Rail Industry Standard
RIS-2761-RST
Issue: One    Draft: 2a
Date: June 2020

Rail Industry Standard
for Driving Cabs

Synopsis
This document sets out supplemental requirements for the design, layout and operational equipment in driving cabs of rail vehicles in line with GB practice.
Issue record

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<td>One</td>
<td>06/06/2020</td>
<td>Original document. This RIS has been produced to provide requirements,</td>
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<td>[proposed]</td>
<td>that do not fulfill the criteria to be national technical rules (NTRs),</td>
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<td>and guidance for the driving cabs of rail vehicles.</td>
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Revisions have not been marked by a vertical black line in this issue because the document has been revised throughout.

Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

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Supply

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Part 1  Purpose and Introduction

1.1  Purpose

1.1.1  This document sets out requirements for the design and layout of driving cabs of rail vehicles in line with practice in Great Britain (GB), as well as requirements for operational equipment in the driving cab. The requirements are supplementary to those in the Locomotives and Passenger Rolling Stock Technical Specification for Interoperability (LOC & PAS TSI) and national technical rules (NTRs) in GMRT2161.

1.1.2  The requirements in this document do not apply to either on-track machines (OTMs) or to on-track plant (OTP). Requirements for the driving cabs of OTMs and OTP are set out in GMRT2400 and RIS-1530-PLT respectively, and associated referenced standards.

1.1.3  This document can be adopted by railway undertakings (RUs) and rolling stock companies (ROSCOs) under their respective safety/quality management system or when specifying products and services, or by manufacturers when designing products.

1.2  Application of this document

1.2.1  Compliance requirements and dates have not been specified because these are the subject of internal procedures or contract conditions.

1.2.2  If you plan to do something that does not comply with a requirement in this RIS, you can ask a Standards Committee to comment on your proposed alternative. If you want a Standards Committee to do this, please submit your deviation application form to RSSB. You can find advice and guidance on using alternative requirements on RSSB’s website www.rssb.co.uk.

1.3  Health and safety responsibilities

1.3.1  Users of documents published by RSSB are reminded of the need to consider their own responsibilities to ensure health and safety at work and their own duties under health and safety legislation. RSSB does not warrant that compliance with all or any documents published by RSSB is sufficient in itself to ensure safe systems of work or operation or to satisfy such responsibilities or duties.

1.4  Structure of this document

1.4.1  This document sets out a series of requirements that are sequentially numbered. This document also sets out the rationale for the requirement, explaining why the requirement is needed and its purpose and, where relevant, guidance to support the requirement. The rationale and the guidance are prefixed by the letter ‘G’.

1.4.2  Some subjects do not have specific requirements but the subject is addressed through guidance only and, where this is the case, it is distinguished under a heading of ‘Guidance’ and is prefixed by the letter ‘G’.
1.5 Approval and authorisation of this document

1.5.1 The content of this document will be approved by Rolling Stock Standards Committee on 13 March 2020 [proposed].

1.5.2 This document will be authorised by RSSB on 24 April 2020 [proposed].
Part 2  Cab Layout

2.1  Guidance on driver’s controls and instruments

Guidance

G 2.1.1  GMRT2100 sets out requirements for the structural integrity and design of driving cab interiors to minimise injury risk in the event of a train collision.

G 2.1.2  BS EN 16186-2:2017 sets out rules for the positioning of controls and instruments in the driving cab and on the driver’s desk. The content of BS EN 16186-2:2017 is not mandated by the LOC & PAS TSI.

G 2.1.3  Standardised control layouts are shown in BS EN 16186-2:2017. However these are for a central driving position, therefore may not be appropriate for left-hand running or for units with an offset driving position. BS EN 16186-2:2017 includes national deviations applicable to trains that will operate solely on the Great Britain (GB) mainline railway. The control layouts in BS EN 16186-2:2017 do not include integration of Class B train protection systems.

G 2.1.4  RIS-0775-CCS sets out requirements for the automatic warning system (AWS) / train protection warning system (TPWS) driver machine interface (DMI). AWS/TPWS is the GB Class B train protection system.

G 2.1.5  Wherever practicable, the visual field directly in front of the driver (when in the driving position) is reserved for siting primary controls and instruments vital to the continuing safe operation of the train. Their locations reflect their importance, frequency, function and sequence of use. The amount of head and eye movements needed by the driver is taken into account, with the objective of maximising the driver’s visual concentration on track and signals.

