

RDG and Network Rail Guidance Note: Train Evacuation Equipment and its Deployment

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About this document

Explanatory Note

The Rail Delivery Group is not a regulatory body and compliance with Guidance Notes or Approved Codes of Practice is not mandatory; they reflect good practice and are advisory only. Users are recommended to evaluate the guidance against their own arrangements in a structured and systematic way, noting that parts of the guidance may not be appropriate to their operations. It is recommended that this process of evaluation and any subsequent decision to adopt (or not adopt) elements of the guidance should be documented. Compliance with any or all of the contents herein, is entirely at an organisation's own discretion.

Other Guidance Notes or Approved Codes of Practice are available on the [Rail Delivery Group \(RDG\) website](#).

Executive Summary:

To provide guidance to support TOCs and NR on having the right equipment and deploying it effectively to support the safe and efficient Controlled Evacuation of passengers from trains.

Issue Record

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1	26 April 2021	First industry release of guidance which resulted from RAIB recommendations from an investigation into a train collision with material washed out from a cutting slope at Corby, 13 June 2019. Approved at RDG Emergency Planning Group 26 April 2021.

This document is reviewed on a regular 3-year cycle.

Written by / Prepared by:



Phil Barrett
Head of Safety and Operations Development,
Rail Delivery Group

Authorised by:



James Burt
Chair of RDG Emergency Planning Group



Paul Ashton
Professional Head of Operations Network Rail

Contents

About this document	2
Explanatory Note	2
Executive Summary:	2
Issue Record	2
Contents	3
1 Purpose and Background	4
1.1 Purpose	4
1.2 Background	4
1.3 Definitions	4
2 Train Evacuation Equipment	5
2.1 Evacuation equipment requirements	5
2.2 What evacuation equipment should be considered	6
3 Train Evacuation Equipment Assessment	6
3.1 Train evacuation plan	6
3.2 Assessment of equipment to be provided	7
3.3 Location of equipment	7
3.4 Passenger needs	8
4 Staff Competence and Preparation	8
4.1 Staff competence requirements	8
4.2 Working with Emergency Services	8
5 References to Other Documents	9
5.1 Other documents	9
Appendix A – Train Evacuation Bridge Example	10
Appendix B – Train Evacuation Steps Example	10
Appendix C – Train Evacuation Equipment Overall Matrix Example	11
Appendix D – Train Evacuation Equipment Location List Example	12

1 Purpose and Background

1.1 Purpose

To provide guidance to support Train Operating Companies (TOCs) and Network Rail (NR) on having the right equipment and deploying it effectively to support the safe and efficient Controlled Evacuation of passengers from trains. To achieve this:

- i. In cooperation with NR, TOC emergency plans should identify the equipment on trains, in response vehicles or at rail locations required for Controlled Evacuation of passengers from trains based on assessment of risk
- ii. The plans should include how to get equipment to site where it is needed by the most effective means.
- iii. Each rolling stock type and its deployment should be assessed for the train evacuation equipment required. This should be documented in the relevant train evacuation instructions.
- iv. Traincrew and other rail staff should be competent to use the equipment provided for train evacuation.
- v. Plans should be in place for passengers with impairments (including those who are disabled) who are unable or have difficulty in using to use the evacuation equipment provided.

1.2 Background

On 13 June 2019 an East Midlands Railway (EMR) train collided with material washed out from a cutting slope at Corby. The Rail Accident Investigation Branch (RAIB) report (Report 04/2020) on the incident noted that it took some time to evacuate the train due to the location and situation on site. The report's recommendation 4 is that, "as part of the ongoing industry-wide programme of work to improve the management of stranded passenger train incidents, Network Rail and the Rail Delivery Group should carry out a joint review of existing procedures and codes of practice for managing stranded trains and carrying out train evacuations, to identify what equipment is needed to deliver the requirements in these procedures for each method of train evacuation. They should then provide this information about what equipment is needed to those responsible for the implementation of recommendation 5." (Recommendation 5 refers to TOCs and NR cooperating to make sure that the equipment identified is available for use, that staff are briefed and trained on it and rolling stock specific documentation is provided).

Meeting the needs of passengers stranded on trains has been a focus of the rail industry following a number of incidents including the multiple stranding of trains during the 'Beast from the East' adverse weather at Lewisham at the beginning of March 2018 and the National Grid power failures on 9 August 2019 which affected a wide area of southern and western England. Good practice from industry learnings from these and previous events has been put into [RDG-OPS-GN049 Meeting the Needs of Passengers Stranded on Trains](#) originally published in 2011 with version 5 issued in November 2020. However, the scope of GN049 does not extend to addressing train evacuation equipment and its deployment. This GN is designed to address that gap and provide guidance about how TOCs can have the right arrangements in place.

