Passenger Train Dispatch and Platform Safety Measures

Synopsis

This document sets out requirements and guidance for the development, review and implementation of passenger train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface.
# Issue Record

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<td>Two</td>
<td>March 2013</td>
<td>Supersedes issue one. Amendments are to incorporate changes made to GERT8000 Rule Book Module SS1 (Station duties and train dispatch), to include relevant aspects of OFG sponsored work carried out by RSSB to review station safety and to make other amendments identified as a result of the 12-month review of the document.</td>
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| Three | September 2017 | Supersedes issue two. Amendments are to incorporate:  
  a) Changes made to GERT8000 Rule Book Module SS1 (Station duties and train dispatch).  
  b) Change in scope so that requirements and guidance apply to infrastructure managers and railway undertakings in line with recommendations from RAIB investigations.  
  c) Additional requirements and editorial changes to existing requirements to provide greater clarity, so each requirement, its rationale and associated guidance are clearly described, including legal obligations associated with passenger train dispatch and platform safety.  
  d) Additional guidance, appendices and diagrams, as well as updates to existing guidance and appendix to incorporate recommendations from RAIB investigations, findings from research, guidance, standards and other documentation published since 2013 and deviation requests from TOCs, for example those relating to the position of the guard.  
  e) Expanded reference section to include recent research, guides, standards, on-line tools and other documentation to support duty holders.  
  f) Amended definition section. |

This document will be updated when necessary by distribution of a complete replacement.

Revisions have not been marked by a vertical black line in this issue because the document has been revised throughout.

**Superseded Documents**

The following Rail Industry Standard is superseded, either in whole or in part as indicated:

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<td>RIS-3703-TOM issue two Rail Industry Standard for Passenger Train Dispatch and Platform Safety Measures</td>
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Supply

The authoritative version of this document is available at [www.rssb.co.uk/railway-group-standards](http://www.rssb.co.uk/railway-group-standards). Enquiries on this document can be forwarded to enquirydesk@rssb.co.uk.
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Part 1 Purpose and Introduction

1.1 Purpose

1.1.1 This document is a standard on passenger train dispatch (including empty coaching stock) and platform safety measures.

1.1.2 This document sets out:

a) The risk assessment process to support the development, review, and implementation of train dispatch processes and measures to manage the safe behaviour of passengers (which includes members of the public) at the platform train interface. This includes rolling stock calling at the platform as well as those passing through the platform such as freight.

b) Operational requirements and guidance for specifying and implementing train dispatch processes.

c) Guidance on the measures that can be implemented to manage the safe behaviour of passengers at the platform train interface.

1.1.3 The requirements and guidance are consistent with legal obligations set out in the Railways and Other Guided Transport Systems (Safety) Regulations 2006, the Electricity at Work Regulations 1989 and the Control of Electromagnetic Fields at Work Regulations 2016.

1.2 Parameters of the platform train interface

1.2.1 For the purpose of this document the platform train interface measures:

a) The length and width of the platform.

b) The length, height and width of the train up to the bodyside furthest from the platform; and

c) Encompasses trains stopped at, arriving/departing from, or passing through the platform without stopping, and when no train is present at the platform; and

d) Electrification systems, or live train mounted electrical equipment.

1.2.2 This is illustrated in the following figures:

a) Figure 1 Parameters of the platform train interface with train in platform on page 8.

b) Figure 2 Parameters of the platform train interface with no train in platform on page 8.
1.3 Platform train interface risk

1.3.1 The platform train interface poses risk to passengers (including members of the public) and staff in relation to:

a) Platforms in operational use.
b) Trains stopped at, arriving/departing from, or passing through the platform without stopping.
c) Intentional and unintentional access to the track, either from the platform or the train when it is stopped in the platform.
d) Electric shock from electrification or live train mounted electrical equipment.

1.3.2 This risk is comprised of high likelihood but low severity hazardous events such as slips, trips and falls; and low likelihood but high severity hazardous events such as dragging; falling from the platform and being struck by the train; and being struck by the train when standing on the platform. A list of hazardous events that can occur at the platform train interface is set out in Appendix A Hazardous Events on page 30.

1.3.3 The development, review and implementation of appropriate train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface can help to mitigate the likelihood and severity of these events.

1.3.4 Other risk control measures are also likely to be required to manage this risk such as those relating to the design and maintenance of stations and platforms; engineering requirements for equipment and design of rolling stock and door operations. References on page 72 provides standards and research that can be consulted to inform the development and implementation of these controls.

1.4 Application of this document

1.4.1 Compliance requirements and dates have not been specified since these will be the subject of internal procedures or contract conditions.

1.4.2 The Standards Manual and the Railway Group Standards (RGS) Code do not currently provide a formal process for deviating from a Rail Industry Standard (RIS). However, a member of RSSB, having adopted a RIS and wishing to deviate from its requirements, may request a Standards Committee to provide opinions and comments on their proposed alternative to the requirement in the RIS. Requests for opinions and comments should be submitted to RSSB by e-mail to proposals.deviation@rssb.co.uk. When formulating a request, consideration should be given to the advice set out in the ‘Guidance to applicants and members of Standards Committee on deviation applications’, available from RSSB’s website.

1.5 Health and safety responsibilities

1.5.1 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 as sufficient in itself to ensure safe systems of work or operation or to satisfy such responsibilities or duties.

1.6 Structure of this document

1.6.1 This document sets out a series of requirements that are sequentially numbered.

1.6.2 This document also sets out the rationale for the requirement. The rationale explains why the requirement is needed and its purpose. Rationale clauses are prefixed by the letter ‘G’.

1.6.3 Where relevant, guidance supporting the requirement is also set out in this document by a series of sequentially numbered clauses and is identified by the letter ‘G’.

1.7 Approval and Authorisation

1.7.1 The content of this document was approved by Traffic Operation and Management Standards Committee (TOM SC) on 11 July 2017.

1.7.2 This document was authorised by RSSB on 28 July 2017.
Part 2 Platform Train Interface Risk Assessment

2.1 Requirement to undertake assessment

2.1.1 A risk assessment shall be undertaken for each platform in operational use.

Rationale

G 2.1.2 The Railways and Other Guided Transport Systems (Safety) Regulations 2006 and the Health and Safety at Work etc Act 1974 require a risk assessment to be undertaken.

G 2.1.3 The Control of Electromagnetic Fields at Work Regulations 2016 requires the assessment and control of any risks from electromagnetic fields in the workplace.

G 2.1.4 The Electricity at Work Regulations 1989, regulation 14, states that: no person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless (a) it is unreasonable in all the circumstances for it to be dead; (b) it is reasonable in all the circumstances for him/her to be at work on or near it while it is live; and (c) suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

G 2.1.5 The likelihood of hazardous events occurring and the potential severity of these events vary from platform to platform.

G 2.1.6 The risk assessment helps determine:

a) The factors that affect the likelihood and potential severity of hazardous events for each platform in operational use.

b) The controls required to mitigate risk so far as is reasonably practicable.

Guidance

G 2.1.7 Infrastructure managers (IMs) and/or railway undertakings (RUs) can initiate assessment(s) and may wish to develop a risk based prioritisation plan for carrying out assessments. A combination of factors can be considered to determine prioritisation. These include but are not limited to:

a) Station footfall.

b) Number of recorded incidents at a station relating to the platform train interface and/or dispatch.

c) Number of platforms and how busy they are.

d) Type of station, for example terminus vs. through station.

e) Type and variety of dispatch processes used at platforms.

f) Number of trains stopping or passing through the platform, the variety of train types and formation of trains stopping at the platforms.

G 2.1.8 The scope and content of the risk assessment is set out in 2.2 Scope of assessment on page 11.
2.1.9 The arrangements for IMs and RUs to work in collaboration to complete an assessment per platform are set out in 2.3 Assessment responsibilities on page 13.

2.2 Scope of assessment

2.2.1 The scope of the assessment shall consider the risk presented in the following circumstances:

a) Continuously on the platform, including when there is no train in the platform and when trains are passing through the platform.
b) During train arrival.
c) During boarding and alighting.
d) During train dispatch and departure.

Rationale

G 2.2.2 Hazardous events at the platform train interface can occur:

a) Continuously on the platform, for example, when the platform is empty of moving vehicles or when moving vehicles are passing through the platform.
b) Where there are moving vehicles, entering, stopped and departing the platform.
c) Where there is the presence of electrification or live train mounted electrical equipment.

G 2.2.3 The type of hazardous event and potential severity of these events varies during train arrival, boarding and alighting, dispatch and departure and when continuously on the platform. These items therefore represent the critical areas of risk within the parameters of the platform train interface.

G 2.2.4 Moving vehicles passing through the platform can create aerodynamic effects. A risk assessment can help to inform the identification and implementation of measures to mitigate this risk. GIRT7016 and GIGN7616 provide information regarding when aerodynamic effects are to be considered.

Guidance

G 2.2.5 The assessment can include but is not limited to:

a) The design and operation of the station, including the provision of information.
b) The layout, design and management of the platform as well as provision, location and design of platform based dispatch equipment. This includes the location of dispatch staff.
c) Passenger and staff behaviour, including objects carried above head height which could reduce electrical clearances. This includes equipment (for example, dispatch bats/flags) and/or handsignals to support dispatch.
d) The characteristics of the rolling stock calling at and passing through the platform. This includes on-board equipment to support dispatch of trains stopping at the platform and live train mounted equipment. This includes how characteristics of the rolling stock can affect the location of dispatch staff.
e) Operational and environmental conditions, for example dwell time, crowding and weather.

G 2.2.6 Appendix B Assessment Factors on page 31 describes these factors in detail along with associated considerations and guidance.

G 2.2.7 Each factor can be considered in terms of the effect it has on the likelihood and severity of hazardous events occurring during train arrival, boarding and alighting, dispatch, departure and when continuously on the platform.

G 2.2.8 The relationship between these factors can also be considered in terms of how they combine to influence the likelihood and severity of hazardous events. For example, time of day, passenger behaviour and the influence of platform layout on the ability of staff to undertake train dispatch duties correctly and safely.
G 2.2.9 Perturbed, degraded and emergency situations also influence the likelihood and severity of hazardous events occurring and their impact can be considered within the assessment.

G 2.2.10 Rolling stock includes, but is not limited to:

a) Passenger and freight trains.
b) On track machines and engineering trains.
c) Trains that start or terminate at the platform.
d) Trains that couple/uncouple at the platform.
e) Empty coaching stock.
f) Parcel trains.
g) Heritage and charter trains.

G 2.2.11 IMs and RUs are to determine the extent of the assessment so that it is consistent with the:

a) Planned, permitted, potential and actual usage of the platform by passengers and trains.
b) Physical characteristics of the platform, equipment and trains stopping and passing through the platform.
c) IM and RUs’ sphere of operational and commercial control, including legal and contractual obligations.

G 2.2.12 IMs and RUs can use the factors listed in 2.1 Requirement to undertake assessment on page 10 to help determine the extent of the assessment. These factors can also inform the risk assessment as they can affect the likelihood and severity of hazardous events.

G 2.2.13 The RSSB PTI Risk Assessment Tool (http://pti.rssb.co.uk/) can be used to carry out the assessment, allowing users to undertake an assessment by platform and per train type stopping at the platform. Additional factors not contained in the tool can also be considered, for example those relating to electrical safety, staff error and injury, permissive working and degraded working. See Appendix B Assessment Factors on page 31.

