Network Safeworking Rules and Procedures

Operation of Self Restoring Points

Rule Number: 9022

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Document History

Version	Effective Date	Pages updated	Reasons for change
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1. Purpose

The purpose of this procedure is to describe *Self Restoring Points (SRP)* and outline the means by which they are used to control the access of *Rail Traffic* to and from *Crossing Locations*, *Sidings* or junctions.

2. General

SRP:

- are electrically operated *Points*;
- are installed at various *Stations* and *Sidings* in *Train Order Territory*; and
- when reversed, under certain conditions and subject to a time delay, will automatically restore to their normal position after the passage of *Rail Traffic*.

NOTE: Automatic restoration of *SRP* is determined from sequential *Track-Circuit Occupation* and therefore does not occur for *Rail Traffic* with insulated *Axles*.

SRP systems provide:

- an indication that *Points* are locked for through movements of *Rail Traffic* in either the normal or reverse positions; and
- electrical operation by:
  - remote operation from the *Rail Traffic* cabin; or
  - by local push button.

2.1 Associated Equipment

Equipment associated with *SRP* include:

- electric *Points* motor
- illuminated triangular shaped *Points Indicators*
- flashing *Points* free indicator (coloured light type)
- push button and crank handle case
- *Track-Circuits*
- white wayside indicator posts “A” to “F”
- remote UHF radio receiver

2.2 Types of SRP

The two types of *SRP* are:

- White light; and
- Coloured light (white, yellow, red).

SRP Points Indicators consist of upper and lower triangular shaped indicators. The upper indicator applies to approaching *Rail Traffic* in the *Facing* direction and the lower indicator applies to *Rail Traffic* approaching in the *Trailing* direction.

3. White Light Type

3.1 Through Movements

WARNING: Normally SRP are left set in the normal position; however *Rail Traffic Crews* should be prepared to stop short of the *Points* in the event they have been left in the reverse position or have lost detection.

If not already illuminated, approaching *Rail Traffic* may see the upper *Points Indicator* illuminate. The *Points Indicator* will display two white lights in a vertical alignment if the *Points* are set, locked and detected in the normal position.

Figure 9022-1 Typical *SRP* Layout – white light type

The same indication will be displayed on the lower *Points Indicator* if *Rail Traffic* is approaching from the *Trailing* direction.

As the last vehicle of the departing *Rail Traffic Clears* the *Track-Circuits* of the *SRP*, the *Points Indicator* lights may extinguish.

Where the *Rail Traffic Crew* approaches the *SRP* and observes the *Points Indicators* are flashing or due to a system failure they are not illuminated, the approaching *Rail Traffic* must be brought to a stand *Clear* of the *Points* and confirm the *Points* are correctly set and locked before traversing the *Points*.

All faults or failures of the *SRP* must be reported in accordance with Rule 2009 Reporting and Responding to Condition Affecting the Network (CAN).

Points Indicators will flash to indicate either:

- loss of detection; or
- for a predetermined time:
  - when the door for the manual operation button is first opened; and
  - when the *Points* are requested to move, before movement of the *Points* begins.

3.2 Reversing Points

3.2.1 Remote radio operation

Where remote control is provided, the on board radio equipment may be used by the *Rail Traffic Crew* to move *Points* to reverse. The control equipment will only accept a call for the *Points* to move after the *Rail Traffic* has been detected as being stationary on one of the approaches to the *Points*.

Radio operation requires the *Rail Traffic Crew* to enter the 3 digit code displayed on the radio code sign into their radio on UHF channel 50.

This code ensures that where there are more than one set of *SRP* in any area, only the correct set will respond.

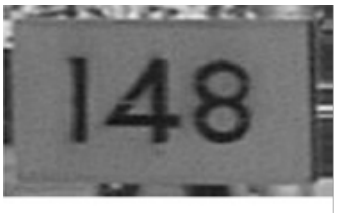


Figure 9022-2 SRP radio code sign

The *Rail Traffic Crew* can either send the 3 digit code by selecting the appropriate command on the *Locomotive* touch screen display or by entering the code on their portable UHF radio handset.

NOTE: The code varies from site to site and is displayed on a sign located alongside the *Points*.

No in cab indications are provided, the *Rail Traffic Crew* must check the indicators to confirm the *Points* setting.

