

Network Safeworking Rules and Procedures

Rail Traffic Lights and Markers

Rule Number: 4005



Brookfield
Rail

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Glossary for this Rule

<i>Active Control Level Crossing</i>	A road or pedestrian level crossing where warning equipment warns road users and pedestrians about approaching rail traffic by devices such as flashing lights or barriers.
<i>Adjacent</i>	Near to, close to, parallel to.
<i>Blocking Facility</i>	A facility used by a Network Controller to prevent either the unintended issue of an Occupancy Authority, or the operation of points or signalling equipment.
<i>Centralised Traffic Control (CTC) Territory</i>	The portions of line where the Centralised Traffic Control system of Safeworking is used.
<i>Clear</i>	A proceed indication displayed by a signal. In reference to a track circuit, block, section or signal route, the absence of rail traffic. In reference to track workers being clear of track.
<i>Complete</i>	Rail traffic where the consist has not parted.
<i>Consist</i>	A listed order of the vehicles arranged to make up a complete train.
<i>Controlled Speed</i>	Controlled speed is a speed that allows rail traffic to stop short of an obstruction within half the distance of clear line that is visible ahead.
<i>Cross</i>	To cross or pass other rail traffic.
<i>Crossing Location/Station</i>	May consist of single or double ended portion of track, to hold rail traffic, connected to a main line that is used to permit other rail traffic to cross or pass.
<i>Disabled</i>	Unable to travel due to a defect.
<i>End-of-Train Marker</i>	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.
<i>End-of-Train Monitor</i>	A device secured to the coupler of the last vehicle which communicates via radio link to the locomotive and provides real time end-of-train air pressure and other related information (e.g. rail traffic separation alarm).
<i>Handsignal</i>	A signal given by hand or lights movements, hand signals may be with or without flags.
<i>Headlights</i>	Lights fitted at the front of rail traffic to provide visibility for the rail traffic crew and to improve the visibility of rail traffic.
<i>Level Crossing</i>	A location where the railway line and a road or pedestrian walkway cross paths on the same level (at grade).
<i>Location</i>	A place in the Network with a designated name, identification number, or signalling reference.

<i>Locomotive</i>	Self-propelled, non-passenger-carrying railway vehicles used for hauling other (typically freight or passenger) rolling stock.
<i>Low Visibility</i>	Any condition that does not allow Competent Workers to view the distance required to work safely (e.g. fog, heavy rain, smoke, dusk, curve in the track)
<i>Marker Lights</i>	Lights which indicate the front or rear of a train.
<i>Marshal</i>	To arrange the order of vehicles in a train's consist.
<i>Motive Power Unit</i>	A rail vehicle used to provide the power to move itself or other vehicles.
<i>Network</i>	A combination of track and other associated infrastructure controlled by Brookfield Rail.
<i>Network Controller</i>	A Competent Worker who authorises and issues Occupancy Authorities, and works points, signals and other signalling equipment to manage routes for safe and efficient transit of rail traffic in the Network.
<i>Normal Speed</i>	A speed that does not exceed the speed limit currently in effect for the section of line and type of rail traffic.
<i>Obstruct</i>	To make a line unsafe for the passage of rail traffic by the placing of tools, equipment or plant on the track.
<i>Passive Control Level Crossing</i>	Road and pedestrian level crossing warning that relies on road users and pedestrians looking out for and giving way to rail traffic (i.e. no flashing lights, half boomgate or bells).
<i>Points</i>	A track component consisting of paired pieces of tapered rail (blades) that can be moved and set to allow tracks to diverge or converge.
<i>Points Indicator</i>	An indicator showing the position of points.
<i>Rail Traffic</i>	Trains and track vehicle or vehicles travelling on the Network.
<i>Rail Traffic Crew</i>	Competent Workers responsible for the operation of the Motive Power Unit.
<i>Restricted Speed</i>	Restricted speed is a speed that allows rail traffic to stop short of an obstruction within half the distance of clear track that is visible ahead. Restricted speed must not exceed 25 km/h.
<i>Running Line</i>	A fixed signal placed near a running line to authorise and control running movements.
<i>Section</i>	The line between the departure end station limit of one location and the arrival end station limit of another location. A section consists of one or more blocks.
<i>Shunt</i>	To move rail traffic, rakes of vehicles, or vehicles on lines for purposes other than through movement.

