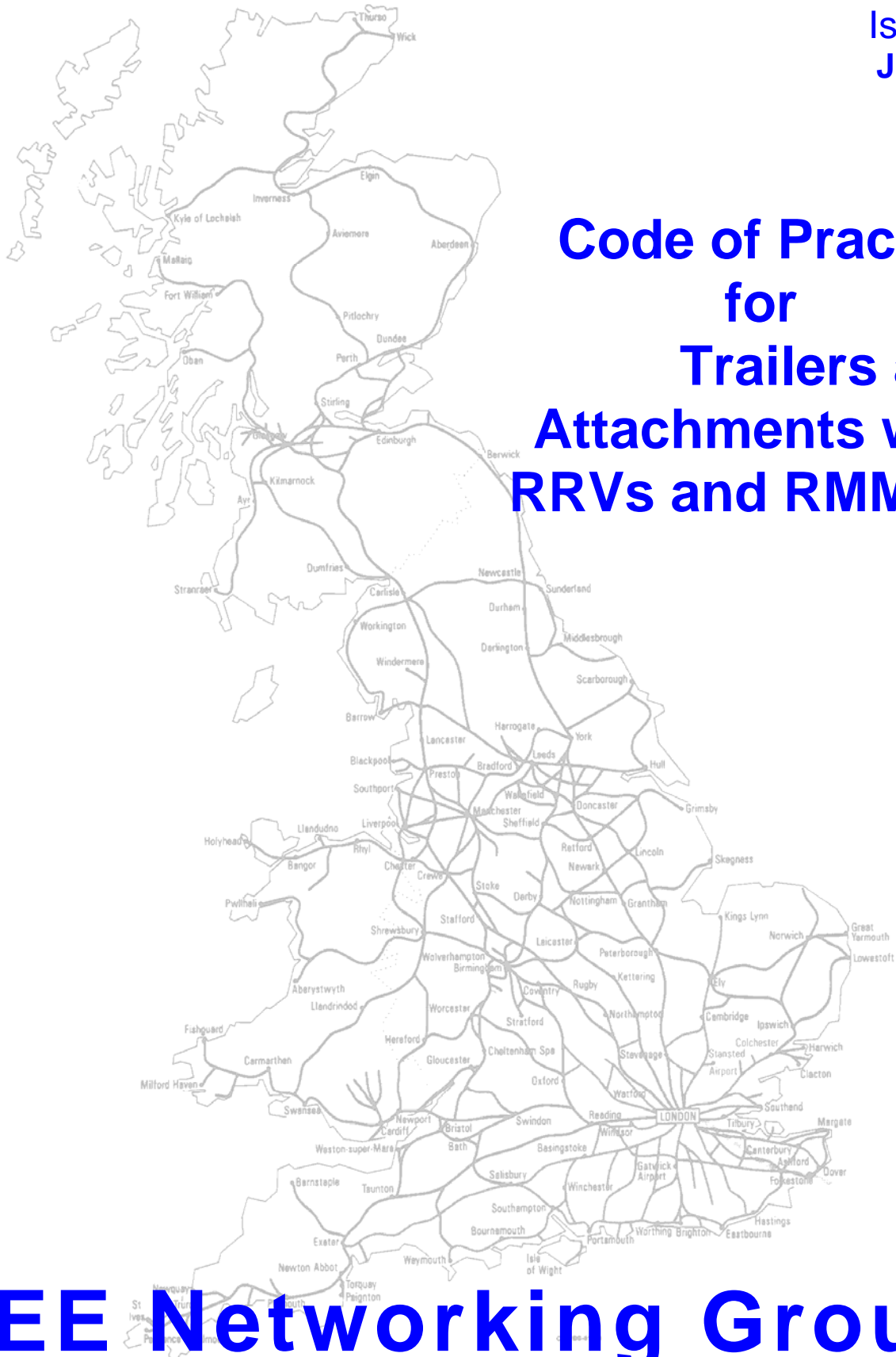


COP0014

Issue 4
July 08



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

M&EE Networking Group

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1	July 04	First issue (now withdrawn)
2	Feb 05	(now withdrawn)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
4		Reissued to include dozer blade trolleys

Changes introduced in Issue 4 are highlighted with a vertical black line on the side of the page

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 draft 3 of the document and recommend the following as good practice for the Industry.