G 2.2.14 If IMs and/or RUs do not wish to use the tool, they can create their own template to undertake an assessment by platform and per train type stopping at the platform. The factors described in Appendix B Assessment Factors on page 31 can be used.

G 2.2.15 The risk assessment methodology set out in GIGN7616 can be used to assess aerodynamic risk and identify actions to control risk. The RSSB Platform Aerodynamic Risk Assessment Tool can also be used to undertake this assessment and can be accessed from: https://www.rssb.co.uk/rail-risk-portal.

G 2.2.16 The Health and Safety Executive www.hse.gov.uk/msd/manualhandling.htm provides guidance in relation to occupational health and safety risk assessment. This can be used to help assess the risk of injury to staff at the platform train interface. For example, those relating to manual handling and musculoskeletal disorders.

G 2.2.17 The RSSB Safety Risk Model (https://www.rssb.co.uk/rail-risk-portal) can also be used to help inform the risk assessment as it provides a quantitative representation of the potential accidents or incidents resulting from operations at the platform train interface.

G 2.2.18 Additional information may also be required to inform the assessment, for example, company risk register, station risk assessments, crowd control plans for the station, existing platform risk assessments, dispatch plans and relevant competence records of dispatch staff. These facilitate the consideration of existing risk and controls within the assessment. Additional sources of information are to be identified and collated before the assessment is undertaken.

G 2.2.19 Further resources relating to electrical safety can be found in References on page 72.
2.3 Assessment responsibilities

2.3.1 IMs and/or RUs shall:

a) Nominate and authorise representatives to undertake the assessment.
b) Agree arrangements for managing the end-to-end assessment process.

Rationale

G 2.3.2 The Railways and Other Guided Transport Systems (Safety) Regulations 2006, regulation 22 Duty of Cooperation, requires collaboration in assessment and for procedures to be agreed for working in collaboration.

G 2.3.3 IMs and RUs can bring together the competence and information about the operational context necessary to make informed assessment decisions.

Guidance

G 2.3.4 Representatives from organisations that are responsible for the following can lead the assessment:

a) Managing and operating the station and platforms under assessment.
b) Operating trains that call at the platform(s) under assessment.

c) If the assessment has been initiated due to a proposed change, then the change proposer may wish to lead the assessment in relation to the risks associated with that specific change, if they are competent to do so. The IMs and/or RUs documented change process is also to be followed, as to is the Common Safety Method for Risk Evaluation and Assessment (CSM RA) if the change is deemed significant.

G 2.3.5 The nominated representatives are required to have experience and knowledge that is relevant to the assessment process. This could include, but is not limited to, knowledge and/or experience relating to:

a) The station and platform.
b) The trains stopping at the platform.
c) The train dispatch arrangements, including equipment used for dispatch.
d) Human factors, including understanding and influencing passenger and staff behaviours.
e) Risk assessment and management.
f) Health and safety, for example local health and safety representatives.
g) Electrical safety, for example, an electrical competent person.

G 2.3.7 Representatives from stakeholder organisations can also be included within the assessment team. Stakeholders could include trade unions, the Office of Rail and Road (ORR), other operators at the station and, where applicable, the IM or RU who undertakes dispatch on behalf of the IM and/or RU carrying out the assessment.

G 2.3.8 If different from the above, the owner of assets relevant to the assessment, for example close doors (CD)/right away indicators (RA), platform based monitors and mirrors, starting signals can be part of the assessment team.

G 2.3.9 The end-to-end assessment process includes, but is not limited to:

a) Carrying out the risk assessment.
b) Developing, reviewing and implementing appropriate systems of train dispatch and measures required to manage the safe behaviour of passengers at the platform train interface, encompassing local instructions and procedures. This includes determining:
   i) Risk reduction so far as is reasonably practicable.
   ii) Governance arrangements and responsibilities for implementation.
iii) Timescales and priorities.
c) Recording and storing the results of the assessment and agreed risk control measures to be implemented.
d) Agreeing and implementing arrangements for monitoring and review.

2.4 Applying assessment results

2.4.1 Train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface shall be implemented using the findings from the risk assessment.

Rationale
G 2.4.2 The Railways and Other Guided Transport Systems (Safety) Regulations 2006 requires measures to be developed and implemented to control identified risks so far as is reasonably practicable.
G 2.4.3 Train dispatch processes can help to mitigate the likelihood and severity of hazardous events, so far as is reasonably practicable, during train arrival, boarding and alighting, train dispatch and departure.
G 2.4.4 Measures to manage the safe behaviour of passengers at the platform train interface can help to mitigate the likelihood and severity of hazardous events, so far as is reasonably practicable, during train arrival, boarding and alighting, train dispatch, departure and when continuously on the platform.

Guidance
G 2.4.5 Train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface are to be:

a) Appropriate and proportionate to risks identified for each platform in operational use.
b) Such as reduce risk to a level that is deemed so far as is reasonably practicable.
G 2.4.6 To achieve this, IMs and RUs are to use the risk assessment, agreed risk acceptance principles and commercial considerations to inform the development, review and implementation of these controls.
G 2.4.7 IMs and RUs may determine that residual risk could be reduced further through the implementation of additional controls, such as those relating to new equipment, resourcing, infrastructure and/or rolling stock.
G 2.4.8 IMs and RUs may also wish to identify controls that can be implemented across platforms and/or route(s) to control generic risks identified through the assessment. For example, passenger education programmes or the use of risk triggered commentary for dispatch staff.
G 2.4.9 The use of the risk assessment, agreed risk acceptance principles and commercial considerations helps to determine whether or not the costs of control(s) are grossly disproportionate to the safety benefits.
G 2.4.10 So far as is reasonably practicable, decisions are also to consider the extent to which proposed controls may introduce risk not relating to the platform train interface and the impact this could have on proposed safety benefits.
G 2.4.11 Risk acceptance principles are set out in the CSM RA and RSSB Taking Safe Decisions. See References on page 72.
G 2.4.12 Where applicable, IMs and RUs are to work in collaboration to develop, review and implement controls. For example, an IM can liaise with RUs whose trains stop at their stations, so that due consideration is given to the formation of trains and the likely position of on-board staff involved during the train dispatch process.
G 2.4.13 Governance arrangements, including accountabilities and responsibilities for implementation, are to be in place between IMs and RUs so risk controls are developed, reviewed and implemented within:

a) The known and planned limits of the IM and RUs’ operational context.

b) The IM and RUs’ sphere of operational and commercial control, including legal and contractual obligations.

G 2.4.14 To help inform the implementation of controls, IMs and RUs are to determine:

a) Agreed actions to control risk so far as is reasonably practicable, that are appropriate, proportionate, specific, measurable, achievable and realistic.

b) Priority levels, costs and any business case requirements.

c) Project team(s) responsible for developing, reviewing and implementing controls.

d) The method(s) for developing, reviewing and implementing controls, which may include development, testing and piloting, as well as amendments or additions to competence management arrangements, procedures, local instructions, resourcing and equipment.

e) Process for engagement and consultation, for example trade union health and safety representatives. This includes providing suitable and timely communications to staff in advance of implementation.

f) Timescales and milestones so that progress can be monitored and close out dates agreed.

G 2.4.15 Operational requirements and associated guidance to develop, review and implement train dispatch processes are provided in Part 3 as well as:

a) Appendix C Considerations for Driver Controlled Operation on page 45.

b) Appendix D Considerations for Guard Train Dispatch on page 50.

c) Appendix E Considerations for Platform Staff Dispatch on page 52.

d) Appendix L Staff Training and Assessment on page 66.

G 2.4.16 Guidance to inform the development, review and implementation of measures to manage the safe behaviour of passengers at the platform train interface is provided in:

a) Appendix F Managing Passenger Behaviour on page 54.

b) Appendix K Design of Effective Safety Signs and Platform Markings on page 63.


d) Appendix H Design and Delivery of Verbal Announcements on page 59.

e) Appendix L Staff Training and Assessment on page 66.

G 2.4.17 References on page 72 provides standards and documents that can be consulted to inform the development and implementation of controls relating to dispatch equipment, platform and station infrastructure and rolling stock design (for example doors, in-cab controls).

2.5 Assessment records

2.5.1 The assessment records shall, as a minimum, include:

a) Reason for undertaking the assessment.

b) The assessment team.

c) Station and platform profile.

d) The results of the assessment.

e) The agreed actions to be taken.

Rationale

G 2.5.2 These items provide a historical record of the assessment process and the decisions made that can be referred to during future assessments.
G 2.5.3 The items provide the rationale for risk control measures to be implemented and demonstrate how decisions were made.

**Guidance**

G 2.5.4 Information relevant to ‘reason for undertaking the assessment’ encompasses the reason why the risk assessment was initiated.

G 2.5.5 Information relevant to ‘the assessment team’ includes details of the representatives who undertook the assessment, representatives from stakeholder organisations, if applicable, and the agreed responsibilities for managing the end-to-end assessment process.

G 2.5.6 Information relevant to ‘station and platform profile’ includes, but is not limited to:

a) Name of the station.
b) Platform under assessment.
c) Date and time of the assessment.
d) Date of last assessment.
e) Station footfall.
f) Changes to the station, rolling stock or platform since the last assessment (if not addressed under ‘reason for undertaking the assessment’).
g) Staff concerns and/or customer complaints relevant to the assessment.
h) Recorded safety and/or operational incidents relevant to the assessment (if not addressed under ‘reason for undertaking the assessment’).
i) Type and formation of train(s) calling at the platform.
j) Mode of dispatch for each train calling at the platform.
k) Type of station and platform, for example whether the station is a terminus station; whether the platform is a through platform, and if so unidirectional or bi-directional.

G 2.5.7 Information relevant to ‘the results of the assessment’ includes, but is not limited to:

a) A description of risks assessed.
b) The evaluation of risks, including consideration of contributory factors, effectiveness of existing control measures and explanation for the evaluation result.
c) Additional notes and photos, if applicable, captured by the assessor(s) to inform the assessment.

G 2.5.8 Information relevant to ‘agreed actions to be taken’ encompasses all agreed actions in relation to the development, review and implementation of risk controls.

G 2.5.9 This information is to include dispatch plans and local instructions specifying, for example, staff operating positions and describing the arrangements necessary to control the risks associated with dispatching trains from the platform concerned. Photographs and diagrams are to be included to aid understanding wherever possible.

G 2.5.10 Decisions where it has been agreed that no action should be taken, are to be recorded, along with evidence to justify the decision.

G 2.5.11 An issues log is also to be maintained and outstanding items tracked until it is agreed by those involved that they have been resolved.

G 2.5.12 Ownership of the record(s) is also to be determined and documented. This includes, but is not limited to:

a) The individual, team or role who has responsibility for owning and storing the record.
b) The method and location for storing the record.
c) The responsibilities and methods for communicating the record.
d) The date when the assessment, train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface will be reviewed. A calendar-based schedule can be implemented based on the risk profile of the station and platform(s).

2.6 Requirement to monitor

2.6.1 Arrangements shall be put in place to monitor train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface.

Rationale

G 2.6.2 The Railways and Other Guided Transport Systems (Safety) Regulations 2006 requires monitoring arrangements to be developed and implemented.

