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Rail Industry Standard for In-Service Examination and Reference Limits for Freight Wagons

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Superseded or replaced documents

The following Railway Group documents are superseded or replaced, either in whole or in part as indicated:

Superseded or replaced documents	Sections superseded	Date when sections are superseded
GM/RT2455 issue one October 1999 Freight Vehicle In-service Inspections	All except Parts B4.2 and B6	4 June 2011

GM/RT2455 issue one (All except Parts B4.2 and B6) cease to be in force and is withdrawn as of 4 June 2011.

Supply

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Rail Industry Standard for In-Service Examination and Reference Limits for Freight Wagons

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Rail Industry Standard for In-Service Examination and Reference Limits for Freight Wagons

Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 This document is a voluntary standard on in-service examination and reference limits for freight wagons, for the rail industry to use if they so choose.
- 1.1.2 This document sets out 'The Registered List of Agreed Criteria' for the in-service examination and lubrication of freight wagons, for operation over Network Rail managed infrastructure.
- 1.1.3 The document is set out in the form of standard requirements followed by guidance notes. Guidance notes are marked by a grey bar in the margin with the letters GN and sequential numbering, to differentiate them from the standard requirements to which they relate.

1.2 Application of this document

- 1.2.1 An infrastructure manager or a railway undertaking may choose to adopt all or part of this document in company procedures or contract conditions. Where this is the case the infrastructure manager or the railway undertaking will specify the nature and extent of application.
- 1.2.2 Specific compliance requirements and dates have therefore not been specified since these will be the subject of the internal procedures or contract conditions of the companies which choose to adopt this standard.

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1.5 Approval and authorisation of this document

- 1.5.1 The content of this document was agreed by the Freight Technical Committee on 02 December 2010.
- 1.5.2 The content of this document was approved by Rolling Stock Standards Committee on 21 January 2011.
- 1.5.3 This document was authorised by RSSB on 27 January 2011.

Part 2 Requirements for In-Service Examination of Freight Wagons

2.1 Requirements for freight wagons

2.1.1 Freight wagons shall either:

- a) Be designed to enable the visual examination of all components to the limits as set out in Appendix A to Appendix F.

Or

- b) The owners' maintenance plan shall compensate where a freight wagon vehicle's design makes it impractical to visually examine to the limits quoted.

2.2 Requirements for the in-service examination

2.2.1 Reason for in-service examination

- 2.2.1.1 Freight wagons in service shall be examined at convenient locations to ensure fitness to run and at a frequency as set out in the applicable maintenance plan.
- 2.2.1.2 The freight wagon in-service examination is a visual check of the part of a freight wagon and its components that are visible from the lineside.
- 2.2.1.3 The purpose of the in-service examination is to identify obvious defects or damage that are readily visible from the lineside and may import risk onto Network Rail managed infrastructure. This examination is not intended to identify lack of maintenance or to check that maintenance has been correctly carried out.
- 2.2.1.4 It is the responsibility of the holder of a Safety Management System to ensure that the examiner is competent to carry out the examination of freight wagons as set out in this document.

2.2.2 Safety for in-service examination

- 2.2.2.1 Under no circumstances shall the in-service examination be carried out on a running line unless protection is provided as set out in GE/RT8000 module T10.
- 2.2.2.2 Under no circumstances shall personnel go under or between any freight wagons without protection as set out in GE/RT8000 module T10 (this includes leaning into spaces under the vehicle).
- 2.2.2.3 Personnel shall be instructed not to climb on freight wagons that are under or adjacent to overhead electrified lines.

2.2.3 Actions to be taken if a defect(s) is found

- 2.2.3.1 Where defects noted during the in-service examination obviously exceed the quoted criteria / limits, then subsequent action should be shown in Appendix A to Appendix F. Where defects exceed the quoted criteria / limits then further steps should be taken to verify compliance or failure with the limits while abiding by all safety requirements.
- 2.2.3.2 It is not possible to cover all defects. The examiner retains the discretion, for example to 'red card' defects listed as 'repair card', where the defect is seen to compromise safety (for example, a component may become detached in traffic).
- 2.2.3.3 Where defects are outside the quoted criteria / limits, a red carded vehicle can only be moved when an authorised person competent to perform vehicle safety examinations authorises the move.

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- 2.2.3.4 Freight wagons found to be defective shall be reported as defective as set out in GO/RM3056. A written record of wagons found to be defective shall also be taken.

Part 3 Reference Limits for In-Service Examination of Freight Wagons

3.1 Examination of freight wagons

3.1.1 Freight wagons shall be examined to the limits set out in Appendix A to Appendix F.

GN01 The requirements set out in Appendix A to Appendix F are the current limits to be applied at in-service examination when examining freight wagons. These details supersede section G of TF/TI 0007 'Red Book', though it is recommended that this is retained for information.

GN02 The details set out in this document were originally compiled to meet the requirements of GM/RT2455 and RIV 2000 Appendix XII which have been replaced by GM/RT2004 issue four and the General Conditions of Use (GCU).

