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GM/RC2532
Recommendations for Rail Vehicle Emergency and Safety Equipment
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Railway Group Recommendations for GM/RT2130

Recommendations for Rail Vehicle Emergency and Safety Equipment

Issue Record

Issue	Date	Comments
One	June 2008	Original document Supersedes parts of GM/RT2177

Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded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/RT2177, issue one, January 1995 Emergency and Safety Equipment and Signs on Rail Vehicles	4.1 to 4.9 inclusive, 5.5, part of 7.1 Appendix A	02 August 2008

Other parts of GM/RT2177 issue one are superseded by GM/RT2130, issue one, Vehicle Fire, **Safety** and Evacuation.

GM/RT2177 ceases to be in force and is withdrawn as of 02 August 2008.

Supply

Controlled and uncontrolled copies of this Railway Group Code of Practice may be obtained from the Corporate Communications Department, Rail **Safety** and Standards Board, Evergreen House, 160 Euston Road, London NW1 2DX, telephone 020 7904 7518 or e-mail enquiries@rssb.co.uk. Railway Group Standards and associated documents can also be viewed at www.rgsonline.co.uk.

Recommendations for Rail Vehicle Emergency and Safety Equipment

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Recommendations for Rail Vehicle Emergency and Safety Equipment

Part 1 Introduction

1.1 Purpose and structure of this document

This document has been published by Rail Safety and Standards Board (RSSB) to give details of a recommended method which, if followed, would meet the requirements of Railway Group Standard GM/RT2130.

Should a railway undertaking choose not to follow the recommended method of meeting the requirements of GM/RT2130 laid out in this document, it should assure itself that the method it is following is as effective, and no less safe, than the method that is recommended here.

Relevant requirements in GM/RT2130 are reproduced in the sections that follow. Recommendations are provided as a series of sequentially numbered clauses prefixed 'RC'.

Specific responsibilities and compliance requirements are laid down in the Railway Group Standard itself.

1.2 Copyright

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1.3 Approval and authorisation of this document

The content of this document was approved by:

Rolling Stock Standards Committee on 18 January 2008.

This document was authorised by RSSB on 16 April 2008.

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Part 2 Recommendations for **Emergency and Safety Equipment**

2.1 General

- RC001 **Equipment** should be readily accessible to the intended user, with minimal risk of injury.
- RC002 **Equipment** provided for use by persons not trained in its use should be designed so as to be simple in operation, as far as reasonably practicable.
- RC003 **Equipment** provided in passenger accommodation, or passenger accessible areas, should be protected, as far as practicable, to deter misuse.
- RC004 Where **equipment** is retained in a cupboard or container which does not permit the contents to be readily checked, as an aid to checking, the cupboard or container should be sealed closed only when the contents are complete.
- RC005 **Equipment** should be adequately secured and suitably located in order to reduce, as far as reasonably practicable, the risk of injury to passengers, staff or train crew from **equipment** being ejected from its container or off its mounting during a vehicle crash (see [GM/RT2100](#)).
- RC006 **Equipment** should be labelled in accordance with Part 6 of GM/RT2130.
- RC007 The requirements of this document are based on additional **equipment** being personally issued to train crew. This document assumes that personal issue items for train crew include:
- Three pointed screwdriver (for vehicles containing toilet compartments)
 - Hand lamp capable of showing red, green and white aspects.

2.2 Provision of **emergency equipment**

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5.1 General requirements

- 5.1.1 The following items of **equipment** (except the **equipment** in paragraph d)) shall be provided on trains for use by traincrew only and shall not be available to passengers:
- In each operative driving cab:
 - At least ten detonators
 - Two sets of track circuit operating clips (except that only one set of such clips is required in the cab on multiple unit type trains operated with a guard, where an additional two sets are located in the guard's accommodation)
 - Two red flags with sticks (one in each cab on a multiple unit train)
 - Requirements for portable fire extinguishers are set out in 2.15.2.
 - Readily available to the driver (preferably in the driving cab):
 - One brake stick on locomotive hauled trains comprising vehicles fitted with manually operated 'lever' type hand brakes such as those installed on freight vehicles
 - One spare portable tail lamp on locomotive hauled driver-only trains

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- iii) Four wheel scotches in trains where electric parking brakes are provided.
- c) Available to the guard, within, or adjacent to, accommodation provided for a guard on passenger trains:
 - i) Two sets of track circuit operating clips
 - ii) Requirements for portable fire extinguishers are set out in 2.15.2
 - iii) Six wheel scotches on air braked locomotive hauled trains.
- d) Available to members of the traincrew for use in passenger and other crew areas, (this item may be made accessible for passengers' use as well as that of traincrew if desired):
 - i) One ladder or step ladder made from non-conducting material.