G 2.6.3 Monitoring arrangements help to determine the extent to which train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface mitigate, as planned, the likelihood and severity of hazardous events, so far as is reasonably practicable. This includes helping to determine the extent to which:

a) These processes and measures can be and are being implemented by staff, including resourcing required versus resourcing applied.

b) Implementation of these processes and measures introduces new risks that need to be assessed and controlled.

c) Identify common themes across platforms and stations to inform subsequent action plans.

Guidance

G 2.6.4 Multiple sources of information can be used for monitoring purposes, examples include, but are not limited to:

a) Live monitoring, for example, through planned and unplanned inspections, management supervision, safety tours, face-to-face discussions, unobtrusive observations and reviews of CCTV.

b) Audits of stations, platform management and rolling stock.

c) Safety and operational performance measures relating to platform safety and/or the dispatch process. These should include activity and outcome based measures.

d) Reported accidents, incidents, near misses, issues, hazards and concerns by staff and passengers.

e) PTI incident data recorded in the RSSB Safety Management Intelligence System (SMIS) and reported in the RSSB annual safety performance reports - see References on page 72.

f) RAIB investigation into accidents associated with the platform train interface that are relevant to the IMs/RUs operational context.

g) Competence management records of dispatch staff, platform staff and relevant members of station staff and train crew.

h) Results from risk assessments and/or monitoring activity of stations and platforms with similar characteristics and risks to those being monitored.

i) Publication of industry guidance and research, for example from RSSB, Rail Delivery Group (RDG), trade unions and the Rail Research UK Association (RRUKA).

G 2.6.5 The results of monitoring can be analysed to identify areas for improvement across platforms and stations, including if residual risk could be reduced further through the implementation of additional controls, such as those relating to new equipment, resourcing, infrastructure and/or rolling stock.

G 2.6.6 The analysis of monitoring results can be used to inform, so far as is reasonably practicable, decisions and helps create a strategy, action plan(s) and business cases (if applicable) to address improvement areas.
G 2.6.7 To help inform these, IMs and RUs may wish to share monitoring results and analysis to identify common areas for improvement and arrangements to work in collaboration.

G 2.6.8 The effectiveness of implemented action plans are to be evaluated. Stakeholders such as trade union health and safety representatives can be involved to help develop action plans and evaluate their effectiveness.

G 2.6.9 Monitoring arrangements are to document, as a minimum:

a) Responsibilities and accountabilities for monitoring, including involvement of stakeholders.
b) Priorities for monitoring, for example based on safety risk.
c) The monitoring activities to be undertaken, how these will be undertaken and the schedule for monitoring.
d) The results and analysis of monitoring, including decisions made and subsequent action plans.
e) The storage, communication, implementation and evaluation of results, analysis, decisions and actions taken.

2.7 Requirement to review

2.7.1 The train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface shall be reviewed when:

a) A change is proposed.
b) An incident has occurred.
c) Monitoring arrangements indicate a review is required.
d) The scheduled review date set by the IM and/or RU is near expiration.

Rationale

G 2.7.2 The Railways and Other Guided Transport Systems (Safety) Regulations 2006 requires risk associated with change to be reviewed.

G 2.7.3 The CSM RA requires any technical, operational or organisational change to be reviewed to determine if it is ‘significant’. If a change is deemed ‘significant’, as defined in the CSM RA and through this review, then the CSM RA process is to be applied and recorded.

G 2.7.4 Incidents and monitoring arrangements can indicate that train dispatch processes and/or measures to manage the safe behaviour of passengers at the platform train interface may not be mitigating, as planned, the likelihood and severity of hazardous events, so far as is reasonably practicable.

G 2.7.5 IMs and RUs set review dates for assessments, train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface.

G 2.7.6 The review helps determine:

a) If the current assessment, train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface remain valid.
b) If existing train dispatch processes and/or measures to manage the safe behaviour of passengers at the platform train interface require changing to mitigate, as planned, the likelihood and severity of hazardous events, so far as is reasonably practicable.
c) If additional controls are required.
d) The extent of assessment required to identify and/or inform changes to existing controls and/or development and implementation of additional controls.
Guidance

G 2.7.7 Changes can be planned, unplanned, permanent or temporary. Examples of changes that can initiate a review include, but are not limited to:

a) Introduction of new trains or changes to existing trains.
b) Variations to train formations.
c) Changes to staffing levels and/or staffing roles, on and off the train, including introduction of new staff.
d) Changes to dispatch arrangements, for example, modes of dispatch, position of staff, equipment, and where an alternative train dispatch procedure is introduced at short notice (for example, due to staff illness).
e) Changes to legislation, policies and/or procedures and industry good practice.
f) Increase to staff workloads and/or duties that could have a detrimental effect on their ability to carry out dispatch tasks and/or manage passenger safety.
g) Organisational changes, including change in franchise.
h) Alterations to signalling equipment.
i) Alterations (temporary and permanent) to stations, platform and/or track.
j) Alterations to CCTV equipment.
k) Changes to the timetable that could increase risk at the platform train interface, for example permanent or temporary cancellation of a service that increases crowding on other services.
l) Changes to operating conditions and/or the service provided.
m) Temporary changes such as the installation of temporary structures or repair and renewal work.
n) Special events.
o) Increased passenger numbers over a period of time.
p) Change in electrical clearance available due to change of train type(s), changes to the electrification systems, platform heights and rail cant.

G 2.7.8 If a change is deemed ‘significant’ as defined by the CSM RA significant test then the CSM RA methodology is to be applied. If the CSM RA significant test deems the change not to be ‘significant’ then this must be recorded along with its justification and a commensurate risk assessment undertaken.

G 2.7.9 Incidents that can initiate a review are set out in Appendix A Hazardous Events on page 30

G 2.7.10 Where the current assessment, train dispatch processes and measures to manage the safe behaviour of passengers at the platform train interface remain valid, a new review date can be agreed and recorded, along with the evidence to justify the decision.

G 2.7.11 Where an assessment is required, the extent of the assessment is to be appropriate and proportionate to the proposed changes to existing controls and/or development and implementation of additional controls.

G 2.7.12 The assessment can be initiated by IMs, RUs or the change proposer (if not, the IM or RU and the assessment is related to change).

G 2.7.13 The requirements set out in this document are to be followed to:

a) Carry out the assessment.
b) Change existing controls and/or
c) Develop and implement additional controls.

G 2.7.14 The arrangements for review are to document as a minimum:

a) Triggers for review.
b) Responsibilities and accountabilities for review.
c) The review team.
d) How the review will be undertaken and the review schedule.
e) The results and analysis of the review, as well as decisions made and subsequent actions taken.

f) The storage, communication, implementation and evaluation of results, analysis, decisions and actions.
Part 3 Train Dispatch

3.1 Introductory guidance

3.1.1 Specific requirements and guidance relating to dispatch equipment can be found in:

a) GERT8060 Engineering Requirements for Dispatch of Trains from Platforms. This mandates the minimum engineering requirements for the facilities used in dispatching trains from platforms.

b) GEGN8560 Guidance on Engineering Requirements for Dispatch of Trains from Platforms.

c) RIS-2703-RST Rail Industry Standard for Driver Only Operated On-Train Camera/Monitor Systems.

d) NR L2 TEL 31111 Design and Installation Requirements for Driver Only Operation (Passenger).

3.1.2 Rules for completing dispatch tasks can be found in: GERT8000 Rule Book. Module SS1 Station Duties and Train Dispatch.

3.1.3 Risks associated with platforms within a route and the factors to consider in terms of a driver’s or guard’s knowledge of these risks can be found in RIS-3702-TOM Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers.

3.1.4 Specific principles and considerations for driver controlled operated dispatch, guard dispatch and platform staff dispatch are set out in:

a) Appendix C Considerations for Driver Controlled Operation on page 45.

b) Appendix D Considerations for Guard Train Dispatch on page 50.

c) Appendix E Considerations for Platform Staff Dispatch on page 52.

Note: These appendices are designed to be read individually as required. Therefore, some principles and considerations are repeated.

3.2 The dispatch corridor

3.2.1 Staff involved in the train dispatch process shall be provided with a view that enables them to observe the train dispatch corridor to:

a) Monitor passenger behaviour on the platform. The types of behaviours that may increase risk during dispatch can be found in Appendix L Staff Training and Assessment on page 66.

b) Determine nothing and/or no-one has fallen onto the track or is trapped by the train doors.

c) Where practicable, monitor all train doors during the door closing process.

d) Determine that all doors are securely closed and the train can safely depart from the platform.

Rationale

G 3.2.2 The purpose of this view of the train dispatch corridor is to enable staff involved in the train dispatch process to react to any emerging risks that may occur while the train is arriving in the platform, is stationary and when the train is departing the platform.

G 3.2.3 The ability of staff involved in the train dispatch process to monitor passenger behaviour enables them to communicate with anyone that is carrying out an unsafe act and to stop the train dispatch process until it is safe to allow the train to depart the platform.

G 3.2.4 With all staff involved in the train dispatch process being able to observe if anyone or anything has fallen on to the track, the train can be prevented from moving until the object or person has been removed from the track.
G 3.2.5 The ability of all staff involved in the train dispatch process to view all the train doors for which they are responsible for observing during the door closing process, allows staff to identify if anything or anyone has become trapped in the train doors. If anything or anyone does become trapped within the train doors, this view would allow staff involved in train dispatch to stop the train dispatch process and only restart the process when it is safe to do so. This view also enables staff involved in the train dispatch process to ensure that all train doors are closed prior to the train departing the platform.

Guidance

G 3.2.6 To achieve 3.2.1 on page 21 staff responsible for train dispatch are to be provided with or able to achieve a view of the train dispatch corridor. The view is to enable staff responsible for dispatch to carry out the train safety check as described in GERT8000 SS1 Station Duties and Train Dispatch. This view is illustrated in Figure 3 The train dispatch corridor on page 22 and consists of:

a) The full length of the train.
b) The length of the platform accommodated by the train.
c) The gap between the train and the platform.
d) At least the height of the doors.

Note:
Minimum distances from the platform edge are only specified as part of the technical requirements for platform-mounted monitors and on train camera/monitor systems.

Network Rail standard NR L2 TEL 31111 Design & Installation Requirements for Driver Only Operation (passenger) specifies the minimum as 1000 m from the platform edge.

RIS-2703-RST Rail Industry Standard for Driver Only Operated On-Train Camera/Monitor Systems specifies the minimum as 1500 mm.

![Diagram of the train dispatch corridor](image)

**Figure 3:** The train dispatch corridor

G 3.2.7 Staff responsible for train dispatch are to be provided with a view of all the train doors for which they are responsible for observing during the door closing process.
G 3.2.8 There should be no blind spots within the dispatch corridor. Where the risk assessment has identified blind spots these are to be either removed where practicable, or additional control measures put in place. For example, additional members of staff to undertake dispatch, methods to manage passenger movement within the dispatch corridor, such as announcements asking passengers to stand behind the yellow lines or the movement of train dispatch equipment.

G 3.2.9 The view is to be achieved throughout the dispatch procedure, during typical day and night and weather-related visibility conditions and regardless of whether the train is dispatched using cameras/monitors, mirrors or line of sight. Minimum requirements for the facilities used can be found in GERT8060 Engineering Requirements for Dispatch of Trains from Platforms.

