

General Operational Safety
RE-ACCREDITATION Work Book



This workbook is derived from extracts from Queensland Rail Standard: General Operational Safety Manual, MD-110-107

Adapted for CKS / Cairns Rail workers seeking re-accrédiation as Locomotive Driver.

1.4 Personal Safety On or Near the Track

1.4.1 Workers not to expose themselves to danger

When moving/walking in, near or close to Rail Traffic

- Workers do not jump onto, or ride on, the automatic coupler or the buffer of any rail vehicle or locomotive
- do not ride on the sides of rail vehicles, locomotives, track vehicles or road vehicles, except where provision is made and used for the body to be inside the profile of these vehicles
- do not join or alight from moving vehicles

Note: Where it is necessary for track workers to travel on track vehicles and no suitable seating is available, track workers must be able to maintain a secure handhold and the speed must not exceed 15 km/h.

- before walking between rail vehicles on the same track, make sure the rail vehicles are stationary, and at least nine metres apart when crossing a track near stationary rail vehicles, make sure to cross not less than five metres from the end of the rail vehicle
- be aware of rail traffic when walking or working within the Danger Zone
- make sure when walking or working in electrified areas to work and keep tools, equipment and self a minimum of 3 metres from any part of the live overhead line equipment

Please turn over the page and complete the revision exercise.

What distance of separation must there be between two stationary rail vehicle before it is considered safe to move between them.

A:

A worker may join a moving rail vehicle provided that it is travelling at less than 5 kph, and that the driver has initiated a brake application.

True or False (circle correct answer)

It is a requirement to be aware of rail traffic when walking or working in the Danger Zone. In your own words, explain how you might achieve this.

A:

In relation to the above, are there any additional training or courses that you are aware of that might be useful for a great understanding of Danger Zone issues?

A:

1.8 Fire

1.8.1 Safety

WARNING: When a fire occurs, workers must assess the situation to determine if the fire can be controlled by themselves, or if the assistance of the Fire Service is required.

Workers must not place themselves in danger when attempting to fight a fire.

1.8.5 Fires on rail traffic and on rail vehicles

a) Fire on Rail Vehicles of Rail Traffic

When a fire occurs on rail vehicles of rail traffic

Rail Traffic Crew

- stop and secure the rail traffic
 - as soon as it is safe to do so
 - where passengers can be evacuated safely
 - where fire fighting equipment can be used effectively
- tell the Network Control Officer
- check documentation for contents of rail vehicles
- transmit a radio message telling others in the area about the fire
- if it is safe to do so attempt to extinguish fire and/or isolate burning rail vehicles
- tell Network Control Officer if fire is extinguished, or if Fire Service is required

The network control office will arrange for emergency services, stopping other nearby rail traffic, and keep the crew at the scene informed of arrangements.

Rail Traffic Crew

- protect any adjacent tracks, when necessary
- evacuate passengers if necessary, to the next passenger rail vehicle, a platform, or to the track
- if the rail traffic is carrying dangerous goods
 - keep upwind and clear of the affected area
 - keep yourself and others uphill of the affected area, if possible
- if the rail traffic is carrying dangerous gas
 - keep all people upwind, uphill and clear of the affected area, if possible

Note: All precautions should be maintained until the Fire Service says the situation is under control.

b) Fire on Locomotives or Train Units

When a fire occurs on a locomotive or train unit

Rail Traffic Crew

- stop and secure the rail traffic or train unit
 - as soon as it is safe
 - where passengers can be evacuated safely
 - where fire fighting equipment can be used effectively
- tell the Network Control Officer

- if necessary, transmit a radio message telling others in the area about the fire
- shut down diesel locomotive and turn off fuel
- isolate battery, if necessary

Note: When the battery is isolated, in-cab radio communication will be lost.

