Rail Industry Safety Induction Handbook

RISIHB1115

RailSafe

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Contents

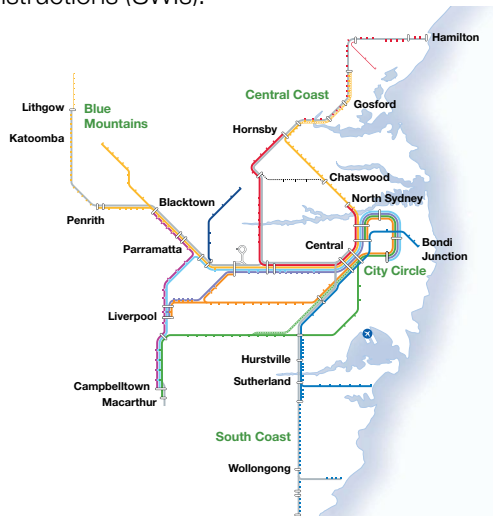
Introduction

The Sydney Trains Network encompasses all rail track in the area bounded by Newcastle, Macarthur, Lithgow and Nowra, and covers more than 3000km of track.

This network is used by both passenger and freight services, with the majority of track being electrified for the operation of electric passenger trains.

When working in the rail industry, you will encounter many hazards, as you would expect in any heavy industry. However, there are additional hazards that are specific to the rail industry — notably, very heavy trains travelling at high speeds and the presence of track repair equipment.

This handbook has been produced to create an awareness of the hazards and risks faced when working in the rail industry and to familiarise users with the infrastructure and common terminology. This handbook is a guide only and is not a substitute for other applicable *Safety Management Systems*. It must not be used in place of any applicable Safe Work Method Statements (SWMSs) or Safe Work Instructions (SWIs).

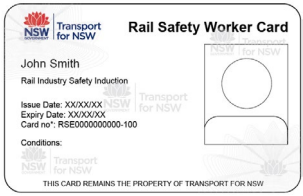


Rail Industry Safety Induction

Rail Industry Safety Induction (RISI) is an induction training package specifically designed for persons working in the rail industry. This training introduces participants to the key generic hazards of an operating rail environment.

All employees or contractors who enter the Rail Corridor whose activities will, or have the potential to, enter the Danger Zone must have successfully completed the RISI training course and must hold a valid Sydney Trains RISI authorisation.

Upon attainment of a Sydney Trains RISI authorisation, persons will be issued Rail Safety Worker card or Rail Industry Worker card.



A RISI card does not entitle the holder to enter the Danger Zone unsupervised. Unless a person holds an applicable Safeworking Rail Safety Worker Card, they must be supervised at all times.

WARNING

A RISI cardholder must only enter the Danger Zone when supervised by a Protection Officer.

Entry to the Rail Corridor

Who is permitted to enter the Rail Corridor?

Entry to the Rail Corridor is restricted to persons who are performing work for or on behalf of Sydney Trains, NSW Trains, or TfNSW, or with the express permission of Sydney Trains. Being the holder of a RISI authorisation or other Safeworking certification does not automatically entitle entry to the Rail Corridor.

Contractors and visitors must not enter the Rail Corridor without the permission of a Sydney Trains representative. Unless prior arrangements have been made with Sydney Trains, permission from a Sydney Trains representative is required each time a contractor or visitor enters the Rail corridor.

Obtaining permission each time you enter the Rail Corridor is very important, as the circumstances at that location may have changed. Protection arrangements that were in place may have changed or new activities that introduce different hazards may have commenced. Whenever arrangements change all persons at that site will be given a new safety briefing.

Before any activity within the Rail Corridor can commence, the activity must be assessed by a Protection Officer or other appropriately qualified worker to determine whether it may require entry to the Danger Zone.

If the activity has been assessed as having the potential to enter the Danger Zone, all work must be adequately protected and must be supervised by a Protection Officer.

WARNING

Permission must be obtained from the Protection Officer or Sydney Trains representative before entering the Rail Corridor.

Safety briefings

Before any work commences in the Rail Corridor, all persons involved in the work must be briefed on the risks and hazards associated with the proposed activity and location.

This briefing will be conducted by your supervisor and will include details about any safety controls that will be implemented and any special instructions relating to the work or location. If the briefing contains information about worksite protection arrangements, the Protection Officer must deliver this component of the briefing. Should the work activities or environment change, the safety briefing will be updated.

