



RIS

RIS-3702-TOM **Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers** Issue Two: December 2014 Rail Industry Standard

Published by:

RSSB
Block 2
Angel Square
1 Torrens Street
London
EC1V 1NY

© Copyright 2014
Rail Safety and Standards Board Limited

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

Issue record

Issue	Date	Comments
One	September 2011	Original document
Two	December 2014	Replaces issue one. Revised document includes additional requirements and guidance dealing with drivers who transfer in (section 2.2.3) or are employed on 'zero hours' contracts (section 2.2.4). The changes have been made in response to a RAIB recommendation. Minor editorial changes have also been made throughout the document.

Amended or additional parts of revised pages have been marked by a vertical black line in the adjacent margin, with the exception of minor editorial changes.

Superseded or replaced documents

The following Railway Group documents are superseded or replaced, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
RIS-3702-TOM Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers, issue one	All	December 2014

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 Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

Contents

Section	Description	Page
Part 1	Introduction	4
1.1	Purpose of this document	4
1.2	Application of this document	4
1.3	Health and safety responsibilities	4
1.4	The structure of this document	4
1.5	Copyright	5
1.6	Approval and authorisation of this document	5
Part 2	Requirements for Railway Undertakings	6
2.1	Determining what basic route knowledge is required by staff	6
2.2	Factors which affect route learning	6
2.3	Undertaking a route risk assessment	8
2.4	Provision of route knowledge information	9
2.5	Methods of providing route knowledge information	9
2.6	Organisation of route learning	9
2.7	Route knowledge retention	9
2.8	Assessing route knowledge	11
2.9	Competence of instructors, trainers, assessors and managers	14
2.10	Assessing the impact of change on route knowledge and route competence requirements	14
2.11	Records	16
2.12	Review of the route competence assessment process	17
Appendices		
Appendix A	Factors to assess as part of the route risk assessment	18
Appendix B	List of route knowledge requirements	20
Appendix C	Methods of providing route knowledge information	22
Appendix D	Organisation of route learning activities	24
Appendix E	Competence of train driver route conductors	26
Appendix F	Route knowledge assessment	27
Definitions		28
References		30

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 This document is a standard on the training, development, monitoring and assessment of staff on route knowledge and route risks, for the rail industry to use if they so choose. This document, where appropriate, also contains additional guidance to be considered by the railway undertaking during the development and management of its route learning and assessment processes.
- 1.1.2 Route learning provides staff with sufficient knowledge of route factors and route risks and appropriate practical operating experience to enable them to work safely over each route and to give them the necessary skills and confidence to predict and react to environmental changes and conditions.
- 1.1.3 Route learning is primarily aimed at equipping trainees with the necessary knowledge and skills¹, together with practical experience, to enable them to operate trains under all climatic and operating conditions.
- 1.1.4 Route learning procedures may be reviewed in light of infrastructure changes and technological advances so that any necessary changes can be made to route learning procedures and to enable staff skills and knowledge to be updated. The introduction of European Rail Traffic Management System, for example, may impact on route knowledge learning requirements.

1.2 Application of this document

- 1.2.1 A member of RSSB may choose to adopt all or part of this document through internal procedures or contract conditions. Where this is the case the member of RSSB will specify the nature and extent of application.
- 1.2.2 Therefore specific compliance requirements and dates have not been specified since these will be the subject of internal procedures or contract conditions.

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 The structure of this document

- 1.4.1 This document is set out as a series of requirements, in some cases followed by relevant guidance. The guidance is indicated by prefixing the paragraph number with the letter 'G'.

¹ Route learning training is related to the development of non-technical competence of drivers and other staff. For example, elements of situational awareness are required for a large proportion of driving tasks including detailed monitoring tasks, observing speed limits, retaining information about changed stopping patterns, managing distractions, looking out for hazards, assessing and understanding driving situations, and changing driving strategies depending on changing situations. More information can be found in research project T869 Non-technical skills for rail: development, piloting and evaluation of a training course.

