

Railway Group Standard

GM/RT2004

Issue Five

Date June 2012

Rail Vehicle Maintenance

Synopsis

This document sets out the arrangements by which continued conformity to standards, known as the Maintenance Plan, is achieved together with the requirements for the provision of documentation for the maintenance of rail vehicles.

This document contains requirements that are amended under the Railway Group Standards Code (Issue Three) as a small scale change. Reference to the amended requirements is made in the 'Issue record'. All other parts of the document are unchanged from the previous issue.

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Rail Vehicle Maintenance

Issue record

Issue	Date	Comments
One	September 1995	Original document supersedes GM/TT0188
Two	October 1999	Supersedes GM/RT2004 issue one, GM/RT2241, GM/RT2244, GM/RT2270, GM/TT0110, GM/TT0144, GM/TT0173, GM/TT0403, GK/EHH205
Three	December 2009	Supersedes GM/RT2004 issue two
Four	March 2011	Supersedes GM/RT2004 issue three, GM/RT2030 issue two (Parts C1.1 and C3.1), GM/RT2455 issue one (Parts B 4.1 and B.6)
Five	June 2012	Supersedes GM/RT2004 issue four Small scale change amendment – withdrawal of 3.1.3 f) and 3.1.3 g) and updated references to CR LOC&PAS TSI to remove 'draft'.

Amended or additional parts and / or sections of revised pages have been marked by a vertical black line in the adjacent margin.

Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GM/RT2004 issue four, March 2011, Rail Vehicle Maintenance	All	01 September 2012

GM/RT2004 issue four ceases to be in force and is withdrawn as of 01 September 2012.

Supply

The authoritative version of this document is available at www.rgsonline.co.uk.
Uncontrolled copies of this document can be obtained from Communications, RSSB, Block 2, Angel Square, 1 Torrens Street, London EC1V 1NY, telephone 020 3142 5400 or e-mail enquirydesk@rssb.co.uk. Other Standards and associated documents can also be viewed at www.rgsonline.co.uk.

Rail Vehicle Maintenance

Contents

Section	Description	Page
Part 1	Purpose and Introduction	4
1.1	Purpose	4
1.2	Introduction	4
1.3	Approval and authorisation of this document	5
Part 2	Requirements for a Maintenance File	6
2.1	Requirement to have a maintenance design justification file	6
2.2	Requirement to have maintenance documentation	6
Part 3	Requirement to have a Maintenance Plan	8
3.1	General requirements for a maintenance plan	8
3.2	Specific requirements for the content of a maintenance plan	9
Part 4	Additional Inspection Requirements for Freight Wagons	15
4.1	Agreed common criteria for in-service examination of freight wagons	15
4.2	Application of new freight wagon vehicle designs to the common criteria for in-service examination	15
Part 5	Application of this document	16
5.1	Application - infrastructure managers	16
5.2	Application - railway undertakings	16
5.3	Health and safety responsibilities	16
Appendices		
Appendix A	Guidance on Composition of a Maintenance Policy	17
Definitions		20
References		21

Railway Group Standard

GM/RT2004

Issue Five

Date June 2012

Rail Vehicle Maintenance

Part 1 Purpose and Introduction

1.1 Purpose

- 1.1.1 This document sets out requirements for the provision of documentation for the maintenance of rail vehicles.

1.2 Introduction

1.2.1 Background

- 1.2.1.1 The High Speed Rolling Stock Technical Specification for Interoperability (HS RST TSI), the Conventional Rail Locomotives and Passenger Rolling Stock TSI (CR LOC & PAS TSI) and the Conventional Rail Freight Wagons TSI (CR WAG TSI) require a maintenance file, which comprises:
- a) Maintenance documentation*.
 - b) Maintenance design justification file.
- * The terminology currently used within the CR LOC & PAS TSI regarding maintenance documentation is 'Maintenance Description File'. The CR LOC & PAS TSI sets out requirements for the maintenance design justification file and the maintenance documentation for rail vehicles in scope of the TSI.
- 1.2.1.2 All rail vehicles require to be maintained in accordance with a maintenance plan. This document sets out requirements for the maintenance plan, and in addition, guidance for a maintenance policy is provided in the non-mandatory Appendix A.
- 1.2.1.3 Parts 3 and Part 4 of this document apply to railway undertakings to maintain rail vehicles in compliance with the railway undertaking's safety management system.
- 1.2.1.4 In some cases a body called an 'entity in charge of maintenance' (ECM) will be responsible for some of the requirements set out as the responsibility of 'railway undertakings'. In all cases the requirement is the same and hence where this document states 'railway undertaking' it means 'railway undertaking or entity in charge of maintenance' where applicable.