It should be remembered that train Incidents should be managed to avoid the need for train evacuation away from a station and arrangements along with the hierarchy of dealing with this is covered in GN in GN049

1.3 Definitions

Term	Definition in the context of this document
Controlled Evacuation	This is where passengers evacuate the train under the supervision of railway industry staff and with all relevant safety controls in place e.g. that all train movements on adjacent tracks have been stopped and that the traction current on 3rd rail equipped routes has been switched off.
Emergency Services	The Emergency Services consist of the Fire & Rescue Service, Ambulance Service and the Police. The British Transport Police will

	have specialist knowledge of the rail industry and the Fire & Rescue Service can provide evacuation support.
Equality Act (2010)	Comprising of a number of regulations and acts, the Equality Act (2010) came into force replacing several acts including the Disability Discrimination Act (1997). Terms used to outline a Passenger with protected characteristics, such as disabled people, are defined by this act.
Human Rights Act	Human rights set out in the European Convention on Human Rights are protected by the Human Rights Act 1998. The right to life set out in this act needs to be considered in terms of how vulnerable people are treated when stranded on trains.
MOM	Mobile Operations Manager is the NR role responsible for ensuring that, during times of service disruption or incidents with the potential to cause service disruption, incidents are managed effectively with the aim of minimising delay and coordinating prompt service recovery.
NR	Network Rail is the owner and Infrastructure Manager of most of the mainline railway network in Great Britain. NR is responsible for the overall management of incidents over the majority of the network.
On Board Staff	Staff, including contractors (such as catering or cleaning staff), on board a train other than members of the Traincrew.
Passenger(s)	Person(s)/customer(s) who is travelling in a rail vehicle but is not a member of Traincrew or On Board Staff.
TOC	A Train Operating Company also known formally as a Railway Undertaking is any private or public undertaking whose business is to provide rail services for the transport of Passengers (in this case) on trains.
Traincrew	Drivers and, where provided, guards/senior conductors/on-board train managers.
Train to Train Transfer Bridge (TTTB)	This is a walkway between trains to allow passengers to transfer from one train to the other on the same level. The bridges can either be dedicated for the task or can be adapted wheelchair ramps.
Uncontrolled Evacuation (may also be called self-evacuation)	This is where passengers evacuate from the train without the supervision of railway industry staff and where relevant safety controls are not in place e.g. that all train movements on adjacent tracks have not been stopped and that the traction current on 3rd rail equipped routes remains live.

2 Train Evacuation Equipment

2.1 Evacuation equipment requirements

TOCs and NR should have in place the appropriate equipment and the means of deploying it to support the safe and effective Controlled Evacuation of passengers from a train which is not at a station i.e. from train to train or train to track. Where the train is at a station, its evacuation will be considered normal operation and is not covered by this Guidance Note.

There are implied references to evacuation equipment in both the Technical Specification for Interoperability (TSI) for the [Rolling Stock Subsystem - Locomotives and Passenger Rolling Stock](#) adopted by the Commission Regulation (Commission Regulation (EU) No 1302/2014 of 18 November 2014) (referred to as TSI LOC&PAS) and [RIS-2730-RST Issue: One June 2020 Vehicle Fire Safety and Evacuation](#) both of which concentrate on cab equipment.

The equipment specified in RIS-2730-RST relating to train evacuation is 1 x ladder or step ladder made from non-conducting material and 8m of stout cord (in 3rd rail areas). This Guidance does not cover any other emergency equipment or systems included in the TSI LOC&PAS or RIS-2730-RST.

2.2 What evacuation equipment should be considered

In addition to the base equipment of a ladder and 8m of stout cord (in 3rd rail areas) set out in RIS-2730-RST, the following evacuation equipment can be considered by Duty Holders:

- i. Steps designed to work with specific trains
- ii. Steps built into the train normally where trains use tunnels with limited clearances (see Appendix A) and can be considered part of the train itself.
- iii. A Train to Train Transfer Bridge (TTTB) to allow passengers to transfer from one train to another on an adjacent track. TTTBs can either be dedicated for the task or can be adapted wheelchair ramps. Bridges should have a handrail which can be dedicated or temporary using the cord in the emergency equipment if it can be secured well enough. The weight of the TTTB, how wide it is and how it is secured on each train need to be considered (see Appendix B).
- iv. Specialist equipment for disabled people – it should be noted this is unlikely to be reasonably practical.
- v. Other innovative solutions such as slides like those used in the airline industry

Not every situation can be planned for and therefore the appropriateness of other options may need to be considered using a dynamic risk assessment on the day based on training. As the situation changes, such as a deterioration of on-board conditions, the situation may reach a point where evacuation is the most appropriate and safest option”.

