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Issue:	3
Date:	03 June 2017
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NR/L2/RMVP/0200 - Infrastructure plant manual

Module P514 – Hand-controlled trolleys

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NOTE 2: *The relationship of this standard/control document with legislation and/or external standards is described in the purpose of this standard.*

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Issue record

Issue	Date	Comments
1	March 2013	First issue.
2	June 2016	Scheduled periodic review and update carried out. Additional requirement added to Sections 2 Safe System of work, 4 Placing a trolley on and off track and 9 Requirements for manually propelled rail handlers.
3	June 2017	Aligned content with regulator recommendations. Updated terminology and references for clarity.

Reference documentation

GE/RT8000 NR/L2/RSE/100/05	<i>Rule Book Product acceptance and change to Network Rail operational infrastructure</i>
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1 Purpose

The implementation of this module contributes to mitigating the following risks:

- a) compliance with legislation (LOLER, PUWER, HASAW);
- b) runaway/failure to stop on demand, e.g. OTP running away on a gradient;
- c) collision, e.g. collision between a RRV and an OTM;
- d) damage to assets, e.g. RRV or its load hitting a passing train during ALO operation;
- e) derailment, e.g. trailer being loaded incorrectly; and
- f) staff injuries, e.g. Operator being trapped between machine and infrastructure or machine and machine.

2 Scope

This module:

- a) defines the meaning of the term 'trolley', as well as the requirements for their acceptance and use in service;
- b) provides guidance on the number of persons required to move a trolley on rail;
- c) specifies requirements for the safe use of trolleys;
- d) specifies requirements for developing a safe system of work;
- e) specifies how to safely put a trolley on track;
- f) specifies requirements for pre-use checks; and
- g) specifies requirements for particular types of trolley.

This module applies to organisations who are involved with any of the following:

- a) planning or supply of any trolley;
- b) carrying out or controlling operations using trolleys; and
- c) maintenance of trolleys used on Network Rail managed infrastructure and Network Rail projects.

See the index of NR/L2/RMVP/0200 for information on which:

- a) specific roles this module applies to; and
- b) modules that also apply to those roles.

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3 Using trolleys

Hand-controlled trolleys and other manually propelled equipment mounted on rail wheels or runners are referred to as trolleys.

Trolleys shall:

- a) be accepted for use in accordance with NR/L2/RSE/100/05. Trolleys which do not have product acceptance shall not be used;
- b) be used in accordance with:
 - GE/RT8000/HB10 *Rule Book, Handbook 10, Duties of the COSS and person in charge when using a hand trolley*;
 - manufacturer's instructions; and
 - any limitations of use on the product acceptance certificate.
- c) not be moved above a maximum speed of walking pace.

NOTE: The brakes on this type of plant are generally only designed to cope with walking speeds. If the trolley is used at higher than walking speeds when on a gradient, there is a significant risk that the brakes will not prevent a runaway.

Determine the manpower when planning to push a hand controlled trolley on a gradient.

Guidance for the recommended number of persons required is given in Table 1.

Load Gradient	Moving rail only	Moving any load				
		3000kg ⁽⁴⁾	2000kg	1500kg	1000kg	500kg
Up to 1 in 250	5	3	3	2	1	
1 in 250 to 1 in 150	5	4 ⁽²⁾	3	2	1	
1 in 150 to 1 in 70	6	5 ⁽²⁾	4 ⁽²⁾	3	1	
1 in 70 to 1 in 50	7	6 ⁽²⁾	5 ⁽²⁾	4 ⁽²⁾	2	
1 in 50 to 1 in 30 ⁽¹⁾	10 ⁽³⁾	6 ⁽²⁾	5 ⁽²⁾	4 ⁽²⁾	2	

Table 1 Estimated persons required to move a trolley (except manually propelled rail handlers) on gradients

NOTES:

- (1) Where authorised by local instruction.
- (2) Not recommended except when moving rail.
- (3) Not recommended.
- (4) The ability to move loads above 3000kg is dependent on site conditions and requires risk assessment for each location.

The number of estimated persons required is a theoretical value and assumes one person can push the trolley or load with both hands when moving on level track and firm footing.

The recommendations shown in Table 1 should be taken into account when planning the work, but are only indicative values and might not always apply due to site conditions, the state of the trolley and/or the ability of individuals present.