The first deliverable from the project, which is essentially a list of non-technical skills that are relevant to the driver role, a description of the observable behaviours and tasks associated with each skill, and an explanation of how these skills were identified. The T869 project deliverables can be downloaded from the RSSB Spark website at <http://www.sparkrail.org>

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

1.5 Copyright

- 1.5.1 Copyright in the Railway Group documents is owned by Rail Safety and Standards Board Limited. All rights are hereby reserved. No Railway Group document (in whole or in part) may be reproduced, stored in a retrieval system, or transmitted, in any form or means, without the prior written permission of Rail Safety and Standards Board Limited, or as expressly permitted by law.
- 1.5.2 RSSB members are granted copyright licence in accordance with the Constitution Agreement relating to Rail Safety and Standards Board Limited.
- 1.5.3 In circumstances where Rail Safety and Standards Board Limited has granted a particular person or organisation permission to copy extracts from Railway Group documents, Rail Safety and Standards Board Limited accepts no responsibility for, nor any liability in connection with, the use of such extracts, or any claims arising therefrom. This disclaimer applies to all forms of media in which extracts from Railway Group documents may be reproduced.

1.6 Approval and authorisation of this document

- 1.6.1 The content of this document was approved by Traffic Operation and Management Standards Committee on 09 September 2014.
- 1.6.2 This document was authorised by RSSB on 24 October 2014.

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

Part 2 Requirements for Railway Undertakings

2.1 Determining what basic route knowledge is required by staff

- 2.1.1 Railway undertakings shall identify and document the elements of route knowledge essential for safe operation of their trains on the routes over which they operate, including diversionary routes and unusual moves.
-

G 2.1.1.1 Route knowledge will usually include, but not be limited to:

- a) Available stopping distances for the trains to be driven.
 - b) The effect the infrastructure can have on the braking capabilities of the types of train that are to be driven.
 - c) Signals which have been identified as multiple SPAD signals.
 - d) Signals which may be misread by drivers because of the effects of sunlight, positioning on gantries, the presence of overhead line equipment or other factors.
 - e) Position of stopping points on platforms and knowledge of platform lengths.
 - f) Differences between driving over the route in daylight, darkness and poor visibility.
 - g) Types of traction unit / train worked over each route.
 - h) Diversionary routes.
 - i) Unusual moves.
-

2.2 Factors which affect route learning

2.2.1 Physical factors that may affect route learning

- 2.2.1.1 Railway undertakings shall identify and document those route factors which, for each route operated by their trains, could affect the ability to learn and retain route knowledge.
-

G 2.2.1.1.1 Route factors include, but are not limited to:

- a) The complexity of station, junction and yard layouts and associated signalling.
 - b) Time of day and year when climatic conditions may negatively affect a route or part of a route.
 - c) The frequency a driver is rostered to drive over a route, including any specific signalling and routing combinations.
-

2.2.2 Identifying individual factors that may affect route learning

- 2.2.2.1 Railway undertakings shall identify and document individual factors that could affect the ability to learn and retain route knowledge.
-

G 2.2.2.1.1 Individual factors include, but are not limited to:

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

- a) New entrants with no previous operational experience of the railway environment.
 - b) Existing staff learning new or revised routes.
 - c) Staff with previous operational experience transferring from one railway undertaking to another.
- G 2.2.2.1.2 Railway undertakings may wish to consider the previous experience and capabilities of staff when determining any variations to the core route learning programme that may be needed, so that individual training and development needs can be met.
- G 2.2.2.1.3 The development of route learning plans may benefit from considering the individual learning needs of staff so that personal development can be aligned to previous experience, skills, knowledge and abilities. Individual learning preferences may also be considered when aligning route learning plans to each individual.
- G 2.2.2.1.4 Route learning plans may be used to identify a minimum amount of time to review parts of the route already learned when progressing to other parts of the route.
- G 2.2.2.1.5 Where separate routes are being learned, consideration may be given to the provision of a period of driving over a route following completion of route learning before moving on to another route. Where such opportunities are not provided, the risk of skills fade is an important consideration.

2.2.3 Managing the competency of transferred-in drivers having previous driving experience

- 2.2.3.1 Railway undertakings shall establish the level of route knowledge competency of all transferred-in drivers having previous driving experience to determine whether additional training is required.