<i>Tail Lights</i>	Red lights used as to designate the end of rail traffic. (see also end-of-train markers).
<i>Track</i>	The combination of rails, rail connectors, sleepers, ballast, points and crossings.
<i>Train</i>	A locomotive or self-propelled vehicle, alone or coupled to one or more vehicles. Rail Traffic.
<i>Train Order Territory</i>	The portions of line where the Train Order system of Safeworking is used.
<i>Travel</i>	Planned or purposeful movement from one location to another.
<i>Visibility Lights</i>	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. Also known as ditch lights or crossing lights.
<i>Whistle</i>	A device such as a bell, whistle, siren, horn or hooter, fitted to rail traffic to give audible warning.

1. Purpose

The purpose of this Rule is to describe how *Rail Traffic* lights and markers are used to:

- indicate the normal direction of *Travel*;
- indicate *Completeness* of *Rail Traffic*; and
- enhance the visibility of *Rail Traffic*.

2. General

Rail Traffic must not enter the *Network* unless the *Rail Traffic* lights and *Markers Lights* are working correctly.

Headlights must be set on full at the front of all moving *Rail Traffic* unless required to be dimmed or turned off as prescribed within this rule.

An approved *End-of-Train Marker* or at least one approved red light must be displayed at the rear of *Rail Traffic*.

3. Headlight Use

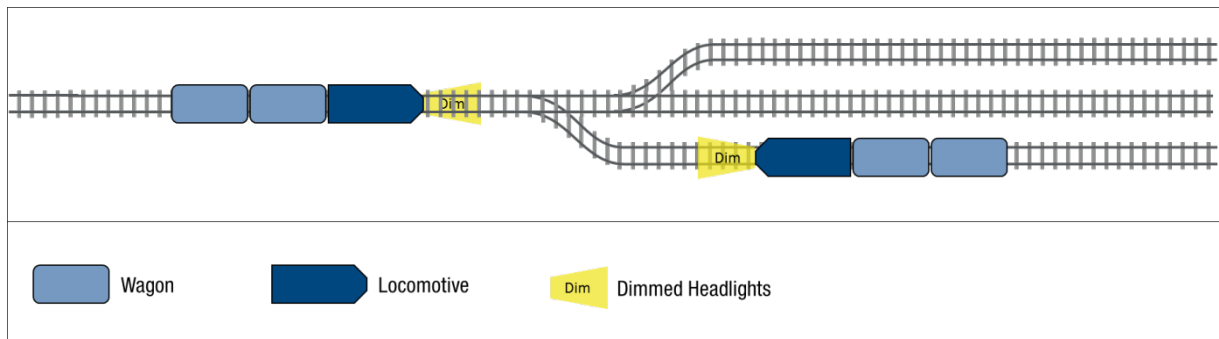


WARNING: When approaching *Level Crossings*, *Headlights* must remain on full unless opposing *Rail Traffic* is simultaneously approaching. In this case, *Rail Traffic Crew* are permitted to dim the *Headlights*.

Rail Traffic Crews are permitted to dim or turn off *Headlights* when *Visibility Lights* are operating under the following conditions:

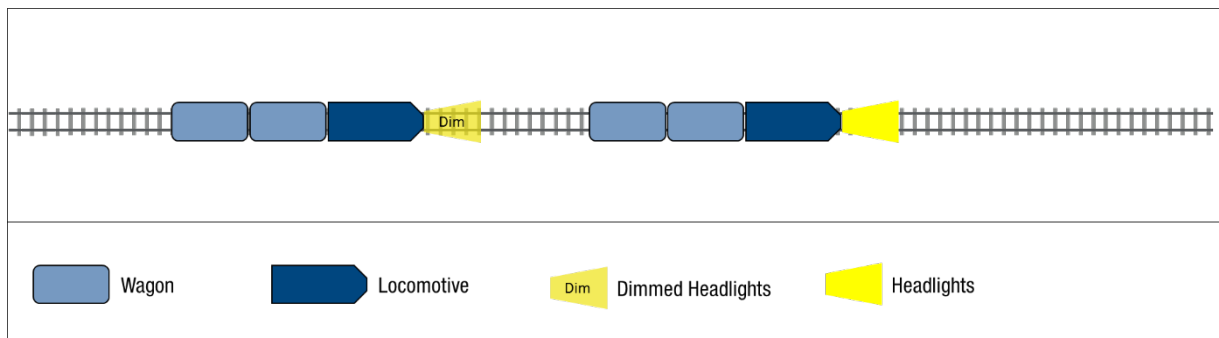
- When approaching, standing or working at *Locations* where *Shunting* is being performed.

Figure 4005-1 Approaching, standing or working at locations where shunting is being performed.



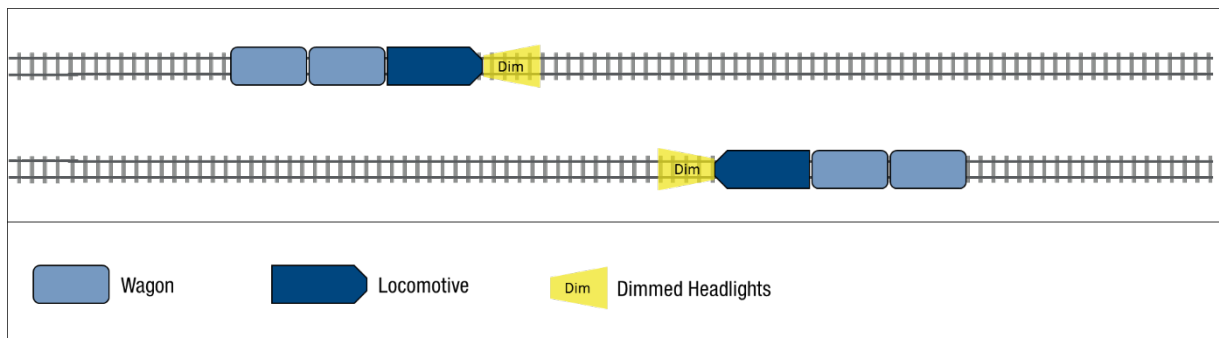
- When approaching or stopped behind other *Rail Traffic*.

Figure 4005-2 Approaching or stopped behind other rail traffic.



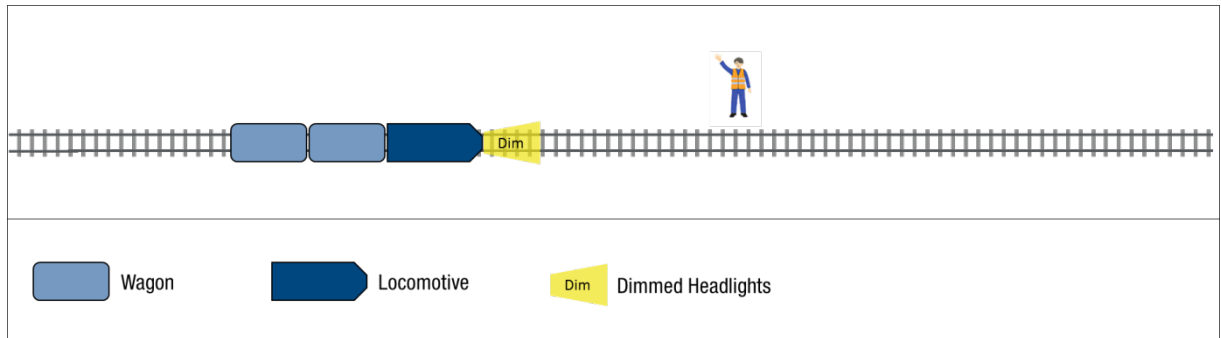
- When approaching and *Crossing* the lead end of opposing *Rail Traffic*.

Figure 4005-3 Approaching and crossing the lead end of opposing rail traffic.



