



AUSTRALIAN RAIL TRACK CORPORATION LTD

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About This Standard

This Principle addresses the need for the provision of and types of control panels or operator workstations to facilitate the local operation of interlockings.

Document History

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13 Local Control

13.1 Principle No. 13.1 - Local Control Of Interlockings

13.1.1 Introduction

This Principle addresses the need for the provision of and types of control panels or operator workstations to facilitate the local operation of interlockings.

13.1.2 Local Control

The term local control shall apply to an interlocking which is normally operated under remote control but due to particular operational needs is provided with facilities to enable it to be controlled locally by operations staff.

This would normally be a regular occurrence and typically where heavy local shunting operations are involved.

13.1.3 Emergency Local Control

The term emergency local control shall apply to an interlocking which is normally operated under remote control but due to the effects of a partial or total loss of the remote control system or for operation during planned maintenance works or for testing and other maintenance requirement, is provided with facilities to enable it to be controlled locally by operations staff.

13.1.4 Provision of Emergency Local Control

The provision of emergency local control should be determined having regard to the following criteria:

- The probability and consequences of remote control system failure.
- The operational needs and traffic levels involved.
- The availability of staff to operate the system locally.
- The provision of alternative arrangements such as override controls, signal post push buttons or local automatic route setting etc.
- The need to facilitate both initial and future system testing and commissioning.
- The cost effectiveness of the above considerations to revenue earning services.

13.1.5 Method of Local Control

The local control may be exercised by the provision of a local control panel (LCP).

In each instance local operation shall be enabled by the operation of a key-locked switch or other suitable security device for which the key or enabling mechanism shall be maintained in

a safe place for use by authorised operations staff.

Refer to Principles 13.2 & 13.3 for full details.

13.1.6 Type of Local Control

Generally the simplest method of local control should be provided subject to interfacing considerations

Usually if the interlocking to be locally controlled is an entrance - exit type then the local control panel shall provide entrance - exit route setting commands which directly interface with the interlocking circuits.

Usually if the interlocking to be locally controlled is a unit lever type then the local control panel shall provide unit lever commands which directly interface with the interlocking circuits.

If the control of the interlocking is of a hybrid nature then care shall be exercised to interface the local control panel to the interlocking in the most effective manner.

13.1.7 Maintenance Panels

If a local control panel is provided then wherever practical the local control panel should be positioned so that it also services the needs of maintenance staff and avoids the provision of a separate maintenance panel.

13.2 Principle No. 13.2 - Local Control Without A Closing Facility

13.2.1 Introduction

This Principle addresses the technical requirements for the local control of an interlocking without the provision of a local closing facility.

13.2.2 Requirements

13.2.2.1 General

If under normal operating conditions an interlocking is remotely controlled via a data transmission system and is also required to be operated from a local control panel (LCP) without closing facilities then the following special features shall be incorporated into the system design.

13.2.2.2 Operators Interface - Local Control Panel Switches and Indications

A two position key-locked rotary switch shall be provided to enable control of the interlocking to be transferred from remote to local and back as required. The key shall be captive in the local position. Refer to figure 1.

The switch shall be turned to the left hand position when the interlocking is required to operate locally. Text reading LOCAL shall be provided above this switch position. Refer to figure 1.

The switch shall be turned to the right hand position, when the interlocking is required to operate remotely. Text reading REMOTE shall be provide above this switch position. Refer to figure 1.

A two position switch may be provided to enable all the local control panel indications to be switched on or off as required. Text reading INDICATIONS shall be provided beneath the switch. Refer to figure 2.

An illuminated white or yellow indication shall be provided immediately above each position of the local/remote switch to indicate the current control mode to an Operator. This shall be in correspondence with the local control interlocking relay or equivalent CBI bits. These specific indications shall not be subject to control by the panel indication switch. Refer to figure 1.

The signal post and yard working telephones shall be switched to the local or remote control centre, as applicable.

13.2.2.3 Non Vital System Switching

Transfer of a control from remote to local may be by either relays or solid state means.

The mode of operation selected shall be registered either by the relay based interlocking (RBI) or computer based interlocking (CBI) as appropriate and this shall ensure that any particular interlocking features required for the particular mode of operation are properly maintained.