SUB-GROUP CONTACTS

Jim Nutty	AIS, Sutton Courtenay, Abingdon, Oxon, OX14 4PP	Tel07747 627 139
Chris Sayers - Leavy	Network Rail, 40 Melton St, London, NW1 2EE	Tel 0207 557 8188
John Ockenden	Carillion Transport, Gloucester House, Birmingham	Tel 07803975584
Ron Wells	Balfour Beatty Rail Plant Raynesway, Derby,	Tel 01332 288 564
Steve Wadham	Gamble Rail Nowhurst Business Park, Broadbridge Heath, West Sussex. RH12 3PL	Tel 01403 213716
Richard Grundy	Network Rail, Derwent House, RTC Business Park, London Rd, Derby DE24 8UP	Tel 01332 263 099
Mick James	RSSB Evergreen House 160 Euston Road, London NW1 2DX	Tel 0207 983 6759
Simon Bailey	Network Rail, Derwent House, RTC Business Park, London Rd, Derby DE24 8UP	Tel 01332 263 099

Sign off

The M & EE Networking Group agreed and signed off this Code of Practice on 27 July 2008

Amey	J Nutty	Mech Assurance Engineer
Balfour Beatty Rail Plant	R Wells	Plant SC Manager
Carillion	J Ockenden	Prof Head Plant Eng
COLAS RAIL	M Scully	Fleet Engineer
Babcock Rail	J Watson	Director M&EE
Grantrail	G Adamson	Technical Manager
Harsco Track Technology	D Geering	Engineering Director
Network Rail	A J Jones	Head of Rail Vehicle Eng
Rail Plant Association	R Donald	Director
RSSB	M James	Principal Plant Engineer

Purpose

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

Scope

This code of practice covers all rail trailers and attachments with more than two rail wheels, towed or propelled by RRVs and RMMMs on Network Rail managed infrastructure.

Definitions

Consist	One or more trailers coupled to a host vehicle
Trailer	A non self-propelled, rail-mounted vehicle capable of being towed or propelled, (this includes attachments with more than two rail wheels).
PORV	Possession-only rail vehicle. 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 standard they are split into three main groups: rail mounted maintenance machines (RMMMs), road-rail vehicles (RRVs), and trailers.

1 Engineering design requirements

- 1.1 All rail trailers must have a current engineering acceptance certificate. All trailers must comply with the parking brake requirements of GM/RT1300 issue 4, GM/RT2402 issue 2, or RIS1530 PLT.
- 1.2 All attachments with more than two rail wheels must have either a current engineering acceptance certificate or a letter of compliance issued by the duty holder for attachments with Grandfather rights. All attachments must comply with GM/RT1310, with endorsement to the RSSB technical note 17. (The parking brake requirements of issue 4 of GM/RT1300, issue 2 of GM/RT2402, or RIS-1530-PLT must be complied with.)
- 1.3 Attachments that have no carrying capacity (i.e. only have a gross weight) may either be fitted with a braking system where components enter into the ballast immobilising the vehicle, or the direct operation of the braking system can be seen e.g. movement of brake block, brake pad.
- 1.4 Trailers/attachments must not be fitted with a self-contained hand pump facility for manual release of the rail wheel brakes. Existing trailers/attachments fitted with hand pumps may be left in place, provided they are disabled from manual operation.
- 1.5 For hydraulically braked trailers, there must be a mechanism for zeroing the hydraulic pressure on the trailer/attachment which shall not release fluid to the environment during, or subsequent to this operation.
- 1.6 The maximum brake system pressure must be printed adjacent to the male brake coupler on the RRV/RMMM and the acceptable pressure range printed adjacent to the brake pipework on the trailer headstock/attachment, in letters/figures that are clearly visible from a distance of 2m.
- 1.7 Where hydraulic parking brake systems are used, modified (or new) to RIS 1530 PLT, a 90 degree elbow must be designed into the system, and fitted to the trailer headstock, that will cause an immediate loss of hydraulic pressure in the braking system (and hence cause the trailer brakes to apply) should a breakaway occur. Hydraulic self sealing couplings are to be the "Faster VFB" type, with the male part fitted to the RRV/RMMM and the female part fitted to the flexible hose on the trailer/attachment. The trailer headstock

around the modified brake pipe connection must be colour coded blue (circle/square etc).