When the *Points* are set in the reverse position, the two white lights on the upper and lower *Points Indicator* will be illuminated at 45 degrees, indicating the *Points* are set for reverse.

When the *Points* are moved to reverse or normal, they remain time locked for 30 seconds. After this time it is possible to move the *Points*.

3.2.2 Manual operation

A manual “PRESS TO OPERATE *POINTS*” button is provided in the crank handle case to give manual operation of *Points* in the event that radio operation is not working.

Provided the *Track-Circuit* is *Occupied*, an indicator in the push button case will display “*Points* free” after 30 seconds.

When the push button is operated, the *Points Indicator* lights will extinguish and the *Points* will move to reverse. After the *Points* are set into reverse and become locked and detected, the *Points Indicator* will illuminate to correspond with the lie of the *Points*.

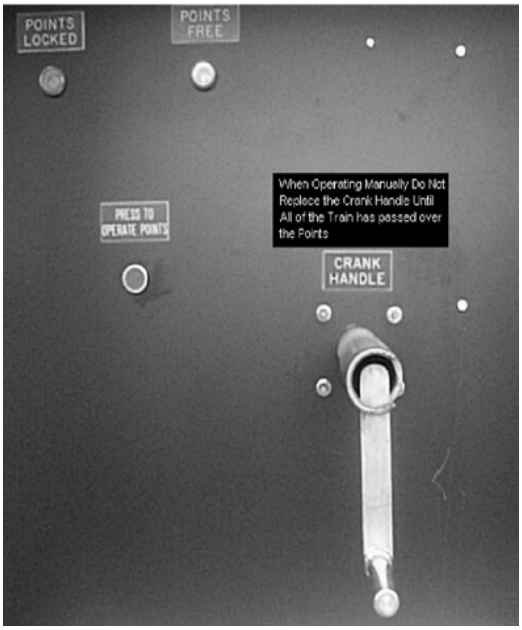


Figure 9022-3 Local control panel/crank handle case

At some *SRP* the *Points* free indicator may remain lit until the *Points* are set and detected, at which time the *Points* locked indicator will illuminate.

At other *SRP Locations* the *Points* free indicator will be extinguished when the button is pushed, followed by a delay before the *Points* move to reverse. During this time the *Points Indicator* lights will flash until the *Points* are set and detected.

The *Points* locked indicator will only illuminate at some *Locations* when they are locked by *Track* locking as the *Rail Traffic* traverses the *Points* or after the *Points* are called to move whilst the *Points Indicators* are flashing.

3.2.3 Shunt movements

For *Shunt* movements from the *Main Line* to the loop or junction, the *Points Indicator* will illuminate, if not already illuminated, when *Rail Traffic* comes to a stand at a predetermined distance from the *Points*.

The indicator will display two white lights in a vertical alignment indicating the *Points* are set in the normal position.

The *Rail Traffic Crew* may then operate the *Points* using either the remote or manual operation methods.

3.3 Points Restoration

After any *Rail Traffic* movement where the *Points* have been set to reverse and the last vehicle of the *Rail Traffic* has *Cleared* the *SRP Track-Circuits*, the *Points Indicator* may extinguish after a predetermined period and the *Points* will automatically move back to the normal position.