These briefings will be documented in a pre-work briefing form which workers will be required to sign. If you do not understand any aspect of the briefing, you should seek clarification from the person conducting the briefing.

WARNING

Do not sign the pre-work briefing form or commence work unless you understand all aspects of the briefing.

High-visibility clothing

Wearing high-visibility clothing greatly increases the distance from which a person can be seen by approaching rail traffic.

All persons entering the Rail Corridor must wear approved orange high-visibility clothing at all times.

If approved high-visibility clothing is not worn, an approved orange high-visibility vest must be worn as the outermost garment.

In some instances, rail traffic movements are directed by flag and light signals. These signals are usually given by red and green flags or lights.

To avoid any possibility of confusion, red and green clothing should not be worn by persons whilst in the Rail Corridor.

General

Drugs and alcohol

Sydney Trains is committed to protecting the health and safety of all employees, contractors, consultants, customers and members of the public by minimising accidents, incidents or injuries. This commitment involves maintaining an alcohol and drug free workforce while on duty. Safety is our priority.

Sydney Trains is a drug and alcohol free workplace. All employees, contractors and consultants are required to be drug and alcohol free while at work. All employees, contractors and consultants may be subject to random or targeted testing for drugs and alcohol.

Any employee, contractor or consultant will breach the requirement of a drug and alcohol free workplace if their:

- drug level is at, or above, the cut-off level stipulated by the Australian Standard AS/NZS 4308, or
- alcohol level is above 0.00% blood alcohol concentration.

Employees who breach these standards or who refuse a drug or alcohol test will be subject to counselling and/or disciplinary action. Serious or ongoing breaches may result in dismissal. Contractors (whether or not they are Rail Safety Workers) who test positive to drugs or alcohol, or who fail to comply with the requirements of a Testing Officer, will not be permitted to carry out work in the Sydney Trains Network.

Railway employees, contractors and consultants who undertake railway safety work are also subject to the provisions of the Rail Safety (Adoption of National Law) Act 2012 and the Rail Safety (Adoption of National Law) Regulations 2012. Breaches of the above drug or alcohol levels or testing requirements may also be subject to prosecution in a court of law.

Employees, contractors and consultants are not permitted to have or sell alcohol or prohibited drugs or prohibited plants or be in possession of any item or equipment for the use or the administration of a prohibited drug or plant on Sydney Trains premises. Suspected instances will be reported to the police.

It is an individual's responsibility to ensure that they are drug and alcohol free at work.

If you are taking prescribed medications, you must seek advice from your doctor about your ability to work safely. You should also talk to your pharmacist regarding any over-the-counter medications that you are taking.

TIP

Guideline 1

The lifetime risk of harm from drinking alcohol increases with the amount consumed.

For healthy men and women, drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury.

Guideline 2

On a single occasion of drinking, the risk of alcohol-related injury increases with the amount consumed.

For healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

A guide to standard drinks

1 middy (285 mL) low-strength beer
(2.7% alcohol/volume)
= 0.6 standard drinks

1 schooner (425 mL) low-strength beer
(2.7% alcohol/volume)
= 0.9 standard drinks

1 middy (285 mL) mid-strength beer
(3.5% alcohol/volume)
= 0.8 standard drinks

1 schooner (425 mL) mid-strength beer
(3.5% alcohol/volume)
= 1.2 standard drinks

1 middy (285 mL) full-strength beer
(4.8% alcohol/volume)
= 1.1 standard drinks

1 schooner (425 mL) full-strength beer
(4.8% alcohol/volume)
= 1.6 standard drinks

1 glass (150 mL) red wine
(13.5% alcohol/volume)
= 1.6 standard drinks

1 glass (150 mL) white wine
(11.5% alcohol/volume)
= 1.4 standard drinks

1 glass (60 mL) fortified wine (port, sherry)
(17.5% alcohol/volume)
= 0.8 standard drinks

1 glass (150 mL) champagne
(12.5% alcohol/volume)
= 1.5 standard drinks

1 glass (30 mL) spirit nip
(40% alcohol/volume)
= 1 standard drinks

1 stubby (375 mL) cider
(5% alcohol/volume)
= 1.5 standard drinks

1 bottle (330 mL) full strength pre-mix spirits
(5% alcohol/volume)
= 1.2 standard drinks

1 bottle (330 mL) high strength pre-mix spirits
(7% alcohol/volume)
= 1.8 standard drinks

1 can (375 mL) full strength pre-mix spirits
(5% alcohol/volume)
= 1.5 standard drinks

1 can (375 mL) high strength pre-mix spirits
(7% alcohol/volume)
= 2.1 standard drinks

Fatigue

You need to develop an understanding of the physical and emotional effects that your hours of work have on you, your family and friends. These effects might impact on your safety and that of other staff, visitors and customers.

