Procedures

NPR 738 Operating powered interlocking machines

Description

This document describes the procedure for operating powered interlocking machines.

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Introduction

Powered interlocking machines use electrical relays or computers to interlock points and signals. Interlocking machines check and set the points and signals in a route.

Point indicator lights show that points are:

- able to respond to operation of the point-setting levers, toggles or rotary controls
- set in the intended positions.

Flashing point transit indicator lights show that the relevant points do not have detection, because:

- the points are not in position, or
- facing point locking is not engaged, or
- the points are changing position.

> **Note**
>
> During signalling equipment failures, special working, work on track authorities and work on track methods **AUTOMATIC ROUTE SETTING** must be cancelled in affected areas.

Relay (unit lever) interlocking machines

Unit lever interlocking machines have controls to check and set points and signals individually. Controls are numbered and colour coded:

Control colour	Control function
Blue	Operates releases

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Control colour	Control function
Black	Sets points
Red	Operates signals

Steady white indicator lights show that points are in the **NORMAL** or the **REVERSE** position.

Steady point lock lights show that the position of the relevant points cannot be changed.

Qualified Worker

1 Set points to:

- **NORMAL** by moving a lever back, a toggle up, or a rotary control left, or
- **REVERSE** by moving a lever forward, a toggle down, or a rotary control right.

2 Check point indicator lights to make sure that points have operated correctly.

3 Set signals to:

- **STOP** by moving a lever back, a toggle to up or middle, or a rotary control to left or middle, or
- **CLEAR** by moving a lever forward, a toggle down or up, or a rotary control right or left.

4 Check signals or signal repeaters to make sure they have operated correctly.

Route-setting interlocking machines

Route-setting interlocking machines check and set a complete route for an intended movement.

The machines:

- check that no conflicting movements have been set already
- set the points and signals for a route.

Route-setting buttons are colour-coded or pattern-coded:

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Button colour or pattern	Means
Blue	Up direction routes
Yellow	Down direction routes
Red	Shunting movements, or an emergency
White	Automatic re-clearing of signals
Black arrowhead	Commence on Entrance-Exit (NX) machines
Outlined arrowhead	Finish on Entrance-Exit (NX) machines
Double arrowhead	Combined commence/finish on Entrance-Exit (NX) machines
No arrowhead	Route on One Control Switch (OCS) machines

Individual controls can operate points independently of the route-setting. These controls must be:

- kept in the centre position to allow the route-setting function to operate, or
- when an unsignalled movement is to occur, set to **NORMAL** or **REVERSE** to lock them in the correct position.

A green **FREE** indicator light shows that the relevant points are able to be moved.

One Control Switch (OCS) route-setting

The Qualified Worker uses a single button to set a route. A flashing green light in the signal repeater symbol shows that the route is being set. The light steadies when the route is set.

A yellow indicator light in the signal repeater symbol shows that a subsidiary route has been set.

Qualified Worker

5 Press the route button for the intended route.

6 Check that:

- a steady green light shows that the route has been set

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- signals for the route have cleared.

7 Press the relevant **CANCEL** button to cancel a route.

Entrance-Exit (NX) route-setting

The Qualified Worker sets the start and end of the route.

A white light within the **COMMENCE** button:

- flashes if the **COMMENCE** button is pressed
- steadies when the route is set.

A row of steady white route lights on the indicator panel:

- flashes until points in the route have been set
- steadies when the route has been set.

If a train occupies a portion of track in the intended route, the indicator panel lights representing the occupied portion change to red.

Qualified Worker

8 Press the **COMMENCE** button for the signal at the start of the route.

9 Press the **FINISH** button for the end of the route.

10 Check that a row of steady white lights shows that the intended route is set.

11 Check that a steady green light in the signal repeater shows that the signal has cleared.

12 Pull out the relevant **COMMENCE** button to cancel a route.

Failure of intended route to set

Qualified Worker

1 If the route does not set, or if signals do not clear, check that:

- the route does not conflict with a route already set
- required time releases have operated.

2 Check that you are operating the correct controls in the correct order.

3 Cancel the intended route. If necessary, cancel routes that affect the intended route.

4 Make at least three attempts to set the route.

5 If a set of points does not have detection, check, where practicable, that the points are not obstructed.

6 If the route cannot be set, tell:

- a Signals Maintenance Representative
- the Network Controller.

Related Documents

NPR 707 Clipping points

NPR 719 Operating groundframes

NPR 739 Operating mechanical interlocking machines