G 2.1.6  In addition, in GB driving cabs the following controls and instruments, where fitted, are located to be operable and/or viewable by the driver whilst at the main driving position:

a) Passenger alarm acknowledgement and indicator. Requirements for the passenger alarm system are set out in BS EN 16334:2014

b) Fire extinguisher delay system

c) On-train camera/monitor (OTCM) system displays for use with driver controlled operation (DCO). RIS-2703-RST sets out requirements for DCO OTCM system monitors

d) Controls for automatic coupling and uncoupling

e) Controls and indicators for radio electronic token block (RETB). GKGN0554 provides guidance on RETB equipment

f) Driver’s reminder appliance (DRA). Clause 3.1 sets out requirements for the DRA.

G 2.1.7  Best practice is to assess the design of the driving cab to evaluate whether the design supports human performance and does not cause adverse health or musculoskeletal issues for operators. The likelihood of achieving a suitable design can be improved by early engagement and continuous integration of human factors throughout the design process. This might include engaging with human factors experts, applying human factors methods and anthropometric data, and engaging with end users.
G 2.1.8 BS EN 16186-1:2014+A1:2018 sets out upper and lower values of anthropometric data that have been used in defining the requirements of that document. These values are based on body data from European countries, and may not be appropriate for use in vehicles that will only operate domestically on the GB mainline railway. Alternative anthropometric data sets are available in PD CEN ISO/TR 7250-2:2011+A1:2013 and in PeopleSize 2008. PD CEN ISO/TR 7250-2:2011+A1:2013 contains various national data sets, but it does not include data for the UK. In the absence of a PD CEN ISO/TR 7250-2:2011+A1:2013 data set for the UK, recent RSSB human factors projects have used the PD CEN ISO/TR 7250-2:2011+A1:2013 data set for Germany as a close approximation for the UK population. PeopleSize 2008 is a commercially available product that has traditionally been used by the GB mainline railway industry and which includes data for the UK population. Best practice is to use the data set that has the greatest range for the dimensions of interest.

G 2.1.9 The LOC & PAS TSI requires that a multiple unit or locomotive is able to continue to be driven to a firefighting location in the event of a fire on board. This may require the activation of an onboard fire extinguishing system to be delayed, for example in the case where activation of the fire extinguishing system would disable the traction system. BS EN 16186-2:2017 states that it is prohibited for there to be any means for the driver to interfere with the fire extinguishing system, thereby disabling or deactivating it (for example by placing the train into a maintenance mode). However, this does not prevent the driver operating the system as designed, such as delaying the activation of the system to enable the vehicle or unit to continue to a firefighting location.

G 2.1.10 The colour-coding of the brake pipe and main reservoir pipe icons shown in BS EN 16186-2:2017 is the reverse of normal GB practice. Normal GB practice is to colour the brake pipe red and the main reservoir pipe yellow as set out in GMRT2045. Users of this standard may adopt the brake pipe and main reservoir pipe icons shown in BS EN 16186-2:2017 but use the same colour coding as set out in GMRT2045.

G 2.1.11 The direction of operation and labelling of the driver’s traction and brake control set out in BS EN 16186-2:2017 are the reverse of normal GB mainline practice. For GB domestic vehicles, Annex F of BS EN 16186-2:2017 permits the application of the brake by movement of the handle away from the driver. This reflects the GB specific case in the LOC & PAS TSI clause 7.3.2.19. For more information see GMRT2045.

G 2.1.12 The LOC&PAS TSI sets out requirements for storage space located in or near the driving cab for equipment that may be used in an emergency situation. GMRT2130 sets out requirements for emergency and safety equipment to be carried on board trains, including equipment to be located within the driving cab.