G 3.2.10 The risk assessment is to be used to inform the line of sight required in all lighting conditions to complete the train safety check. If the risk assessment identifies issues with achieving line of sight in all lighting conditions, consideration can be given to:

a) The suitability of the dispatch mode for the platform and/or rolling stock in use.

b) The provision of monitors to assist with achieving a better view.

c) Number of staff. For example, there may be a need to increase the number of staff involved in the dispatch process, especially if a line of sight is not achievable or the dispatch corridor has blind spots due to curvature or platform furniture.

d) Position of staff responsible for the train safety check. For example, the guard or member of platform staff may need to move position to complete the train safety check.

G 3.2.11 Where monitors/cameras are used, they are required to enable staff throughout the dispatch process to visually detect persons or objects that are anywhere within the train dispatch corridor, in the typical day and night visibility conditions. To help achieve this, staff should be provided with:

a) An optimal number of clear images (RSSB research project T535 ‘Assessing the impact of increased numbers of CCTV images on driver only operation of trains’ suggests a maximum of 12).

b) Suitable platform lighting and positioned monitors/cameras.

c) Sufficient time (including platform dwell time).

d) Zero or manageable distraction.

e) Training, including non-technical skills training, to reliably scan, detect and act.

G 3.2.12 Where practicable, a view wider than that described in G 3.2.6 on page 22 can be provided so all staff involved in the train dispatch process can monitor the movement and behaviour of passengers and respond to emerging risks while the train is at the platform. The view can allow staff to view entrances to the platform and people approaching or waiting while the train is at the platform. Consideration is to be given as to whether this wider view will:

a) Increase the risk of distraction of staff involved in the train dispatch process, for example, by viewing a wider area that may include busy station entrances.

b) Impact on the speed and accuracy in which the train dispatch process can be completed.

3.3 Mode of train dispatch

3.3.1 The mode of train dispatch used on each individual platform and for each type of rolling stock shall reflect the findings of the risk assessment.

Rationale

G 3.3.2 There are various modes of train dispatch used within the rail industry. In deciding on the most effective mode to be used at any given platform, consideration of the layout of the platform and the variation of the types of rolling stock that stops at the platform will inform the most effective mode of train dispatch to be introduced.
G 3.3.3 The dispatch process adopted at each platform can vary depending on the type of rolling stock and the formation of the train. The mode of working will also influence the train dispatch process, for example, where services already operate under driver controlled operation (DCO) but the services are to be increased from 8-car to 12-car trains, the provision of a guard or additional member of platform staff may be the only option available as opposed to the fitment of look-back mirrors.

G 3.3.4 All organisations involved in the train dispatch process and responsible for platform safety have a legal obligation to ensure the safe movement of trains and passengers in and around stations.

Guidance

G 3.3.5 It would be preferable, where practicable, to implement the same technology along an entire route to minimise costs, the workload on train dispatch staff and the potential for human error that could arise from dispatch staff performing a variety of dispatch modes.

G 3.3.6 Information relevant to the mode of dispatch for each platform in operational use encompasses a description of the dispatch mode(s) and associated equipment that will be deployed for each platform in operational use, based on the risk assessment. This is to include:

a) The modes and associated equipment to be deployed during normal situations, for different rolling stock, including infrequent services stopping at the platform and the dispatch of empty coaching stock.

b) Alternative modes of train dispatch permissible for use where the normal mode cannot be used. For example, situations where platform starting signals cannot be cleared or where a movement authority cannot be issued and drivers have to receive the signaller’s permission to proceed, there is a failure of the train dispatch equipment or during emergency situations.

G 3.3.7 When deciding on train dispatch modes and associated equipment, the following factors could affect which mode is used:

a) The length of the platform (including any non-operational sections).

b) The formation of the trains that stop at the platform.

c) The curvature of the platform.

d) Any platform furniture or structures that may interfere with the view of the train dispatch corridor.

e) The ability of those involved in train dispatch to view the external hazard lights on the entire length of the train.

f) The ability of all staff involved in the train dispatch procedure to observe all train doors during the door closing process.

g) The ability of train dispatch staff to watch the entire train until it has fully departed the platform.

h) The location of the existing DCO equipment on the platform (if provided).

i) The location of the starting signal, banner repeater or OFF indicator (where provided) and the sighting of this signal throughout the train dispatch procedure.

j) The positioning of the guard on the train (where provided).

k) The potential use of alternative modes of train dispatch at the platform should the agreed modes become ineffective or unavailable.

l) The ability of staff involved in the train dispatch process to carry out their duties without undue physical or mental exertion.

m) The effect that environmental issues may have on the equipment, for example, sunlight on a platform mirror or ambient noise that may lessen the effects of audible signals.

n) The diversity of equipment required to be used at a single platform for different types of rolling stock, for example, DCO look-back for four-car trains but close doors (CD) and right away (RA) indicators for 12-car trains.

o) How platform crowding may affect the efficiency of the equipment to be used, for example, at busy periods, would any equipment be obscured by passengers that may not be boarding that train?

p) The position of the electrification system and live train mounted electrical equipment.
G 3.3.8 If visual communications such as handsignals, CD/RA indicators are used to dispatch trains then the following factors that can affect the ability of staff to see the communication can be assessed as part of the risk assessment:

a) Position of members of staff in relation to the communication to be seen.
b) Obscuration of the starting signal (where provided) prior to commencing the train dispatch process.
c) Glare from the sun or other light sources.
d) Obscuration of the communication, for example, by station furniture or people on the platform.
e) Anything that may affect the visibility, such as overcrowding on the platform.
f) Ease with which the communication can be distinguished from the background.
g) Other safety-critical tasks that are required at a similar time to giving or receiving the communication.
h) The development of new dispatch equipment or processes, for example, illuminated dispatch bat or white lights which can be more visible to the driver or guard.
i) Whether the physical location of switches/buttons to operate train ready to (TRTS)/CD/RA equipment reduces the dispatcher’s ability to see the train dispatch corridor.

G 3.3.9 The risk of TRTS/CD/RA equipment being operated by unauthorised persons can be reduced if the equipment is operated by a key or protected by other security arrangements.

G 3.3.10 When deciding on the mode of dispatch to be used at a certain location, consideration is to be given to the electromagnetic risk to staff. Guidance can be found in GLGN1620 Guidance on the Application of the Control of Electromagnetic Fields at Work Regulations.

3.4 The dispatch plan

3.4.1 A train dispatch plan shall be developed.

Rationale

G 3.4.2 The creation of a dispatch plan that adequately addresses any risks or potential hazards identified during the risk assessment will enable all staff involved in the train dispatch process to dispatch trains and manage platform train interface (PTI) risk in a consistent and robust manner on a platform-by-platform basis.

Guidance

G 3.4.3 The dispatch plan is to be created using the results of a risk assessment.

G 3.4.4 The dispatch plan is to contain additional instructions to those contained in GERT8000 Rule Book Module SS1 Station Duties and Train Dispatch. The dispatch plan is to include:

a) The method(s) of dispatch for each platform in operational use.
b) Instructions for undertaking each method of dispatch.
c) Roles and responsibilities of those involved in dispatch.
d) The communication process for those involved in dispatch.
e) Procedures for train dispatch during degraded operations and emergencies.

G 3.4.5 Specific emphasis within the dispatch plan is to be placed on monitoring during the door close process and during train departure. Such processes are to be designed to mitigate the risk from staff involved in the train dispatch process failing to observe a person falling between the platform and the train, a person trapped in the doors or any other potentially dangerous occurrences taking place.

G 3.4.6 Consideration is to be given to the level of monitoring required during train dispatch, for example:
a) Additional monitoring by other members of staff using CCTV monitors away from the train or platform (for example, in an office at the station).

b) Platform staff positioning themselves on the platform before the train arrives so they can observe the train and have overall awareness of any developing hazards or PTI risks.

G 3.4.7 The view of the platform starting signal, banner repeater or OFF indicator (where provided), is to be considered when determining the position of members of staff involved in the train dispatch process, to avoid the risk of the train being dispatched against a signal at danger.

G 3.4.8 Instructions are to be clearly defined as to when passengers are to be treated as being potentially trapped in train doors and the action that is to then be taken. In the case of trains with manually closed (slam doors), this includes defining the methods of determining that slam doors are correctly closed before the train starts away from the platform.

G 3.4.9 Instructions are to also be provided that clearly indicate when and how staff can assist passengers, for example, those with impairments, luggage or small children and when dispatch tasks take priority. When assisting passengers, care is to be taken by staff in terms of adopting safe manual handling techniques and staff not placing themselves in a position of risk.

G 3.4.10 Information relevant to the communication processes for those involved in dispatch encompasses how information will be communicated between different members of staff at each stage of the train dispatch process in terms of:

a) Purpose.

b) Meaning.

c) Permitted format of communication signals.

d) Action to take if the communication is not clear.

G 3.4.11 This would also include contingency measures in the event that any of the forms of communication fail or become ineffective.

G 3.4.12 Risk of confusion with audible communications from other platforms or from audible communications used for other purposes are to be minimised, so far as reasonably practicable, for example, to inform passengers that the train doors are about to close.

G 3.4.13 When required, if there is potential for confusion or misinterpretation, audible signals can be distinguished by:

a) Using different types of sounds (for example, voice versus whistle).

b) Having a different uniform pitch from each other (for example, a low-pitched sound versus a high-pitched sound).

c) Using a pitch change within a sound.

d) Varying the temporal pattern (for example, a long slow blast versus two short blasts).

e) Reducing the volume of the signal.

G 3.4.14 Considerations concerning train dispatch during degraded situations can be found in 3.6 Degraded dispatch on page 28.

3.5 Training and assessment

3.5.1 All staff involved in the train dispatch process shall be trained and assessed on a regular basis in line with company competence management systems, including the following:

a) The staff’s understanding of the train dispatch corridor.

b) The modes of train dispatch for each location.

c) The dispatch plans.
d) Procedures for degraded dispatch.
e) Variations of rolling stock and train formations.
f) Any identified risks.

3.5.2 Records of all training and assessment shall be kept and maintained in a robust manner in line with company competency management systems.

Rationale

G 3.5.3 A suitably designed and robust training and assessment plan for each member of staff involved in train dispatch will help assure the health and safety of the staff, and the employer can be compliant with the Health and Safety at Work etc Act 1974.

Guidance

G 3.5.4 If staff involved in the train dispatch process are adequately trained, competent and confident in undertaking the train dispatch process for the platforms at which they work, the risk of incidents or accidents could be reduced. The understanding of degraded dispatch modes also enables these modes to be introduced swiftly should they be required.

G 3.5.5 The items within this section provide guidance on how to deal with a train stopping incorrectly within a station, whether stopping short of, or overrunning, the designated stopping point; dealing with these types of incidents correctly and swiftly can reduce the risk of passengers falling on to the track, activating passenger alarms/emergency egress devices or self-evacuating, in line with the relevant GERT8000 rule book modules.

G 3.5.6 All elements of train dispatch are to be communicated and easily accessible to all members of staff to which they apply.

