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**Published by:**

**RSSB**

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**G/IGN7633**  
**Guidance on Lineside Signs**  
Issue One: June 2015  
Rail Industry Guidance Note for G/IRT7033



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# Guidance on Lineside Signs

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## Issue record

| Issue | Date           | Comments                                                                                                                                                                     |
|-------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| One   | September 2015 | Original document.<br>Provides guidance against the requirements in GI/RT7033, and additional guidance for lineside operational and lineside safety signs in the appendices. |

## Superseded documents

This Rail Industry Guidance Note does not supersede any other Railway Group documents.

## Supply

The authoritative version of this document is available at [www.rgsonline.co.uk](http://www.rgsonline.co.uk). Enquiries on this document can be forwarded to [enquirydesk@rssb.co.uk](mailto:enquirydesk@rssb.co.uk).

# Guidance on Lineside Signs

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# Guidance on Lineside Signs

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## Part 1 Introduction

### G 1.1 Purpose of this document

- G 1.1.1 This document gives guidance on interpreting the requirements of Railway Group Standard GI/RT7033 issue three Lineside Signs. This document also gives additional guidance for both lineside operational and lineside safety signs in the appendices. It does not constitute a recommended method of meeting any set of mandatory requirements.
- G 1.1.2 GI/RT7033 is also supported by another Rail Industry Guidance Note GI/GN7634 Index for Lineside Signs, and an online catalogue of lineside signs. The catalogue of lineside signs includes two groups of signs, namely mandatory lineside operational signs and non-mandatory lineside safety signs. GI/GN7634 sets out an index for all the signs in the catalogue of lineside signs.
- G 1.1.3 Requirements for the visibility of trackside control-command and signalling objects are set out in section 4.2.15 of the CCS TSI. Requirements for the provision, visibility, readability, maintenance and testing of a specific set of European Rail Traffic Management System (ERTMS) trackside boards are set out in BS EN 16494:2015. The requirements in GI/RT7033 are national technical rules (NTRs) which are provided for the design of lineside operational signs for the Great Britain (GB) main line railway. It also contains a non-mandatory appendix relating to the design of lineside safety signs.

### G 1.2 The structure of this document

- G 1.2.1 All requirements from Railway Group Standard GI/RT7033 are reproduced with a grey background in this document.
- G 1.2.2 Guidance is provided as a series of sequentially numbered clauses prefixed 'G' immediately below the greyed text to which it relates.
- G 1.2.3 Specific responsibilities and compliance requirements are laid down in the Railway Group Standard itself.
- G 1.2.4 The guidance given in Appendices A and B is applicable to lineside operational signs only.
- G 1.2.5 The guidance given in Appendix C is applicable to lineside safety signs only.
- G 1.2.6 The guidance given in Appendices D and E is applicable to both lineside operational and lineside safety signs.

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## Guidance on Lineside Signs

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### **G 1.4 Approval and authorisation of this document**

G 1.4.1 The content of this document was approved by Control Command and Signalling (CCS) Standards Committee on 22 January 2015.

This document was authorised by RSSB on 21 April 2015.

# Guidance on Lineside Signs

## Part 2 Guidance on Requirements for Lineside Operational Signs

### G 2.1 Approved lineside operational signs

#### GI/RT7033 issue three

##### 2.1 Approved lineside operational signs

2.1.1 Only lineside operational signs referenced in GI/GN7634 shall be installed, and only for those applications mandated in Railway Group Standards.

G 2.1.1 Rationale: Restriction to only the approved signs prevents the proliferation of different designs of signs conveying similar information, which could cause confusion and misinterpretation.

G 2.1.2 The lineside operational signs that have been approved are shown in the catalogue of lineside signs. The applications of lineside operational signs are specified in the relevant Railway Group Standards that set out the need for the signs.

G 2.1.3 The catalogue of lineside signs includes both lineside operational and lineside safety signs. An index for all signs in the catalogue is set out in GI/GN7634.

G 2.1.4 The process for introducing new or modified designs of lineside operational signs into the catalogue is set out in GI/RT7033.

### G 2.2 Physical requirements

#### G 2.2.1 Dimension tolerance

#### GI/RT7033 issue three

##### 2.2.1 Dimension tolerance

2.2.1.1 Unless otherwise stated, the maximum tolerance of 1% to the dimension specified in the catalogue of lineside signs shall be applied, but subject to a maximum of  $\pm 10$  mm.

G 2.2.1.1 Rationale: Tolerance on the dimension allows minor deviation from the specified value at the manufacturing stage.

G 2.2.1.2 The dimensions of signs are specified in the catalogue, to achieve consistency in the size and shape of signs.

G 2.2.1.3 Smaller sizes of some signs are used in special circumstances, for example limited clearance in tunnels.

#### G 2.2.2 Lettering and symbols

#### GI/RT7033 issue three

##### 2.2.2 Lettering and symbols

2.2.2.1 Unless otherwise stated for individual lineside operational signs, the following typefaces shall be used:

- a) For those signs incorporating only digits or digits and capital letters as abbreviations, the digit typeface shall be BS 3693B:1964.
- b) The Rail Alphabet typeface shall be used, except where BS 3693B:1964 applies.

G 2.2.2.1 Rationale: These typefaces are specified for their readability, and to achieve consistency across the railway network.

## Guidance on Lineside Signs

G 2.2.2.2 BS 3693B:1964 only contains definitions for digits. Although BS 3693B:1964 was withdrawn in 1992, the typeface specified is still being used for digits that are incorporated in those lineside signs that either:

a) Contain only digits.

Or

b) Contain digits and capital letters as abbreviations.