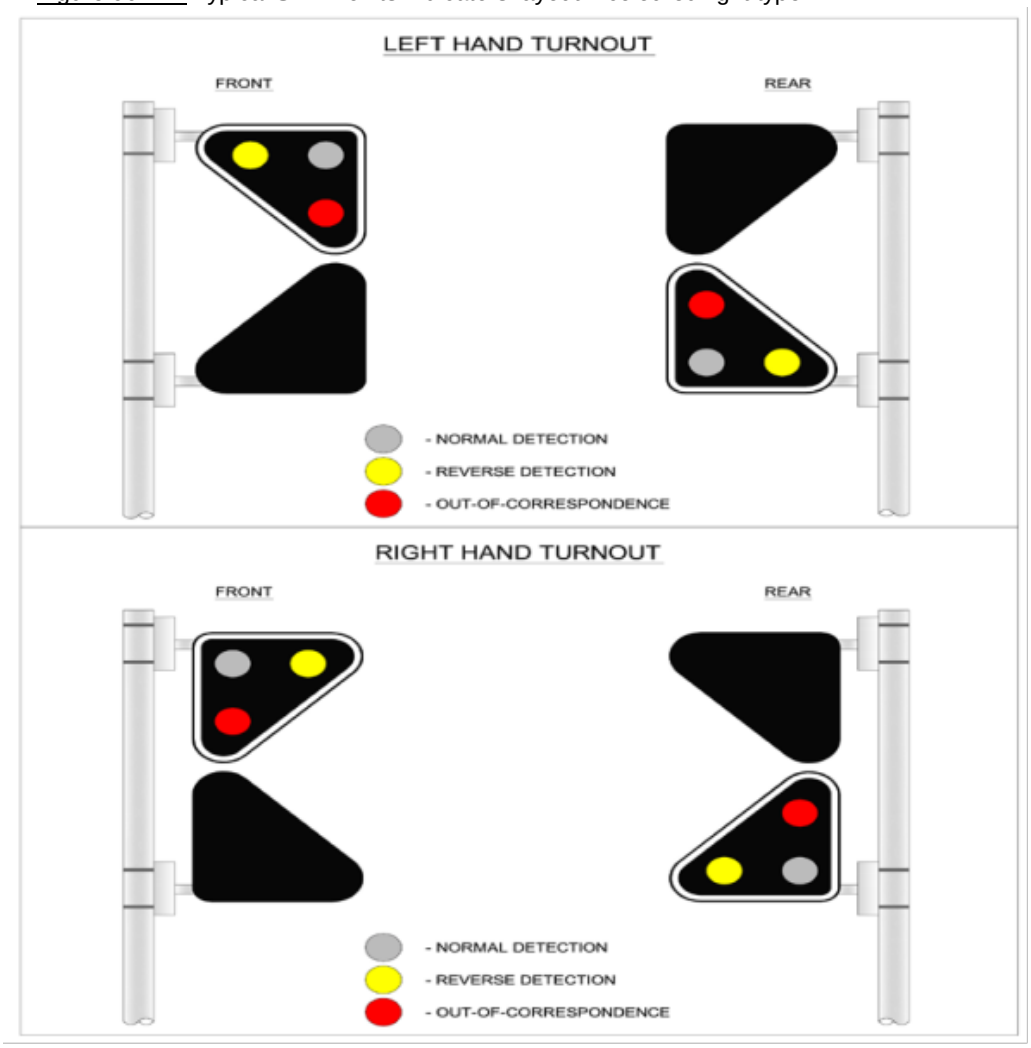
4. Coloured Light Type

There are three LED lights (white, yellow, red).

- White – indicates the *Points* are set and detected in the normal position.
- Yellow – indicates the *Points* are set and detected in the reverse position.
- Red – indicates the *Points* are not detected or, are about to move.

NOTE: A coloured light type *SRP Points Indicator* is continually illuminated.

Figure 9022-4 Typical *SRP Points Indicators* layout – coloured light type



4.1 Through Movements

WARNING: Usually SRP are left set in the normal position; however *Rail Traffic Crews* should be prepared to stop short of the *Points* in the event they have been left in the reverse position or have lost detection.

When *Rail Traffic* approaches the *SRP* in the *Facing* direction, the top indicator should be illuminated with a white light provided the *Points* are set, locked and detected in the normal position.

If *Rail Traffic* is to pass through the *Points* on the *Main Line* in the normal position, there is no requirement to stop provided there is a white light displayed on the *Points Indicator*.

The same indication will be displayed on the lower *Points Indicator* if *Rail Traffic* is approaching from the *Trailing* direction.

Where the *Rail Traffic Crew* are approaching *SRP*, and the *Points Indicator* is at red or due to electrical failure the *Points Indicator* is not illuminated, *Rail Traffic* must:

- be brought to a stand *Clear* of the *Points*; and
- confirm the *Points* are correctly set and locked before traversing the *Points*.

All faults or failures of the *SRP* must be reported in accordance with Rule 2009 Reporting and Responding to Condition Affecting the Network (CAN).

4.2 Reversing Points

4.2.1 Remote radio operation

Where remote control is provided, on board radio equipment may be used by the *Rail Traffic Crew* to move the *Points* to reverse.

Radio operation requires the *Rail Traffic Crew* to enter the 3 digit code displayed on the radio code sign into their radio on UHF channel 50. This code ensures that where there are more than one set of *SRP* in any area, only the correct set will respond.