Fatigue may affect you if you are working extended or varying shifts, so make sure that you rest in your assigned breaks.

If you think you are suffering from fatigue, you should immediately advise your supervisor.

TIP

Healthy ways to avoid fatigue

- Plan your work and personal commitments, and get plenty of sleep.
- Avoid drinking too much alcohol when off duty.
- Avoid large meals and excessive fluid intake just before going to bed.
- Eat a balanced diet, including a variety of foods.
- Choose foods that are low in fat and sugar, and be sure to include plenty of vegetables, fruit and water.
- Reduce eye-strain with good lighting.
- Exercise regularly. This keeps you physically fit and also improves your ability to sleep.
- Maintain good posture by proper workplace setup, and vary activities when possible.
- Avoid prolonged positions and repetitive movements.
- Avoid too much caffeine.

Incident reporting

All accidents, incidents and near misses must be reported. The general process of incident reporting is as follows:

Report it to Network Control

Rail Safety incidents or incidents affecting the rail network **must** be reported to Network Control.

Report it to your supervisor

All actual and potential incidents and injuries must be reported to your supervisor.

Report it to the Safety Incident and Injury Hotline

Report all workplace incidents, injuries and near misses to the **Safety Incident and Injury Hotline 1800 772 779** as soon as possible.

Any injured person should be accompanied to medical help if possible.

Unsafe situations

If you notice an unsafe situation, you must immediately report it to your supervisor or the Network Control Officer.

When reporting an unsafe condition to the Network Control Officer, you should provide as much relevant information as possible.

When reporting an incident, you should provide appropriate information as shown in the table on page 13.

Critical information	***Key words/Typical information from notifier***
Identity of the caller and train	• Driver/Guard/Station Officer/ infrastructure worker • Train type and size • Contact details of caller
Seriousness and nature of the incident	• Serious accident • Casualties/number of passengers • Derailed/collision • Spill (e.g. diesel, unknown liquid, powder)
Urgency of the response required	• Urgent response • Ambulance/Fire Brigade/Police
Location and direction of travel	• Stanchion number/signal number • Station/landmark/kilometrage • Access point • Up or Down direction • Nearby sensitive environment/waterway
Immediate hazards	• Overhead wiring down • Fire/smoke/dangerous goods • Lines obstructed • Protection from rail traffic • Spill moving off site

Incident investigations

Just as incidents need to be reported, Sydney Trains has a process of examining and analysing a situation in order to discover the reasons why an incident occurred. If an incident occurs in your workplace, you may be required to participate in an incident investigation.

Your participation in these investigations is critical as investigation findings will generally result in safety actions being implemented in order to prevent or reduce the likelihood of a similar incident occurring in the future.

Personal Protective Equipment

Personal Protective Equipment (PPE) helps protect you from the hazards or dangers in your job.

Your supervisor should instruct you in the proper use and care of your PPE and provide you with the right equipment for your job.

It is your responsibility to wear and maintain the PPE in accordance with workplace procedures.

Your PPE must always:

- fit properly
- be suitable for the task
- be properly cleaned and maintained
- comply with the relevant Australian Standards.

Tell your supervisor if your equipment becomes damaged and needs replacing, or if you are not able to wear any of the required equipment for medical reasons.

Plant and equipment

"Plant" is a general term referring to machinery, equipment and appliances. Plant found in your workplace can include:

- powered mobile plant – e.g. forklifts, bulldozers, tow motors, scrubbing machines
- hand-held plant – e.g. power tools, chainsaws
- static plant – e.g. scaffolding, boilers
- plant that moves people – e.g. elevated work platforms, escalators.