-
- G 2.2.3.1.1 Railway undertakings may benefit from assessing the level of route knowledge competence currently held by newly transferred-in drivers to determine if further training is required to meet their current business requirements. This may be achieved by:
- a) Conducting a detailed training needs analysis, taking into consideration the individual's experience as set out in G2.2.3.1.2.
 - b) Determining any potential competence gaps.
 - c) Creating and documenting a detailed individual training plan to meet the identified needs.
 - d) Providing training in accordance with the plan.
 - e) Assessing and documenting the driver's competence using company processes.
- G 2.2.3.1.2 Consideration may be given to:
- a) The last time the route/s had been physically driven over and whether this is aligned with company policy.
 - b) The amount of time previously spent driving over the route/s.

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

- c) Experience in operating the type of traction that will be worked over the route whilst working for the railway undertaking.
- d) Different operating characteristics of traction and train types to those operated in the past, such as stopping / fast services, suburban / intercity services, freight / passenger or fast / slow operation.

2.2.4 Managing the competency of drivers employed on 'zero hours' contracts or who drive for more than one railway undertaking

2.2.4.1 Railway undertakings shall establish the level of route knowledge competency of all drivers who are employed on 'zero hours' contracts or drive for more than one railway undertaking, to determine whether additional training is required.

G 2.2.4.1.1 In determining whether additional training is required for drivers employed on 'zero-hours' contracts or working for more than one railway undertaking, the following may be considered:

- a) The last time the route/s had been physically driven over and whether this is aligned with company policy.
 - b) The amount of time spent driving over the route/s.
 - c) Experience of operating the type of traction that will be worked over the route whilst working for the railway undertaking.
-

2.3 Undertaking a route risk assessment

2.3.1 Railway undertakings shall carry out and record route risk assessments to identify and manage factors which could increase safety risk.

G 2.3.1.1 The following may be considered when undertaking the route risk assessment:

- a) Information provided by experienced staff, managers and trainers.
- b) Reports of incident investigation and signal sighting committees.
- c) Route information from the infrastructure manager.
- d) Information from local, regional or national cross-industry risk management groups.

G 2.3.1.2 It is important that route risk assessment processes are applied consistently for each route to ensure consideration is given to all factors which might affect safety. Results of this process may be used to determine which factors are to be included in route maps.

G 2.3.1.3 Railway undertakings who operate over the same infrastructure may benefit from developing and maintaining a close liaison to consider those factors that affect their operations and the risk mitigation measures that may be applied to reduce those risks to 'as low as reasonably practicable' (ALARP).

G 2.3.1.4 Appendix A provides guidance on the factors to assess as part of the route risk assessment.

Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers

2.4 Provision of route knowledge information

2.4.1 Railway undertakings shall provide an individual engaged in route learning with all route knowledge information appropriate for the routes being learned.

G 2.4.1.1 Appendix B provides guidance on the minimum route knowledge requirements for drivers and train managers / guards.

2.5 Methods of providing route knowledge information

2.5.1 There are no requirements associated with this section.

G 2.5.1.1 Appendix C provides guidance on the methods of providing route knowledge information to staff.

2.6 Organisation of route learning

2.6.1 Railway undertakings shall organise route learning to provide staff with the necessary knowledge to operate trains in normal and degraded conditions.

G 2.6.1.1 Where practicable, the structure of route learning will enable individuals to work trains under those conditions shown by the route risk assessment to present a safety risk, appropriate to the nature of the tasks to be performed.

G 2.6.1.2 Railway undertakings may consider providing staff with a level of training that will enable them to operate trains under normal and, where practicable, degraded conditions.

G 2.6.1.3 Additional training and development may, where practicable, be provided to staff who have not had opportunities to experience non-routine and degraded operations on the routes being learned.

G 2.6.1.4 If the railway undertaking employing the route learner does not operate trains over the route to be learnt, arrangements for route learning may be agreed with another operator and / or alternative training considered.

G 2.6.1.5 Some of the required skills and knowledge may be delivered by providing experience of working trains:

- a) During weekend diversions.
- b) At night.
- c) During the leaf fall period.

G 2.6.1.6 Simulators, where available, may be used to practice degraded working.

G 2.6.1.7 Appendix D provides guidance on the organisation of route learning activities.

2.7 Route knowledge retention

2.7.1 Railway undertakings shall calculate the frequency each individual works over a route to retain route knowledge.