- 1.8 Where air parking brake systems are used, modified (or new) to RIS 1530 PLT, a 90 degree elbow must be designed into the system, and fitted to the trailer headstock, that will cause an immediate loss of air pressure in the braking system (and hence cause the trailer brakes to apply) should a breakaway occur.
- 1.9 All rail trailers and attachments must be clearly marked with the owners' name, contact telephone number and unique owners' identification number which must be passed to Network Rail as required for inclusion on the rail plant data base.
- 1.10 All rail trailers and attachments must have the date of the next maintenance brake test displayed in letters/figures that are clearly visible from a distance of 2m.
- 1.11 All rail trailers must have their Tare Weight, Carrying Capacity and Gross Weight indicated in letters/figures that are clearly visible from a distance of 2m
- 1.12 All attachments must have the Tare Weight indicated and where applicable the Safe working load.
- 1.13 Trailers built post Dec 2006 in compliance with RIS-1530-PLT (ie with service brakes) shall be identified by a notice saying "SERVICE BRAKED" adjacent to the data panel on either side of the vehicle.
- 1.14 If another vehicle is towed as a planned move then the towed vehicle must be classed as a trailer and meet all the associated requirements.
- 1.15 Dozer blade trolleys 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 trolley to be marked with the host vehicle number followed by "/1".

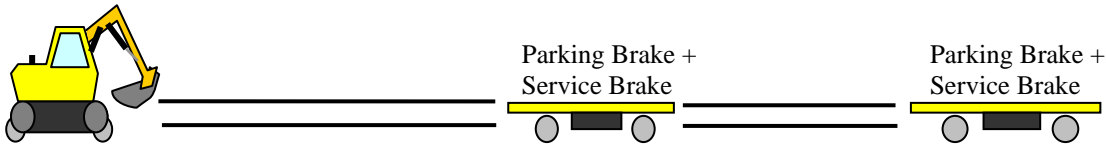
2 Rules for use of trailers and attachments (in addition to Rule Book)

2.1 General rules for trailers and attachments

- 2.1.1 The using duty holder must ensure the contents of this document are briefed to all staff concerned and records retained.
- 2.1.2 Rail trailers and attachments with 3 or more wheels that have defective parking brakes must not be used on track.
- 2.1.3 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.
- 2.1.4 In DC electrified line areas (3rd and/or 4th rail) and in addition to the possession, a DC isolation must be in place at all times whilst the trailer is on the line.
- 2.1.5 Copies of EA certificates are to be available on site to the machine controller, if the EA Certificate is not available then the trailer/attachment must not be used.
- 2.1.6 When a trailer or attachment is left unattended on track, in compliance with the Rule Book, Module OTP, the machine/crane controller must ensure a functional brake test is carried out as per section 3. of this code of practice.

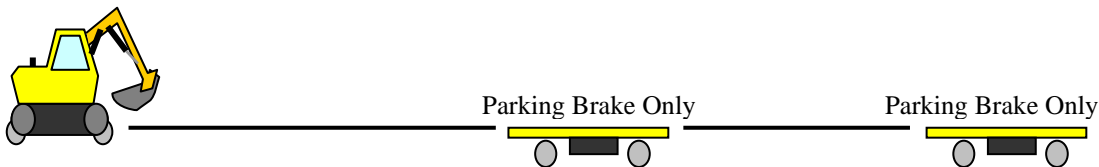
2.2 Rules for compatibility of trailers and attachments

- 2.2.1 Machines and trailers/attachments must be compatible. The towing vehicle maximum brake system operating pressure, must fall within the trailer/attachment brake pressure range or be the same. It must not be greater than the maximum allowable trailer/attachment brake system pressure.
- 2.2.2 Trailers should be attached in formations shown in the diagram below