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Always use the correct brake handle to operate the equipment.

Always push trolleys, when moving them along the track. Do not pull them.

Do not adjust or interfere with the braking mechanism of a trolley.

Do not ride on any part of a trolley or its load.

Do not push or pull a trolley using on-track plant or on-track machines unless it is certificated to do so.

Do not use a trolley in third or fourth rail areas unless an isolation is in place.

Load and unload trolleys correctly, and in the right sequence, in accordance with the manufacturer's instructions. If required, secure loads correctly.

Remove trolleys from the track to a position of safety on completion of work.

Secure trolleys in a position of safety when not in use.

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4 Safe system of work

When planning work that includes the use of a trolley, include the following in the safe system of work:

- a) the size and weight of items to be carried;
- b) the loading sequence or limitations as defined in the product acceptance certificate;
- c) whether more than one trolley will be required to carry a single load;
- d) site conditions on which it will be operated, for example, gradients, ballast shoulders, switches and crossings
- e) the potential for the trolley gaining speed above maximum walking pace and mitigations; and
- f) weather conditions, such as wet or frosty sleepers; and
- g) the number of staff required to load and control the trolley (see Table 1).

Determine whether it is suitable to use manually propelled rail handlers using the planning tool in Appendix A.

A staff member shall be nominated as the person in charge of the trolley and another as their deputy. Record this in the safe system of work.

All staff members nominated to fulfil these roles shall hold the Manually Propelled Rail Handler Competence and shall not act as an assistant when using trolleys during the shift.

Where it is not practical to increase personnel allocation then either the load shall be reduced or an increased number of trolleys shall be allocated to the work.

NOTE: *The role of the deputy is to act as person in charge only when the nominated staff member is no longer able to fulfil the role.*

Plan to check that the brakes operate correctly before placing a trolley on the track (see clause 5 and 6 of this module).

Make provision so that any trolley found with defective brakes, or one that has failed the brake test shall be:

- a) removed from the track and secured in a position of safety to prevent its use on the work site; and
- b) marked as defective and processed in accordance with NR/L2/RMVP/0200/module P100.

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5 Pre-use checks

Before assembling or placing a trolley on the track, check that:

- a) each part of the trolley is labelled with unique identification number, owners name and contact details;
- b) where applicable, the maximum uniformly distributed load (UDL) is shown;
- c) the maintenance brake test has not expired (see also NR/L2/RMVP/0200/module P702).

Do not use the trolley if any of the above are missing or out of date.

Assembly of the trolley shall be undertaken by a competent person (normally the user) in accordance with the manufacturer's instructions, and shall include:

- a) use of the correct braking lever;
- b) fitting push bars, side and end boards where applicable; and
- c) verification that the assembled trolley is fit for purpose.

Prior to the start of each shift and before placing a trolley on the track, verify that the trolley brakes are in working order as follows:

- a) **trolleys with braked wheels:** attempt to turn the braked wheels using one hand as shown in Figure 1. The braked wheels shall resist movement. Always wear gloves for this task.



Figure 1 Undertaking a pre use brake test using one hand only

- b) **trolleys where the design prevents uncontrolled movement:** verify that the mechanism operates correctly.

NOTE 1: For example, trolleys fitted with a restraining device that has to be supported in a raised position to allow movement of the trolley.

- c) **trolleys that are braked other than by using rail wheels** (for example, by a friction pad on the rail head. See Figure 2): verify that the braking system operates correctly before the trolley is placed on rail, or that component parts are assembled on rail so that the trolley cannot run away if the brake was not working.

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NOTE 2: For trolleys that have separate component parts, this might be achieved by placing the braked part on one rail without placing the stabilising arm on the other rail.



Figure 2 – Pre-use checking a trolley not fitted with rail wheel braking

Withdraw any trolley from service that fails these pre-use checks. Label the trolley as defective and process in accordance with NR/L2/RMVP/0200/module P100.

6 Placing a trolley on and off the track

Confirm that sufficient resources are available to handle a trolley before placing and removing it from the track. This includes carrying the trolley or trolley parts between a vehicle used to bring it to site and the track access point.