2.2 Guidance on auxiliary driving positions

Guidance

G 2.2.1 BS EN 16186-2:2017 sets out design rules and guidance on the positioning of auxiliary driver’s desks and control equipment. The LOC & PAS TSI does not cover the subject of auxiliary driving positions, therefore their provision is not prohibited.
G 2.2.2 Where an auxiliary driving position is provided, GB practice is to:

a) Automatically limit the maximum speed that can be achieved when the vehicle is operated from an auxiliary driving position, with the limit being appropriate for the nature of the operations performed from that position, such as low-speed shunting movements or the initial movement away from a platform;

b) Ensure the driver is able to move easily from an auxiliary driving position to the main driving position whilst the train is in motion; and

c) Ensure that the train is automatically brought to a stand if the driver becomes incapacitated during the movement from auxiliary driving position to main driving position.
Part 3  Driver’s Reminder Appliance (DRA)

3.1  Fitment of a DRA

3.1.1  Trains that operate in passenger service and perform station duties, other than those listed in Appendix A.1, and are either not equipped with European Rail Traffic Management System (ERTMS) / European Train Control System (ETCS), or will operate over lines that are not equipped with ERTMS/ETCS, shall be equipped in each driving cab with a DRA that meets the requirements set out in clauses 3.2, 3.3 and 3.4.

Rationale

G 3.1.2 The DRA, when set, indicates to the driver that the signal ahead may be at danger and prevents the driver taking power. The DRA provides a reminder to the driver of the signal indication.

G 3.1.3 A DRA is not necessary when operating under ERTMS/ETCS as the signalling system provides protection to prevent the train passing a signal at danger.

Guidance

G 3.1.4 RSSB-ERTMS-OC provides further guidance on the use of the DRA where ERTMS equipment is fitted.

G 3.1.5 GERT8000-TW1 Section 10 sets out when the DRA is to be used, if fitted.

3.2  DRA functionality

3.2.1  A DRA shall:

a) As a minimum, consist of a control permitting the DRA to be set and reset, and an indicator showing the DRA status;

b) Prevent the driver from taking power, only when set in the active cab and regardless of the status of the DRA in any other driving cabs of the train;

c) Except as set out in b), not impede or be impeded by other controls and instruments, and not affect the correct and safe operation of other systems (trackside, trainborne or otherwise);

d) Have a means of isolation to enable the train to take power, for use when a failure of the DRA could result in the train being unable to take power; and

e) Be labelled ‘DRA’.

Rationale

G 3.2.2 The control and indicator enable the driver to operate the DRA and receive feedback on the DRA status.

G 3.2.3 The driver sets the DRA when stopping, as set out in GERT8000-TW1 Section 10. By preventing the driver from taking power when set, the DRA protects against the driver inadvertently moving the train.

G 3.2.4 Enabling isolation of the DRA ensures that, in case of a failure of the DRA resulting in the train being unable to take power, the train is able to continue in service.
G 3.2.5 Preventing the functioning of the DRA from non-active driving cabs ensures that a set DRA in a non-active driving cab cannot prevent the driver from taking power.

G 3.2.6 Labelling the DRA equipment mitigates the risk of it being mistaken for other equipment.

**Guidance**

G 3.2.7 Requirements for the control and indicator are set out in clauses 3.3 and 3.4. The control and indicator may be combined in a single component.

G 3.2.8 The DRA is a train safety system for the purposes of applying the requirements set out in clauses 6.2 and 6.3, which set out additional requirements relating to the isolation of train safety systems.

G 3.2.9 GERT8000-TW5 Section 7 sets out the rules for operation of a train with a defective DRA.

G 3.2.10 Requirements for the recording of the operational use of the DRA by the on-train data recorder (OTDR) are set out in RIS-2472-RST (scheduled for publication in June 2020).

G 3.2.11 Additions to the functionality of the DRA or changes to the equipment design can be incorporated, as long they do not prevent the equipment from complying with the requirements set out in sections 3.3 and 3.4.

G 3.2.12 Additional guidance for controls and status indicators in driving cabs is set out in clause 2.1.

### 3.3 DRA operation

3.3.1 The DRA set and reset control shall:

a) Require a positive action by the driver to set the DRA and a positive action by the driver to reset the DRA;

b) Be operable by the driver when seated at the driving position; and

c) Be separate from the traction control device.

**Rationale**

G 3.3.2 Requiring a positive action to set and reset the DRA reduces the likelihood of accidental operation of the DRA switch.

G 3.3.3 Separating the DRA control from the power control device ensures that operation of the DRA is a separate action from that used to take power, and therefore reduces the likelihood that the DRA is reset automatically by the driver whilst taking power.

**Guidance**

G 3.3.4 The table in Appendix B.1 sets out a range of permissible control types and associated movements.
3.4 DRA status indicator

3.4.1 The DRA status indicator shall:

a) Illuminate to indicate that the DRA is set and remain lit for as long as the DRA remains set;

b) Emit a steady light, red in colour and visible in all lighting conditions;

c) Be positioned within the driver’s primary vision area; and

d) Be clearly identifiable by the driver from the driving position.