Additional equipment to support Controlled Evacuation does not need to be provided if the risk assessment shows that there is not a requirement, or other such equipment cannot be effectively deployed. The criteria for deciding whether or not to have additional equipment is that it increases the safety of evacuation and or speeds up Controlled Evacuation against the risk and deployment factors.

The equipment should be assessed against how practical it is to use and store and how it can be deployed to site, ideally the TTTB is taken to site, and assembled, on the designated rescue train. This should include the weight that a TTTB can responsibly bear. Restrictions on the number of people that should use a TTTB should be considered.

Equipment that is provided for train evacuation should be checked and reviewed as part of the normal management system.

3 Train Evacuation Equipment Assessment

3.1 Train evacuation plan

Every TOC should have a train evacuation plan. This may be included within train crew manuals.

The plan should be formally documented with an overall matrix for TOC operations control (see Appendix C for an example) and on call managers. Instructions/information based on a simple risk assessment per rolling stock type should be provided to the Traincrew. This evacuation plan will vary according to stock features, location, weather conditions and type of passenger.

The plan needs to include the evacuation equipment provided on trains and held at railway locations, along with how the equipment will get to site. An assessment should be undertaken for both current and newly deployed fleets and the plan should clearly denote if any stock types have features that makes them unsuitable for some options, e.g. if doors are too narrow to permit the installation of a TTTB as then this option can be discounted immediately.

The Emergency Services will require information about train types and their method of a Controlled Evacuation and relevant physical characteristics e.g. any emergency door releases and isolated switches etc. NR and TOCs should work with the Emergency Services to document and provide relevant information and resources available, along with the resource owners.

This plan should be reviewed no less than every 3 years or when a change is made to train services, type of train or when there is a change in legislation.

3.2 Assessment of equipment to be provided

TOCs should assess the train evacuation equipment required based on the rolling stock type, and features, services run and routes that they run on, in cooperation with the NR (or other Infrastructure Manager) and other affected TOCs.

This should include the following:

- i. The evacuation equipment that is required to evacuate passengers from the train to the track.
- ii. Topographical information (tunnels, cuttings and embankments) on planned and diversionary routes and how they would affect evacuation.
- iii. Space and height between tracks and trains including 6 foot and 10 foot i.e. is the space too wide or high for a TTTB.
- iv. Width of train doors i.e. can a TTTB fit in the door.
- v. Practicality of getting equipment to site if it is not already on the train.
- vi. Space on train for additional equipment.
- vii. Service type – metro/interurban and long distance i.e. metro equipment might be easier to have at stations than on trains.
- viii. Other types of train that operate on the routes concerned.
- ix. Level of staffing provided on the train, because some means of evacuation will require more staff supervision than others.
- x. Formation of the train and how easily passengers can be moved through the train from unit to unit, and how easily units may be separated to assist in the rescue.

The assessment should be consider the routes operated over at a high level using the factors above along with the practicalities involved e.g. the provision of TTTBs if a operates over a large part of the network may not be practical. Support and collaboration between NR and TOCs is necessary because equipment storage and deployment will need to be considered at a network level and may require NR support to get the equipment to site when it is needed.

The provision of extra equipment from the emergency services particularly additional ladders from the Fire & Rescue Services should be considered. Preplanning with the emergency services should be considered.

The assessment should also consider the Equality Act (2010). This is because how we manage evacuation of passengers who need extra help, such as those with specific disabilities e.g. blind/wheelchair user/neuro-diversity, needs to be included in understanding which equipment should be provided. The Human Rights Act also requires that all people should be treated equally. and hence disabled passengers need to be treated in an equitable way to non-disabled passengers where safe to do so. In extreme situations evacuation options may need to be considered that in other circumstances may not be acceptable. In such situations the preservation of life takes priority.

3.3 Location of equipment

Train evacuation equipment can be located, dependent on the assessment undertaken by the TOC, in the following places:

- i. On train – needs to have enough space to secure the equipment.
- ii. At stations or other rail locations where and how the equipment can be accessed during time of rail operations. Station Facility Owners should cooperate with other TOCs who use the line of route in this regard.
- iii. In response vehicles operated by either TOCs or NR. TOCs and NR should cooperate in this regard.