- secure the rail traffic
- protect adjacent tracks, if required
- carry out fire fighting procedures for locomotives or train units, if it is safe to do so,

The Network Control Officer will call the Fire Service if necessary and tell the manager emergency services

1.8.6 Isolating burning rail vehicles

When it is necessary to isolate burning rail vehicles from rail traffic to minimise damage or risk

Rail Traffic Crew

- check documentation for dangerous goods
- if possible, and if safe to do so
 - evacuate any passengers
 - secure the rear portion
 - detach behind the affected rail vehicles
- pull ahead at least 100 metres or a greater distance if rail vehicles contain flammable substances or dangerous goods, as in the Initial Emergency Response Guide (HB76)
- — secure and detach burning rail vehicles
- — pull the leading portion at least 100 metres clear of burning rail vehicles or a greater distance if rail vehicles contain flammable substances or dangerous goods, as in the Initial Emergency Response Guide (HB76)

WARNING

Be aware that any metal on rail vehicles may be hot enough to burn the skin on touch, for example, handles on doors.

1.8.7 Extinguishing fires on rail vehicles

When it is necessary and safe to extinguish a fire on rail vehicles, and the Fire Service is not readily available

a) Preparation for Extinguishing Fires on Rail Vehicles

Worker

- obtain any assistance required to extinguish the fire
- make sure any action taken will not increase the hazard
- make sure the proper fire fighting equipment is used
- read instructions on the fire extinguisher before using in confined spaces
- make sure all fire fighting equipment is in place around rail vehicles before opening any doors or hatches, or lifting tarpaulins
- be aware that any metal on rail vehicles may be hot enough to burn the skin on touch, for example, handles on doors

WARNING

Extreme caution must be taken if doors are to be opened on fully enclosed rail vehicles, or container rail vehicles, as fire intensity may rapidly increase.

b) Controlling Fires on Rail Vehicles

Worker

- use gloves when opening doors or hatches
- be aware that flames may suddenly leap from the door, hatch or from under a tarpaulin
- stand to one side before opening a door or hatch, or lifting a tarpaulin
- locate the base of the fire
- direct the extinguisher nozzle at the
 - base of the fire with water or foam fire extinguishers flames
 - above the base for Dry Chemical or Carbon Dioxide (CO₂) extinguishers

Complete the revision exercises over the page...

What key safety consideration must be taken when a fire occurs?

In dot point form, list the procedure for isolating a burning rail vehicle

1.12 Reporting an Accident or an Incident

1.12.1 Reporting an accident or an incident

When an accident or incident such as an injury or a breach of safeworking procedures occurs, or the potential for an accident or incident exists

Worker

- report the accident or incident, or the potential for an accident or incident, to the supervising officer

Supervising Officer

- notify responsible manager
- make sure all accident and incident report forms are correctly filled in
- send forms to responsible manager

1.13 Communication

1.13.1 Relaying radio or telephone messages

When direct communication is not available, messages regarding safeworking may be relayed by an intermediate officer

Sender

- instruct the intermediate officer to write down the message and repeat it
- when the message has been repeated correctly, say 'correct'

Intermediate Officer

- deliver the written message to the receiver, or
- instruct the receiver to write down and repeat the message
- when the message has been repeated correctly, say 'correct'
- tell the sender when the message has been delivered

1.13.2 Verbal communication

When instructions are being sent and received

Workers

- make sure all instructions are correctly sent, received and understood
- write down and read back instructions relating to movement of **rail traffic** if related to safeworking procedures when
 - radio or telephone communication is not available and an instruction is relayed by the intermediate officer
 - instructions are to be carried out over a long period of time
 - instructions are of a complex nature the worker issuing or receiving the instructions asks for it to be taken down in writing specified in the appropriate Safeworking Manual
- write down and read back instructions involving the safety of workers and/or equipment

1.13.3 Special Safeworking Instructions – Form SW50

When safeworking instructions are issued, they must be written down on Form SW50 and repeated when

- radio or telephone communication is not available and the instruction is relayed by an intermediate officer
- instructions are to be carried out over a long period of time instructions are of a complex nature
- the worker issuing or receiving the instruction asks for it to be taken down in writing
- specified in the appropriate safeworking manual

1.13.4 Form SW50 No Longer Required

When Form SW50 is no longer needed, the following action is required.