Rationale

G 3.4.2 The requirements ensure that the driver is provided with a clear, visible indication of the DRA status.

Guidance

G 3.4.3 BS EN 16186-2:2017 sets out general requirements for indicators in the driving cab, but does not specifically reference the DRA, as this is a GB domestic requirement.
Part 4  Driver Controlled Operation (DCO)

4.1  External visibility for DCO equipment

4.1.1  Where a side-window is provided in the driving cab to enable the driver to view platform-mounted equipment (for example mirrors or CCTV monitors for DCO, or car stop markers), it shall not cause distortions or loss of visibility of platform-mounted equipment that could mislead the driver or affect their judgement.

Rationale

G 4.1.2  Ensuring the driver has a view through the side-window that is free of distortions/ loss of visibility enables them to have an accurate view of the platform-mounted equipment. This is necessary for them to be able to decide whether it is safe to start dispatch duties.

Guidance

G 4.1.3  DCO was previously referred to as driver only operation (DOO).
G 4.1.4  RIS-2703-RST sets out requirements for on-train cameras and monitors used in DCO.
G 4.1.5  RIS-3703-TOM sets out requirements and guidance for the development, review and implementation of passenger train dispatch processes, including considerations for DCO.
G 4.1.6  RIS-8060-CCS sets out requirements for equipment used in the dispatching of DCO passenger trains from platforms.
G 4.1.7  Requirements for the optical characteristics of driving cab windscreens are set out in the LOC & PAS TSI. The LOC & PAS TSI is silent on optical characteristics for cab side-windows.

4.2  Door controls for DCO

4.2.1  If DCO requires the driver to move from the main driving position to a side-window to view platform-mounted equipment or to look back along the train, then passenger door controls and a driver’s activity control input device shall be provided for use whilst the driver is positioned at the window.

Rationale

G 4.2.2  Positioning door controls for use whilst the driver is positioned at the side-window enables the doors to be closed whilst the driver has a full view of the platform.
G 4.2.3  Positioning a driver’s activity control input device for use whilst the driver is at the side-window ensures that the driver’s activity continues to be monitored whilst viewing the platform.
Guidance

G 4.2.4 Requirements for the driver’s activity control function are set out in the LOC & PAS TSI. It performs the functions previously covered by the driver’s safety device (DSD) and driver’s vigilance equipment.

G 4.2.5 It may be necessary to consider, as part of the design process, the time necessary to move from the side-window to the main driving position, when defining the value of the time period after which the driver’s activity control function triggers an alarm.
Part 5  Cab Access and Egress

5.1  External access to driving cab

Guidance

G 5.1.1  The LOC & PAS TSI, BS EN 16186-4:2019 and BS EN 16116-1:2013 set out requirements and design rules for external access to the driving cab, including dimensions and characteristics of equipment, doors and steps that are appropriate for use by train staff. The requirements of these documents may not be sufficient or compatible with GB mainline railway infrastructure, such as reduced gauge clearance or operation over third-rail energy infrastructure.

G 5.1.2  It is best practice for the means of access and egress between vehicle and trackside to be ergonomically assessed. This assessment may consider:

a)  Signage
b)  Access / egress over external obstacles (for example third-rail energy infrastructure).

G 5.1.3  Where the driver's access to the driving cab is via a vestibule that is also used by passengers, the following arrangements ensure that the vestibule is free of passengers whilst the driver is occupying the cab:

a)  The internal door between the vestibule and adjacent passenger saloon is kept locked while the driver is occupying the driving cab;

b)  Whilst the internal vestibule door is locked, control over the respective bodyside doors is available only to traincrew;

c)  From within the vestibule, the locked internal vestibule door can be opened without the need for a key or tool, to enable emergency egress; and

d)  From within the saloon, the locked internal vestibule door can be opened only using a security key or emergency release device.

G 5.1.4  Structural requirements for external access doors are set out in GMRT2100.
Part 6  Isolation of Train Safety Systems

6.1  Restrictions on isolation of train safety systems

6.1.1  It shall not be possible for the driver to isolate the following train safety systems whilst the train is moving:

a)  Driver’s activity control function
b)  Passenger alarm
c)  Train speed indication
d)  Any emergency brake devices which are remote from the active driving cab
e)  DRA.