G 3.5.7 Information is to encompass clear and easy-to-understand instructions so staff can undertake each dispatch mode. Instructions can include:

a) Monitoring the movement and behaviour of passengers and managing distractions.

b) Identifying if the train has stopped in the incorrect location within the platform (overrun or stop short), and what action they should take should this occur.

c) Managing the train dispatch corridor, especially in those circumstances where there is not a clear gap between passengers and the train and/or when crowding affects the view of the train dispatch corridor.

d) Responding to emerging risks, managing interruptions and requirements for re-starting the dispatch process.

e) Performing dispatch tasks. This can include the suitable position(s) to perform the tasks as well as techniques to use, for example, risk triggered commentary, point and call and/or Z Scanning. This can also emphasise the requirement to complete a thorough visual check of the doors and not to rely on interlock lights or external hazard lights/body-side indicator lights as an indicator that is safe to depart.

f) Responding to a PTI incident, including methods of informing the driver and stopping the train if possible.

g) Modes of train dispatch to be adopted during degraded operations.

G 3.5.8 The competency of staff involved in train dispatch is to be such that they can identify if the train has not stopped in the correct position within the platform (overrun or stop short). All staff involved in train dispatch are to be trained and assessed in their ability and understanding of the actions to take in the event that a train does not stop in the correct position within the platform.

G 3.5.9 Following any changes to the train dispatch process, additional training will enable all members of staff to maintain their competency in the area in which they work. The additional training can be identified through a training needs analysis and as an output from the risk assessment process for the change as described in 2.7 Requirement to review on page 18.
G 3.5.10 Additional guidance relating to staff training can be found in Appendix L Staff Training and Assessment on page 66.

3.6 Degraded dispatch

3.6.1 Any train dispatch modes that are to be introduced at short notice (for example, due to staff illness or equipment failure) shall form part of the risk assessment.

Rationale

G 3.6.2 Having an effective method of working during degraded situations allows a speedy response to equipment failure, staff illness or changes in train formations.

G 3.6.3 As with standard dispatch arrangements, the modes to be adopted during degraded operations form part of the risk assessment that will take place at each individual platform. This ensures that the mode is safe and fit for purpose and these modes have been made clear to all staff.

Guidance

G 3.6.4 The modes of train dispatch to be used during degraded situations could be:

a) The use of a back-up mode of train dispatch (where available).

b) Driver look-back (the driver leaving the cab if necessary).

c) The driver closing each door individually.

d) Assistance from platform staff (where available).

e) The guard (where provided) moving to a different position within the train.

f) Routing the train to an alternative platform where dispatch equipment is working correctly.

g) The train not stopping at the affected station (where no alternative platform is available).

G 3.6.5 When deciding on an alternative mode of train dispatch during degraded situations, the most suitable mode can be identified by considering:

a) The suitability of the contingency measure at each affected station.

b) The time taken to carry out the alternative method of train dispatch, dependant on:

   i) The train formation.

   ii) Curvature of the platforms.

   iii) Time of day.

   iv) Station footfall.

c) The number of affected station stops (if on-train equipment has failed).

d) The frequency of exposure, that is, the number of trains affected by the fault (if platform equipment has failed).

e) The availability of competent staff to assist in train dispatch.

f) The effects of multiple look-back dispatches on the potential of musculoskeletal injury.

g) The impact of any delays caused by longer dwell times, for example, crowding on platforms and the knock-on risk from assaults.

h) The impact of cancelling the train or not stopping the train at a booked station.

i) The distance to an alternative platform, for example, if there is a greater distance for passengers to traverse when moving around the station, the risk of slips, trips and falls could be increased.

G 3.6.6 Effective maintenance procedures are to be put in place to ensure that all dispatch equipment is operating at its optimal level. By introducing a robust procedure, the effects of damage and vandalism can also be identified and rectified quickly, thereby reducing the likelihood of going into degraded dispatch mode.
G 3.6.7 Guidance concerning alternative modes of train dispatch that could be introduced during degraded operations can be found in:

a) *Appendix C Considerations for Driver Controlled Operation* on page 45.
b) *Appendix D Considerations for Guard Train Dispatch* on page 50.
c) *Appendix E Considerations for Platform Staff Dispatch* on page 52.

G 3.6.8 Additional factors to consider for degraded dispatch can be found in *Appendix B Assessment Factors* on page 31.
Appendices

Appendix A  Hazardous Events

Appendix A.1 Table 1 Hazardous events that can occur at the platform train interface on page 30 sets out the hazardous events that can occur at the platform train interface, generated from:

a) SMIS.
b) The platform train interface strategy technical report.

Appendix A.2 This is not an exhaustive list of events.

Appendix A.3 Stop short, stop short and door release, wrong side door release, dispatching against a signal at danger and person on the train exterior can also be pre-cursors to other hazardous events. For example, a stop short could lead to passengers rushing to the train doors causing a passenger injury while boarding the train. The risk assessment can consider how pre-cursor events could lead to passenger and/or workforce harm and what this may mean for risk mitigation.

<table>
<thead>
<tr>
<th>Hazardous events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger and/or member of workforce struck by train when on platform</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall from platform (not struck or does not suffer an electric shock)</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall from platform and struck by train</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall from platform suffering electric shock</td>
</tr>
<tr>
<td>Passenger and/or member of workforce trapped in stationary train doors (boarding or alighting)</td>
</tr>
<tr>
<td>Passenger and/or member of workforce suffer electric shock from electrification or live train-mounted electrical equipment</td>
</tr>
<tr>
<td>Member of workforce suffers medical implant malfunction due to electromagnetic fields present</td>
</tr>
<tr>
<td>Passenger and/or member of workforce trapped in train doors and train subsequently departs (boarding or alighting)</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall between stationary train and platform</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall between train and platform and train subsequently departs</td>
</tr>
<tr>
<td>Passenger and/or member of workforce fall between train and platform as train arrives and/or departs</td>
</tr>
<tr>
<td>Passenger and/or member of workforce struck by train door while on platform</td>
</tr>
<tr>
<td>Passenger injury while boarding train</td>
</tr>
<tr>
<td>Passenger injury while alighting train</td>
</tr>
<tr>
<td>Passenger alighting or falling from train onto track or non-operational part of the platform</td>
</tr>
<tr>
<td>Passenger boarding train from non-operational part of the platform</td>
</tr>
<tr>
<td>Passenger and/or member of workforce coming into contact with object/infrastructure on or near the platform</td>
</tr>
<tr>
<td>Passenger and/or member of workforce slip/trip/fall or other injury while on platform</td>
</tr>
<tr>
<td>Workforce injury while helping passenger board or alight, for example, manual handling injury</td>
</tr>
</tbody>
</table>
Hazardous events

| Workforce and/or passenger assault at the platform train interface |
| Person on train exterior at the platform train interface |
| Workforce musculoskeletal disorders (MSD) or pain associated with platform train interface related activity |
| For example, checking DCO monitors, DCO using look-back, putting down and lifting up ramps |
| Stop short |
| Stop short and door release |
| Wrong side door release |
| Dispatching against a signal at danger |

Table 1: Hazardous events that can occur at the platform train interface

Appendix B Assessment Factors

Appendix B.1 This section sets out assessment items that can form the risk assessment. These have been generated from:

a) The RSSB PTI Risk Assessment Tool.

Appendix B.2 It does not constitute an exhaustive list of things to consider.

Appendix B.3 The items have been selected as they can all affect the likelihood and/or severity of hazardous events. Assessing these items can therefore help determine:

a) The factors that affect the likelihood and potential severity of hazardous events for each platform in operational use.
b) The controls required to mitigate risk so far as is reasonably practicable.

Appendix B.4 The items are grouped as follows:

a) **Station characteristics.** These are characteristics of the station, including design, operation and provision of information that can affect the behaviour and decision making of passengers and staff.
b) **Platform layout, design and equipment.** This also includes the provision, location and design of equipment on the platform to support train dispatch.
c) **Passenger characteristics and behaviours.** These are the types of passengers who use the platform and the typical behaviours they exhibit.
d) **Staff behaviours.** These are the behaviours and/or characteristics of staff and the factors that can affect behaviour and decision making.
e) **Rolling stock characteristics and equipment.** These are characteristics of the rolling stock calling at and passing through the platform that can affect passenger behaviour, the management of passengers on the platform and/or the completion of dispatch duties. This includes on-board equipment to support dispatch of trains stopping at the platform and live train mounted equipment.
f) **Operational and environmental conditions.** These are conditions that can affect passenger behaviour, the management of passengers on the platform and the completion of dispatch duties, for example weather, noise, crowding, special events.
Appendix B.5  Assessment items denoted with an asterisk are currently not contained in the RSSB PTI Risk Assessment Tool. These items can be added if the IM/RU is using the tool and wishes to assess them.

**Section 1: Station characteristics**

Appendix B.6  These items only need to be assessed per station under assessment.

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to the platform</td>
<td>Are there means of preventing access to the platform (for example ticket barriers or gate line staff) to prevent people waiting on platforms? Are access routes to and between platforms quick, easy, safe and convenient to use? Are methods in place to effectively prevent late running passengers from approaching the departing train? Are platform ends fitted with anti-trespass/suicide gates?</td>
</tr>
<tr>
<td>Station assistance</td>
<td>Are staff present at the station to assist passengers and help influence passenger behaviour? If the station is unmanned, are there controls in place to help the driver or guard to manage the PTI during dispatch? For example: a) The ability for the driver to make announcements on the platform as well as on the train. b) Consideration of additional bodyside lighting. c) The provision of unaided access/egress for passengers that require special assistance.</td>
</tr>
<tr>
<td>Station information</td>
<td>Are customers provided with timely and clear information (visual and/or announcements) when in the station so they can find their platform and board in a timely and safe manner? Does the location of information affect the behaviour of passengers? When is train departure information removed from Customer Service Screens? For example, two minutes before departure? 30 seconds? not at all?</td>
</tr>
<tr>
<td>Station wayfinding</td>
<td>Does wayfinding in the station provide passengers with easy to understand directions so they can find their platform and board in a timely and safe manner?</td>
</tr>
<tr>
<td>Station closure</td>
<td>Is there a station closure procedure? And can staff implement it?</td>
</tr>
<tr>
<td>Assessment item</td>
<td>Example considerations</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Are clear and well-positioned instructions explaining how to exit the station quickly and safely provided to passengers?</td>
<td></td>
</tr>
<tr>
<td>Maintenance and renewal work</td>
<td>Is station maintenance and renewal work assessed for potential impact on risk at the PTI? Could storage of machinery for maintenance and renewal work affect passenger behaviour and/or the completion of dispatch duties, for example, through visual obstruction? Is suitable mitigation in place before the work begins to manage these risks?</td>
</tr>
<tr>
<td>Other*</td>
<td>Do other features within the station affect train dispatch or measures to manage passenger safety?</td>
</tr>
</tbody>
</table>