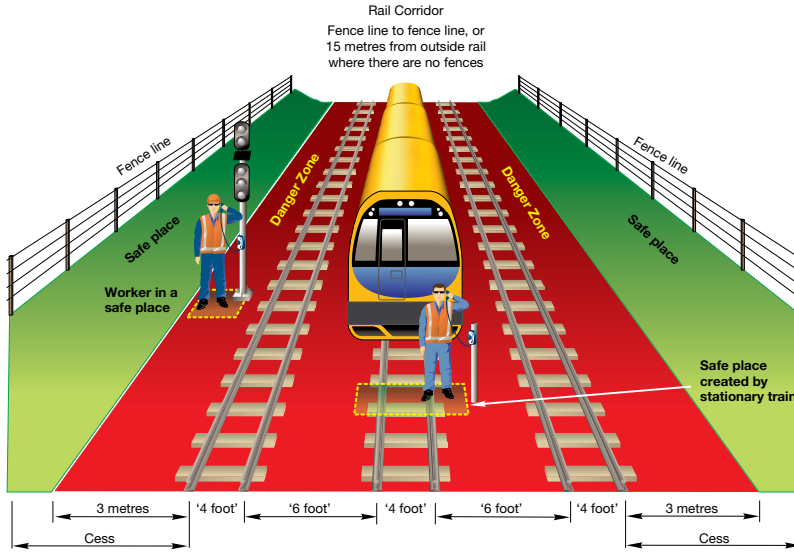
All plant and equipment must be used in accordance with the applicable SWMSs or SWIs.

Some types of equipment may require the operator to have a WorkCover high risk licence. Only suitably qualified persons can operate this equipment.

Working safely in the Rail Corridor

The Rail Corridor

The Rail Corridor is the area from fence line to fence line – or where no fence is provided, the Rail Corridor will extend 15 metres from the outermost rail.



The two major components of the Rail Corridor are the **Danger Zone** and **safe places**.

The Danger Zone

The Danger Zone is anywhere within 3 metres horizontally from the nearest track and any distance above or below this 3 metres, unless constantly in a safe place.

A safe place

A safe place is a place where a person and their equipment cannot be struck by rail traffic.

Rail operations

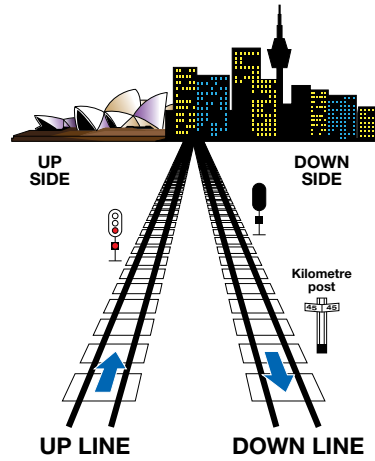
A variety of rail traffic uses the Sydney Trains Network. The different types of rail traffic operating within the Network include suburban electric trains, express passenger trains, freight trains and track repair machines. All of these types of rail traffic have different operating and braking characteristics.

Did you know?

A freight train travelling at 80km/h takes approximately 1.5km to stop.

Unlike driving on the road where we can expect road traffic to always drive on the left-hand side of the road, rail traffic can travel in either direction.

The direction of rail traffic is described as either Up or Down and refers to whether the rail traffic is heading towards Sydney or away from Sydney.



Up direction Rail traffic travelling towards Sydney
Down direction Rail traffic travelling away from Sydney

Fixed signals

Fixed signals are provided throughout the Sydney Trains Network and are used to authorise train movements. Fixed signals may also convey information to Drivers about the route the train will take and the indication displayed by the next signal.

Fixed signals are normally provided on the left-hand side of the track in the direction of travel, but can be positioned in other locations such as above the track on a gantry or on the right-hand side of the track at locations where seeing the signal would be difficult if placed on the left-hand side.

In bidirectional areas, fixed signals will be positioned on both sides of the line.

All fixed signals are fitted with an identification sign. This sign will normally display a combination of letters and numerals. Fixed signals for the Up direction display an even number, and signals for the Down direction display an odd number.

SC 15.35

SM 648 IL

Examples of signal identification signs

WARNING

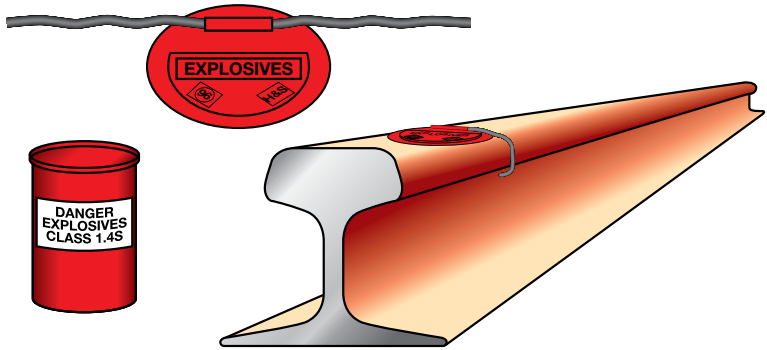
You should never rely on the indications displayed on a fixed signal to determine whether a train movement is expected or not.

