Network Safeworking Rules and Procedures

Active Control Level Crossing Management

Rule Number: 2015

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Document History

Version	Effective Date	Pages updated	Reasons for change
2.01	21 11 2022	6	Rail Traffic Crew added with Competent Worker

Table of Contents

1. Purpose

This rule prescribes the requirements and protocols for managing and testing *Active Control Level Crossings* in the *Network*.

2. General

Active Control Level Crossing Protection equipment will commence to operate when detected *Rail Traffic* reaches a predetermined warning distance from the *Level Crossing*. This varies to provide an adequate warning period appropriate to the maximum *Track Speed*. The activation point may be a fixed position determined by design calculations or may be determined dynamically by the *Level Crossing* prediction system if installed.

Where half boom gates are provided in conjunction with flashing light warning signals, the operation is as follows:

- Where Advance Warning Lights are installed, and when the detected *Rail Traffic* reaches the predetermined warning distance, they will activate for approximately 8 to 10 seconds prior to the *Level Crossing* lights activating.
- The flashing light warning signals will operate and bells will ring, and a white flashing side light will be exhibited to the *Rail Traffic Crew*.
- Approximately 6 to 10 seconds later the boom will commence to descend to form a barrier across the roadway approach lane.
- When the boom is fully lowered, the bells may cease to ring but the warning lights will continue to flash.
- When the *Rail Traffic Clears* the *Level Crossing*, the boom will automatically rise to the vertical position.
- Flashing lights will continue to flash until the boom returns to a vertical position.

Where flashing light warning signals are the only *Level Crossing Protection* installed, the operation is as follows:

- Where Advance Warning Lights are installed, and when the detected *Rail Traffic* reaches the predetermined warning distance, they will activate for approximately 8 to 10 seconds prior to the *Level Crossing* lights activating.
- The flashing light warning signals will operate and bells will ring, a white flashing side light will be exhibited to the *Rail Traffic Crew*.
- When the *Rail Traffic Clears* the *Level Crossing*, the *Level Crossing* lights will cease flashing.

Where pedestrian warning devices are installed, the operation is as follows:

- Where Warning Lights are installed, and when the detected *Rail Traffic* reaches the predetermined warning distance, they will activate for approximately 25 seconds prior to the *Rail Traffic* reaching the *Level Crossing*.
- The flashing light warning signals will operate and bells will ring, until the *Rail Traffic Clears* the *Level Crossing*.
- When the *Rail Traffic Clears* the *Level Crossing*, the *Level Crossing* lights will cease flashing and the bells will cease ringing.
- The Pedestrian *Level Crossing* may also have automatic barrier gates installed. These shut and open in conjunction with the lights and bells operating.

3. Testing Warning Equipment

Active Control Level Crossing roadside and pedestrian warning equipment must be tested by authorised on-site testers.

The warning equipment must be tested at a time when all equipment will operate.

A *Permanent Record* must be made of the test results.

3.1 On-site Testing Intervals

Warning equipment that is tested on-site must be tested in accordance with *Arc Infrastructure* specified test intervals.

Scheduled Testing may be suspended only on the authority of the Manager Engineering Representative.

A minimum level of scheduled testing must be performed within the maintenance cycle. The uncompleted higher level scheduled testing must be completed in the next maintenance cycle.

If there are concerns in regards to the functionality of the equipment, the *Network Controller* must be advised and the *Level Crossing* treated as potentially faulty. *Rail Traffic Crews* must be warned by the *Network Controller*.

3.2 Authorising Testing

The *Network Controller* must be notified before each test is done.

Before authorising a test, the Signalling Maintenance team must consult with the *Network Controller* to make sure no *Rail Traffic* is *Closely Approaching* the *Active Control Level Crossing*.

3.3 Remote Monitoring

Competent Workers required to monitor equipment must regularly check and act on warning alarms and display indications.

3.4 Testing Due to an Incident

Where an incident occurs at *Level Crossings* provided with half boom gates and / or flashing light warning signals, an Approved Engineering Representative is to attend the *Level Crossing* as soon as practicable to report on the condition of equipment and to remedy any damage resulting from the incident.

4. Manually-Operated Warning Equipment

Competent Workers in charge of *Level Crossings* with manually operated roadside and pedestrian warning equipment must make sure that the warning equipment is:

- activated before *Rail Traffic* is authorised to use the *Level Crossing*; and
- deactivated only after *Rail Traffic* has fully *Cleared* the *Level Crossing*.

5. Rail Traffic That May Not Activate Track-Circuits

If *Rail Traffic* needs to use an *Active Control Level Crossing* operated automatically by *Track-Circuits*, but the *Rail Traffic* cannot be relied upon to activate the *Track-Circuits, R*ail Traffic Crews must:

- ensure the *Level Crossing* is clear of all road and pedestrian traffic; and
- manually operate the *Level Crossing Protection*; or
- wait for or arrange to stop all approaching road and pedestrian traffic.

Rail Traffic may *Proceed* over the *Level Crossing* only if it is safe to do so.

6. Level Crossings with Infrequent Rail Traffic

If *Rail Traffic* is to use an *Active Control Level Crossing* operated automatically by *Track-Circuits* and it is more than 28 days since the last *Rail Traffic* transit, the *Network Controller* must, unless advised otherwise by an Approved Engineering Representative, treat the *Level Crossing* as potentially faulty and warn *Rail Traffic*.

Advice of the *Rail Traffic* movement shall also be given to the Regional Lead for the area so that appropriate checks can be made with regard to the operation of the *Track-Circuits*.

7. Extended Operation of Warning Equipment

Crews of *Rail Traffic* stopped in the controlling *Track-Circuit* of an *Active Control Level Crossing* must promptly tell the *Network Controller* if the *Rail Traffic*:

- is delayed; or
- cannot be moved.