**Section 2: Platform layout, design and equipment**

**Appendix B.7** These items can be used to assess each platform.

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of starting signals and other signals controlling train movements</td>
<td>Is there a risk of read across on signals, due to close proximity of the signals? Is the view of fixed signals obscured? For example, by platform curvature, other fixed structures or the train being in the platform? This information may be contained in the signal sighting assessment.</td>
</tr>
<tr>
<td>Position of electrification system*</td>
<td>Are the safety distances described in GERT8000HB16 and GERT8000HB17 being maintained? Have activities been risk assessed to determine which are reasonable to be carried out with the electrification system live and what suitable precautions are required to manage the risk to a tolerable level?</td>
</tr>
<tr>
<td>Platform length and width</td>
<td>Is the minimum usable platform width sufficient in relation to line speed? See GIRT7016. Is width sufficient to accommodate the peak passenger numbers that use the platform? Does the width of the platform affect passenger movement and the view of the dispatch corridor? Is the platform capable of fully accommodating all train formations?</td>
</tr>
<tr>
<td>Assessment item</td>
<td>Example considerations</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Are train stopping</td>
<td>Are train stopping positions clearly marked?</td>
</tr>
<tr>
<td>positions clearly</td>
<td>What controls exist for managing risk related to coaches not accommodated within the platform?</td>
</tr>
<tr>
<td>marked?</td>
<td></td>
</tr>
<tr>
<td>Pinch points</td>
<td>Does the position of fixed or temporary structures create any pinch points?</td>
</tr>
<tr>
<td>Security</td>
<td>What arrangements are in place to manage security on the platform? For example:</td>
</tr>
<tr>
<td></td>
<td>a) Security of platform ends</td>
</tr>
<tr>
<td></td>
<td>b) British Transport Police (BTP) present on the platform</td>
</tr>
<tr>
<td></td>
<td>c) CCTV and is it connected to the BTP?</td>
</tr>
<tr>
<td>Platform curvature and</td>
<td>Does platform curvature impinge upon the dispatch corridor?</td>
</tr>
<tr>
<td>slope</td>
<td>Does the platform slope? If so does this pose a risk to people with pushchairs, and/or users of wheelchairs and/or mobility scooters?</td>
</tr>
<tr>
<td>Platform surface</td>
<td>Does the platform surface create a risk of slip, trip or falls?</td>
</tr>
<tr>
<td>Platform lighting</td>
<td>Does lighting on the platform affect the boarding and alighting of passengers and/or completion of dispatch tasks?</td>
</tr>
<tr>
<td></td>
<td>Is the platform fully covered by a canopy and does this affect lighting?</td>
</tr>
<tr>
<td>Platform structures and</td>
<td>Does station furniture, commercial structures and/or fixed structures impinge upon the dispatch corridor or influence passenger movement on the platform?</td>
</tr>
<tr>
<td>furniture</td>
<td></td>
</tr>
<tr>
<td>Platform markings and</td>
<td>Is the platform edge clearly marked for all passengers?</td>
</tr>
<tr>
<td>signage</td>
<td>Where required, are warning signs for hazards provided that are relevant, well-maintained and positioned so people can see them?</td>
</tr>
<tr>
<td>Platform announcements</td>
<td>Do staff quickly and effectively deliver warnings and instructions to passengers on the platform?</td>
</tr>
<tr>
<td></td>
<td>Are there help points on the platform to support passenger decisions? Do staff respond to requests for help in a timely manner?</td>
</tr>
<tr>
<td>Assessment item</td>
<td>Example considerations</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Does the coverage of platform announcements adequately cover the passenger dwelling areas of the platform?</td>
<td></td>
</tr>
<tr>
<td>Platform monitoring</td>
<td>To what extent is the full length and width of the platform monitored by staff or via CCTV?</td>
</tr>
<tr>
<td>Retrieving objects dropped on the track</td>
<td>What arrangements are in place to manage the retrieval of dropped objects?</td>
</tr>
<tr>
<td>Island platform (if applicable)</td>
<td>Do trains require simultaneous attention on either side on island platforms? How is the dispatch of simultaneous trains managed by staff? What impact could the above have on staff distraction, visual attention and workload?</td>
</tr>
<tr>
<td>Position and clarity of platform monitors or mirrors</td>
<td>Can drivers clearly see dispatch monitors or mirrors from the designated stopping position? Do the monitors or mirrors provide a clear view of the entire dispatch corridor? Does the quantity, quality and size of platform monitors/mirrors affect the performance of dispatch tasks? Can a test target object be reliably detected in all lighting conditions using the monitors or mirrors? See GEGN8560.</td>
</tr>
<tr>
<td>Platform based indicators</td>
<td>Are CD/RA indicators clearly legible for the dispatcher and the driver? Can the dispatcher operate CD/RA equipment and still maintain a clear view of the entire dispatch corridor? Can the dispatcher operate other dispatch equipment and still maintain a clear view of the entire dispatch corridor? Is the OFF indicator clearly legible from the preferred dispatch position? Is new platform based equipment required? If so, could this equipment introduce new risks?</td>
</tr>
<tr>
<td>Other equipment</td>
<td>What type of equipment is used on the platform? For example, tow tractors, powered cleaning equipment? Are pedestrians and vehicles separated?</td>
</tr>
</tbody>
</table>
### Assessment item Example considerations

**Departing trains**  
Do the characteristics of the platform affect staff’s ability to observe the train clear of the platform?  
Can platform staff stop the train in an emergency?  
What platform based controls can be put in place to mitigate train departure risk?

### Section 3: Passenger characteristics and behaviours

Appendix B.8 These factors can be considered per platform.

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
</table>
| **Typical passenger groups**                                                    | Who are the main passenger groups and what behaviours take place?  
Who are the ‘at risk’ passengers?  
What arrangements are in place to help manage and support passengers?                |
| **Passenger and non-passenger experience and knowledge of the railway**          | Consider what additional hazards may be imported by lack of familiarity (or over familiarity) with the station, platform and/or rolling stock.          |
| **Passenger capabilities**                                                      | Is assistance available to passengers with impairments? For example, use of staff or companion programmes?  
Are tactile surfaces provided?                                                      |
| **Attitudes**                                                                  | Consider foreseeable variances in personal attitudes, for example, taking a shortcut due to poor perception of risk.                                 |
| **Motivations and likely behaviours**                                           | Consider passenger motivations and likely behaviours; for example, commuters, infrequent travellers, leisure travellers or tourists and persons with a limited understanding of English. |
| **Objects carried by passengers**                                               | Consider the objects which may be carried by passengers, especially objects which may be carried above passengers’ heads, for example helium balloons, selfie sticks, child on parent’s shoulders, and items allowed by the conditions of carriage. |

### Section 4: Staff behaviour

Appendix B.9 These factors can be considered per platform. This information may already be contained within an existing role or task based assessment.
## Assessment item

<table>
<thead>
<tr>
<th>Staff error</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What typical errors do or could dispatch staff make?</td>
</tr>
<tr>
<td></td>
<td>Are there behaviours and/or characteristics of the individual that can contribute to the occurrence of errors? For example, inexperience or unfamiliarity with context (such as route or platform); inadequate scanning technique; over reliance on traction interlock; slipping into ‘auto pilot’; rushing to complete dispatch.</td>
</tr>
<tr>
<td></td>
<td>Are any conditions likely to increase or induce staff error? For example, distraction from mobile phones, advertising displays, visual media, station furniture and platform layout.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staff injury*</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Could completion of dispatch tasks increase risk of injury to staff?</td>
</tr>
<tr>
<td></td>
<td>For example:</td>
</tr>
<tr>
<td></td>
<td>Are there areas where dispatch bats or similar must not be raised too high in case of electric shock? This would also apply to dispatch related hand signals.</td>
</tr>
<tr>
<td></td>
<td>Position of the in-cab monitors or platform based monitors or mirrors causing MSD or other related pain.</td>
</tr>
<tr>
<td></td>
<td>Use of look-back causing MSD or other related pain.</td>
</tr>
<tr>
<td></td>
<td>Slip, trip or fall risk from guards boarding and alighting the train to carry out their dispatch duties.</td>
</tr>
<tr>
<td></td>
<td>Slip, trip or fall risk from platform staff walking along the platform to carry out dispatch duties.</td>
</tr>
<tr>
<td></td>
<td>Manual handling injuries associated with helping passengers board or alight.</td>
</tr>
<tr>
<td></td>
<td>The Health and Safety Executive <a href="http://www.hse.gov.uk/msd/manualhandling.htm">www.hse.gov.uk/msd/manualhandling.htm</a> provides guidance in relation to occupational health and safety risk assessment. This can be used to help assess the risk of injury to staff at the platform train interface.</td>
</tr>
<tr>
<td></td>
<td>Information on electrical safety is provided in <a href="#">References</a> on page 72.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staff workload and distraction</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Is staff workload (high or low) such that is likely to lead to fatigue, errors or workarounds (violations)?</td>
</tr>
<tr>
<td></td>
<td>Are suitable breaks provided?</td>
</tr>
<tr>
<td></td>
<td>Are dispatch staff required to perform any other duties, such as managing passenger behaviour, that may lead to distraction or increased workload?</td>
</tr>
</tbody>
</table>
### Assessment item

**Example considerations**

- **Conflict situation**, such as managing passengers, may lead to staff becoming distracted; what support is provided to preserve the integrity of the train safety check?

- **Communications**
  - What communication equipment is required and available to undertake dispatch?
  - What method(s) of communication are detailed in existing dispatch plans?
  - Are there risks of miscommunication between staff?
  - What controls are in place to reduce the risk of miscommunication?

- **Procedures**
  - To what extent do staff apply the same method to dispatch all trains from the platform?
  - Is the responsibility for undertaking the train safety check clearly described and understood?
  - How does the dispatch plan describe the way passengers will be managed during arrival to departure of trains?
  - To what extent does the dispatch process fully support staff to undertake their duties? For example, company policy regarding the position of the guard.
  - Do any other procedures within the rest of the station affect train dispatch?

- **Dispatch by another IM or RU**
  - Is dispatch carried out by a different IM or RU? If so, does this have an impact on how dispatch plans are developed and executed?
  - How are staff from other IMs or RUs made aware of the hazards and dispatch plans that exist at this location?

### Section 5: Rolling stock characteristics and equipment

**Appendix B.10** These factors can be considered per train type calling at the platform. Consideration can also be given to the types of trains passing through the platform, such as those described in 2.2 Scope of assessment on page 11, where applicable.