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5.2 Services operating on dc electrified lines

5.2.1 Where trains operate over Network Rail managed third or fourth rail dc electrified lines, the railway undertaking shall determine the need to carry any of the **equipment** set out in 5.2.3, based on perceived risk.

5.2.2 Account shall be taken of factors such as:

- a) Frequency of operation over electrified lines
- b) Duration of operation over electrified lines
- c) Availability of such **equipment** from other sources
- d) Whether detraining of passengers may be necessary
- e) Availability of radio communications.

This list is not exhaustive.

5.2.3 Additional **equipment**, preferably in the operative driving cab, shall be easily and quickly accessible to the traincrew:

- a) One conductor rail short-circuiting bar
- b) One conductor rail hook switch pole
- c) Shoe fuse key (where applicable)
- d) Shoe paddles - the quantity of shoe paddles carried shall be the greater of:
 - i) One paddle for each track short-circuiting bar carried
 - ii) For vehicles with non-retractable shoe gear, the number of paddles shall equal the number of current collector shoes plus one
 - iii) For vehicles with retractable shoe gear, a minimum of two paddles
- e) One roll of insulating tape
- f) 8 m of stout cord.

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Section 5.3 Specific rail applications

5.3.1 Additional **equipment** may be required for specific rail applications, for example, for operation through tunnels. The railway undertaking shall determine the requirements for such additional **equipment** in co-operation with Network Rail.

RC008 Recommended **equipment** specifications for **emergency** and **safety equipment** that are in use at the date of issue of this code of practice are detailed in Appendix A of this document. Alternative **equipment** specifications may be used when assessed as suitable for the designated application by an authority with proven experience in the design and operation of **emergency equipment**.

RC009 On trains carrying passengers first aid **equipment** may be made accessible for passengers' direct use as well as that of train crew if desired.

2.3 **Equipment** examination and testing

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5.4 Examination and testing

5.4.1 **Emergency equipment** shall be fit for purpose when required to be used.

RC010 **Equipment** that may be subject to deterioration during storage or use should be examined in accordance with maintenance procedures, and on each occasion after use, to ensure it continues to be fit for purpose.

RC011 The presence of the required **equipment**, and its condition where appropriate, should be checked before trains enter service.

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Appendix A **Emergency and Safety Equipment Specifications**

A.1 **Equipment mandated**

RC012 The following list provides examples of acceptable specifications for items of **safety** or **emergency equipment** required by GM/RT2130:

- a) Track circuit operating clip (British Rail specification No. BRS-SE89 meets the requirement)
- b) Wheel scotch (British Rail document No. EI G/096 is an acceptable example)
- c) Brake stick to British Rail specification No. BR 532B
- d) Detonators to British Rail specification No. 640A: 1964*. Detonators should be safely stored and secured on the vehicle to prevent accidental operation
- e) Detonator case to British Rail drawing L-A0-11558 item 4* or L-A1-11443 item 5*

*NB: On trains for international traffic only, near-equivalent European standards may be followed for detonators and detonator cases.
- f) Portable tail lamp to specification BR/TS0630
- g) Red flag to British Rail specification No. 218 and 19 mm flag sticks
- h) Conductor rail short-circuiting bar to British Rail drawing No. C60051/12
- i) Hook switch pole to British Rail drawing No. B77642
- j) Shoe paddle to British Rail drawing No. SR-A2-6523/1
- k) Shoe fuse key to British Rail drawing Nos B-1152 or C-1524
- l) Roll of PVC electrical insulating tape, 0.14 mm x 12 mm x 20 metres to BS 6746
- m) Extending type ladder or step ladder to British Rail drawing B1-A0-9007630.

