

Network Safeworking Rules and Procedures

Centralised Traffic Control System

Rule Number: 5001



Brookfield
Rail

Centralised Traffic Control System

Rule Number: 5001

Document Control Identification

Document title	Number	Version	Date
5001 – Centralised Traffic Control System		1.0	31 March 2016

Document History

Publication version	Effective date	Page(s) affected	Reasons for and extent of change(s)
5001 – Centralised Traffic Control System	4 May 2016		

Authorisation



Adam Sidebottom
Rail Safety Manager
Brookfield Rail
31 March 2016



DISTRIBUTION AND CHANGE: Brookfield Rail maintains the master for this document and publishes the current version of the Brookfield Rail website. Any changes to the content of this publication require the version number to be updated. Changes to this publication must be approved according to the procedure for developing Brookfield Rail products.

To view the latest version of this document visit www.brookfieldrail.com

Table of Contents

Glossary for this Rule.....	4
1. Purpose	6
2. General	6
3. Proceed Authorities	7
4. Failure of Control Functions.....	7
5. Entering Signalled Track from Non-Signalled Location	7
6. References	8
7. Effective Date.....	8

Glossary for this Rule

<i>Absolute Signal</i>	An automatic fixed signal that is controlled by the passage of Rail Traffic (i.e. they are not operated by a Network Controller) and must not be passed at STOP without the authority of the Network Controller.
<i>Authority</i>	Formal name for a written Authority (e.g. Local Possession Authority, Alternative Proceed Authority).
<i>Axle Counters</i>	Equipment used to detect the presence of rail traffic vehicles by counting the number of axles entering or leaving a location. They may be used to operate signalling or other infrastructure equipment.
<i>Bi-Directional</i>	Normal movement of rail traffic in either direction according to the infrastructure and system of Safeworking in use.
<i>Centralised Traffic Control (CTC)</i>	A system where points and signals at a number of locations are remotely controlled from a centralised control room or other locations along the route.
<i>Centralised Traffic Control (CTC) Territory</i>	The portions of line where the Centralised Traffic Control system of Safeworking is used.
<i>Competent Worker</i>	A worker certified as competent to carry out a relevant task.
<i>Controlled Absolute Signal</i>	A signal that is controlled or operated by a Network Controller. The signal must not be passed at STOP without authority.
<i>Fixed Signal</i>	A signal that is located permanently near the line.
<i>Interlocking</i>	Interaction of interconnected locking equipment controlling points and/or signals to prevent conflicting movements to make sure routes are set correctly.
<i>Intermediate Signal</i>	An intermediate signal is an automatic fixed signal (absolute signal) used to divide a section to facilitate the movement of following rail traffic.
<i>Location</i>	A place in the Network with a designated name, identification number, or signalling reference.
<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>Occupancy</i>	Presence of rail traffic or track workers on track.
<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>Rail Traffic</i>	Trains and track vehicle or vehicles travelling on the Network.

Rail Traffic Crew	Competent Workers responsible for the operation of the Motive Power Unit.
Route	The rail traffic path from one limit of authority to the next in the direction of travel.
Running Signal	A fixed signal placed near a running line to authorise and control running movements.
Section	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.
Secure	To safeguard against accidental or unauthorised access or movement.
Special Working	Working rail traffic using an Alternative Proceed Authority or manual block working.
System of Safeworking	An integrated system of operating procedures and engineered systems used on the Network, for safe operation of rail traffic, and protection of people and property.
Switchlock	<p>A device used to lock a points lever. The device must be initially released by the Network Controller or by the positioning of the rail traffic prior to a Competent Worker operating a lever.</p> <p>Usually found on points leading to or from an intermediate siding or non-signalled portions of yards in CTC territory.</p>
Track-Circuit	An electric circuit where current is carried through the rails and used to detect the presence of trains. Track-circuits are used in the operation and control of points, signalling and level crossing equipment.
Uni-Directional	Allowing for normal travel in one direction only according to the infrastructure and system of Safeworking in use.

1. Purpose

The purpose of this Rule is to describe the operation of the *Centralised Traffic Control (CTC) System of Safeworking* used in the *Network*.

2. General

The *CTC* system comprises:

- a *Location* for the control of *Points* and signals;
- *Controlled Absolute Signals* at the entrance to each *Section*;
- *Controlled Absolute Signals* protecting the *Route* through *Interlockings*;
- *Absolute Signals (Intermediate Signals)* are placed to divide *Sections* into multiple blocks; and
- *Track-Circuits* or *Axle Counters*.

Sections in *Centralised Traffic Control (CTC) Territory* consist of single or multiple lines that are *Uni-Directional* or *Bi-Directional*.

Interlocking of *Track-Circuits*, *Axle Counters*, *Points* and protecting *Signals* prevents a *Running Signal* from displaying a PROCEED indication unless:

- the block beyond the signal is not *Occupied*;
- there are no conflicting *Routes* set; and
- the *Points* are correctly set.

The *Network Controller* controls the entry of *Rail Traffic* into *Sections* and through *Interlocking's*.

If the *CTC* system is reported as, or suspected to be, faulty or unreliable, a method of *Special Working* must be used until the system has been restored.

3. Proceed Authorities

The authority for *Rail Traffic* to enter and *Occupy* a block under the *CTC* system is:

- a PROCEED signal;
- a verbal authority; or
- a written *Authority*.

4. Failure of Control Functions

If the function to control *Points* and *Signals* fails, the *Network Controller* must instruct the *Competent Worker* to:

- confirm the setting of *Points*;
- manually operate the *Points* as required; and
- manually *Secure* the *Points* if necessary.

The *Rail Traffic Crew* must obtain an authority to pass *Fixed Signals* at STOP in accordance with Rule 6013 Passing Fixed Signals at Stop.

5. Entering Signalled Track from Non-Signalled Location

Where there is no *Fixed Signal* to control entry into *Centralised Traffic Control (CTC) Territory*, the *Network Controller* must authorise *Rail Traffic* entry.

The *Network Controller* must:

- verify that there are no conflicting *Rail Traffic* movements or track *Occupancy*,
- where provided, give the release for *Switchlock* operation; and
- give permission for the *Points* to be operated.

Rail Traffic entering from non-signalled areas must be prepared to stop at the next *Fixed Signal*, and comply with the indication displayed.

6. References

6013 Passing Fixed Signals at STOP

7. Effective Date

4 May 2016