Rationale

G 6.1.2  Train safety systems, when operated, provide protection by bringing the train to a stand in an emergency situation. It is therefore essential to prevent these systems being isolated when the train is in motion.

Guidance

G 6.1.3  It is good practice to position safety system isolation devices beyond the reach of the driver when seated at the normal driving position.

G 6.1.4  The LOC & PAS TSI sets out requirements for the passenger alarm. Regulation 4 of the Railway Safety (Miscellaneous Provisions) Regulations 1997 requires train operators to have, within passenger trains, a means whereby passengers can communicate to the driver that there is an emergency and, if necessary, stop the train.

G 6.1.5  Requirements for the driver’s activity control function are set out in the LOC & PAS TSI. The driver’s activity control function performs the functions previously covered by the DSD and driver’s vigilance equipment by monitoring the driver’s activity. The driver’s activity control function provides an alarm and then applies the train’s brakes if, for a specified time, either:

a)  No activity is detected; or
b)  A single continuous activity is detected.

G 6.1.6  RIS-0775-CCS sets out requirements for the isolation of AWS and TPWS equipment.

G 6.1.7  RIS-2472-RST defines requirements for the recording of isolation of safety systems on the OTDR.

6.2  Indication of isolated train safety systems

6.2.1  If a means of isolating any train safety system is provided, then isolation of that system shall display a reminder, located in the driving cab and visible to the driver, indicating that the system is isolated.
Rationale

G 6.2.2 An indication to the driver that a safety system is isolated identifies that the train should be operated in line with the requirements set out in Rule Book module GERT8000-TW5.

Guidance

G 6.2.3 System-specific isolation requirements are set out in RIS-0775-CCS for AWS / TPWS and in RIS-0797-CCS and RIS-0798-CCS for ERTMS/ETCS.

G 6.2.4 It is permissible to provide a general isolation indicator in the cab backed up by detailed indicators, identifying the isolated system(s), that may be remote from the cab. It is also permissible to provide a general isolation indicator on the train management system (TMS), so that the TMS can be interrogated to identify the isolated system(s).

G 6.2.5 Best practice is to ensure that the reminder is visible and continues to be visible in the event of loss or failure of any of the power supply systems to or on the train.

G 6.2.6 A train safety system performs one or more of the following functions:
   a) Supports the correct interdependency between the train crew and train controls
   b) Supports the correct interdependency between the train crew and other infrastructure based safety systems (including signals and signs to be observed)
   c) Supports the correct interdependency between the train controls and other infrastructure based safety systems
   d) Supports the correct interfacing between the train and any people on or near the track
   e) Permits communications between the train crew and passengers in an emergency
   f) Permits communications between train crew members and between train and track based systems.

6.3 Resetting of isolated train safety systems

6.3.1 Except where resetting of train safety systems is required as part of routine operational duties, train safety systems shall be designed so that they cannot be reset after isolation by train crew.

Rationale

G 6.3.2 This requirement, together with the requirement of clause 6.2, ensures that it is clear that a train safety system has been isolated, so that appropriate corrective actions can be taken.

Guidance

G 6.3.3 Resetting of isolated train safety systems can be performed by maintenance staff.

G 6.3.4 To indicate to train staff that resetting of isolated train safety systems is not possible, except by maintenance staff, a ‘break-seal’ arrangement may be employed. This arrangement also visibly records the isolation of the train safety system.
Appendices

Appendix A  Vehicles for which fitment of a DRA is not required

A.1  Vehicles used for passenger services

A.1.1  Driving cabs of the following types of vehicle, used for passenger services, are not required to be fitted with a DRA, although a DRA may still be fitted if desired:

a) Vehicles of the following classes:
   - Class 33
   - Class 37
   - Class 47
   - Class 73
   - Class 82.1 (Mk 3 DVT)
   - Class 86
   - Class 90
   - Class 373 (fitted with brake interlock switch)

b) All London Underground Ltd trains and Tyne and Wear Metro trains.

c) Driving Brake Standard Open (DBSO) vehicles.

d) Infrequently used cabs, such as the the No. 2 end of a Class 91.

e) Steam locomotives and other preserved traction units used for heritage services.

f) Where a train is fitted with automatic train protection (ATP) or tripcocks as means of controlling the risk of passing a signal at danger, and is confined to routes equipped with that means of control.