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance between train and platform and/or between coaches</td>
<td>What is the stepping distance between the train and the platform? This can be recorded as follows for each train type calling at the platform: Horizontal (mm) =</td>
</tr>
</tbody>
</table>
### Assessment item

<table>
<thead>
<tr>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical (mm) =</td>
</tr>
<tr>
<td>Diagonal (mm) =</td>
</tr>
<tr>
<td>GIRT7016 provides more details in relation to step gaps. In addition, RSSB research project T1037 provides measurements for passenger vehicle footstep positions to reduce stepping distances and gauging constraints - see References on page 72.</td>
</tr>
<tr>
<td>Does this distance pose a risk to passengers?</td>
</tr>
<tr>
<td>What is the size of the gap between the train bodyside and the platform edge?</td>
</tr>
<tr>
<td>What is the risk of a passenger falling between the train bodyside and platform edge?</td>
</tr>
<tr>
<td>Are inter-vehicle barriers installed which can reduce or remove the gap between coaches?</td>
</tr>
</tbody>
</table>

### Train formations

<table>
<thead>
<tr>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there variation in the length and type of train calling at the platform?</td>
</tr>
<tr>
<td>How does this affect the completion of dispatch tasks and maintaining a view of the dispatch corridor?</td>
</tr>
<tr>
<td>For example:</td>
</tr>
<tr>
<td>a) Does the length and/or type of train mean the guard or member of platform staff (where applicable) need to move position to complete the train safety check?</td>
</tr>
<tr>
<td>b) Does the formation or type of train create blind spots in the dispatch corridor?</td>
</tr>
<tr>
<td>c) Does the type or length of train affect ability to see monitors, mirrors or CD/RA indicators?</td>
</tr>
<tr>
<td>How does the type and length of train affect the behaviour and management of passengers?</td>
</tr>
<tr>
<td>Do trains run in reverse order and, if so, does this affect the behaviour and management of passengers?</td>
</tr>
<tr>
<td>How is passenger behaviour and safety managed when units forming part of the train are not in public service? Is it clear to drivers where they should stop in such circumstances?</td>
</tr>
</tbody>
</table>

### Stopping positions

<table>
<thead>
<tr>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are train stopping positions clearly marked and can the driver clearly see and read these? This information may be contained in the signal sighting assessment.</td>
</tr>
<tr>
<td>Assessment item</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Train doors</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Driver view</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Assessment item</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>Guard’s view on board train</td>
</tr>
<tr>
<td>Departing trains</td>
</tr>
<tr>
<td>On-board passenger information</td>
</tr>
</tbody>
</table>
## Assessment item Example considerations

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live train mounted electrical equipment*</td>
<td>What is the position of live train mounted electrical equipment? Does the position pose any risk to passengers and staff? Is there a risk assessment in accordance with GLRT1210, taking into account any change in rolling stock? What suitable precautions are required to manage the risk to a tolerable level?</td>
</tr>
<tr>
<td>Multiple trains and/or coupling/uncoupling of trains*</td>
<td>What controls exist for managing passengers where coupling/uncoupling operations take place or where trains share platforms?</td>
</tr>
<tr>
<td>Empty coaching stock (ECS)</td>
<td>What controls exist for managing passengers when there is empty coaching stock in the platform? What is the process and who is responsible for checking, locking and dispatching the empty coaches?</td>
</tr>
<tr>
<td>Terminating trains*</td>
<td>What controls exist for managing passengers when trains terminate in the platform?</td>
</tr>
<tr>
<td>Heritage and/or charter trains</td>
<td>Is the platform used by heritage and/or charter trains requiring a unique method of dispatch? Do these trains present passengers with increased stepping distance? Are they fully accommodated within the platform? What arrangements exist to manage the passengers and spectators associated with these trains? What controls exist to manage any coaches not accommodated within the platform? How are special train and charter operator’s staff made aware of risk control measures?</td>
</tr>
<tr>
<td>Parcel and/or on-track machines/engineering trains*</td>
<td>Is the platform used by parcel trains, on-track machines or engineering trains? Do these trains create any risk to passengers and/or staff?</td>
</tr>
<tr>
<td>Passing trains*</td>
<td>Do passing trains create aerodynamic effects? If so, are people protected from the aerodynamic effects in accordance with GIRT7016?</td>
</tr>
</tbody>
</table>
Assessment item | Example considerations
--- | ---
The risk assessment methodology set out in GIGN7616 can be used to assess aerodynamic risk and identify actions to control the risk. The RSSB Platform Aerodynamic Risk Assessment Tool can also be used to undertake this assessment and can be accessed from: [https://www.rssb.co.uk/rail-risk-portal](https://www.rssb.co.uk/rail-risk-portal).
Do passing trains create other risks to passengers on the platform? For example, risk of being struck by a passing train when leaning over the platform edge.
Are passengers on the platform provided with targeted announcements to warn them of passing trains and actions they should take?

### Section 6: Operational and environmental conditions

#### Appendix B.11 These can be considered per platform.

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Example considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunlight and weather</td>
<td>To what extent does sunlight and/or weather conditions affect passengers and/or staff? Could the effectiveness of the train safety check be affected by bright/low sunlight and/or adverse weather? What arrangements are in place to manage the impact of bright/low sunlight and/or adverse weather?</td>
</tr>
<tr>
<td>Noise*</td>
<td>Does the noise from diesel engines make it difficult for staff and/or platform users to hear station announcements, radio messages etc? Does the background noise make it difficult for staff and/or platform users to hear station announcements, radio messages etc? Does noise, alarms, communications and announcements from other platforms and trains affect the completion of dispatch tasks and/or the behaviour of passengers?</td>
</tr>
<tr>
<td>Fumes*</td>
<td>Do exhaust fumes gather under canopies, obscure signals, affect air quality etc?</td>
</tr>
<tr>
<td>Dwell time</td>
<td>Does the dwell time affect the behaviour of passengers? Does the dwell time affect the performance of dispatch tasks?</td>
</tr>
<tr>
<td>Assessment item</td>
<td>Example considerations</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Crowding</td>
<td>Does service frequency create risk at certain times of day? For example, too many passengers alighting, not enough trains to cope with customer demand.</td>
</tr>
<tr>
<td></td>
<td>Are train formations strengthened during peak travel periods? If yes, are additional staff needed to adequately perform the train safety check, or manage increased passenger numbers?</td>
</tr>
<tr>
<td></td>
<td>Does crowding on the platform affect the view of the dispatch corridor, for example when a driver is using monitors or mirrors or a guard is using line of sight?</td>
</tr>
<tr>
<td></td>
<td>What controls are in place to manage the effects of crowding on the platform? For example, targeted announcements, monitoring crowding, restricting access.</td>
</tr>
<tr>
<td></td>
<td>How are special events managed?</td>
</tr>
<tr>
<td>Permissive working*</td>
<td>What arrangements exist (or are required) to prevent train crew from misinterpreting signals or hand signals meant for others?</td>
</tr>
<tr>
<td></td>
<td>Does permissive working present or could it present any risk to passengers? If so what controls are in place to mitigate this risk?</td>
</tr>
<tr>
<td>Perturbed, degraded and emergency working</td>
<td>What are the contingency measures to manage perturbed, degraded or emergency situations in terms of managing passengers and completing train dispatch?</td>
</tr>
<tr>
<td>(including staff shortage)*</td>
<td>Are controls in place for when staff are not available?</td>
</tr>
<tr>
<td></td>
<td>When assessing and determining contingency measures, the following can be considered:</td>
</tr>
<tr>
<td></td>
<td>a) What type of situations could realistically occur?</td>
</tr>
<tr>
<td></td>
<td>b) What equipment failures could affect train dispatch?</td>
</tr>
<tr>
<td></td>
<td>c) How long could the situation(s) last for?</td>
</tr>
<tr>
<td></td>
<td>d) How many trains and/or platforms could be affected?</td>
</tr>
<tr>
<td></td>
<td>e) Would the time taken to dispatch the train increase and what would this mean for safety and performance?</td>
</tr>
<tr>
<td></td>
<td>f) What would be the impact of cancelling the train, not calling at effected stations or taking the platform out of use?</td>
</tr>
</tbody>
</table>
Assessment item | Example considerations
---|---
g) | What arrangements exist to manage the risk associated with these conditions?
h) | What alternative dispatch arrangements are/ could be used?
i) | Are competent staff available to assist in train dispatch and the management of passengers from effected stations and/or trains?
j) | Have contingency measures been tested? If so, how effective are they?
k) | What arrangements are in place for monitoring and maintaining equipment?

Unscheduled stops* | What provisions exist for trains making unscheduled stops?

Short notice platform alterations* | What arrangements are in place to manage short notice platform alterations?

Appendix C Considerations for Driver Controlled Operation

Appendix C.1 This appendix provides guidance on DCO train dispatch, and is grouped by the following technologies and practices:

a) Driver look-back.
b) Platform-mounted look-back mirrors.
c) Train-mounted look-back mirrors.
d) CCTV with platform-mounted cameras and monitors.
e) CCTV systems with platform cameras transmitting to in-cab monitors.
f) CCTV system with train-mounted cameras and in-cab monitors.
g) Platform dispatch staff.

Appendix C.2 The layout of the driving cabs of all rolling stock that will be dispatched from the platform can affect the method of DCO dispatch to be used. Considerations could include but are not limited to:

a) The seating position of the driver and their ability to view the DCO dispatch equipment from the seated position.
b) If there is a requirement for the driver to leave their seat to look out of the window, can this be done without the increased risk of musculoskeletal disorders developing?
c) When the train is ready to depart, is it possible for the driver to monitor the train dispatch corridor and the line ahead?
d) How difficult would the train dispatch procedure be to complete if the driver did not stop the train at the exact stopping point?

Appendix C.3 The following measures could be implemented (if already not in place) to minimise the risks associated with DCO:

a) Correct side door enable (CSDE).
b) Selective door opening (SDO).
c) Automated announcements.
d) In-train CCTV.
e) Use of the traction interlock light (lit) and external hazard indicators/bodyside indicator lights (extinguished) as an initial indication that the doors have closed.

f) Use of sensitive edge or threat detection technology.

Appendix C.4 If the traction interlock light or external hazard indicators/bodyside indicator lights are used as an initial indication that train doors have closed, a check of the exterior of the train is still required to ensure that nothing is trapped in the closed doors.

Appendix C.5 If a train is stopped out of course at a station at which it is not booked to call, for example, stopped at a signal at danger or stopped by train failure, as well as following the instructions detailed in GERT8000 Rule Book Module TW1 Preparation and movement of trains, the driver is to, where practicable, look along the side of the train to ensure that the train is safe to continue when authority has been given to proceed. Before deciding whether it is safe to restart the train, the following factors can be considered:

a) Has the traction interlock light extinguished while the train has been stationary at the platform? If it has, then it may be necessary to check that no one or nothing has fallen on to the track on the non-platform side.

b) If there is anyone close to the edge of the platform?

c) If the entire length of the train cannot be seen from the driving cab, it may be necessary for the driver to position themselves on the platform to obtain a view of the entire length of the train.

d) Following these checks, if there is anyone close to the train, they should be warned to stand clear.

Driver look-back

Appendix C.6 Where driver look-back is being used to dispatch DCO trains, the following factors are to be considered:

a) The ability of the driver to view the entire length of the train dispatch corridor and complete the train safety check in all lighting conditions following an appropriate risk assessment.

b) The cab layout allows the driver to comfortably look back out of the side window and operate the door controls.

c) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

d) The driver’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

e) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

Appendix C.7 If any of the factors mentioned above cannot be met in a satisfactory manner, consideration is required as to whether to adopt alternative train dispatch modes, where practicable, these could be:

a) Guard operation.

b) Platform dispatch staff.

c) Platform-mounted look-back mirrors.

d) Train-mounted look-back mirrors.

e) CCTV with platform-mounted cameras and monitors.

f) CCTV systems with platform cameras transmitting to in-cab monitors.

g) CCTV system with train-mounted cameras and in-cab monitors.

Appendix C.8 If DCO look-back is unable to be used due to a fault with the cab window or poor visibility, it may be necessary to introduce an alternative mode of train dispatch, where practicable, this could be:

a) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

b) Platform dispatch staff (where platform dispatch staff are readily available).
Appendix C.9  If none of the alternative modes of train dispatch are immediately available and the inability to use driver look-back is due to a fault on the train, it may be necessary to remove the train from passenger service.

Platform-mounted look-back mirrors

Appendix C.10  Where platform-mounted look-back mirrors are being used to dispatch DCO trains, the following factors are to be considered:

a) The ability of the driver to view the entire length of the train dispatch corridor and complete the train safety check in all lighting conditions following an appropriate risk assessment.

b) The positioning of the look-back mirrors allows the driver to comfortably observe the mirrors from within the cab, where practicable.

c) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

d) The driver’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

e) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

f) The positioning of the look-back mirrors so as to minimise the effect of members of the public obscuring the driver’s view.