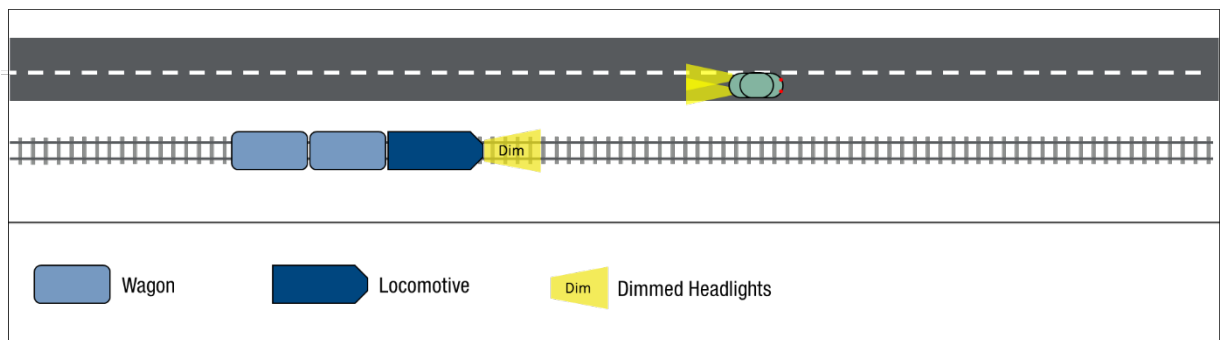
- When *Handsignals* are displayed or when approaching people or workers on or about the *Track*.

Figure 4005-4 Handsignals are displayed or when approaching people or workers on or about the track.



- When *Rail Traffic* is approaching road traffic on *Adjacent* roadways.

Figure 4005-5 Rail traffic is approaching road traffic on adjacent roadways.



- In weather conditions where *Headlights* may reflect back and affect the *Rail Traffic Crew's* vision.

3.1 Operating with Headlights Off



WARNING: *Headlights must not be turned off unless Marker Lights or Visibility Lights are turned on.*

The *Headlights* must be turned off when *Rail Traffic* has stopped *Clear* at a *Crossing Location*, waiting for opposing *Rail Traffic* to *Cross*.

The waiting *Rail Traffic* must display a white *Marker Light* on the side of the *Motive Power Unit* nearest the *Clear Running Line* and a red *Marker Light* on the side of the *Motive Power Unit* furthest from the *Clear Running Line*.

Figure 4005-6 Rail traffic standing on the Loop for a crossing.

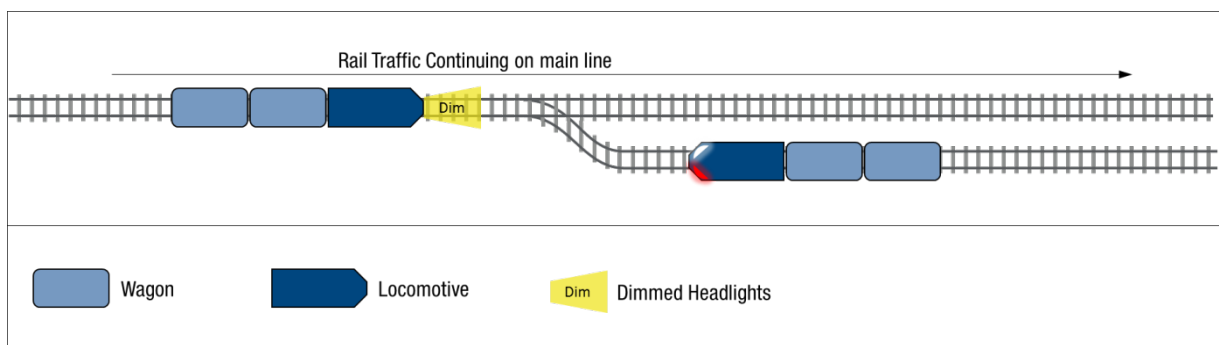
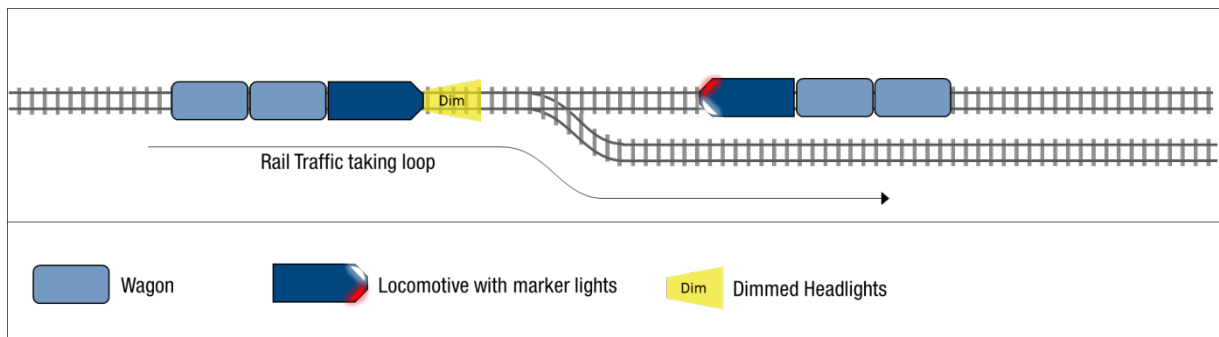