A.2 **Other equipment**

RC013 The following list provides examples of acceptable specifications for **equipment** that is not mandated in GM/RT2130, but is included in this Appendix in case of specific needs by particular railway undertakings.

- a) Straight pein 7 lb sledge hammer to BS 876: 1981 Table 8, with a total length of 762 mm.
- b) Fireman's axe to BS 2957: 1958 Fig. 1.
- c) 11 metres of 18 mm nylon rope to BS 4928 Part 2 Table 1.
- d) Multi-purpose saw - (British Rail Catalogue No. 39/52800).
- e) Long crowbar - 1500 mm long, 32AF hexagonal, with one pointed and one chisel / lever end (with no stress raisers), made from 0.4% plain carbon steel to BS 970 080M40. The ends to be heat treated to condition R.
- f) Rope to BS 4928 Part 1 for plaited ropes with the exception that the yarn should be constructed from high tenacity continuous multi-filament bright polypropylene with:

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- i) Nominal circumference 13 mm
 - ii) Approximate diameter 4 mm
 - iii) Nominal mass per 30.5 m = 0.25 kg and
 - iv) Minimum breaking load = 227 kgf.
- g) Insulated rubber gauntlets to BS 697 1986 Table 3, red up to 1 kV; green up to 3.3kV.
- h) First aid **equipment**. The **equipment** should be clearly identified and sealed with a security device to indicate when it has been opened. The contents of the first aid **equipment** should follow the Health and **Safety** (First Aid) Regulations 1981 approved code of practice (ACOP).

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Definitions

Brake stick

A device used to assist in applying hand brakes on certain freight vehicles.

Conductor rail short-circuiting bar

A device used to cut off the supply to the electrified conductor rail in an **emergency** and to prevent its re-energisation until the device is removed.

Detonator

A device placed on a running rail which explodes when impacted by a vehicle wheel causing an audible warning to the driver and to persons on or near the track in the vicinity of the train.

Hook switch pole

An insulated device used to open or close conductor rail isolating 'hook' switches.

Life extension

Major engineering change (not just a major overhaul) applied to a rail vehicle in order to extend the period of years in which the vehicle can be safely and economically operated. Life extension of a rail vehicle requires all the requirements of this standard to be met.

Operative driving cab

The driving cab from which the train is being driven, including the vestibule or other area immediately accessible from the driving cab.

Track circuit operating clip

A device used to cause a track circuit to operate when connected between both rails of a running line.

Train crew

Staff and personnel such as drivers, guards and conductors employed on board a train who have responsibilities for its safe operation on Network Rail managed infrastructure, as defined in the Rule Book GE/RT8000.

Wheel scotch

A device that prevents train movement in one direction when inserted between the running rail and wheel.

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References

The Catalogue of Railway Group Standards and the Railway Group Standards CD-ROM give the current issue number and status of documents published by RSSB. This information is also available from www.rgsonline.co.uk.

Documents referenced in the text

RGSC 01 The Railway Group Standards Code

Railway Group Standards

[GM/RT2100](#) Structural Requirements for Railway Vehicles

GM/RT2130 Vehicle Fire, **Safety** and Evacuation

Other references

Health and **Safety** (First Aid) Regulations 1981 approved code of practice (ACOP)

BR 218 Specification for buntings and flags manufactured from wool worsted, wool / nylon worsted and polyester fabric

BR 532B Specification for brake sticks

BR 640A:1964 Detonators, single channel type for hand or machine placing

BR EI G/096 Wheel scotches

BR/TS0630 **Equipment** specification for portable tail lamp system

BRS-SE89 Track short circuit bond

BS 697 British Standard Specification for rubber gloves for electrical purposes

BS 876 Specification for hand hammers

BS 970 Steels

BS 2957 Specification for fireman's axe with ash handle

BS 4928 Specification for man made fibre ropes

BS 6746 Specification for PVC insulation and sheath of electric cables

BR Drawings:

B1-AO-9007630 Extending type ladder

B-1152 Shoe fuse spanner

B77642 Hook switch poles

C-1524 Shoe fuse spanner

C60051/12 Conductor rail short circuiting bar

L-A0-11558 Detonator case

L-A1-11443 Detonator case

SR-A2-6523/1 Shoe paddle