Railway Track Signals

Railway Track Signals (also known as detonators) are small round explosive devices that are attached to the rail.

These devices are used to warn Drivers of rail traffic. The number of detonations (explosions) indicates to a Driver what they must do.

When not in use, Railway Track Signals must be secured in a locked cabinet or container.



WARNING

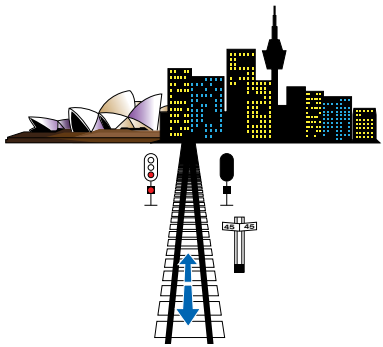
Railway Track Signals should only be used by persons trained in their use.

Track configurations

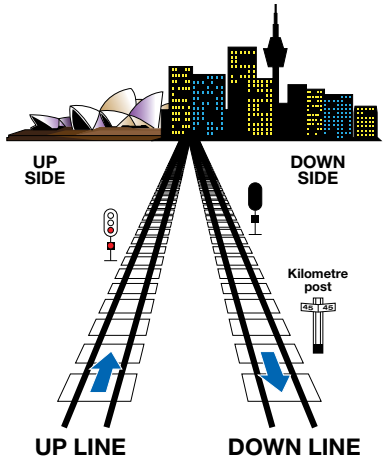
There are a number of different types of working used in the Sydney Trains Network that will determine the direction in which rail traffic will normally travel.

Different areas will have different track configurations. These track configurations include single lines, double lines, bidirectional lines, multiple lines and parallel lines.

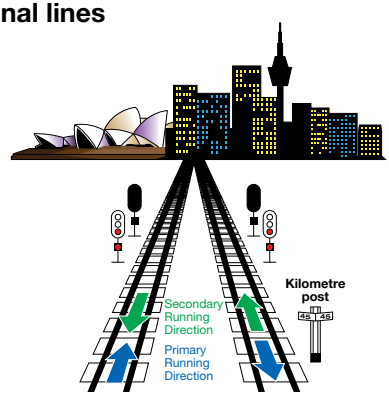
Single lines



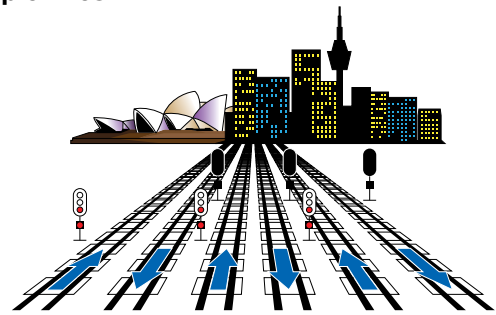
Double lines



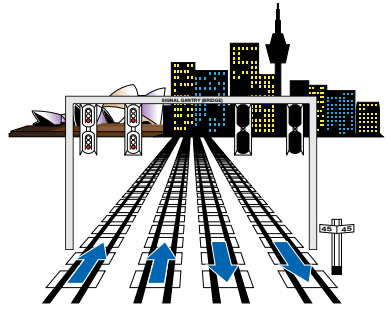
Bidirectional lines



Multiple lines



Parallel lines



Warning lights

Warning lights are provided at locations where workers on track have a restricted view of approaching rail traffic.

These warning lights can be white or yellow and are normally illuminated. When the light goes out, it indicates that a train is approaching.

Before using these lights, workers must make sure they understand which line the warning light applies to.

Handsignals

Handsignals are commonly used within the rail industry to communicate with Drivers of rail traffic. These handsignals are exhibited using hands or flags during daylight or coloured lights during darkness.

The ALL CLEAR handsignal may be used by all workers on track. With the exception of the STOP handsignal in an emergency, all other handsignals should only be displayed by Competent Workers.

ALL CLEAR handsignal

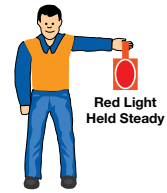
The ALL CLEAR handsignal displayed by workers in the Rail Corridor is critically important as it indicates to Drivers of approaching rail traffic that workers are aware of the rail traffic's presence.