Check that the trolley brakes or holding devices are functioning correctly as soon as the trolley has been placed on the track as follows:

- trolleys with braked wheels;** carry out a push test to verify that the braked wheels do not rotate unless the brake lever is operated. The brake lever shall be in place when this test is carried out;
- trolleys where the design prevents uncontrolled movement:** check that the holding mechanism, where one is fitted, drops to the ballast when released.

NOTE: For example, trolleys fitted with a restraining device that has to be supported in a raised position to allow movement of the trolley.

Withdraw any trolley from service that fails these post on-tracking checks. Label the trolley as defective and process in accordance with NR/L2/RMVP/0200/module P100.

7 Maintenance

Trolleys shall be maintained in accordance with NR/L2/RMVP/0200/module P702.

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8 Requirements for hand trolleys

Hand trolleys have a flat load area on which tools and materials can be carried and transported along the track. They are also sometimes known as rail trolleys, track trolleys and plate layers trolleys.

The maximum load to be carried by any hand trolley shall not exceed 1000kg, uniformly distributed across its load area.

NOTE: *This applies to any hand trolley used on Network Rail managed infrastructure irrespective of its manufacturer, type or capacity when in excess of 1000kg.*

Reduce the load to be carried if the safe system of work identifies that this is required based on the number of people who can push the trolley simultaneously (see Table 1), or the site conditions on which it is to be used.

Distribute the load uniformly across the trolley load area, and check that the brake handle is not obstructed.

Do not allow a load to overhang the sides of a trolley unless a risk assessment has been completed and any necessary protection of adjacent lines has been arranged in accordance with the *Rule Book*.

Do not carry any load that overhangs a single trolley:

- a) by more than 50% of the trolley's deck length at one end; and
- b) by not more than 100% of the trolley's deck length where the overhang is equal at both ends.

Carry the load over two trolleys if loads longer than this are to be transported, but do not use two trolleys with unlinked brakes to move a load.

9 Manually propelled rail handler

Manually propelled rail handlers are trolleys that can be used to transport lengths of rail along the track.

Lift plans shall be prepared in accordance with NR/L2/RMVP/0200/module P503 when using manually propelled rail movers to move loads. This should include the estimated number of persons required to move the equipment and load (see Table 1).

Complete form NR/L2/RMVP/0200_F026 when planning to use manually propelled rail handlers.

When using manually propelled rail handlers:

- a) only use units from the same manufacturer;
- b) check that the frame locking pins are located and locked before movement and use;
- c) check that the load is raised in a controlled manner;
- d) check that some tension remains in the lifting accessory whilst the rail or switch and crossing are supported by the bottom beam;
- e) turn the traversing wheel in a controlled manner;

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- f) take care when releasing the traversing wheel on canted track;
- g) lock the traverse handwheel before letting go of the handwheel;
- h) always move the units with the bottom beam in place;
- i) do not move the units with rail in the rail storage bracket.
- j) position single rail centrally on the bottom cross beam when travelling;
- k) use four persons when lifting an assembled unit;
- l) check that the SWL is shown, and the 'Next Brake Test Due' has not expired; and
- m) complete a brake test at the start of every shift.

10 Requirements for rail skates

Rail skates consist of two double flanged wheels attached to a metal frame which form a single unit that can be used to carry a load along a single rail. The design is such that it can be speedily lifted and removed, without dismantling, within the warning time given by a lookout.

The following applies where a rail skate is to be used without a line blockage.

- a) assess the suitability of using rail skates at the planning stage and include in the safe system of work;
- b) rail skates shall only be used where a position of safety for staff, the item being carried and the skate itself is immediately available;
- c) rail skates shall only be used for the movement of single items. The number of staff required to load the skate shall be in attendance at all times throughout the operation, both to lift off the load if required, and to maintain stability of the load in transit;
- d) rail skates shall only be used singularly. Their use in tandem on the same rail or in pairs (side by side on opposite rails) is prohibited; and
- e) rail skates shall not be used to handle or transport rail.

11 Requirements for rail scooters

Rail scooters provide manual leverage for lifting a load and use the head of one rail to provide a running surface enabling the load to be transported along the track..

Protection of the line shall be in place in accordance with the GE/RT8000/HB10 *Rule Book, Handbook 10, Duties of the COSS and person in charge when using a hand trolley*, when using a rail scooter.

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Appendix A - Use of Manually Propelled Rail Handlers Planning Tool