A.2  Vehicles for non-passenger service

A.2.1  Driving cabs of the following types of vehicle, used for non-passenger services, are not required to be fitted with a DRA:

a) Freight and shunting vehicles used for limited passenger train operations.

b) Vehicles not scheduled to perform station duties (including freight trains and Class 325 EMUs).

   c) Infrastructure monitoring vehicles.
### Appendix B  DRA Control Types

#### B.1 Table of agreed DRA control types

The DRA control shall be selected from the table below, which sets out a variety of permissible control types and associated movements.

<table>
<thead>
<tr>
<th>Control type</th>
<th>Movement</th>
<th>Set</th>
<th>Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rotary*</td>
<td>Rotation</td>
<td>Clockwise</td>
</tr>
<tr>
<td>2</td>
<td>Toggle</td>
<td>Horizontal alignment</td>
<td>Right</td>
</tr>
<tr>
<td>3</td>
<td>Toggle*</td>
<td>Vertical alignment</td>
<td>Down</td>
</tr>
<tr>
<td>4</td>
<td>Rocker</td>
<td>Horizontal alignment</td>
<td>Right in</td>
</tr>
<tr>
<td>5</td>
<td>Rocker</td>
<td>Vertical alignment</td>
<td>Bottom in</td>
</tr>
<tr>
<td>6</td>
<td>Latching</td>
<td>Push/push</td>
<td>Push in</td>
</tr>
<tr>
<td>7</td>
<td>Latching*</td>
<td>Push/pull</td>
<td>Push in</td>
</tr>
</tbody>
</table>

*Table 1: DRA control types and movements*

*In order to promote consistency, it is recommended that either a rotary, a vertically aligned toggle or a latching push/pull control design, shown in bold above, is employed.*
## Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Train Protection (ATP)</td>
<td>A safety system that enforces either compliance with or observation of speed restrictions and signal aspects by trains.</td>
</tr>
<tr>
<td>Automatic Warning System (AWS)</td>
<td>A system that gives train drivers in-cab warnings of the approach to signals, reductions in permissible speed and temporary/emergency speed restrictions, and to apply the brakes in the event that a train driver does not acknowledge cautionary warnings given by the system within the specified time. Source: GERT8075</td>
</tr>
<tr>
<td>auxiliary driving position</td>
<td>A driving position for authorised movements which cannot be safely made from the main driving position and for which the full range of driving controls and the full viewing requirements cannot be provided.</td>
</tr>
<tr>
<td>Class B systems</td>
<td>Existing non-ETCS national signalling systems.</td>
</tr>
<tr>
<td>closed circuit television (CCTV)</td>
<td>A television system in which the video signal is not publicly distributed but is monitored, primarily for surveillance and security purposes. The monitoring may be undertaken by an operator in real time, or recorded for later analysis in the event of an incident. Equipment that is used for remote monitoring and supervisory purposes, usually at a station platform or Level Crossing.</td>
</tr>
<tr>
<td>detonator</td>
<td>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. Also known as Railway Fog Signals.</td>
</tr>
<tr>
<td>Driver Controlled Operation (DCO)</td>
<td>A method of working where the train driver is in control of the opening and closing of the train’s doors.</td>
</tr>
<tr>
<td>Driver Machine Interface (DMI)</td>
<td>A HMI for the driver.</td>
</tr>
<tr>
<td>Driver Safety Device (DSD)</td>
<td>A device to detect driver incapacity.</td>
</tr>
<tr>
<td>driver’s primary vision area</td>
<td>The area within the cab viewable by the driver when at the driving position.</td>
</tr>
<tr>
<td>driver’s reminder appliance (DRA)</td>
<td>A device in a driving cab to enable the driver to set a reminder that the signal ahead may be at danger.</td>
</tr>
<tr>
<td>driving position</td>
<td>The normal position from which the driver controls the train, by operating the primary controls. It may be seated or standing or both, depending on operational requirements.</td>
</tr>
<tr>
<td>European Rail Traffic Management System (ERTMS)</td>
<td>Signalling and operation management system encompassing ETCS for control command, and GSM-R for voice and data.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>European Train Control System (ETCS)</td>
<td>The signalling, control and train protection part of the European Rail Traffic Management System designed to provide interoperability and standardisation across European railways.</td>
</tr>
<tr>
<td>on train data and recorder (OTDR)</td>
<td>Equipment provided on a train to record data about the operation of its controls and performance in response to those controls. A TDR may also be referred to as an On Train Monitor Recorder (OTMR), Data Logger or Event Recorder.</td>
</tr>
<tr>
<td>on-track machine (OTM)</td>
<td>Any rail-mounted machine, whose primary function is for the renewal, maintenance, inspection or measurement of the infrastructure, meeting the requirements of GMRT2400 and permitted by the Rule Book to be moved, either self-propelled or in train formation, outside a possession.</td>
</tr>
<tr>
<td>on-track plant (OTP)</td>
<td>Machines with rail wheels capable of running on railway track, limited by their engineering acceptance to running within a possession only. They are split into three main groups: demountable machines, road-rail vehicles (RRVs), and trailers.</td>
</tr>
<tr>
<td>primary control</td>
<td>A control essential for the safe driving of a train or rail vehicle, operable by the train driver from the normal driving position.</td>
</tr>
<tr>
<td>Radio Electronic Token Block (RETB)</td>
<td>A method of protecting a single line of railway through the use of an electronic interlocking and a radio link to the trains which use the line.</td>
</tr>
<tr>
<td>railway undertaking (RU)</td>
<td>Any private or public undertaking the principal business of which is to provide rail transport services for goods and/or passengers, with a requirement that the undertaking must ensure traction; this also includes undertakings which provide traction only. Source: Article 3 (a) of Directive 2004/49/EC.</td>
</tr>
<tr>
<td>train protection and warning system (TPWS)</td>
<td>A system mitigating Signals Passed At Danger and non-respect of permissible speeds.</td>
</tr>
<tr>
<td>tripcock</td>
<td>Valve, the action of which is initiated by contact with a feature of the railway infrastructure, resulting in the input of a brake demand.</td>
</tr>
</tbody>
</table>
References