In locating the equipment, consideration should be given to the type of service being operated:

- i. Long distance with provision of extra customer service staff.
- ii. High density urban service where equipment at stations/locations may be easier.
- iii. Rural type services with limited access to locations to hold equipment.

iv. Charters and special services.

Where equipment is held at strategic locations around the network, responsibility for the equipment and its maintenance should be clearly assigned, along with how it can be accessed and deployed. Agreements for the sharing of equipment should be considered by TOCs and NR. An example list of equipment held and how it can be accessed is provided in Appendix D.

The plan for the use of evacuation should include the transporting of equipment and should consider the use of a road vehicle. The transporting of equipment to site from a road vehicle or station location should be planned with the use of a train or a PW trolley to transport to site as the situation dictates. A MOM is likely to attend trains that require to be evacuated and should help to organise getting equipment to site including use of their road vehicle.

Where equipment is located in rolling stock this should be considered as part of the safety equipment (such as ladders etc). In the case of a multiple unit if it is split for maintenance the reformed unit should still have the specified train evacuation equipment.

3.4 Passenger needs

Planning for or undertaking a Controlled Evacuation should be done with due regard to the Equality Act (2010). All passengers should be treated in a fair and equitable way. It may not be possible to provide dedicated equipment to suit all needs and the plan should therefore consider when support from the Emergency Services will be required.

TOCs and NR should assess passenger needs and requirements during evacuation when developing their plans which should be reviewed at the same time as the plan is updated.

4 Staff Competence and Preparation

4.1 Staff competence requirements

Traincrew and response staff should be competent in train evacuation as far as it is relevant to their job role. A training needs analysis based on the job role and evacuation responsibilities for that role should be undertaken. Based on the results of the training needs analysis, training on the equipment, update briefing and handbooks as appropriate should be provided. The training should include in the case of a TTTB the risks such as distance between trains, how much of ramp should in in the train to support it, the weight of passengers using it and how to deploy the equipment.

On Board Staff would not normally be expected to be competent in train evacuation but should understand the process and be expected to assist traincrew as directed.

Network Rail response staff do not need to be competent in train evacuation but should understand the process to the extent where they can support and assist the train crew. Network Rail response staff should be competent if deploying Network Rail owned equipment.

If on site, the Network Rail RIO (Rail Incident Officer) would lead the on-site operation overall, and managing the site safety, with the evacuation element led by the train crew or other TOC lead on site, e.g. the TOLO.

4.2 Working with Emergency Services

The role of the Emergency Services should be documented, and the responsible chain of command reviewed as part of the wider process to ensure continued engagement.

Where practical, NR and TOCs should consider briefing and joint working with the Emergency Services when planning, preparing for (including exercises) and undertaking train evacuation.

The emergency services may be of assistance when there is a need to safely evacuate persons with existing conditions that affects their mobility or ability to otherwise evacuate safely.

5 References to Other Documents

5.1 Other documents

Other documents that relate to Train evacuation equipment are:

- [Technical Specification for Interoperability \(TSI\) for the “rolling stock subsystem - Locomotives and passenger rolling stock” adopted by the Commission Regulation \(Commission Regulation \(EU\) No 1302/2014 of 18 November 2014\) \(referred as TSI LOC&PAS\)](#)
- [RIS-2730-RST Issue 1: Vehicle Fire Safety and Evacuation - June 2020](#)
- [GERT8000-M1 Issue 6: Dealing with a train accident or train evacuation - June 2020](#)
- [RDG-GN-003 Issue 7: The Training of On-Train Staff in On-Train Emergency Procedures - April 2016](#)
- [RDG-GN016 Issue 3: Competence of Train Operator Liaison Officers \(TOLOs\) - February 2017](#)
- [RDG-GN-029 Issue 1: Responding to Vulnerable Persons - November 2015](#)
- [RDG-OPS-GN-049 Issue 5: Meeting the Needs of Passengers Stranded on Trains - November 2020](#)

Appendix A – Train Evacuation Bridge Example

Network Rail bridge being tested on a c2c class 357 unit.