The transfer of control from remote to local shall ensure that the transmission system control outputs are isolated before the local controls are enabled.

If relays are used this may be achieved by switching the appropriate system bus bars. Switching relays and repeats shall be monitored in the Local/Remote indications.

If solid state switching is used then this may be achieved by hardware or software means or any combination of the two.

Indications shall be transmitted continuously to the remote control centre irrespective of whether the interlocking is operating locally or remotely.

13.3 Principle No. 13.3 - Local Control With A Closing Facility

13.3.1 Introduction

This Principle addresses the technical requirements for the local control of an interlocking with the provision of a local closing facility.

13.3.2 Requirements

13.3.2.1 General

If under normal operating conditions an interlocking is remotely controlled via a data transmission system but is also required to be operated from a local control panel (LCP) with closing facilities then the following special features shall be incorporated into the system design.

13.3.2.2 Operators Interface - Local Control Panel Switches and Indications

A three position key-locked rotary switch shall be provided to enable control of the interlocking to be transferred from REMOTE to LOCAL to CLOSING and back as required. The key shall be captive in the local position. Refer to figure 1.

The switch shall be turned to the centre position when the interlocking is required to operate locally. Text reading LOCAL shall be provided above this switch position. Refer to figure 1.

The switch shall be turned to the left hand position when the interlocking is required to operate locally and unattended in automatic reclearing mode. Text reading CLOSING shall be provided above this switch position. Refer to figure 1.

The switch shall be turned to the right hand position when the interlocking is required to operate remotely. Text reading REMOTE shall be provided above this switch position. Refer to figure 1.

A two position switch may be provided to enable all the local control panel indications to be switched of or off as required. Text reading INDICATIONS shall be provided beneath the switch. Refer to figure 2.

An illuminated white or yellow indication shall be provided immediately above each of the three switch positions to indicate the current control mode to an operator. This shall be in accordance with the interlocking relay conditions or equivalent CBI bits. These specific indications shall not be subject to control by the panel indication switch. Refer to figure 1.

Signal post and yard working telephones shall be switched to the local or remote control centre as applicable.

13.3.2.3 Non Vital System Switching

Transfer of control from remote to local or closing may be either by relays or solid state means.

The mode of operation selected shall be registered either by the relay based interlocking (RBI) or computer based interlocking (CBI) as appropriate and the interlocking shall ensure that any

particular interlocking features required for a particular mode of operation are safely selected and maintained.

The transfer of control from remote to local shall ensure that the transmission system control outputs are isolated before the local controls are enabled.

If relays are used this may be achieved by switching the appropriate system bus bars. Switching relays and repeats shall be monitored in the Local/ Remote indications.

Indications shall be transmitted continuously to the remote control centre irrespective of whether the interlocking is operating locally or remotely.

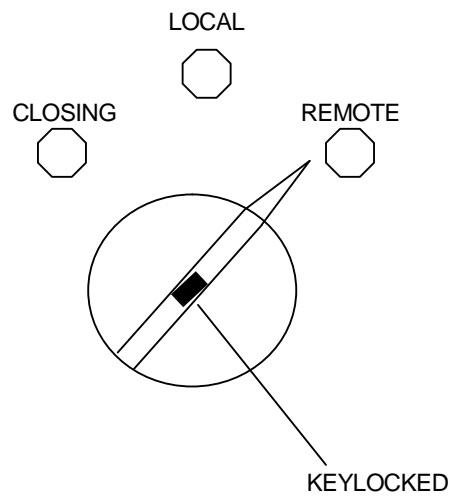
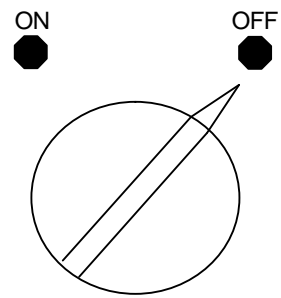


FIGURE 1



INDICATIONS

FIGURE 2

LOCAL CONTROL WITH A CLOSING FACILITY

PRINCIPLE N° 13.3