

Engineering Procedure

Signalling (Manual J)

CRN SP 006

RELEASE OF TRACK LOCKING OR INDICATION LOCKING

Version 1.3

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Document control

Revision	Date of Approval	Summary of change
V1.1	March 05r	RIC SC 00 52 00 06 SI
V 1.0	July 2011	Conversion to CRN Signalling Standard CRN SP 006
V1.1	June 2015	Update to reflect CRN operations and personnel deployment
V1.2	Jan 2017	Review only, no changes
V1.3	May 2019	

Summary of changes from previous version

Section	Summary of change
All	Remove Train Register Book replace with Network Control Log Book
All	Delete all references to Trainstops
All	Replace Signaller with Network Train Controller
5,6 and 7	Deleted obsolete equipment.

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1 Introduction

The instance of releasing being required in modern interlockings is greatly reduced when compared to relay based systems, however there still may be a requirement for a release, the Country Regional Network still has relay based route set interlockings and hybrid route set interlockings all remotely controlled in use.

1.1 Types of Releases

Under failure conditions or when an incorrect route for an approaching train is set up or when made necessary by the presence of a train which is delayed on a particular section of track, it may be necessary to provide a manual "release" to reduce train delays.

INTERLOCKING between conflicting signals and/or points and/or level crossings shall not be released.

TRACK LOCKING, either approach locking or route holding, may be released in certain circumstances in accordance with procedures prescribed hereinafter.

INDICATION LOCKS on mechanical levers, either signal normal indication locks or points normal or reverse indication locks, may be released in certain failure circumstances in accordance with procedures as prescribed hereinafter.

CAUTION

In some installations, circuits may combine INTERLOCKING with TRACK LOCKING or TRACK LOCKING with INDICATION LOCKING and care is necessary to ensure that only the specific locking concerned is released in accordance with the respective procedure.

Manual releases are normally confined to release of approach locking in approach stick relays or to overcome failure of an NI electric lever lock on a mechanical signal lever or a normal or reverse electric lever lock on a mechanical points lever.

In exceptional circumstances only, where delays to trains would be otherwise extensive, manual releases may be provided as prescribed to release route holding locking in point lock relay circuits (route control interlockings) and to release point lock relays (standard relay interlockings) and signal normal indication relays (standard relay interlockings) or signal route normal lock relays (route control interlockings).

Manual releasing methods after observing the prescribed precautions are limited to:

Manually lifting the electric lever lock on mechanical levers while the lever is moved.

Momentarily bridging out track circuit contacts in approach stick circuits (via the stick finger) or in point lock relay circuits (route control interlockings). The bridge is to be immediately removed.

Momentarily energising a signal normal indication relay, a point lock relay (except route control interlockings) and a signal route normal lock relay. The false feed is to be immediately removed.

1.2 General Releasing Conditions

Releases may be given in accordance with this procedure on receipt of a request from the Network Train Controller or a Network Authorised Person. Details of the release request are to be entered into the Network Control Log book and signed by the Network Train Controller and the Signalling Maintainer is to complete a CNRF 003 in section 3.

Where the release is requested remotely, details shall be entered on Infrastructure Booking Authority form CNRF 003 in section 3 and signed by the Signalling Maintainer and authorised by the Network Train Controller.

A separate request must be received for each and every release to be given and a separate entry made in the Network Control Logbook and the on Infrastructure Booking Authority form CNRF 003.

The Network Train Controller is to place signals at stop to prevent trains approaching the signal/points involved while a release is being given. Blocks should be employed as reminders.

2 Release of Approach Locking

Approach locking is provided to prevent the alteration of a route in the face of a train that has received a signal indication that the route is cleared for the train, and thereby an assurance that all facing points are lying correctly secured for the passage of the train, that trailing points are set for the non-conflicting position (and hence no converging routes can be signalled) and that opposing signals are at stop.

Release of approach locking requires that the following be observed.

The Signalling Maintainer giving the release must ensure that:

- The signal(s) involved is at stop and will remain so
- Any train approaching the signal involved has been brought to a stand.

In NX, OCS and CBI installations this function is achieved by the ALSR functionality – it proves the signal (and route) is at stop and that the train approaching the signal has come to a stand (usually by an approach track occupied timer of 120 seconds) – this combination will allow the route to normalise so that it can be reset as required.

3 Release of Route Holding

Route holding is provided to prevent in the face of a train that has entered a signalled route the following,

- the alteration of facing points in the overlap to an obstructed overlap,
- the unlocking or movement of facing points within the route,
- the alteration of trailing points in the route or the overlap,
- the clearing of opposing signals.

Release of route holding, where prescribed, requires the following precautions to be observed.

The Signalling Maintainer giving the release shall:

- Ensure that the signal(s) authorising entry into the route concerned is at stop and will remain so.
- Ensure that the exit signal from the route concerned is at stop and will remain so.
- Ensure that any train that has entered the route concerned is at a stand and will remain so.

For points that are route held and are to be operated when released then, prior to the release being given, the Signalling Maintainer shall also:

- Ensure that all ends of the points concerned are protected by signals at stop.
- Ensure that any trains, which are approaching signals immediately protecting any end of the points concerned, have come to a stand.
- Ensure that no train, having passed an immediate protecting signal, is on the approach side of the point ends concerned.
- Ensure that no train or vehicle is foul of any of the point ends concerned.

In any instance where it is intended to by-pass a train with a second train, by releasing converging points that are route held by the first train, then the Signalling Maintainer giving the release shall

be assured that the driver of the first train is aware that another train will be signalled across the path of his/her train.