G 2.2.2.3 The Rail Alphabet typeface designed by Kinnear & Calvert for the British Railways Board in the 1960s is similar to a bold weight of Helvetica®. The Helvetica® Neue Bold typeface is to be used by lineside signs on ERTMS lines for degraded mode operation, as set out in BS EN 16494:2015.

### G 2.2.3 Layout of text

#### GI/RT7033 issue three

##### 2.2.3 Layout of text

2.2.3.1 The layout of text within a lineside operational sign shall be based on a grid system, as shown in Figure 1.

- a) The size of the grid is defined by the “x”-height of the main heading, denoted as “a” in Figure 1. The “x”-height being the height of a lower-case “x”.
- b) If hierarchical information is required, the “x”-height of the main heading shall be three units, and the qualifying text two units. Text of one unit in height shall be reserved for any limitations which need to be applied.
- c) The interlinear separation, denoted as “b” in Figure 1, shall be double the “x”-height of the text.
- d) Borders shall be the same thickness as the “x”-height of the main heading.

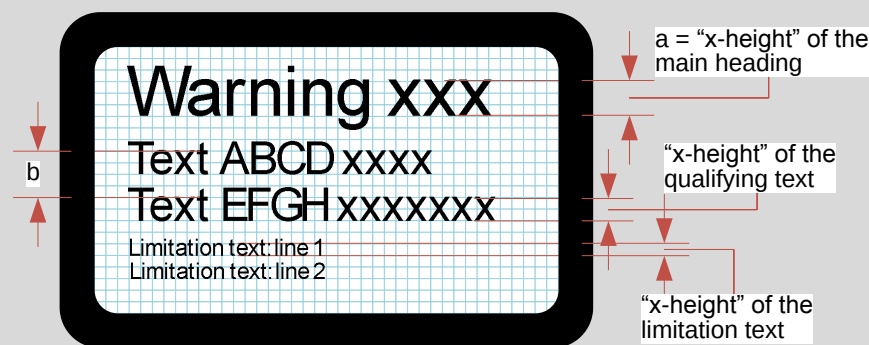


**Figure 1** Generic format of text using the Rail Alphabet typeface

G 2.2.3.1 Rationale: The grid system allows for consistency of proportionality between the levels of hierarchical text. This emphasises the hierarchical level of text importance.

### G 2.3 Optical requirements

#### G 2.3.1 Reflectivity

#### GI/RT7033 issue three

##### 2.3.1 Reflectivity

2.3.1.1 The retroreflective material used for lineside operational signs shall have a coefficient of retroreflection equal to or greater than Class RA2, as set out in BS EN 12899-1:2007 Table 4.

G 2.3.1.1 Rationale: Retroreflective signs are used to help drivers read them in low light levels.

G 2.3.1.2 BS EN 12899-1:2007 Table 4 sets out performance requirements for Class RA2 retroreflective material, which is equivalent to the Class 1 material previously specified in the superseded standard BS EN 873-6:1983.

## Guidance on Lineside Signs

### G 2.3.2 Colour

#### GI/RT7033 issue three

##### 2.3.2 Colour

- 2.3.2.1 The optical properties for non-retroreflective white, red, yellow, blue, green, grey and black colour shall be as set out in BS EN 12899-1:2007 Table 16.
- 2.3.2.2 The non-retroreflective purple shall be Pantone 260C®.
- 2.3.2.3 The optical properties for retroreflective white, red, yellow, blue, green and grey colours shall be as set out in BS EN 12899-1:2007 Table 2.
- 2.3.2.4 Retroreflective purple shall be achieved by overlaying a transparent Pantone 260C® product on a white retroreflective product.
- 2.3.2.5 The optical properties for retroreflective yellow-green shall be as set out in BS 8408:2005 Tables 4 and 5.

- G 2.3.2.1 Rationale: The optical properties and colours are specified to prevent proliferation of different shades of colours being used.

### G 2.3.3 Colour for the rear of signs

#### GI/RT7033 issue three

##### 2.3.3 Colour for the rear of signs

- 2.3.3.1 The rear of lineside operational signs shall be uniform, non-retroreflective grey.

- G 2.3.3.1 Rationale: The non-retroreflective grey colour is used for the rear of signs, as it is a neutral colour which reduces distraction.

- G 2.3.3.2 The rear surfaces of lineside operational signs should not cause confusion to drivers.

- G 2.3.3.3 There is no colour specification for rear surfaces of ERTMS trackside board in BS EN 16494:2015, although it recommends the use of uniform, non-reflective grey in accordance with the chromaticity requirements of BS EN 12899-1:2007 Table 16 and luminance factor  $\beta \leq 0.4$ .

## G 2.4 Introducing new designs of lineside operational signs

### G 2.4.1 Presentation and shape for new designs of lineside operational signs

#### GI/RT7033 issue three

##### 2.4.1 Presentation and shape for new designs of signs

- 2.4.1.1 For new designs of lineside operational signs, one of the following shapes shall be used, either for the sign itself or as a symbol contained within a rectangular or circular shape:
  - a) A circular sign or symbol to denote an instruction.
  - Or
  - b) A triangular sign or symbol, apex pointing upwards, to denote a warning. It is permissible to use a pentagon shape where multiple lines of lettering and / or digits are required.
  - Or
  - c) A rectangular sign or symbol for the display of information.

- G 2.4.1.1 Rationale: The purpose of a sign is reinforced through its shape, thereby enabling users to more readily interpret the information presented.

- G 2.4.1.2 Some existing warning signs, for example, Sign AD03m (permissible speed warning indicators) use an irregular pentagon shape. The irregular pentagon shape is in the form of a rectangle above a triangle with its vertex pointing downwards. The height of the rectangular section can vary to accommodate the texts.