Figure 4005-7 Rail traffic standing on the Main for a crossing.



NOTE: The *Headlight* must be set on full once the lead end of the *Motive Power Unit* has past;

- the opposing *Rail Traffic*;
- road traffic on *Adjacent* road way; or
- the worker.

4. Displaying Visibility Lights

If provided, *Rail Traffic Visibility Lights* must be turned on when the *Rail Traffic* is moving on *Running Lines*.

If *Visibility Lights* fail, *Rail Traffic* may continue normally provided *Headlights* are turned on.

5. Using Lights for Warning

If necessary, *Rail Traffic Crew* may flash *Headlights* or change the colour of *Marker Lights* displayed from white to red to give a warning.

6. Failed Headlights

All cases of total *Headlight* failure must be reported to the *Network Controller*.

The *Network Controller* and the *Rail Traffic Crew* must make arrangements to:

- effect repairs;
- re-Marshall the *Motive Power Units*; or
- replace the lead *Motive Power Unit*.

If this is not possible, the *Rail Traffic* may proceed to the next repair facility.



WARNING: Where *Headlights* have failed, *Rail Traffic Crew* must make additional use of the *Whistle* to compensate for the lack of visual warning.

6.1 Total Headlight Failure and Visibility Lights Are Not Available

If visibility is good, *Rail Traffic* must *Travel* at *Controlled Speed*.

During periods of *Low Visibility*, *Rail Traffic* must;

- *Travel* at *Restricted Speed* and may only *Clear* the *Section*; and
- in *Train Order Territory*, stop before *Travelling* over *Points* where mechanical *Points Indicators* exist and ensure *Points* are correctly set before proceeding.

When approaching *Level Crossings* *Rail Traffic* must *Travel* at *Restricted Speed* prepared to stop and not proceed over the *Level Crossing*, until:

- *Active Control Level Crossing* warning equipment is operating; or
- road or pedestrian traffic is not approaching or has stopped at the crossing.

When approaching *Locations* where the *Rail Traffic Crew* is aware or can see workers or other personnel are present on the ground, *Rail Traffic* must *Travel* at *Restricted Speed*.

6.2 Total Headlight Failure and Visibility Lights Are Available

If the *Headlights* have failed and *Visibility Lights* are available, *Rail Traffic* may *Travel* at *Normal Speed*.

7. Failed Headlights and Whistle

7.1 Headlights and Whistle Failed, and Visibility Lights Not Available

If the *Headlights* and *Whistle* fail and *Visibility Lights* are not available and no other *Motive Power Unit* can be used as the lead unit, the *Rail Traffic Crew* must carry out instructions for operating with total *Headlight* failure when *Visibility Lights* not available in accordance with Section 6.1:

During periods of *Low Visibility* the *Rail Traffic* must be treated as *Disabled* in accordance with Rule 4009 Disabled Rail Traffic.