Appendix B – Train Evacuation Steps Example

Steps for evacuation in a tunnel on a class 717



Appendix C – Train Evacuation Equipment Overall Matrix Example

Example from MerseyRail

On Train Systems and Equipment

Table B1	507/508
Train Access	
Corridor throughout (passenger use)	Y
Side access	Y
End access	Y
Driver /Guard access to passenger saloon	Y
Train Environment	
Opening windows	Y
Air Conditioning. (only in driving cabs)	No
Train Staffing	
Guard on board	Y
Revenue Protection, Carlisle Security, On board cleaners.	A
Train Equipment	
Emergency Ladders	Y
Fire Extinguishers	Y
Train Communications	
Guard to passenger P/A	Y
GSM-R	Y
Main Power Supply Failure (<u>Battery and residual air supply only</u>)	
Emergency lighting	Y
Guard to passenger P/A	Y
GSM-R	Y

Table B2: Train System Degradation – System Sustainability (mins – approximately)	507/508
Emergency lighting (minimum of 90 minutes)	180 mins
Guard to passenger P/A (minimum of 90 minutes)	180 mins
GSM-R (minimum of 90 minutes)	180 mins

Key

Y = Available/System will operate

A= May be on board

Appendix D – Train Evacuation Equipment Location List Example

Example from GWR

SMS-1022-80					
Listed Locations of Transboardment Bridges					
Region	Station	Owner	Location	Contact Details	Notes
Central	Ashchurch (MOM's office)	NR	Ashchurch Railway Station, MOM's office, Tewksbury, GL20 8HQ	via NR Incident Controller or Ashchurch MOM	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
Central	Bath Spa	GWR		Contact Station	
Central	Bristol Parkway	GWR	Plant Room - Middle Floor	Contact Station	
Central	Bristol Parkway (MOM's office)	NR	Stoke Gifford Yard, Church Road, Bristol, BS34 8QA	via NR Incident Controller or Parkway MOM	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
Central	Bristol Temple Meads	GWR	Supervisor's Office, Platform 9	via Duty Station Manager	
East	Didcot Parkway	GWR	Platform 3 Old Toilet Lobby	Contact Station	
West	Exeter St David's	GWR	Queens passage, platform 1.	Contact Station	
West	Exeter PSB (MOM's office)	NR	Exeter PSB, Oldsview, Exeter, EX4 4PA	via NR Incident Controller or Exeter MOM	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
Central	Gloucester	GWR		Contact Station	
East	Hayes Outer MOM vehicle	NR	ex-Slough PSB, Bristol Way, Slough, SL1 3QE	via NR Incident Controller or Hayes MOM on 07824 411920	Ramp normally carried on vehicle (Transit)
East	Maidenhead	GWR		Contact Station	
East	Newbury	GWR	Mess Room Platform 1	Contact Station	
East	Oxford	GWR		Contact Station	
East	Oxford (MOM's office)	NR	ex-Oxford PSB, Roger Dudman Way, Oxford, OX1 1HW	via NR Incident Controller or Oxford MOM on 07824 411918	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
East	Paddington	GWR	DM Office	via Duty Station Manager	
West	Par	GWR		Contact Station	
West	Penzance	GWR	Penzance Chagemans store Platform 3	Contact Station	
West	Plymouth	GWR		via Duty Station Manager	
West	Plymouth (MOM's office)	NR	Royal Albert Bridge, Tamar Bridge Car Park, Pemros Road, Plymouth, PL5 1LP	via NR Incident Controller or Plymouth MOM	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
East	Reading	GWR	Storage area by Platforms 1 and 2	via Duty Station Manager	
East	Reading (MOM's store)	NR	100 Napier Road, Reading, Berks, RG1 8FJ	via NR Incident Controller or Reading MOM on 07515 620185	Ramp kept at store ready for use (NR Ranger to small to stow but can transport to/from site).
East	Slough	GWR		Contact Station	
East	BTP Slough EIU vehicle	NR	ex-Slough PSB, Bristol Way, Slough, SL1 3QE	via NR Incident Controller or Slough MIO on 07922 010295	Ramp normally carried on vehicle (BTP Ranger)
West	St. Blazey (MOM's office)	NR	Old Station House, St Blazey Road, St Blazey, Cornwall, PL24 2GN	via NR Incident Controller or St. Blazey MOM	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
Central	Swindon	GWR	Platform 3 Store Room	Contact Station	
Central	Swindon (MOM's office)	NR	ex-Swindon B IECC, Station House Estate, Sheppard Street, Swindon, SN1 5DB	via NR Incident Controller or Swindon MOM on 07740 225418	Ramp kept at office ready for use (NR Ranger to small to stow but can transport to/from site).
Central	Westbury	GWR		Contact Station	
East	Worcestershire Parkway	GWR		Contact Station	

Rail Delivery Group



Rail Delivery Group Limited Registered Office, 2nd Floor, 200 Aldersgate Street, London EC1A 4HD
www.raildeliverygroup.com 020 7841 8000 Registered in England and Wales No. 08176197