Worker

- deface the form by drawing two diagonal lines across the face of the form

Note: Defacing the form is done to indicate the form is no longer in use.

1.14 Use of Audio/Visual Equipment

1.14.1 Distractions using audio/visual equipment while carrying out safety critical tasks

Worker and contractors must not allow themselves to be distracted by the use of audio/visual equipment while carrying out safety critical tasks.

a) Risks

The following consequences may occur from a person being distracted while performing a safety critical task:

- Collision
- Running move derailment
- Yard derailment
- SPAD
- Collision caused by a SPAD
- Running move derailment caused by SPAD
- Yard derailment caused by SPAD
- Injury or death

Note: There have been several accidents/incidents where a person has been distracted whilst performing safety critical tasks. This has resulted in collisions, derailments and SPADs, etc.

b) Examples of Types of Audio/Visual Equipment

The types of audio/visual equipment that contribute to a distraction can be but are not limited to the following:

- QR Radio communication equipment
- Desk top computers with computer games/DVD/CD and etc, whether QR supplied or

- private
- Laptops and portable hand held computers
- Mobile phones
- Personal radios, CD/MP3/DVD players
- Televisions
- Cameras
- Newspapers and Magazines

c) Examples of workers carrying out safety critical tasks and how they may be distracted are as follows:

- A rail traffic driver using a mobile phone while approaching a red signal.
- A rail traffic driver obtaining a DTC Authority while approaching the limit of his authority and trying to bring the rail traffic to a stop
- A track section supervisor using continual vigilance on a walking inspection and having a conversation on a mobile phone
- A Network Control Officer watching or listening to private audio/visual equipment while monitoring safety critical communication equipment.

Note: Any worker or contractor carrying out a safety critical task or monitoring safety critical communications must take necessary action to eliminate the risk of being distracted at a critical time in their task. Worksite risk assessments should evaluate the risk of distraction during safety critical tasks.

Complete the revision exercise on the following page. Your Instructor will be required to dictate some special safeworking instructions.

On the SW50 form below, write out the instructions given by the tutor

SW50 Written Authority for Rail Traffic

Instruction Proceed Authority

Section 1 Rail Traffic Identification
 Date: _____
 Rail Traffic Number: _____
 Location: _____

Section 2 Remote Controlled Signal Territory Authority
 Authority to On-Track at Authority to Proceed from:
 Location: _____ Track: _____ Signal: _____ Type: _____
 Proceed to Location: _____ Track: _____ Signal: _____ Type: _____
 Signal Prior to Limit of Authority: _____
 Proceed/Return to and OBEY: _____
 Location: _____ Track: _____ Signal: _____ Type: _____

Section 3 Direct Traffic Control Territory Authority Staff and Ticket Territory Authority

Section 4 Instructions

Section 5 Level Crossings
 Obey all SP signals
 The active protection on level and pedestrian crossings may not be operating
 Make sure the level crossing equipment is activated before entering the crossing

Section 6 Rail Traffic Speed
 Restricted Speed Controlled Speed
 Normal Speed Nominated Speed _____

Section 7 Previous Rail Traffic Movements
 Unknown
 Known Rail Traffic Number: _____
 Cleared Beyond Disabled at Locked In at
 Location: _____

Section 8 Authorisation
 Authorising Officer: _____
 Signature: _____ Time: _____
 Issuing Officer: _____
 Signature: _____ Time: _____
 Intermediate Officer: _____
 Signature: _____ Time: _____
 Rail Traffic Crew: _____
 Signature: _____ Time: _____
 Relief Rail Traffic Crew: _____
 Signature: _____ Time: _____

Section 9 Partial Fulfilment
 Rail Traffic is Clear and Complete at

Signal/BLB	Location	Track	Time	Initial
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NOTES

SW50 Version 1

Once completed, assume that the instructions are no longer required. Make the necessary alterations to the form.