When working in proximity to the Danger Zone, workers must immediately move to a safe place, if not already in one, and must display an ALL CLEAR handsignal as soon as they become aware that rail traffic is approaching.

Workers must continue to display the ALL CLEAR handsignal until the Driver acknowledges the handsignal by sounding the train whistle.

STOP handsignal

If it becomes necessary to stop rail traffic, workers should stand in or have access to a safe place, be in clear view of the Driver and display a STOP handsignal.



Workers must continue to display the STOP handsignal until the approaching rail traffic has stopped.

NOTE
In an emergency, vigorous waving of arms, any coloured light or flag or other material will indicate STOP to the Driver of approaching rail traffic.

Points

Points are a component of the track that consists of paired pieces of tapered rail that can be moved and set to allow tracks to diverge or converge.

Points can be operated by a variety of means, including electrically, mechanically, pneumatically or hydraulically. Points and associated equipment can move without warning.

WARNING

Workers must take extreme care when working or walking near points and associated equipment. Serious injury to workers can occur if caught or struck by moving parts of the equipment.

Trackside telephones

Telephones are located on signals and other trackside infrastructure throughout the Sydney Trains Network. These telephones are connected to a signal box or control centre.

The Network Control Officer can be contacted by using any signal or trackside phone. Before commencing work at a new location, you should familiarise yourself with the location and operation of these phones.

Slips, trips and falls

You can reduce the risk of slips, trips and falls by:

- regularly inspecting your work environment for hazards in consultation with your supervisor to ensure good housekeeping, suitable safety signage and adequate lighting
- reporting any slip, trip or fall immediately to your supervisor
- telling new employees, contractors and visitors about any hazards or potential hazards in the work area.

Rail industry terminology

Like most industries, the rail industry has terminology that is unique. To assist those people who are new to the industry, some of the more commonly used terms are explained in the following table:

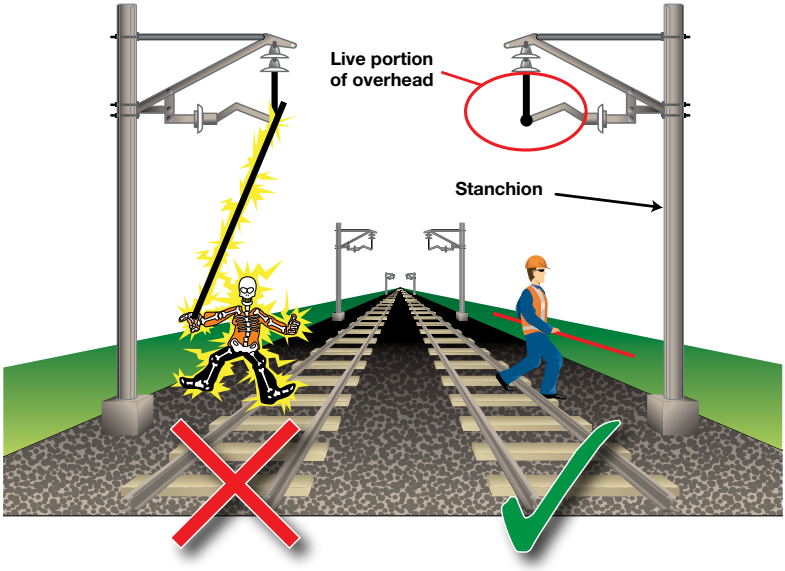
Railway Track Signals	A device fixed to the rail that explodes on impact and is used to attract the attention of Drivers and track vehicle operators. This device may also be referred to as a *detonator*.
automatic signal	A signal that is normally controlled exclusively by the operation of track-circuits.
ballast	The blue metal used as the foundation for track.
Competent Worker	A worker certified as competent to carry out the relevant task.
controlled signal	A signal that is, or may be, controlled or operated by a Signaller or a Competent Worker.
detonator	See *Railway Track Signals*.
Down	Describes the direction of travel away from Sydney.
level crossing	A location where the railway line and a road or pedestrian walkway cross paths on the same level.
Lookout	A Competent Worker responsible for keeping watch for approaching rail traffic, and for warning other workers to stand clear of the line before the arrival of rail traffic.
Network Control Officer	A Train Controller for an unattended location, a Signaller for an attended location, or a delegate carrying out some functions of a Train Controller or Signaller.
pantograph	An apparatus fixed to the roof of electric traction vehicles to draw current from the overhead supply.
Protection Officer	The Competent Worker responsible for protection.