4 Release of Approach Stick Relays

Approach locking in approach stick relay circuits may be released as follows:

The Signalling Maintainer giving the release shall:

- After receiving a request from the Network Train Controller for the release and an entry made in the Network Control Logbook and on Infrastructure Booking Authority form CNRF 003.
- Ensure that the signal is at stop and will remain so..
- Ensure that any train approaching the signal involved is at a stand.
- Momentarily bridge the approach stick finger contact on the approach stick relay. The bridge must be removed immediately.

If the relay does not pick up traffic is to be conducted in accordance with Network Rule CNSG 608 until the situation is rectified.

This style of release is typically given in a relay interlocking when shelf relays were traditionally used. Some locations were a combination of shelf and Q type where alterations had taken place and there was not sufficient room for additional shelf relays.

5 Release of Signal Normal Indication (NI) Relays or Signal Route Normal Relays

Failure of signal normal indication relays (standard relay interlockings) or signal normal route lock relays (route control relay interlockings) may be released as follows only if extensive train delays would otherwise occur.

If the failure is due to track locking then a release of the approach stick relay is to be provided.

If the failure is due to another cause then a release may be provided as under.

The Signalling Maintainer giving the release shall:

After receiving a request from the Network Train Controller for the release and an entry made in the train register book or on Infrastructure Booking Authority form CNRF 003.

- Ensure that the signal involved is at stop and will remain so.
- Electrically disconnect the signal to prevent its operation and book it out of use
- Ensure that any approaching train has come to a stand

Momentarily energise the NI relay or NLR relay (after driving the RLR relay down, if necessary). Immediately remove the false feed.

Conduct traffic past the disconnected signal in accordance with Network Rule CNSG 608.

This style of release is typically given in in NX interlockings.

6 Release of Point Lock Relays at Standard Relay Interlockings (Not Route Control Type Interlockings)

Point lock relays in N.S.W. standard relay interlockings apply track locking, generally route holding and in some cases approach locking.

If approach stick relays are provided in the point lock relay circuit and approach locking needs to be released then the respective procedure for releasing approach stick relays shall be provided.

In exceptional circumstances it may be necessary to energise a point lock relay to minimise excessive train delays. The relay may be energised after the following precautions have been observed:

After receiving a request from the Network Train Controller for the release and an entry made in the train register book or on Infrastructure Booking Authority form CNRF 003.

- Ensure all protecting signals are at stop and will remain so and that train stops where provided are in the tripping position.
- Ensure any approaching train has been brought to a stand.
- Ensure that no train is foul of any of the connections worked by the points lever.

Momentarily energise the point lock relay while the points are operated by the Network Train Controller. Immediately remove the false feed.

Where it is necessary to bypass a train occupying route holding track circuits, provided that in addition to the above the Signalling Maintainer is assured that the driver of the train to be by-passed is made fully aware of the by-passing movement and a notation to this effect is made on the release form by the Network Train Controller, the Signalling Maintainer may give the release.

This style of release is typically given in a relay interlocking when shelf relays were traditionally used. Some locations were a combination of shelf and Q type where alterations had taken place and there was not sufficient room for additional shelf relays.

7 Release of a Point Lock Relays at Route Control Type Interlockings

At Route Control type relay interlockings if a failure occurs in the circuit of a point lock relay, traffic must be conducted in accordance with Network Rule CNSG 608 until the defect has been rectified, except as set out below.

At these interlockings in addition to track locking, the point lock relay circuits incorporate interlocking functions which must not be released.

In exceptional circumstances, if a failure of a point lock relay circuit occurs due to a failure of the track locking within the circuit, or if for other reasons, it is necessary to release the points with the route holding tracks occupied, and it is ascertained that the failure cannot be rectified quickly to avoid serious train delays, then the applicable point lock relays may be energised as follows to allow operation of the points from the lever, or to allow the point lock relays to be placed in correspondence with defective points which have been operated locally by hand by the Signalling Maintainer in the case of EP points, or wound over in the case of electrically operated points, and have been secured by clip and SL lock.

The Signalling Maintainer must fully explain the circumstances to the controlling officer and obtain permission to effect the release as follows:

After receiving a request from the Network Train Controller for the release and an entry made in the Network Control Logbook and on Infrastructure Booking Authority form CNRF 003.

The Signalling Maintainer giving the release shall:

- Ensure that all signals that interlock with the points are normal and that any approaching trains are at a stand;
- Ensure that any points or releases which interlock with the points are in non-conflicting positions;
- Ensure there are no trains on routes over the points concerned;
- Ensure that no train or vehicle is foul of any of the connections worked by the points lever.

Place the point lever in route control interlockings to the position in correspondence with the points and fit lever sleeves on any signals which control routes which lead over any connections of the points.

In the point lock relay circuit concerned, bridge the appropriate contacts applying track locking and double check that the correct contacts and only those contacts are bridged. Then place the point lever to the centre position and observe the points 'free' indication. The Network Train Controller shall then operate the point lever to the position concerned. Remove the bridge immediately the respective point lock relay picks up and check that the opposite point lock relay is down.

Note 1: No attempt shall be made to operate the point lock relay or the points by operating route set buttons.

Note 2: No contacts in the point lock relay circuit are to be bridged except those that apply track locking and on no account shall point lock relays be lifted or unplugged and replaced by a relay in the up position.

Where it is necessary to by-pass a train which is occupying the route holding track circuits which lock the points to be used for the by-passing movements, then, provided that in addition to the above requirements the driver of the train to be by-passed is made fully aware of the by-passing movements and that a notation to this effect is made in the Network Control Logbook and on Infrastructure Booking Authority form CNRF 003 by the Network Train Controller, the Signalling Maintainer may provide the release.

Separate requests and entries in the Network Control Logbook and on Infrastructure Booking Authority form CNRF 003 must be completed and a separate release must be given on each occasion it is necessary to operate the point lock relays and the points.

This style of release is typically given in in NX interlockings.