

**Code of Practice for
Trailers and
Attachments with
RRVs and RMMMs**

M&EE Networking Group

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Document revision history

Issue	Date	Reason for change
1	July 04	First issue (now withdrawn)
2	Feb 05	(now withdrawn)
3	Jul 07	Reissued following review and inclusion of service braked trailers. Document re-ordered to simplify use (now withdrawn)
4	Jul 08	Reissued to include dozer blade trolleys (now withdrawn)
5	Nov 11	Reissued to: rename dozer blade bogies and include a functional brake test for them; requirements for annual brake test when changing brake mediums; and engineering requirements deleted because now included in RIS-1530-PLT
6	May 14	Service braked trailers made the only option, with service brake maintenance records included in Appendix A. Requirements for attachments clarified.

Background

The original issue of this COP was issued following review of urgent operating notice 3350/132, issued 16 Feb 2004. A sub-group of the M&EE Networking Group has reviewed and amended issue 5 of the document. 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 14 May 2014 and published on 6 September 2014.

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Purpose

This Code of Practice details the requirements, actions and control measures to be put in place when trailers and/or attachments are rail mounted, working with RRVs and RMMMs.

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Scope

This Code of Practice covers all trailers/attachments with more than two rail wheels, towed or propelled by RRVs or RMMMs. It does not cover the use of UIC brakes (fitted on some OTP) for use with conventional railway vehicles.

Definitions

Attachment

Any equipment that is mechanically fixed to and / or powered or controlled from the host vehicle; this could be a lifting accessory. For the purposes of this COP, only attachments with more than two rail wheels should be considered and treated the same as trailers. For example a ballast brush with more than two rail wheels is treated the same as a trailer.

Consist

One or more trailers coupled to a towing vehicle

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**Engineering
acceptance
certificate (EAC)**

The document declaring compliance to the infrastructure manager's engineering requirements, this will also give operational limitations for the use of the trailers and attachments.

OTP

On-track plant.

Vehicles with rail wheels capable of running on railway track, limited by their engineering acceptance to running within a possession only. For the purposes of this document they are split into three main groups: rail mounted maintenance machines (RMMMs), road-rail vehicles (RRVs), and trailers.

Trailer

A non self-propelled, rail-mounted vehicle capable of being towed or propelled (this includes attachments with more than two rail wheels).

1 Engineering design requirements

- 1.1 All trailers/attachments must have a current engineering acceptance certificate. All trailers must comply with the service and parking brake requirements of RIS-1530-PLT.
- 1.2 Dozer blade bogies should be marked with an identification number (for maintenance purposes). This is permitted to be the number of the dozer it is related to. Best practice, if the host dozer number is used, is for the dozer blade bogie to be marked with the host vehicle number followed by "/1".

2 Rules for use of trailers/attachments (in addition to the infrastructure manager's operating instructions)

2.1 General rules for trailers/attachments

- 2.1.1 Trailers/attachments with more than 2 wheels that have defective brakes must not be placed or used on track.
- 2.1.2 If a trailer/attachment is found to have defective brakes whilst on track it must be off-tracked. This may involve unloading the trailer first, whilst it remains coupled to the towing RRV/RMMM.
- 2.1.3 In DC electrified line areas (3rd and/or 4th rail) and in addition to the possession, a DC isolation should be in place at all times whilst the trailer is on track.
- 2.1.4 Copies of engineering acceptance certificates (EAC) are to be available on site to the machine controller. If the EAC is not available then the trailer/attachment should not be used.
- 2.1.5 Before a trailer/attachment is left unattended on track the machine controller should ensure a functional brake test is carried out as per section 3 of this code of practice.

2.2 Rules for compatibility of trailers/attachments

- 2.2.1 Towing vehicles and trailers/attachments should be compatible. The towing vehicle maximum brake system operating pressure, should fall within the trailer/attachment brake pressure range or be the same. It should not be greater than the maximum allowable trailer/attachment brake system pressure.
- 2.2.2 Trailers should be attached as shown in Figure 1.

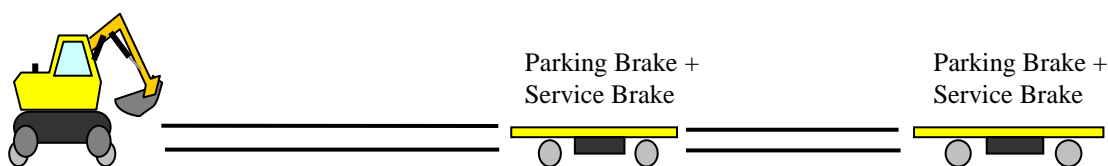


Fig 1 Towing vehicle and trailers compliant with RIS-1530-PLT with service and parking brake couplings connected

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- 2.2.3 Trailers of different make/model should only be coupled where the owner has declared the brake systems to be compatible.
- 2.2.4 The speed of consist should be limited to the lowest maximum speed of any vehicle in the consist.

