COP0031

Issue 1

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Code of Practice for Safe Use of Remote Controls

M&EE Networking Group

Document revision history

Issue	Date	Reason for change
1	Jan 2015	First issue, produced following the issue of NIR 2908.

Background

A sub-group of the M&EE Networking Group have looked at the use of remote controls. The M&EE Networking Group recommend this COP as good practice for the industry.

M&EE COPs are produced for the benefit of any industry partner who wishes to follow the good practice on any railway infrastructure. Where an infrastructure manager has mandated their own comparable requirements, the more onerous requirements should be followed as a minimum for work on their managed infrastructure.

The M&EE Networking Group makes no warranties, express or implied, that compliance with this document is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.
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Sign off

The M&EE Networking Group agreed and signed off this Code of Practice on 14th January 2015 and published on 6th June 2015

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Purpose

This Code of Practice details the use of remote controls.

Scope

This Code of Practice concerns wired and wireless remote controls for OTP, OTM and other machines in the railway environment.

Definitions

remote control	a control mechanism that can either be wireless (eg radio, infra red) or hard wired with a connector between control and system (even when the connector is not intended for normal use)

1 Design requirements

1.1 Wired remote controls

1.1.1 For remote controls that affect movement, the machine should stop working and the brake applied (if fitted) if a remote control is inadvertently removed or disconnected.

1.1.2 As a one-off check that existing machines meet the requirements of 1.1.1 each machine owner should remove each plugged connection in turn, whilst the machine is moving, and ensure that the movements cease.

1.2 Wireless remote controls

1.2.1 For remote controls that affect movement, the machine should stop working and the brake applied (if fitted) if a remote control becomes out of signal range, or the power supply to the remote control is lost.

1.2.2 Wireless control devices should meet the electro-magnetic compatibility (EMC) requirements set out in EN 50121-3-2:2006.

1.3 All remote controls

1.3.1 All remote controls should have a hold-to-run device such that no movement can take place without the specific device operated. Ceasing to operate the device should cause the machine movements to stop and brake (if fitted).

NOTE: A control lever which spring returns to a neutral position fulfils the requirement of a hold to run device.

1.3.2 All remote controls should have an emergency stop button capable of locking in the stop position.

1.3.3 All remote controls that are carried should failsafe (stop machine) when the device is dropped or the operator falls over.

1.3.4 If the person operating a remote control is not on board the machine (that is walking beside the machine) the speed of the machine should be limited to not greater than 3 mph (5 km/h).

2 Use of remote controls

2.1 Always check site rules. Some sites have specific rules in place to prevent the use of radio remote controls - for example, if petrochemicals are present or nearby.

2.2 To ensure compatibility with the railway for EMC, remote controls should only be used if they are a constituent part of a road worthy vehicle or machinery with declaration of conformity to the Machinery Directive. Anything else should not be used, or will require testing to a recognised standard (such as EN 50121). Each railway infrastructure manager could have differing requirements depending on the equipment (eg signalling) in use in the particular location. EMC compatibility could therefore be route specific.

2.3 Where radio controls are not acceptable then it will be necessary to use an alternative method such as the umbilical cord or manual levers.

2.4 Always use the belt, neck strap or harness where provided. The belt, neck strap or harness is provided for several reasons, including:

- enabling the operator to make full use of both hands in operating the machine, as opposed to holding onto the control handset.
- ensuring the operator retains possession of the handset at all times.
- preventing the handset from getting damaged or inadvertently left on-site.

2.5 In addition to the strap and umbilical cord and as part of the pre-use checks carried out on the equipment, other checks of items on the remote control handset should be made. Examples of these include:

- ensuring all the control lever decals are present and legible.
- that the emergency stop button is intact and functioning.
- where fitted, a separate hold to use (deadmans) device is working.
- where fitted with a changeable battery, a spare battery is available at all times.

2.6 There should be instructions to staff to be aware of the working area, including the proximity of the operator and others to the machine (and load where applicable), the positioning of the operator is the key to this. When selecting a position of safety, the operator should ensure they have a clear view of the machine, the load and its intended path at all times. In all cases the use of an exclusion zone should be the default consideration (and consideration of use of additional staff, to ensure the working area is not breached).

2.7 Do not stand between the machine movement or load and a fixed object, such as a wall or a machine (including the one being operated). In addition to 2.4 concerning the operator positioning, make sure at all times the operator is not in such a place where an incorrect or unintended movement of the equipment can inadvertently trap or crush them. This includes never walking under a boom, whether a load is attached or not.

2.8 If working with another person, agree a communications protocol prior to commencing work. This should include agreeing a way of ensuring that the operator confirms they have isolated the controls prior to anyone encroaching within the exclusion zone, including approaching a load to attach or remove it.

2.9 Consideration should always be given to whether it is safe to walk whilst operating the remote control. A popular misconception is that radio remote controls are designed to permit the operator to both walk and operate the machine at the same time, which in most cases is wrong. Operating whilst walking is highly dangerous; as the operator is unable to concentrate on where they are going and keep their eye on the operations at the same time. Some machines (such as PEMS & LEMS etc) were deliberately designed for walking beside, but in the majority of cases this should be avoided. If there is a need for the operator to re-position them self then the controls should be isolated before moving. Once the operator is in a new position of safety and standing still they should make an all-round check before re-engaging the controls and proceeding.

2.10 Always ensure the remote control is de-activated / isolated when not in use. Inadvertently catching the handset with a coat sleeve or other article when attaching or removing a load, or exiting the cab for example, can have potentially fatal consequences. Isolating the controls can totally prevent the risk of crushing or trapping.

2.11 The operator should always store the control unit in a suitable place when not in use. Remote control handsets are not only dangerous in the hands of untrained persons, they are also extremely expensive

to replace if they get lost or damaged. For this reason, unless wearing the remote control handset in the prescribed manner, the operator should always ensure it is in its designated storage place. It is not uncommon for a manufacturer to fit a specially designed docking station and even a warning device to prevent driving away without the remote stowed. However, and whatever is fitted, the operator is responsible for ensuring the remote control handset is either worn properly or stored properly at all times.