List some of the risks that could arise from being distracted when performing safety critical tasks

2.3 Working of Rail Traffic

2.3.1 Rail Traffic Driver to be in charge of the rail traffic

a) When rail traffic is worked by a Rail Traffic Driver and other Rail Traffic Crew Member/s

Rail Traffic Crew Member/s

- carry out instructions given by the rail traffic driver

b) When rail traffic is worked under Two Driver Operation

Rail Traffic Driver at controls

- take charge of the running of the rail traffic

Rail Traffic Driver not at controls to monitor:

- other drivers performance
- signal aspects
- speed board changes
- level crossings
- other safeworking requirements

Note: By agreement with the rail traffic driver at the controls, the other rail traffic driver can take a short break when it is considered safe to do so and when not in or approaching a Safety Critical Zone.

2.3.8 Rail traffic crew to check rail traffic regularly

When working rail traffic

Rail traffic crew

- make visual checks, where possible, to make sure the rail traffic is following safely
- monitor locomotive/train unit air and power gauges for irregularities
- visually check locomotive engine exhausts for excessive sparks being thrown

2.3.9 Rail Traffic Driver becoming incapacitated while driving rail traffic

If a rail traffic driver becomes incapacitated while driving rail traffic

Rail Traffic Crew Member

- stop the rail traffic
 - avoid stopping in tunnels,
 - on bridges or
 - over level crossings, if possible
- give the rail traffic driver any assistance possible
- inform Network Control Officer, if possible, giving details
 - of the rail traffic driver's condition
 - where the rail traffic is located
 - accessibility of the location to road vehicles, for example, an ambulance
- secure the rail traffic, if necessary

2.3.10 Rail Traffic Driver incapacitated – clearing rail traffic from section

a) Second Rail Traffic Driver or Rail Traffic Drivers Assistant Qualified to Drive

When rail traffic is worked by a second Rail traffic Driver, or a Rail Traffic Drivers Assistant qualified to drive rail traffic

- take the rail traffic to where medical assistance can be obtained

b) Rail Traffic Driver's Assistant Not Qualified to Drive

When the Rail Traffic Driver's Assistant is NOT qualified to drive rail traffic

- secure the rail traffic
- use any means possible to assist the rail traffic driver

2.3.11 Rail traffic crew handover

When rail traffic crews handover to a relieving rail traffic crew or officer in charge

Rail Traffic Crew being relieved

- write on the rail traffic list details of any rail vehicles requiring special attention en route
- hand the rail traffic over to a relieving rail traffic crew, if necessary
- give the relieving rail traffic crew or officer in charge,
 - details of limit of safeworking authority for the rail traffic
 - the handling characteristics of the rail traffic
 - work carried out or to be carried out en route
 - arrival and departure times at stations
 - any overcrowding of passenger rail traffic
 - delays or unusual occurrences
 - defects or faults on the rail traffic
 - defects or faults in signals
 - defects or faults on or near the track

2.5 Securing of Rail Traffic

2.5.1 Securing of rail traffic, portion of rail traffic, or rail vehicles

When securing rail traffic, portion of rail traffic, or rail vehicles on a main line or siding

Worker

- make sure rail vehicle/s has stopped
- close both brake pipe cocks
- disconnect hosebags by hand
- hold the hosebag firmly
- open the brake pipe cock slowly do not direct airflow onto yourself or other workers
- wait until the air flow stops

WARNING: Do not close the brake pipe cock before the airflow stops otherwise a train brake

release may occur.

- close the brake pipe cock
- apply
 - all handbrakes, unless validated instructions are issued by the Manager Rollingstock Engineering
 - chocks, where necessary
- make sure any derail devices are in place
- secure the points away from the occupied track

Note: Shunting yards will have local instructions giving the percentage of handbrakes to be applied.