siding	A portion of track where vehicles can be placed clear of the running lines.
Signaller	A Competent Worker who issues Proceed Authorities, and works points, signals and other signalling equipment to manage routes for safe and efficient transit of rail traffic in the Sydney Trains Network.
shunting yard	A system of tracks, within defined limits, used for shunting.
SMS	Safety Management System.
Station Manager	The person responsible for a station or group of stations.
SWI	Safe Work Instruction.
SWMS	Safe Work Method Statement.
Train Controller	A Competent Worker who authorises, and may issue, occupancies and Proceed Authorities, and who manages train paths to ensure safe and efficient transit of rail traffic in the Sydney Trains Network.
Up	Describes the direction of travel towards Sydney.
1500V overhead wiring	The overhead electrical wiring that provides current for electric trains.

Electrical safety

This section describes some of the electrical infrastructure and its associated hazards that you may encounter in the Sydney Trains Network.

These hazards include overhead electrical wiring used to provide current for electric trains, underground cables, substations and electrical signal cables in trackside troughs.



Extreme care must be exercised when working or operating any equipment near electrical wiring or equipment.

Contact with electricity can be fatal or can cause damage to the heart or other vital organs.

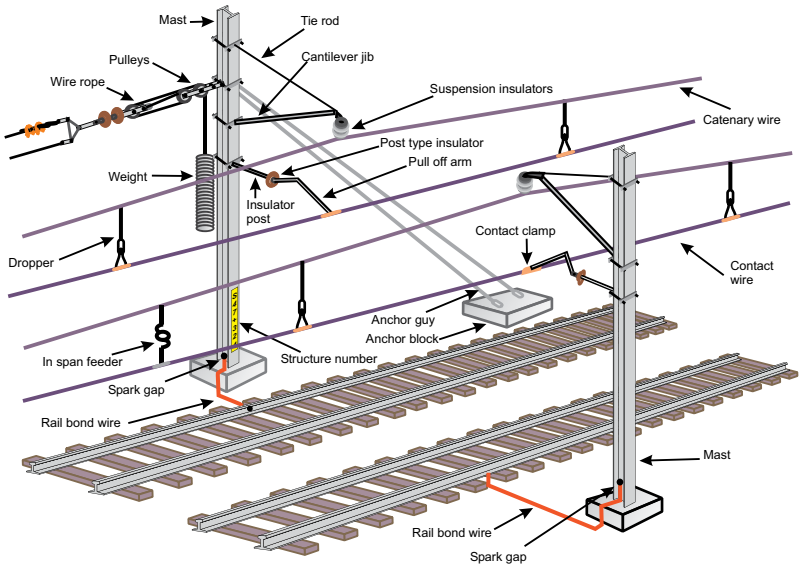
In some cases, it can result in delayed shock where internal organs are damaged, but this may not be apparent until well after the incident.

Did you know?

Persons or materials don't have to actually touch electrical wiring or equipment to be dangerous. Persons or materials in close proximity to electrical infrastructure can cause an electric arc, resulting in serious injury or death.

1500V overhead wiring

The diagram below represents a typical 1500V overhead wiring arrangement used in the Sydney Trains Network.



Safe approach distances

Safe approach distances (SADs) are the minimum separation, in air, from exposed electrical equipment that must be maintained by a person, or any object held by or in contact with that person.

SADs vary greatly depending upon a number of factors, including the voltage of the equipment, type of equipment being used and skill level of the worker.

If unsure of the SAD, you must seek the advice of an Electrical Representative before commencing any work within the vicinity of electrical equipment.

Working around electrical equipment

Sydney Trains has an Electrical Permit system for situations when your work may require you to come within the SAD of exposed electrical equipment. You must not come within the SAD if you are not signed onto an Electrical Permit for that equipment. **If you are not signed onto a permit, you must regard the equipment as being live!**

This permit is issued to an accredited permit holder (normally a supervisor or other qualified person), and you must follow the directions of the permit holder. If you sign onto a permit, then you will be instructed in the conditions of the permit.

At the completion of your work, you must sign off the permit.

Underground cables

High and low voltage underground cables are installed at numerous locations. When digging or excavating, it should always be assumed that underground cables are present unless proven otherwise. Never excavate on or near the Rail Corridor without first arranging for an underground services search.

Substations

Sydney Trains has electrical substations at various locations along the Rail Corridor containing exposed high-voltage, 1500V and low voltage equipment. You must not enter a substation unless under the supervision of an authorised Electrical Representative.