7.2 Headlights and Whistle Failed, and Visibility Lights Available

If the *Headlights* and *Whistle* fail and *Visibility Lights* are available, the *Rail Traffic Crew* must:

- continue the movement with the *Visibility Lights* turned on and *Travel* at:
 - *Controlled Speed* if visibility is good; or
 - *Restricted Speed* during periods of *Low Visibility*;
- slow to *Restricted Speed* before each *Level Crossing*, prepared to stop if road or pedestrian traffic is approaching;
- not proceed over the *Level Crossing*, unless:
 - at an *Active Control Level Crossing*, equipment is operating; or
 - at a *Passive Control Level Crossings*, it is *Clear* or road and pedestrian traffic has been stopped;
- slow to *Restricted Speed* approaching other *Rail Traffic* and where workers may be present on the ground;
- slow to *Restricted Speed* approaching people on or about the *Track*; and
- slow or stop as necessary, if the approach of the *Rail Traffic* is not attracting the appropriate attention.

8. Rail Traffic Markers

8.1 Front of Rail Traffic

The front of *Rail Traffic* must be identified by *Headlights*, *Visibility Lights*, or *Marker Lights*. If *Marker Lights* become defective they must be repaired or replaced as soon as practical.

8.2 Rear of Rail Traffic

The rear of *Rail Traffic* must be identified by:

- an *End-of-Train Marker*,
- one or more clearly visible, steady or flashing red lights;
- an *End-of-Train Monitor*, or
- a combination of the above.

End-of-Train Markers and monitors must have at least one red light that is illuminated during the hours of darkness or when visibility is low.

8.3 Motive Power Unit is Rear Vehicle

When a *Motive Power Unit* is operating without vehicles or is at the rear of the *Rail Traffic Consist*, one of the following must be displayed:

- one or more red *Tail Lights*; or
- an *End-of-Train Marker*.

8.4 Inspection of End-of-Train Marker

The operation of an *End-of-Train Marker* must be checked before departure and where possible en-route by:

- direct observation of the marker; or
- using telemetry in the cab of the *Rail Traffic*.

8.5 Failed End-of-Train Marker

If the rear *End-of-Train Marker* fails en-route:

- the *Network Controller* must be told;
- a red reflector, red flag or red light may be used as an alternative rear marker; and
- *Rail Traffic* may *Travel* only as far as the next *Location* where the marker can be repaired or replaced.

8.6 Missing End-of-Train Markers

If *Rail Traffic* is detected with no *End-of-Train Marker* the *Network Controller* must be told.

Rail Traffic may *Travel* at the discretion of the *Network Controller* only as far as the next *Location* where the marker can be replaced.

In *Centralised Traffic Control (CTC) Territory*, *Rail Traffic* must be worked in accordance with Rule 5023 Manual Block Working until the *End-of-Train Marker* has been replaced.

The *Network Controller* must confirm that:

- the *Rail Traffic* is *Complete*; or
- the *Sections* to the rear of the *Rail Traffic* are *Clear*.

If the *Rail Traffic* is unable to be confirmed as *Complete*, affected *Sections* must be treated as *Obstructed* in accordance with Rule 2009 Reporting and Responding to Conditions Affecting the Network.

Until it can be established that the *Section* is *Clear*, the *Network Controller* must:

- apply *Blocking Facilities* to prevent other *Rail Traffic* from entering the affected *Section*;
- tell *Rail Traffic Crews* within the affected *Section* to stop their *Rail Traffic*; and
- warn *Rail Traffic* on *Adjacent* lines.

8.7 Shunting Marker Lights

Locomotives Shunting within yards must display two red *Marker Lights* at each end.



NOTE: The *Marker Lights* of *Shunting Locomotives* do not indicate direction of *Travel*.

8.8 Identifying Number

Where provided, number lights must be illuminated on the leading *Motive Power Unit*.

8.9 Other Lights

Step and other lights may be illuminated on all units to improve visibility of *Rail Traffic* at night.

9. References

2009 Reporting and Responding to Conditions Affecting the Network.

4009 Disabled Rail Traffic

5023 Manual Block Working

10. Effective Date

4 May 2016