2.3 Rules for on-tracking trailers/attachment

- 2.3.1 After placing the trailer/attachment on the track and before releasing the trailer/attachment, a functional parking brake test should now be carried out to ensure that it is operational, as described in section 3.

2.4 Rules for coupling of trailers

- 2.4.1 Only trained and assessed competent staff are allowed to undertake the coupling/uncoupling procedures for these trailers.
- 2.4.2 The operator is responsible for the coupling/uncoupling procedure. The machine/crane controller should be present and verify that the procedure has been carried out correctly.
- 2.4.3 Carry out a functional brake test as described in section 3.
- 2.4.4 A test of the service brake, or continuity test, should be carried out in accordance with the manufacturer's recommendations before the trailer is used each time the trailer is coupled. As a minimum this should be by applying the service brake at the towing vehicle and verifying the pressure at the furthest trailer.
- 2.4.5 Only if these tests are satisfactory should the trailers be used.

2.5 Rules for uncoupling of trailers

- 2.5.1 Bring the consist to a stand, apply the towing vehicle parking brake and stop engine (where necessary). Follow the manufacturer's procedure for ensuring that the brake pressure has been released.

There is usually a time delay for line pressure to decay after stopping the engine.

- 2.5.2 Disconnect the parking brake hose, restart the engine (where necessary). Undertake a functional brake test as described in 3.

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- 2.5.3 Providing the functional brake test is successful, verifying that the parking brake is effective, disconnect the service brake hose and uncouple the tow bar.

2.6 Rules for coupling and uncoupling of attachments

- 2.6.1 Only trained and competent staff are allowed to undertake the coupling/uncoupling procedures for these attachments.
- 2.6.2 The operator is responsible for the coupling/uncoupling procedure. The machine/crane controller should be present and verify that the procedure has been carried out correctly.
- 2.6.3 Before placing an attachment on track, assume that the braking mechanism is off.
- 2.6.4 Before releasing an attachment a functional brake test as per the manufacturer's recommendations must be carried out to ensure that the brake mechanism is operational. As a minimum this should be as described in 3.3.
- 2.6.5 If the brakes are found to be ineffective, the attachment should be off-tracked to a safe position and secured to prevent movement.
- 2.6.6 All attachments should be off-tracked into a safe position when not in use.

2.7 Rules for attaching and detaching of dozer blade bogies

- 2.7.1 Only trained and competent staff are allowed to undertake the attaching/detaching procedures for these bogies.
- 2.7.2 The bogie should be firmly attached to the blade, as per the manufacturer's instructions, before the dozer is on-tracked.
- 2.7.3 The dozer is to be off-tracked before detaching the bogie. The bogie is then detached and left on ballast or another suitable location (but not on track).
- 2.7.4 The bogie should never be left on track when detached from the dozer blade, unless a functional brake test has been carried out as shown in 3.3.

3 Functional brake test

3.1 General

- 3.1.1 When placing a trailer, attachment or dozer blade bogie on the track, and whilst coupling and uncoupling a trailer or attachment, a functional brake test should be carried out. This test is fundamental to the safe use of these vehicles.

3.2 Trailer functional brake test

- 3.2.1 When placing a trailer on track, before connecting brake hoses/cables etc, move the trailer along the track. This may be achieved by pulling the trailer with the lifting accessories, the trailer brakes should resist the movement, ie the braked wheels do not rotate.

NOTE This is intentionally using lifting accessories to pull the trailer. It is considered that the risk of damage to the lifting accessories is minimal and the risks associated with defective parking brake are greater.