High-voltage aerial lines

High-voltage aerial lines operating at voltages up to 132,000V are located on or near the Rail Corridor. These are usually owned by Sydney Trains, but some are the property of other electrical distributors. The presence of these must always be considered when working around rail infrastructure.

Trackside troughing

Signal troughs are found beside the track at many locations throughout the Sydney Trains Network.

These troughs contain wiring for signalling and communications purposes. This electrical wiring can carry high voltages.

Care must be exercised around this equipment, especially when using heavy plant or equipment.

Any damage to this equipment must be reported immediately.

Fires around electrical equipment

If you notice or become aware of a fire near electrical infrastructure or signalling locations, you should immediately notify the Network Control Officer.

Unless you have been trained, you must not attempt to fight fires near electrical infrastructure or signalling locations.

Fallen electrical wires

Everyone must keep or be kept at a safe distance from exposed electrical equipment and wires when in the Rail Corridor.

Unless you are told by an authorised Electrical Representative that wires or equipment are not live, untrained workers must treat the following as live:

- electrical equipment
- fallen electrical wires
- vehicles, equipment or objects in contact with wires or fallen wires
- water or fires in contact with electrical infrastructure.

WARNING

Objects caught in or touching overhead wiring must be treated as live. Only Electrical Representatives may remove these.

Hazardous materials, tools and equipment

Treat all materials – including liquids, gases, metal, tree branches, clothing, wet ropes and flames – as conductors of electricity unless there is definite knowledge to the contrary.

Treat all tools and equipment as capable of conducting electricity, unless there is definite knowledge that the item concerned is suitable, and approved if appropriate, for use at the voltage concerned.

If care is not taken to keep them away from exposed live electrical equipment, long metal objects can be a hazard. Such objects include but are not limited to:

- ladders
- long tools
- scaffolding
- lengths of metallic pipe, conduit and reinforcing bars
- portable radio equipment with long or telescopic aerials
- metallic guttering, metal roof or wall sheeting
- rope, hose and wire
- tree branches, particularly when wet.

Take care that these items are not placed or used in positions where they can fall, come into contact with, or can be blown across exposed live equipment.

Metallic tapes

Steel tapes, metal-reinforced linen tapes and long steel rules can be very dangerous and are **not** to be used:

- when taking measurements near live, exposed electrical equipment, or
- where there is a likelihood that the metal tape/rule might bridge between metal objects at different potentials, for example, between rail and overhead wiring structures or between structures and fencing or metallic troughing.

WARNING

When working around electrical equipment, use only non-conductive tapes and sticks that have been electrically tested, approved and branded.

Ladders

Metal ladders or metal-reinforced ladders are not to be used for work that is:

- on or near low-voltage electrical conductors, or
- within six metres of live 1500V DC overhead conductors or equipment, or
- within six metres of live high-voltage (greater than 1000V AC).

Activities that may create an electrical hazard

- Interfering with or damaging temporary connections from overhead wiring to the rails that are installed to protect workers in the vicinity of railway overhead wiring. Report any damage immediately.
- Working around electrical cables at a substation or any equipment connected to the system. Report any damage immediately.
- Working around overhead wiring structures.
- Working near where substation cables connect to the rails. If the connections are damaged or broken, a dangerous situation could be caused. Report any damage immediately.
- Working with scaffolding near overhead conductors.
- Working with cranes, elevating platform vehicles, tip trucks or other plant.

Activities that alter ground level under overhead conductors

The following activities carried out under, or in the vicinity of, overhead conductors might result in statutory clearances from the ground not being maintained and are to be avoided:

- building stockpiles
- stacking material
- filling up ground
- earthworks using machinery, especially those that result in a raised ground level
- placing containers or erecting portable buildings.

Note that it is possible that the work itself does not infringe the required minimum SADs for persons and tools, for mobile plant, or for work using or erecting scaffolding during the course of work.

However, if conductor clearances from ground and structures are reduced on the completion of such work, it is possible that these may no longer meet the minimum statutory requirements. This could result in a major safety hazard for people working under the overhead line in the future.

Train pantographs

Care must be exercised when working around 1500V overhead wiring where rail traffic is operating, i.e. stations, maintenance centres etc.

A pantograph is an apparatus fixed to the roof of electric traction vehicles to draw current from the overhead supply.

When a pantograph is in contact with the overhead wiring, the entire pantograph is live. This will impact on the safe approach distances as they will have to be assessed from the extremity of the pantograph, and not from the overhead wiring itself.

Notes

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