3.1.2 The details in the Appendix A to Appendix F identify:

- a) Criteria: Identifies the component being examined and the limits that are to be applied.

Note: Where the criteria is specific only to a type of freight wagon (for example GCU registered freight wagons, freight wagons having a 12 digit number,) or component (for example three piece bogies fitted to tank wagons,) then this is stated.

- b) Action to be taken: Identifies the action to be taken that is the physical action, the card (label for GCU) and defect description code to be applied.
- c) Black print indicates physical action to be carried out.
- d) Green print indicates a green card situation and also identifies the GCU labels that shall be applied as:
- i) GCU indicates this action applies to 'ALL' GCU registered wagons - wagons having a 12 digit European Vehicle Number (EVN).
 - ii) FR indicates this action applies to 'ALL FOREIGN' GCU registered wagons – wagons that have a 12 digit EVN, but where the third and fourth digit of the EVN is 'NOT' '70' (that is not UK registered).
 - iii) Vehicles which have the third and fourth digit of the EVN as '70' (registered in EU) shall be treated ii) above.
- e) Red print indicates a red card situation and is applicable to 'ALL' freight wagons.
- f) Category: This is the category used for assessment of risk of the defects and the exchange of data between railway undertakings. This information can be used for safety performance monitoring. For further details see GCU.
- g) An asterix (*) Indicated as the first character in the defect description code in the 'action to be taken' column. The character will either be W defect caused by wear and tear or D defect caused by damage.

GN03 The GCU Model K label is blue in colour, whilst GCU Model M label is white, but are applied in a green card situation.

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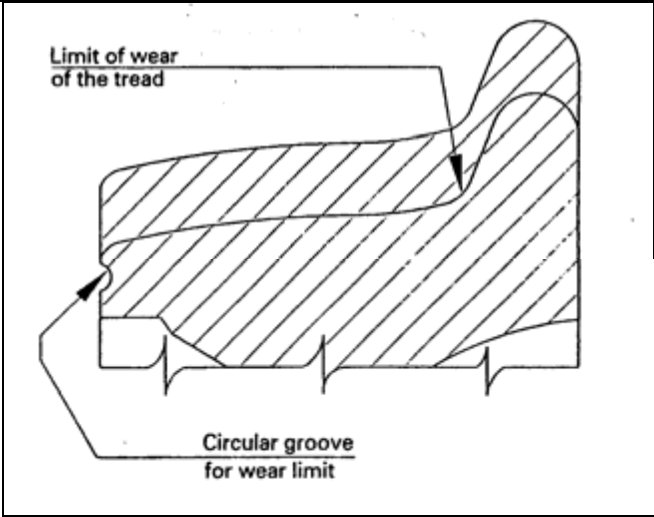
- | | |
|------|---|
| GN04 | The GCU Model R1 label also requires the vehicle brakes to be isolated. |
| GN05 | The application of any card is at the point of in-service examination, and therefore the freight wagons may already be loaded prior to applying a green card (even if the load status in TOPS has not yet been updated) – in this case there is no requirement to tranship the load (unless the load or its securing arrangement is defective). |
| GN06 | When GCU labels are applied, the GCU details should be reported to TOPS and not the UK green card version. |
| GN07 | For TOPS codes see 'Red Book' TF/TI 0007. |

Appendix A Wheelsets

A.1 Tyred wheels

Criteria	Action to be taken	Category
Tyred wheel, thickness less than 30 mm.	CR *W	4
Tyre fractured or cracked.	CR *W	5
Tyre or Gibson Ring, loose moved or distorted - any signs at tyre / wheel centre interface of: - Misalignment of painted white lines. - Rust, slivers of metal, or break in continuity of dirt seal. - Overheating of tyre, for example hot or burnt paint. - Looseness, by tapping tyre with ball pein hammer. - Gibson Ring cracked, broken or missing. - Security of Gibson Ring, by tapping the ring lightly whilst resting fingers on ring. - Gap between ends of Gibson Ring exceeding 3 mm.	CR *W	5
White painted lines missing or unclear. Note: Tyred wheels should be marked with three radial white lines (UK registered vehicles) or four radial white lines (GCU registered vehicles).	CR *W	4

A.2 Monobloc wheels

Criteria	Action to be taken	Category
		
Last turning groove not entirely visible.	CR *W	4
Overheated wheels - any signs of excessive heat or burnt paint. Note: This does not apply to GCU wheelsets with high thermal resistance – these are marked (on the axlebox by a vertical split white line).	CR *W	5

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A.3 Wheel tread

A.3.1 Wheel tread defects – out of roundness and tread roll-over

Criteria	Action to be taken	Category
Out of roundness is suspected.	CG *W	5
Wheel tread roll-over: - Any cracks found in tread roll-over or extending into the tread profile or rim face. - Roll-over in excess of 5 mm from front face of wheel. Note: Fine cracking in the tread area is permissible.	CR *W	5
Uneven contact surface or irregular burns on tread surface.	CR *W	4