The *Network Controller* must arrange for the *Rail Traffic Crew* or *Competent Workers* to *Protect* the *Level Crossing*.

8. Potentially Faulty Active Control Level Crossings

If an *Active Control Level Crossing* is potentially faulty, the *Network Controller* must warn *Rail Traffic Crews*, in accordance with Rule 2009 Reporting and Responding to Condition Affecting the Network (CAN).

Rail Traffic Crews warned about a potentially faulty *Level Crossing* must approach the crossing at a speed that allows *Rail Traffic* to stop short of the crossing.

If it cannot be determined that the *Level Crossing* equipment is working correctly, *Rail Traffic* must stop short of the *Level Crossing* to check whether the warning equipment is operating correctly and:

- if warning equipment is operating correctly, proceed;
- if warning equipment is not operating correctly, treat the *Level Crossing* as faulty; and
- as soon as possible, report the condition of the warning equipment to the *Network Controller*.

9. Faulty Active Control Level Crossings

If an *Active Control Level Crossing* is faulty, the *Network Controller* must:

- warn *Rail Traffic Crews* that the warning equipment is faulty, in accordance with Rule 2009 Reporting and Responding to Condition Affecting the Network (CAN);
- as necessary, arrange for a *Competent Worker* to *Protect* the *Level Crossing*, or arrange to close the crossing to road and pedestrian traffic;
- arrange for a *Signals Maintenance Representative* to attend; and
- make a *Permanent Record* of the details.

9.1 Faulty Active Control Level Crossing not Protected by a Competent Worker

If a faulty *Active Control Level Crossing* is not *Protected* by a *Competent Worker, Rail Traffic Crews* must:

- stop short of the *Active Control Level Crossing*;
- manually operate the *Level Crossing*; arrange to stop approaching road and pedestrian traffic; and
- proceed over the *Level Crossing* only if it is safe to do so.

NOTE: *Rail Traffic Crews* must be aware that an *Active Control Level Crossing* failure where the *Level Crossing Protection* is continually activated increases the risk that road users may not be observing the warning equipment. *Rail Traffic Crews* must be prepared to Stop to prevent a collision. They may only proceed when satisfied it is safe to do so.

10. Protection by Competent Workers

Competent Workers must contact the *Network Controller* and obtain *Rail Traffic* information.

Competent Workers must not do other work when *Protecting* an *Active Control Level Crossing*.

If one *Competent Worker* cannot safely *Protect* an *Active Control Level Crossing*, additional *Competent Workers* must be used.

Competent Workers must make sure that all road and pedestrian traffic has been stopped prior to the arrival of *Rail Traffic*.

10.1 Active Control Level Crossing with Flashing Light Protection Only

Competent Workers must:

- advise any road user and pedestrians waiting at the crossing to only move across the *Level Crossing* when directed to do so;
- if there is no approaching *Rail Traffic*, direct any road or pedestrian traffic to move over the crossing; and
- make sure that all road and pedestrian traffic has been stopped prior to the arrival of *Rail Traffic*.

10.2 Active Control Level Crossing with Half Boom Gates and Flashing Light Protection

Competent Workers must:

- confirm if the boom barrier is in contact with or if there is a risk of contact with any Overhead Traction System or live overhead electricity. If so, await directions from the Manager Engineering Representative before raising or lowering any half boom gate;
- if there is no approaching *Rail Traffic*, raise and latch the boom barriers and then direct road and pedestrian traffic to move over the crossing:
  - if the mast has a red sign attached (WARNING – BOOMS DRIVE DOWN) then the manual activation switch must be set to 'manual' before attempting to lift the boom gates.
- make sure that all road and pedestrian traffic has been stopped prior to the arrival of *Rail Traffic*; and
- if there is approaching *Rail Traffic*, wait until the *Rail Traffic* has cleared the crossing and then re-assess the time available.

When the *Competent Workers* is relieved, the *Network Controller* must be advised.

Figure 2015-1 Warning – Booms Drive Down sign.

10.3 Active Control Level Crossing interfaced with the Main Roads Department traffic lights

If the crossing control is interfaced with the Main Roads Department traffic lights, the *Competent Worker* must not raise and latch the boom barrier until a *Signals Maintenance Representative* has given permission to do so.

10.4 Returning Active Control Level Crossing to Normal

When the *Signals Maintenance Representative* has made the necessary repairs they will give permission for the *Level Crossing* to return to normal use.

The *Competent Worker* must:

- fully lower a boom barrier to restore normal functionality, then lower the remaining boom barrier(s) and secure all latches; and
- confirm with the *Signals Maintenance Representative* that the *Level Crossing* is operational and advise the *Network Controller*.

11. Resuming Normal Operation

If told that *Active Control Level Crossing* warning equipment has been tested and *Certified* as working correctly, the *Network Controller* must:

- tell *Competent Workers* that normal working will be resumed;
- tell affected *Rail Traffic Crews*; and
- make a Permanent Record of the details.

12. Wrong Running-Direction Movements

If there is no *Competent Worker* to protect a *Wrong Running-Direction* movement over an *Active Control Level Crossing* operated automatically by *Track-Circuits*, *Rail Traffic Crews* must:

- stop short of the *Active Control Level Crossing* and manually operate the *Level Crossing*; or
- arrange to stop approaching road and pedestrian traffic.

Rail Traffic may proceed over the *Level Crossing* only if it is safe to do so.

In Double Line areas where the *Active Control Level Crossing* can be operated automatically for *Bi-Directional* movements, manual *Protection* of the *Active Control Level Crossing* is not required.

13. References

2009 Reporting and Responding to Condition Affecting the Network (CAN)

14. Effective Date

21 November 2022