The control equipment will only accept a call for the *Points* to move after the *Rail Traffic* has been detected as being stationary on one of the approaches to the *Points*. Approaches are indicated by wayside white posts in both the *Facing* and *Trailing* directions.

Once the *Rail Traffic* has been detected as stationary a blue flashing light will illuminate and the 3 digit code can be used to call the *Points*.

The *Rail Traffic Crew* either sends the 3 digit code by selecting the appropriate command on the *Locomotive* touch screen display or by entering the code on their portable UHF radio handset.

If the code is accepted, the blue flashing light will extinguish and the *Points Indicator* will change to red. After 30 seconds the *Points* will move and the indicator will display a white or yellow indication once the *Points* are detected in the required position. The *Points* will lock for 2 minutes before becoming free again.

If the *Points* fail to be detected in the called position, they will immediately become free again to allow them to be returned to their original position.

The *Points* will re-lock and the blue flashing indicator light will extinguish if the *Points* are not called within 5 minutes of becoming free.

For *Rail Traffic* departing in the *Trailing* direction and waiting for a passing movement, the *Points* will become free for a further 5 minutes once the incoming *Rail Traffic* has passed over the *Points*.

4.2.2 Manual operation

WARNING: *Rail Traffic Crews* must close the crank handle case door before leaving the *SRP* site.

A manual push button switch is provided in the crank handle case to give manual operation of *Points* in the event that radio operation is not working or the *Points* have re-locked.

Once the crank handle case has been opened, the *Points* free indicator light will illuminate and the *Points* can be called by using the push button.

If the call has been accepted the *Points* will activate in the same way as using the remote radio procedure.

The *Points* will remain free as long as the crank handle case door is left open.

4.2.3 Shunting movements

Rail Traffic Shunting to or from the *Main Line* to the loop, *Siding* or branch line via the *Points* being in reverse, must stop at the *SRP* and operate the *Points* to the reverse position using either the remote or manual operation methods.

When the *Points* are set in reverse, the indicator will display a yellow light.

4.2.4 Points restoration

After any *Rail Traffic* movement where the *Points* have been set to reverse and the last vehicle of the *Rail Traffic* has *Cleared* the *SRP Track-Circuits*, the *Points Indicator* will change from yellow to red, and after a predetermined period, the *Points* will automatically move back to the normal position.

5. Signage

The maximum permissible speed approaching SRP is 40 Km/h, which applies 400m either side of the Points. “40 SRP” speed restriction signs are provided at all *Locations.*

“NO STANDING BEYOND THIS POINT” signs are provided on the approach to the Points Indicator.

6. Electrical Failures

WARNING: SRP that have been moved manually must be returned to their designated normal position.

A crank handle is provided for manual operation of the *Points* during electrical failures. Once the crank handle is removed, *Point* detection is lost and power to the *Points* machine is removed.

When manually working *Rail Traffic* through a set of *SRP*, the crank handle must be kept out of the crank handle case until all of the *Rail Traffic* has passed over the *Points*.

6.1 Restoring SRP to Normal

When crank handle operation has been used, the *Points* must be returned to their normal position after the *Rail Traffic* movement and the *Network Controller* advised.

To avoid undue delays to *Rail Traffic*, the *Network Controller* may give permission for the *Rail Traffic Crew* to leave the *Points* in the reverse position and the crank handle out of the crank handle switch.

The *Network Controller* must:

- record on the *Network Control Diagram* the position of the *Points* and that the crank handle is out of the crank handle switch;
- *Issue* a warning in accordance with Rule 2009 Reporting and responding to a Condition Affecting the Network (CAN) to the *Rail Traffic Crew* of *Rail Traffic* approaching that *Location*;
- continue to *Issue* warnings until the *SRP* has been restored to normal and the crank handle restored to the crank handle switch.

The *Network Controller* can arrange for the next *Rail Traffic Crew* or other *Competent Worker* to restore the *SRP* and crank handle to normal.

7. Use by Track Vehicles

When *Track Vehicles*, that do not reliably activate *Track-Circuits*, are required to traverse over *SRP*, the *Points* must be operated using the manual operation method.

The *Points* must be manually restored to normal when the *Track Vehicle* has moved *Clear* of the *Points*.

8. References

2009 Reporting and responding to a Condition Affecting the Network (CAN)

9. Effective Date

3 February 2020