A.3.2 Wheel tread defects – flats and wheelslide damage

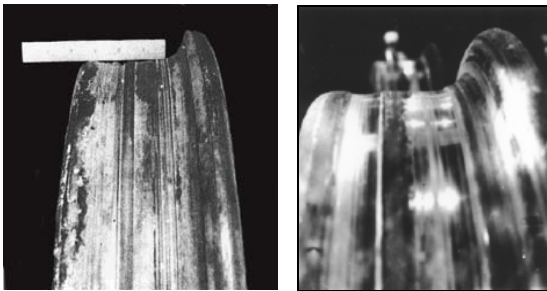
Criteria		Action to be taken	Category
Vehicle type	Flat length		
Former coaching stock vehicles.	Up to 40 mm	None	–
	40 – 60 mm	CG *W (FR Model M, isolate brakes + R1)	4
	Over 60 mm	CR *W	4
Wagons with wheels greater than 630 mm diameter.	Up to 50 mm	None	–
	50 – 60 mm	CG *W (FR Model M, isolate brakes + R1)	4
	Over 60 mm	CR *W	4
Wagons with wheels equal or less than 630 mm diameter.	Up to 30 mm	None	–
	Over 30 mm	CR *W	4
Notes: 1. Maximum speed of movement to a repair point for all vehicle types: - Up to 70 mm flat length - 60 mph. - Over 70 mm flat length - 35 mph. These limits maybe superseded on a vehicle by vehicle basis as a result of a WheelChex alarm or activation. In this case further carding advice will be provided by the freight operating company procedures. 2. A vehicle having a wheel flat length greater than 100 mm must not be moved, except where necessary to clear the running lines, without the approval of Network Rail. 3. If a large flat has formed a 'false flange' on the outside face of the wheel tread with a height of over 2 mm above the tread surface this must be reported to Network Rail via the freight operating company in order that any track damage may be investigated.		Report to Freight Operating Company CR *W and report to Freight Operating Company	5
Metal build-up and scaling on tread – length greater than 50 mm or more than 1 mm in height. Note: If moved to a repair point - maximum permitted speed is 35 mph.		CR *W	5

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Criteria	Action to be taken	Category
Intermittently indented metal inclusions greater than 50 mm long or more than 1 mm thickness. Note: If moved to a repair point - maximum permitted speed is 35 mph.	CR *W	5

A.3.3 Wheel tread defects – tread cavities

Criteria	Action to be taken	Category
Tread cavities exceeding: 15 mm in length. 10 mm in continuous length and occur less than 50 mm apart. 60 mm continuous length.	CG *W CG *W CR *W	5 5 5
Cracks in tread area: - Up to 40 mm in length. 40 mm and over in length.	CG *W (FR Model M, isolate brakes + R1) CR *W	4 5
Scoring and grooving - if scoring greater than 1 mm depth or grooving greater than 2 mm depth is present on tread as below: 	CR *W	5
Cracks in tread - cracks are present in the tread area and exceed 30 mm in length.	CR *W	5

A.4 Wheel flange

Criteria			Action to be taken	Category
Flange height and thickness - vehicle found with wheel flange outside the limits below:			CR *W	5
Tread profile	Minimum flange thickness	Maximum flange height	Comments	
P1, P6, P8	24 mm	36.5 mm		
P5	27 mm	33 mm		
P10	27 mm	33 mm		
S1002	24 mm (see note 3)	36 mm (see note 3)	GCU registered wagon, with wheel diameter greater than 840 mm.	
S1002 SW	27.5 mm (see note 3)	36 mm (see note 3)	GCU registered wagon with wheel diameter less than 840 mm.	

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Criteria	Action to be taken	Category
Notes: 1. Check the marking on the wagon to confirm flange profile. 2. GCU registered wagons have the wheel diameter marked on the vehicle / bogie frame. 3. If required to gauge, then use 'P1, P6 and P8' gauge to measure flange height, and 'P1, P6 and P8' or 'P5 and P10' gauge to measure flange thickness.		
Flange Toe Malformation – wear of flange tip to form a sharp corner or build up of material on flange tip to form a ridge (if in doubt gauge using a 5 mm quadrant gauge).	CR *W	5
Radial cracks in flange.	CR *W	5
Circumferential step in flange of 1.5 mm or greater.	CR *W	5

A.5 Wheel centre

Criteria	Action to be taken	Category
Fractures in wheel disc, web or rim.	CR *W	5
Any signs of movement between the wheel boss and axle wheelset (also between axle mounted equipment and the axle, for example, axle mounted brake discs where visible).	CR *W	5

A.6 Axle

Criteria	Action to be taken	Category
Any signs of cracks, or the axle is warped or deformed.	CR *W	5
Axle scoring and damage that is due to contact with brakegear: Axles with score marks.	CR *W	5
Axle with damaged paintwork (applies only to axles which are painted).	Tie up brakework CG *W (FR Model K, isolate brakes + R1) or if unable CR *W	4 4