Note: Some locations may have local instructions to provide further security, if required.

2.5.2 Securing rail vehicles on a running track

When it is necessary, in an emergency, to stow rail vehicles, including locomotives on a running track

Officer in Charge

- obtain approval from the Network Control Officer
- arrange to place signals applying to that track at stop
- secure the points for other than the occupied track

Rail Traffic Crew

- apply all handbrakes, unless otherwise authorised
- use chocks where required

Note: The first six and last six rail vehicles must have the handbrakes applied.

Note: Some locations may have local instructions to provide further security, if required.

2.5.4 Procedure for placing chocks to prevent rail traffic or rail vehicle movement

When it is not possible to hold rail traffic or rail vehicle stationary with handbrakes

Rail Traffic Crew Members placing chocks

- check the drawgear
 - if bunched (drawgear pushed in), chock wheels from the bottom of the grade
 - if stretched (drawgear pulled taut), chock wheels from the top of the grade
- place chocks under wheels on one side of rail vehicle only
- tell Network Control Officer which rail vehicle/s is chocked
- endorse the train list with the position of chocked rail vehicle/s

The Network Control Officer will make sure the next rail traffic driver who moves the rail vehicle/s is aware of which rail vehicle/s is chocked

Note: Care must be taken when placing or removing chocks under the wheels of rail vehicles. Hold the chock so the hand is not between the chock and the rail or wheel.

2.6.11 Applying handbrakes on rail vehicles

When applying a handbrake on rail vehicles in a yard or siding

Worker

- apply airbrake, if possible
- apply handbrake
- fully release airbrake
- check the handbrake is fully applied

Complete the revision exercise on the following page....

In two driver operated locomotives, who is in charge of running rail traffic?

List the duties of the driver not in control of the locomotive:

How often should a rail traffic crew in a moving train “check back” at the loading?

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List the actions that may be taken by a second person, not qualified to drive, in the event that the driver of rail traffic is suddenly incapacitated:

When exhausting air from a hosebag, where should you direct the airflow?

--

State the procedures for applying hand brakes to rail vehicles

3.2 Hand Operated Points

3.2.1 Reversible switch levers (throwover points)

When operating reversible switch levers

Worker

- check reversible switch levers are correctly set before allowing movements over them
- do not reverse them in front of moving rail vehicles in case of rebound
- check direction in which points are set
- points are locked for any facing movement
- points are locked when not in use

3.2.2 Spring reversible switch levers (spring points)

When operating spring reversible switch levers

Worker

- check points are set correctly before allowing rail traffic to move over the points

3.3 Operating Hand Operated Points

3.3.1 Points to be in proper position

When operating hand operated points levers

Worker

- check the track ahead face oncoming traffic
- do not straddle points levers
- make sure the points are correctly held
- make sure toe of switch in contact with rail is not damaged
- make sure the switch rail is firm against the stock rail
- after use, make sure
 - points levers are returned to normal position
 - switches are properly closed
 - folding handles are folded down
 - removable handles are removed and stowed correctly
 - points locks, where provided, are locked

3.3.2 Operating points near moving rail vehicles

When operating points in the vicinity of moving rail vehicles

Worker

- make sure rail vehicles are clear of points
- do not move the operating lever while rail vehicles are moving over the points
- do not bounce throwover points as this causes switches to open or not close correctly
- make sure non-reversible lever points (kangaroo points) are held firmly

- check points switches are in the correct position before facing movements take place
- make sure toe of switch in contact with rail is not damaged

3.5.1 Operating a catch point

Catch points protect the running track and some sidings from unauthorised movement of rail vehicles.

When operating a catch point

a) Entering a Siding

Worker

- unlock catch point, if necessary
- check catch point is in the correct position to allow the rail traffic to pass

b) Leaving a Siding

Worker

- make sure catch point is correctly positioned to allow rail vehicles to be moved out of the siding
- make sure catch point is returned to the open position after use
- lock the catch point, if possible

Note: In certain areas it may be necessary to obtain a release from the Network Control Officer before unlocking a catch point.

