventilation System backup and other station and rail corridor security services that may be switched to and from local control using a defined Request/ Accept protocol.

Station Traffic Controller

Qualified Worker on duty at a station, responsible for the supervision of station operations. The Station Traffic Controller is also responsible for train operations at the station when control of the station's interlocking area has been transferred to the local ATS workstation in the station control room.

substation

A place (including substations, traction substations, transformer rooms, switch rooms, sectioning huts, pole-mounted or pad-mounted transformers) containing high-voltage electrical equipment.

Sydney Metro Trains Facility (SMTF)

A designated location where maintenance work is carried out on electric traction vehicles, and where stabling facilities are provided for the MTS passenger fleet and other rail traffic, including Engineering Vehicles. An SMTF may also be referred to as "a depot".

system of Safeworking

An integrated system of operating procedures and engineered systems used in the Network, for safe operation of rail traffic, and protection of people and property.

tailwall

Arrival end of a platform in the normal direction of service operation.

tail lights

Red lights used to designate the end of rail traffic. See also end-of-train markers.

Glossary

terminal line

A dead-end line.

through-movement

Transit or travel in the Network.

Timetable Graph

An electronically generated diagram showing operational information for a traffic control area. This diagram is viewed and monitored through the Human Machine Interface (HMI) screen at the ATS workstation.

TOA

See Track Occupancy Authority.

track

The combination of rails, rail connectors, sleepers, ballast, points and crossings.

Trackside monitoring equipment

Devices that monitor and respond to track, trackside and rail vehicle conditions.

Track indicator diagram

A diagram that shows if tracks are occupied and other relevant information.

Track Occupancy Authority (TOA)

An authority for Qualified Workers and their equipment to occupy a defined portion of line for an agreed period.

Glossary

track speed

The allowed maximum speed for a portion of line.

track vehicle

A vehicle, usually self-propelled, used for inspecting and/or maintaining infrastructure.

track vehicle number (identification)

The unique number displayed on a track vehicle.

Track Vehicle Crew

The Qualified Workers responsible for the operation of a track vehicle.

Track Vehicle Operator

A Qualified Worker controlling the movement of a track vehicle.

track work

Construction, maintenance, testing, commissioning or repair work on or around infrastructure in the Rail Corridor.

track workers

Qualified rail safety workers whose primary duties are associated with work on or around infrastructure in the Rail Corridor.

traction return current

The electric current returning from the 1500V overhead power supply through the rails to sub-stations.

Glossary

Traffic Controller

A Qualified Worker who operates an ATS workstation to authorise and issue Occupancy Authorities, and who manages rail traffic paths to ensure the safe and efficient transit of rail traffic in the Network.

This role includes OCC Traffic Controllers, Depot Traffic Controllers and Station Traffic Controllers when the ATS workstation is in local control.

Traffic Notice

A publication that advertises proposed work on track, and traction power outages.

train

A locomotive or self-propelled vehicle, alone or coupled to one or more vehicles.

Train Management System (TMS)

A train-borne sub-system responsible for ensuring that the train operates as per design and pre-set parameters. The TMS monitors all train-borne equipment. Referred to as TCMS in some documents.

Train Operator

The Qualified Worker responsible for the manual operation of a train when it is required to operate in a manual mode (either Restricted Manual or Fall-back [ATC Bypass] mode).

train number (identification)

A train or run number used to provide unique identification of a train.

Train Running Information

Information about rail traffic movement and frequency provided for a particular location.

Glossary

transfer

Movement from location to location.

transfer track

The portion of line between the SMTF and the mainline, that is dual controlled utilising cooperative or route signalling between Traffic Controllers.

transit

Through-movement along a portion of line.

travel

Planned or purposeful movement from one location to another.

Tunnel Ventilation System (TVS)

A system designed to exhaust air from tunnel areas (including underground stations) to the outside air by using large industrial fans to either “push” or “pull” tunnel borne air to a ventilation shaft where the air can be exhausted from the tunnel to maintain air quality within the tunnel.

TVS

See Tunnel Ventilation System.

Unattended Train Operation (UTO) mode

The driverless mode of operation, where trains are automatically controlled by Automatic Train Control with full Automatic Train Protection.

unauthorised

Not given approval or exceeding the limit of authority. See authorise.

Glossary

unidirectional

Allowing for normal travel in one direction only according to the infrastructure and system of Safeworking in use.

UTO

See Unattended Train Operation.

visibility lights

Lights, fitted below the headlights, to improve rolling stock's ability to be seen and to assist the crew in viewing of the immediate area in front of the vehicle.

wheel scale

A build-up of metallic material on a wheel tread's surface.

work on track

The work performed in the Rail Corridor. To perform work in the Rail Corridor.

work on track authority

An authority to work on track. See Local Possession Authority (LPA); Track Occupancy Authority (TOA).

work on track method

A method to work on track. See Route Blocking.

work train

A train used in Construction, maintenance, testing, commissioning or repair work on or around infrastructure in the Rail Corridor.

Glossary

Work Zone

Work Zones are applied and removed by Traffic Controllers using a High-Level Integrity Control (HILC) command through an ATS workstation.

Work Zones allow the Traffic Controller to apply Temporary Speed Restrictions and/ or to apply blocking facilities to the track in a unidirectional mode. Work Zones only exclude rail traffic operating in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode.

Track portions with active Work Zones are displayed in a specific aspect on the ATS workstation.

wrong running-direction

The direction opposite to the normal direction of travel on unidirectional lines.

ZC

See Zone Controller.

Zone Controller (ZC)

Equipment that is part of the Automatic Train Supervision (ATS) sub-system, with the main function being to manage the protection and movement of trains operating in Unattended Train Operation (UTO) mode and Protected Manual (PM) mode.

Other functions include forbidding and granting train movement within a global or local GAMA zone; indicating the state of automatic protection and emergency stop areas; and indicating the state of secondary train detection equipment (axle counters) whether they be “In Operation” or “Out of Operation”.

Effective date

28 April 2025