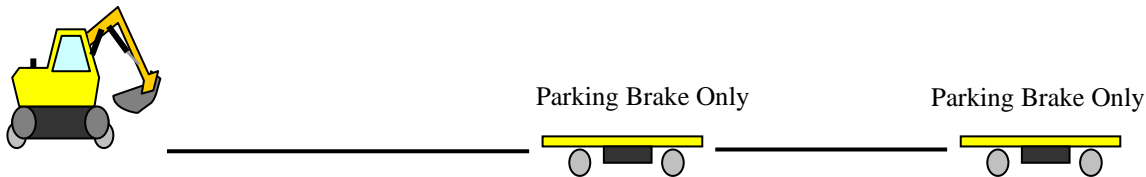
A) **RIS-1530-PLT (RIS) compliant PORV towing RIS compliant trailer(s) fitted with service and parking brake system.**

Maximum towing capability is defined on the EAC of the towing Vehicle



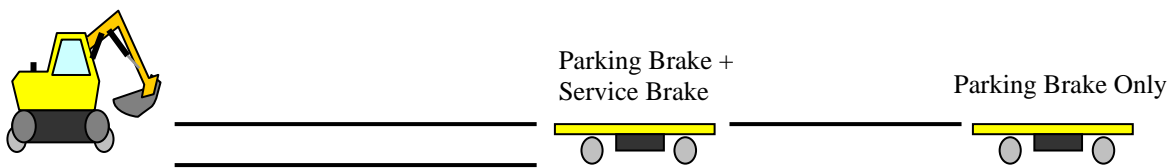
B) **GM/RT1300 compliant PORV towing GM/RT1300 compliant trailer(s) fitted with parking brakes only.**

Maximum towing capability permitted is 100% of the weight of the towing Vehicle. (This may be limited further by the EAC)



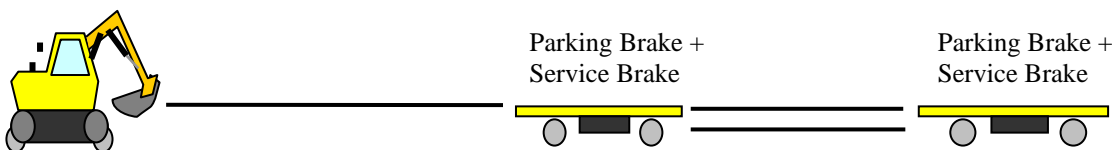
C) **RIS 1530 compliant PORV towing GM/RT1300 compliant trailer(s) fitted with parking brakes only**

Maximum towing capability permitted is 100% of the weight of the towing Vehicle. (This may be limited further by the EAC)



D) **Any PORV towing any combination of trailers e.g. service brake/parking brake trailers and parking brake only trailers.**

Maximum towing capability permitted is 100% of the weight of the towing Vehicle. (This may be limited further by the EAC)



E) **GM/RT 1300 compliant PORV towing RIS compliant trailer(s) fitted with service and parking brake system.**

Maximum towing capability permitted is 100% of the weight of the towing Vehicle. (This may be limited further by the EAC)

- 2.2.3 Where trailers are coupled to the towing vehicle, unless they all have a service brake fitted, the gross laden weight of the trailer consist shall not exceed 100% of the GVW of the towing vehicle. (or less if specified by EAC).
- 2.2.4 Where a service brake consist is used, unless all the service brake hoses are connected then the consist must be limited to 100% of the GVW of the towing vehicle (or less if specified by EAC).
- 2.2.5 Trailers of different make/model should only be planned to be coupled where the owner has declared the brake systems to be compatible.
- 2.2.6 The speed of consist shall be limited to the lowest max speed of any vehicle in the consist (note 10mph maximum for non-service braked)
- 2.2.7 Trailers with braking equipment to UIC specifications do not fall within the scope of these rules.

2.3 Rules for on-tracking trailers

- 2.3.1 Whenever a rail trailer is placed on the track, a test of the parking brakes must be carried out.
- 2.3.2 After placing the trailer on the track and before releasing the trailer, a functional parking brake test must now be carried out to ensure that it is operational, as shown 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 vehicles.
- 2.4.2 The operator is responsible for the coupling/uncoupling procedure; the machine/crane controller must be present and verify the procedure has been carried out correctly.
- 2.4.3 Carry out a functional brake test as shown in section 3.
- 2.4.4 If a service brake is intended to be used, then a test of the service brake, or continuity test, should be carried out in accordance with the manufacturers' recommendations before the vehicle is used. This

may be carried out by applying the service brake at the vehicle and verifying the pressure at the further most trailer.