Note: A kangaroo lever which operates a catch point must be correctly held to allow rail vehicles to enter or leave a siding.

3.5.4 Ground frame levers

Where ground frame levers are used, their purpose is identified by the name plate, if fitted, and the colour of the lever as shown below

COLOURS	PURPOSE
Half black and half white	Level Crossing Protection levers
Black and White Stripes	Release levers
Blue	Lockbar levers
Black	Points levers
Red	Signal levers
White	Spare lever

3.6 Shunting – General

3.6.1 Safety

WARNING

Particular care must be taken by all workers during shunting operations. A distance of at least nine metres must be observed when moving or working between rail vehicles on the same track. Shunting may affect workers who may not be familiar with traffic operations. Workers involved in shunting must be qualified.

3.6.7 Detaching rail vehicles in sidings

When detaching rail vehicles in sidings

Worker

- make sure rail vehicles are in clear and secured
- if rail vehicles are left foul of another track
 - tell the officer in charge or Network Control Officer
 - protect the rail vehicles that are foul by using detonator signals and/or permanent way stop signals, if necessary

3.6.8 Clearance of rail vehicles on adjacent, converging or diverging tracks

As a guide, when checking if rail vehicles are clear at floor level

Worker

- stand on the end of the sleeper on the adjacent track closest to the end of the vehicle
- check clearance by making sure the out stretched arm does not touch rail vehicle

Note: Be aware of top clearance as rail vehicle is shunted to adjacent tracks

3.6.9 Rail traffic crew unable to receive a hand, light or radio signal when shunting

When carrying out shunting operations and a hand, light or radio signal cannot be received

Rail Traffic Crew

- do not move the rail traffic, even when the fixed signals are at proceed
- wait until a hand, light or radio signal is received

Note: If the delay seems excessive, investigate the cause.

3.6.10 Pushing during a shunt movement – rail traffic crew unable to see last rail vehicle

When pushing rail vehicles during a shunt movement and the rail traffic crew cannot see the track beyond the last rail vehicle of the rail traffic, or cannot receive a signal from the worker shunting

Rail Traffic Crew

- stop until told, by the worker shunting, the distance the rail traffic is to proceed

Note: When setting back on a main line separate procedures apply.

3.7 Shunting of Facilities

3.7.1 Shunting rail traffic at a facility/siding

When shunting rail traffic at any facility/siding at which other workers and/or equipment may be working

Rail Traffic Crew/Shunting Staff

- stop the rail traffic prior to
 - any lockout system, or
 - the points at the entry to the facility/siding
- contact the worker in charge of the facility/siding to ask permission to
 - enter the facility/siding
 - request that all workers in the vicinity are warned
 - request that any lockout systems, signs, skid rails, gates or barriers be removed from the track by the worker responsible for their placement
 - operate any warning device in place
- do not enter the facility/siding without permission
- proceed at restricted speed into the facility/siding and shunt
- tell the worker in charge when shunting work is completed, and the rail traffic is ready to depart
- turn off any warning device in operation
- ask the worker in charge of the facility/siding to replace any lockout system

Note: Some of the above procedures may be arranged by the Network Control Officer.

Note: Some facility shunting procedures may be covered under separate operating plan or Interface coordination plan.

3.7.4 Entry to a facility/siding with no lockout system and without a worker in charge

When shunting a facility/siding where no lockout system is provided, and without a worker in charge

Rail Traffic Crew/Shunting Staff

- warn all persons in the vicinity
- check that no persons or rail vehicles obstruct the way into the facility/siding
- proceed at restricted speed into the facility/siding and shunt
- switch on siren and lights, if provided, and turn them off when shunting is completed

Complete the revision exercises on the following page.

Describe the procedure for operating a catch point for a train leaving a siding

When shunting, if you are unable to receive hand, light or radio signals, what must you do?

After use, where should hand operated points be placed?

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