- 3.2.2 Staff should be aware that not all rail wheels on some trailers have parking brakes, therefore only the braked wheels should resist movement. The number of parking braked wheels is identified on the brake test sheet as shown in appendix A.
- 3.2.3 When coupling a trailer, except as shown in 3.2.7, connect up the trailer tow bar to the towing vehicle (but not the brake hoses/cables). Undertake a pull test, the trailer brakes should resist the movement. Connect up the brake hoses/cables, release the trailer parking brake on the towing vehicle and repeat the pull test allowing for any time delay in the system operation. The wheels should now rotate freely.
- 3.2.4 When uncoupling a trailer, except as shown in 3.2.7, disconnect the brake hoses/cables to the towing vehicle (but not the trailer tow bar). Undertake a pull test. The trailer brakes should resist the movement.
- 3.2.5 If the brakes are found to be ineffective, the trailer must be off-tracked and secured to prevent movement. If the trailer cannot be lifted off the track in one operation by the towing vehicle while in rail mode, then the nearest end of the trailer should be off-tracked in order to prevent runaway. If the towing vehicle is incapable of lifting even one end of the trailer the consist should remain coupled and stationary with the brakes applied on as many vehicles as possible and a lifting machine called to lift the trailer. At all times the trailer

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must be secured to prevent runaway, eg the lifting chains are attached before the tow bar is uncoupled.

- 3.2.6 Only if these tests are satisfactory should the trailer be used.
- 3.2.7 On some mechanically braked trailers the attachment of the tow bar releases the parking brake. In these circumstances the functional brake test should be carried out without the tow bar attached, but ensuring that the trailer is restrained from running away if the brakes are not functioning correctly. These are small lightweight trailers and should be stopped by hand before allowed to build up momentum.

3.3 Attachment functional brake test

- 3.3.1 When placing an attachment on track using lifting accessories, before disconnecting the lifting accessories check that the attachment resists movement by either moving the attachment along the track as described in 3.2.1. or, as most attachments are incapable of carrying a load and the brakes are only capable of resisting movement of the attachment, a push test as described in 3.4.1 is appropriate.
- 3.3.2 Where an attachment is permitted to be left unattached on track, then a push test of the attachment must be carried out prior to the attachment being detached from the host vehicle.

3.4 Dozer blade bogie functional brake test

- 3.4.1 Where a dozer blade bogie is permitted to be left unattached on track (for example where an excavator places a dozer blade bogie on the track prior to the dozer attaching to it) then a push test of the dozer blade bogie must be carried out prior to the chains being detached.

4 Maintenance brake test

4.1 General requirements

- 4.1.1 A maintenance brake test must be carried out on all trailers, attachments and dozer blade bogies in line with the periodicity stated in the certified maintenance plan.
- 4.1.2 A brake test certificate should be issued, which overwrites any previous certificate, after each test. The brake test certificate should include all that is required in the example shown in appendix A and be available to the machine controller on site.

4.2 Parking brake test requirements

- 4.2.1 The brake test should be carried out to the manufacturer's brake test procedure. Where this is less than that defined in 4.2.4 or 4.2.5 the pull/push test in those clauses should be carried out. This should be conducted on a periodicity of no greater than 12 months, and after any brake repair, modification or brake related incident.
- 4.2.2 For attachments and dozer blade bogies, where the manufacturer has not defined the brake test periodicity, the brake test should be completed at a periodicity no greater than 3 months.
- 4.2.3 Auditable records should be kept of all maintenance brake tests undertaken detailing the test requirements and the test performance.
- 4.2.4 When the parking brake is not used as the break away brake the brake test is a pull/push test on level surface which involves the trailer/attachment (unit) withstanding a push/pull force of a minimum of 3% of the gross weight. During the test the wheels should not turn or slide. (This may require the unit to be loaded to prevent wheel slide.)
- 4.2.5 When the parking brake is also used as the break away brake the brake test is a pull/push test on level surface which involves the trailer/attachment (unit) withstanding a push/pull force of a minimum of 6% of the gross weight for units certificated up to 10 mph, 7% of the gross weight for units certificated up to 20 mph or 8% of the gross weight for units certificated up to 35 mph. During the test the wheels should not turn or slide. (This may require the unit to be loaded to prevent wheel slide.)

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- 4.2.6 The brake system pressure at both ends of each RRV/RMMM should be tested during the 12 monthly maintenance period using a calibrated test gauge and the results clearly recorded on the machine records.

4.3 Service brake test requirements

- 4.3.1 The brake test should be carried out to the manufacturer's brake test procedure at the frequency dictated by the maintenance plan, as a minimum this should be conducted on a periodicity of no greater than 12 months, and after any brake repair, modification or brake related incident.
- 4.3.2 The service brake test should be recorded and documentation kept with the maintenance records.

4.4 Brake medium change test requirements

- 4.4.1 Where the approved design of a dual braked vehicle requires dismantling and reassembly to convert from one brake medium to another, a brake test should be carried out after each conversion and a new brake test certificate issued recording the current medium.

