



Briefing note

Project 16-007: Engineering requirements to support operation of heritage vehicles on mainline infrastructure

New documents

Document number	Document title	Issue number
RIS-2003-RST	Certification and Registration of Heritage Rail Vehicles Operating on the GB Mainline Railway	One
RIS-4472-RST	Engineering Requirements for Steam Locomotives and other Heritage Rail Vehicles	One

Documents to be withdrawn

Document number	Document title	Issue number
GMRT2003	Certification Requirements for Registration of Steam Locomotives	One

Standards Committee(s):	Rolling Stock (RST) (Lead) Traffic Operation and Management (TOM) Infrastructure (INS) Control Command and Signalling (CCS) Energy (ENE)
Issue date:	02 December 2017
Withdrawal date:	03 March 2018
Document ceases to be in force:	03 March 2018

1 Background

- 1.1 In 2015, arising from a serious incident involving a steam locomotive (Cat. A SPAD at Wootton Bassett), the Office of Rail and Road (ORR) convened a Steam Summit which led to the formation of the Charter Train Safety Group.
- 1.2 The Charter Train Safety Group highlighted that the current Railway Group Standards (RGSs) supporting the operation of steam locomotives on the mainline are out of date and not currently fit for purpose.
- 1.3 Rail Industry Standards (RISs) RIS-2003-RST and RIS-4472-RST address the following areas to support safe operation of heritage rail vehicles on the Great Britain (GB) mainline railway:
 - a) Design / engineering requirements and guidance to support the build / re-build of heritage vehicles, or when making engineering changes to heritage vehicles such that they are compatible with the GB mainline railway.

- b) The process for assessing technical compatibility with the GB mainline railway and the route(s) on which the vehicle is going to operate.
- c) Guidance and requirements on how to maintain a vehicle's capability to operate safely and compatibly with the network and route(s) it operates on.

2 Key changes

- 2.1 RIS-2003-RST issue one and RIS-4472-RST issue one are structured differently to GMRT2003 as they are now written in the new format: Requirement, Rationale and Guidance. This structure aims to provide clearer separation for users on what the actual requirements are, the purpose of the requirements and, where appropriate, supporting guidance. Each requirement is written so that it is measurable and discrete.
- 2.2 RIS-2003-RST issue one largely reflects the existing arrangement for ongoing, independent assessment and periodic re-certification of heritage rail vehicles as is applied to mainline steam locomotives and has been adapted for other types of heritage rail vehicle. The term 'independent certification body' is introduced and there are various cross-references to assessment and certification processes within RIS-2700-RST issue one 'Rail Industry Standard for Verification of Conformity of Engineering Change to Rail Vehicles'. These are the equivalent of 'the VAB' and the processes in GMRT2000 issue three 'Engineering Acceptance of Rail Vehicles' as were referred to in GMRT2003 issue one.
- 2.3 RIS-2003-RST issue one, Part 4, introduces several new requirements which reflect the current legislative landscape and recognises the existence of more extensive heritage rail vehicle engineering projects (including complete new-build / replica locomotives and other vehicles). The process is modelled on the role of the Notified Body within RIR to provide broad equivalence and recognise that such projects can carry equal (if not greater) levels of risk to the mainline railway.
- 2.4 RIS-2003-RST issue one, Appendix A, contains existing requirements (redrafted where necessary) specific to the certification of steam locomotives.
- 2.5 RIS-4472-RST issue one is a new document for which Part 4 of the RST TSI was used as a prompt for section headings, together with the content of a typical steam locomotive derogation under the withdrawn clause 6.6.3 and Appendix H of GMRT2000 issue three. RSSB research project T1049 'Operating non-mainline vehicles on the mainline' has also provided input in terms of the concept of using a previous record of safe operation as a basis for standards for heritage process.
- 2.6 RIS-4472-RST issue one, Part 3, covers requirements for all heritage rail vehicles to support the continued operation of vehicles which might otherwise be at the end of – and perhaps beyond – their expected design life and are of a design that does not reflect prevailing standards. In some cases, direct compliance with current standards is required (for example braking performance and train safety systems); in other cases, guidance only is offered as there are no specific requirements.
- 2.7 RIS-4472-RST issue one, Part 4, covers areas specific to steam locomotives, including boilers, cylinders, motion and valve gear and fire protection. The requirements support existing arrangements from external schemes (such as the Pressure System Safety Regulations for boilers) or the requirement for spark arrestor devices to be fitted.
- 2.8 RIS-4472-RST issue one, Part 5, covers areas specific to diesel and electric traction units. In the case of these vehicle types, it was concluded that compliance with current standards is more readily achieved compared to steam locomotives.
- 2.9 RIS-4472-RST issue one, Part 6, covers areas specific to passenger rolling stock. In the case of these vehicle types, requirements are dominated by the current arrangements for Mark 1 stock and slam doors according to the Railway Safety

Regulations 1999. It is considered reasonable that the interiors of heritage passenger vehicles achieve compliance as good as or equivalent to modern rail vehicles in terms of the safety of the passenger environment. The requirement to comply with the Rail Vehicle Accessibility Regulations by 2020 are also reflected.

- 2.10 RIS-4472-RST issue one, Part 7, covers maintenance requirements, addressing both the requirement for documented maintenance plans to be in place and the delivery of maintenance in accordance with them. This includes the requirement for heritage traction units to be subject to a fitness-to-run examination prior to a heritage train operation – a key interface with RIS-3440-TOM issue one ‘Steam Locomotive Operation’.
- 2.11 RIS-4472-RST issue one, Part 8, addresses competency requirements and competency management arrangements. This includes specific competency requirements for steam locomotive boilers, design modifications and owner’s representatives / technical riders; this is another interface with RIS-3440-TOM issue one.
- 2.12 There are four appendices to RIS-4472-RST issue one, which include a new table for steam locomotive speeds. This table, previously in GORT3440 issue two ‘Steam Locomotive Operation’, was originally issued as a rapid response standard and has never subsequently been refined, leading to several derogations being issued against various steam locomotive types. The new table in RIS-4472-RST issue one, Appendix D, has been revised following more detailed analysis to generate a more refined list of speeds. This is accompanied by a method for managing increased speed limits in Appendix B.
- 2.13 Withdrawn requirements not transferred to RIS-2003-RST issue one or RIS-4472-RST issue one from GMRT2003 issue one include the process outlined in GMRT2003 issue one, clause 5.2.13 (advise the Trains & Train Systems Unit of Railtrack S&SD in instances of cancellation or refusal to issue a certificate) is withdrawn as it is no longer in line with current legislation.
- 2.14 Also withdrawn are Appendix A and Appendix B of GMRT2003 issue one that cover the specific instance of extending the periodicity of a steam locomotive general boiler examination from a standard seven-year frequency to up to 10 years. Although this contains sound engineering practice and has been used successfully over the last 20 years, it is considered that greater flexibility is required, taking into account the increasing age of existing steam locomotive boilers, more extensive rebuilding and, in some cases, construction of completely new boilers.

3 Compliance requirements

- 3.1 The RIS does not include compliance dates and can be used from the date of publication.
- 3.2 It is planned that the updated ORR exclusion list for ROGS 2006 (as amended) referring to the updated heritage standards will be published on the same date of publication as RIS-4472-RST issue one and RIS-2003-RST issue one. This means heritage operations seeking to be excluded from ROGS 2006 (as amended) will be required to comply with RIS-4472-RST issue one and RIS-2003-RST issue one.