1.2.2 Supporting documents

- 1.2.2.1 The following Rail Industry Guidance Notes and Rail Industry Standards support this Railway Group Standard:
- GM/GN2571 Guidance on the Storage and Recommissioning of Traction and Rolling Stock
- GM/GN2646 Guidance on Axle Bearing Maintenance
- RIS-2701-RST Rail Industry Standard for NDT Processes on Rail Vehicles
- RIS-2702-RST Rail Industry Standard for In-Service Examination and Reference Limits for Freight Wagons

Rail Vehicle Maintenance

1.3 Approval and authorisation of this document

- 1.3.1 The content of this document was approved by Rolling Stock Standards Committee on 17 February 2012.
- 1.3.2 This document was authorised by RSSB on 25 April 2012.

Railway Group Standard

GM/RT2004

Issue Five

Date June 2012

Rail Vehicle Maintenance

Part 2 Requirements for a Maintenance File

Note: The text reproduced in Part 2 is a direct copy of the mandatory requirements set out in the CR LOC&PAS TSI. The application of Part 2 is set out in 5.2.1.1.

2.1 Requirement to have a maintenance design justification file

- 2.1.1 The maintenance design justification file explains how maintenance activities are defined and designed in order to ensure that the rolling stock characteristics will be kept within acceptable limits of use during its lifetime. The file includes input data in order to determine the criteria for inspection and the periodicity of maintenance activities.
- 2.1.2 For a new rail vehicle, the railway undertaking shall satisfy themselves that the manufacturer has supplied a maintenance design justification file which contains:
 - a) Precedents, principles and methods used to design the maintenance of the railway vehicle.
 - b) Utilisation profile showing the limits of the normal use of the railway vehicle (for example, km/month, climatic limits, authorised types of loads).
 - c) Relevant data used to design the maintenance and origin of this data (previous experience).
 - d) Tests, investigations and calculations carried out to design the maintenance.

2.2 Requirement to have maintenance documentation

- 2.2.1 For a new rail vehicle the railway undertaking shall obtain from the manufacturer the maintenance documentation which describes how to conduct maintenance activities. Maintenance activities include all activities necessary such as inspections, monitoring, tests, measurements, replacements, adjustments and repairs.
- 2.2.2 Maintenance activities are split into:
 - a) Preventive maintenance, scheduled and controlled.
 - b) Corrective maintenance (repair).
- 2.2.3 The maintenance documentation shall include the following:
 - a) Component hierarchy and functional description. The hierarchy sets up the boundaries of the rolling stock by listing all the items belonging to the product structure of that rolling stock and using an appropriate number of discrete levels. The lowest level shall be a replaceable unit.
 - b) Schematic circuit diagrams, connection diagrams, wiring diagrams, pneumatic schematics and lubrication diagrams.
 - c) Parts list:
 - i) The parts list shall contain the technical descriptions of the spare parts (replaceable units) and their references, in order to allow identification and procurement of the correct spare parts.

Rail Vehicle Maintenance

- ii) The list shall include all parts specified for changing on condition, or which may require replacement following electrical or mechanical malfunction, or which will foreseeably require replacement after accidental damage (for example, windscreen).
- iii) Interoperability constituents shall be indicated and referenced to their corresponding declaration of conformity.
- d) The limit values for components which shall not be exceeded in service shall be stated; the possibility to specify operational restrictions in degraded mode (limit value reached) can be considered.
- e) European legal obligations. Where components or systems are subject to specific European legal obligations these obligations shall be listed.
- f) The maintenance plan. The maintenance plan is the structured set of tasks that include the activities, procedures, means and the working time required to carry out the maintenance task.
- g) The description of the maintenance activities. The maintenance activities include the following activities:
 - i) Disassembly / assembly instructions drawings necessary for correct assembly / disassembly of replaceable parts.
 - ii) Maintenance criteria.
 - iii) Checks and tests.
 - iv) Tools and materials required to undertake the task.
 - v) Consumables required to undertake the task.
 - vi) Personal protective safety provision and equipment.
 - vii) Necessary tests and procedures to be undertaken after each maintenance operation before re-entry into service of rolling stock.
- h) Troubleshooting (fault diagnosis) manuals or facilities for all reasonably foreseeable situations. This includes functional and schematic diagrams of the systems or IT-based fault finding systems.