- 2.4.5 Only if these tests are satisfactory should the trailers be used.

2.5 Rules for un-coupling of trailers

- 2.5.1 Bring the vehicles 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 brake hose; restart the engine (where necessary). Undertake a functional brake test as shown in 3.
- 2.5.3 Providing the functional brake test is successful, verifying that the parking brake is effective, uncouple the tow bar.

2.6 Rules for coupling and un-coupling of attachments

- 2.6.1 Only trained and competent staff are allowed to undertake the coupling/uncoupling procedures for these vehicles.
- 2.6.2 The operator is responsible for the coupling/uncoupling procedure; the machine/crane controller must be present and verify 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 manufacturers' recommendations must be carried out to ensure that the brake mechanism is operational. The duty holder is responsible for ensuring that the manufacturers' recommendations are equivalent to those detailed in section 3 for trailers.
- 2.6.5 If the brakes are found to be ineffective, the attachment must be off tracked to a safe position.

2.6.6 All attachments must be off-tracked into a safe position when not in use.

2.7 Rules for attaching and detaching of dozer blade trolleys

2.7.1 Only trained and competent staff are allowed to undertake the attaching/detaching procedures for these vehicles.

2.7.2 The trolley 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 trolley. The trolley is then detached and left on ballast or other suitable location (but not on track).

2.7.4 The trolley should never be left on track on its own.

3 Functional brake test

3.1 General

3.1.1 When placing a trailer or attachment on the track, and whilst coupling and uncoupling a trailer or attachment, a functional brake test must 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 on track, before connecting brake hoses/cables etc move the vehicle along the track. This may be achieved by pulling the trailer with the lifting chains, the vehicle brakes should resist the movement, i.e. the braked wheels do not rotate.

3.2.2 When coupling a trailer, except as shown in 3.2.7, connect up the trailer tow bar to the RRV/RMMM (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 from the machine and repeat the pull test allowing for any time delay in the system operation: the wheels should now rotate freely.

3.2.2 When un-coupling a trailer, except as shown in 3.2.7, disconnect the brake hoses/cables to the RRV/RMMM (but not the trailer tow bar). Undertake a pull test, the trailer brakes should resist the movement.

3.2.4 Staff should be aware that not all wheels are braked on some vehicles, therefore only the braked wheels should resist movement. The number of braked wheels are identified on the brake test sheet appendix A.

3.2.5 If the brakes are found to be ineffective, the trailer must be off tracked. If the trailer cannot be lifted off track in one operation by the host machine while in rail mode, then the nearest end of the trailer must be off-railed in order to prevent runaway. At all times the trailer 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 vehicles 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 vehicle is restrained from running away if the brakes are not functioning correctly.

4 Maintenance brake test

4.1 General requirements

- 4.1.1 A maintenance brake test must be carried out on all rail trailers and attachments in line with the periodicity stated in the certified maintenance plan.
- 4.1.2 The brake test certificate must 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 must be carried out to the manufacturers 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 must be carried out. This must 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 described in 1.3 and dozer blade trolleys, where the manufacturer has not defined the brake test periodicity, the brake test must be completed no greater than 3 months.
- 4.2.3 Auditable records must 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 shall 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 10mph, 7% of the gross weight for units certificated up to 20 mph or 8% of the gross weight for units certificated up to 35mph. During the test the wheels shall not turn or slide. (This may require the unit to be loaded to prevent wheel slide).

- 4.2.6 The brake system pressure at both ends of each RRV/RMMM must 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 must be carried out to the manufacturers brake test procedure at the frequency dictated by the maintenance plan, as a minimum this must 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 must be recorded and documentation kept with the maintenance records.

References

Document	Title
RIS-1530-PLT	Engineering Acceptance of Possession-only Rail Vehicles and Associated Equipment
GE/RT8000 / OTP	Rule Book Module – On Track Plant