The Standards catalogue gives the current issue number and status of documents published by RSSB: http://www.rssb.co.uk/railway-group-standards.

RGSC 01  Railway Group Standards Code
RGSC 02  Standards Manual

Documents referenced in the text

Railway Group Standards

GMRT2045  Compatibility Requirements for Braking Systems of Rail Vehicles
GMRT2100  Requirements for Rail Vehicle Structures
GMRT2130  Vehicle Fire, Safety and Evacuation
GMRT2161  Requirements for Driving Cabs of Railway Vehicles
GMRT2400  Engineering Design of On-track Machines in Running Mode

RSSB documents

GERT8000-TW1  Preparation and movement of trains
GERT8000-TW5  Preparation and movement of trains: Defective or isolated vehicles and on-train equipment
GKGN0554  Guidance on Radio Electronic Token Block (RETB)
RIS-0775-CCS  AWS and TPWS Application Requirements
RIS-0797-CCS  ERTMS/ETCS Baseline 3 Onboard Subsystem Requirements: Retrofit
RIS-0798-CCS  ERTMS/ETCS Baseline 3 Onboard Subsystem Requirements: New Trains
RIS-1530-PLT  Rail Industry Standard for Technical Requirements for On-Track Plant and their Associated Equipment and Trolleys
RIS-2472-RST  Data Recorders on Trains
RIS-2703-RST  Driver Controlled Operation (DCO) On-Train Camera/Monitors (OTCM)
RIS-3703-TOM  Passenger Train Dispatch and Platform Safety Measures
RIS-8060-CCS  Engineering Requirements for Dispatch of Trains from Platforms
RSSB-ERTMS-OC  Operational Concept for ERTMS
Other references

BS EN 16116-1:2013  
Railway Applications. Design requirements for steps, handrails and associated access for staff. Passenger vehicles, luggage vans and locomotives

BS EN 16186-1:2014+A1:2018  
Railway Applications. Driver’s cab. Anthropometric data and visibility

BS EN 16186-2:2017  
Railway Applications. Driver’s cab. Integration of displays, controls and indicators

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LOC&PAS TSI  

Basic human body measurements for technological design. Statistical summaries of body measurements from national populations.

SI 1997/553  
The Railway Safety (Miscellaneous Provisions) Regulations 1997

Other relevant documents

Other references

BS EN 16186-3:2016+A1:2018  
Railway Applications. Driver’s cab. Design of displays