Appendix C.11  If DCO look-back mirrors become defective, it may be necessary to introduce an alternative method of train dispatch, where practicable, this could be:

a) The driver leaving the cab to obtain a full view of the train dispatch corridor.

b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

c) Platform dispatch staff (where platform dispatch staff are readily available).

Appendix C.12  If none of the alternative methods of train dispatch are immediately available it may be necessary to, if possible, divert the train to another platform or prevent trains from stopping at the affected platform.

Train-mounted look-back mirrors

Appendix C.13  Where train-mounted look-back mirrors are being used to dispatch DCO trains, the following factors are to be considered:

a) The ability of the driver to view the entire length of the train dispatch corridor and complete the train safety check in all lighting conditions following an appropriate risk assessment.

b) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

c) The driver’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

d) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

Appendix C.14  If train-mounted look-back mirrors become defective, it may be necessary to introduce an alternative method of train dispatch, where practicable, this could be:

a) The driver leaving the cab to obtain a full view of the train dispatch corridor.

b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

c) Alternative platform based equipment if available (such as monitors).

d) Platform dispatch staff (where platform dispatch staff are readily available).
Appendix C.15 If none of the alternative methods of train dispatch are immediately available it may be necessary to remove the train from passenger service.

CCTV with platform-mounted cameras and monitors

Appendix C.16 Where CCTV with platform-mounted cameras and monitors are used to dispatch DCO trains, the following factors are to be considered:

a) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

b) The optimal amount of images displayed is not exceeded.

c) The driver’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished. This view is to be achievable in all typical day and night lighting conditions.

d) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

e) The positioning of the platform-mounted monitors so as to minimise the effect of members of the public obscuring the driver’s view.

Appendix C.17 If CCTV cameras and monitors become defective, it may be necessary to introduce an alternative method of train dispatch, where practicable, this could be:

a) The driver leaving the cab to obtain a full view of the train dispatch corridor.

b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

c) Platform dispatch staff (where platform dispatch staff are readily available).

d) Platform-mounted look-back mirrors (if fitted).

Appendix C.18 If none of the alternative methods of train dispatch are immediately available it may be necessary to, if possible, divert the train to another platform or prevent trains from stopping at the affected station.

CCTV systems with platform cameras transmitting to in-cab monitors

Appendix C.19 Where CCTV systems with platform cameras transmitting to in-cab monitors are used to dispatch DCO trains, the following factors are to be considered:

a) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

b) The optimal amount of images displayed is not exceeded.

c) The driver’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

d) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

Appendix C.20 If CCTV cameras and monitors become defective, it may be necessary to introduce an alternative method of train dispatch, where practicable, this could be:

a) The driver leaving the cab to obtain a full view of the train dispatch corridor, where possible.

b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

c) Platform dispatch staff (where platform dispatch staff are readily available).

d) Platform-mounted look-back mirrors (if fitted).

Appendix C.21 If none of the alternative methods of train dispatch are immediately available it may be necessary, where possible, to route trains in to an alternative platform (if the fault is with the platform-
mounted cameras) or remove the train from passenger service (if the fault is deemed to be with the trainbourne monitors).

**CCTV system with train-mounted cameras and in-cab monitors**

Appendix C.22 Where CCTV systems with train-mounted cameras and in-cab monitors are used to dispatch DCO trains, the following factors are to be considered:

a) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

b) The optimal amount of images displayed is not exceeded.

c) The driver’s view down the length of the train enables them to view all train doors as they close and to observe that all hazard warning lights/bodyside indicator lights have extinguished.

d) The stopping point at the platform does not hinder the driver’s ability to view the starting signal or banner repeater (where provided).

Appendix C.23 If CCTV cameras and monitors become defective, it may be necessary to introduce an alternative method of train dispatch, where practicable, this could be:

a) The driver leaving the cab to obtain a full view of the train dispatch corridor, where possible.

b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

c) Platform dispatch staff (where platform dispatch staff are readily available).

d) Platform-mounted look-back mirrors or monitors (if fitted).

Appendix C.24 If none of the alternative methods of train dispatch are immediately available it may be necessary to remove the train from passenger service.

**Platform dispatch staff**

Appendix C.25 Where trains are being dispatched by platform dispatch staff, the following factors are to be considered:

a) The combination of the driver and platform staff are able to view the entire length of the train dispatch corridor and complete the train safety check.

b) The train has the ability for the driver to make a passenger announcement (if required) to warn passengers that the train doors are about to close and to manage risk at the PTI.

c) The driver’s and platform staff’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

d) The stopping point at the platform does not hinder the driver’s or platform staff’s ability to view the starting signal, banner repeater of OFF indicator (where provided).

e) The driver can clearly observe and distinguish the handsignals being displayed by the platform staff.

f) Any dangers presented by the electrification systems.

Appendix C.26 If any of the above is not possible, it may be necessary to introduce an alternative method of train dispatch, where practicable, this may include:

a) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard operation).

b) The provision of another member of platform dispatch staff (where another member of platform dispatch staff is readily available).

**Platform dispatch staff - CD/RA**

Appendix C.27 Where trains are being dispatched using CD/RA indicators, consideration is to be given to the view by platform staff from the location of the CD/RA equipment. The view is such that:
a) Platform staff can view the entire length of the train dispatch corridor.
b) Platform staff can view all of the train doors during the door closing process and observe all external
hazard lights/bodyside indicator lights have extinguished.
c) Platform staff can view the starting signal, banner repeater or OFF indicator (where provided).

Appendix C.28 If any of the above factors are not possible, it may be necessary to introduce an additional
member of platform staff.

Appendix C.29 If the CD/RA equipment becomes defective it may be necessary to introduce an alternative
method of train dispatch. This may include:

a) Dispatch by platform staff using handsignals.
b) Guard operation (where a guard is readily available and if the rolling stock is suitable for guard
operation).

Appendix D Considerations for Guard Train Dispatch

Appendix D.1 This appendix provides guidance on guard train dispatch and is grouped by the following
technologies and practises:

a) Dispatch using bell/buzzer codes.
b) Dispatch using handsignals.
c) Dispatch with the assistance of platform staff.
d) Platform-mounted mirrors.
e) CCTV with platform-mounted cameras and monitors.

Appendix D.2 If the risk assessment has identified the position of the guard responsible for dispatch as an
issue, the following can be taken into account to help determine the designated positioning of the guard
within the train:

a) The characteristics of the platform (for example curvature or platform furniture), and train (for example
length, design of doors, operation of doors).
b) The types of passengers that use the platform and their typical behaviours (for example rushing for the
train from the stairs).
c) The position of equipment, if relevant, that will be operated by the train dispatch staff to assist with
train dispatch, for example CD/RA.
d) The location of platform staff in case they are required to signal to the guard to stop the train.
e) The ability of the guard to move within the train to achieve the view of the train dispatch corridor prior
to the train departing the platform. This includes being able to stop the train or notify the driver to stop
if required.
f) The ability of the guard and/or platform staff to check that the platform starting signal/banner repeater
or OFF indicator (where provided) is displaying a proceed aspect prior to the train dispatch process
commencing.

Appendix D.3 If a slam door train is stopped out of course at a station at which it is not booked to call, for
example, stopped at a signal at danger or stopped by failure, where practicable, the guard is to ensure that
the train is safe to continue when authority has been given to proceed and then send the driver the ‘Ready
to start’ signal. Before deciding whether it is safe to restart, the following factors are to be considered:

a) Has the traction interlock light extinguished whilst the train has been stationary at the platform? If it
has, then it may be necessary to check that no one or nothing has fallen on to the track on the non-
platform side.
b) If there is anyone on the platform close to the train.
c) If the entire length of the train cannot be seen from the location of the guard, it may be necessary for
the guard to position themselves on the platform to obtain a view of the entire length of the train,
contacting the driver before doing so.
d) Following these checks, if there is anyone close to the train, they should be warned to stand clear.

Dispatch using bell/buzzer codes

Appendix D.4 Where dispatch by a guard using bell/buzzer codes is being used, the following factors are to be taken into account:

a) The guard’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

b) If the train consists of slam door stock, all doors are to be visually (and physically, where practicable) checked to ensure that they are closed.

App. D.5 If the bell/buzzer function on the train is not working, an alternative method of dispatch is to be introduced, this could be:

a) Handsignals from guard to driver.

b) Handsignals from platform staff to driver (as described in GERT8000 Rule Book. Module SS1 Station Duties and Train Dispatch).

c) CD/RA indications (where fitted).

Appendix D.6 If none of the alternative methods of train dispatch are immediately available, it may be necessary to remove the train from passenger service.

Dispatch using handsignals

Appendix D.7 Where dispatch via handsignals from the guard to the driver is being used, the following factors are to be taken into account:

a) The position of the guard allows the driver to observe the guard’s handsignals.

b) The guard’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

c) If the train consists of slam door stock, all doors are to be visually (and physically, where practicable) checked to ensure that they are closed.

d) If the guard is required to move away from the door controls after the ‘ready to start’ signal has been given, the location which they are moving to provides a better view of the train dispatch corridor, can be reached prior to the train departing and provides the facility to stop the train if necessary.

e) The guard’s view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

f) Any risks presented by the electrification systems.

Appendix D.8 If any of the above factors cannot be met, alternative dispatch methods may be required to be introduced, these could be:

a) Handsignals from platform staff to driver.

b) Using bell/buzzer communication (where fitted).

c) CD/RA indications (where fitted).

Dispatch with assistance from platform staff

Appendix D.9 Where dispatch by a guard with the assistance of platform staff is being used, the following factors are to be taken into account:

a) If dispatch is being assisted by platform staff, the combined view of the platform staff and the guard should enable them to observe the entire length of the train dispatch corridor and all train doors during the door closing process. The view should also allow members of dispatch staff to view that, where applicable, all external hazard lights/bodyside indicator lights have extinguished (for example, where the
guard is using a local door to view the train dispatch corridor, the bodyside indicator light will not be extinguished).

b) If the train consists of slam door stock, all doors are to be visually (and physically, where practicable) checked to ensure that they are closed.

c) If the guard is required to move away from the door controls after the ‘Ready to start’ signal has been given, the location which they are moving to provides a better view of the train dispatch corridor, can be reached prior to the train departing and provides the facility to stop the train if necessary.

d) The guards view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

Appendix D.10 If the above factors cannot be achieved it may be necessary to provide an additional member of platform staff and/or change the method of dispatch.

Platform-mounted mirrors or monitors

Appendix D.11 Where dispatch by a guard using platform-mounted mirrors or monitors is being used, the following factors are to be considered:

a) The ability of the guard to view the entire length of the train dispatch corridor and complete the train safety check in all lighting conditions following an appropriate risk assessment.

b) The guard’s view along the length of the train enables them to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

c) If the train consists of slam door stock, all doors are to be visually (and physically, where practicable) checked to ensure that they are closed.

d) If the guard is required to move away from the door controls after the ‘Ready to start’ signal has been given, the location which they are moving to provides a better view of the train dispatch corridor, can be reached prior to the train departing and provides the facility to stop the train if necessary.

e) The guard’s view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

Appendix D.12 Should the platform-mounted mirrors or CCTV cameras and monitors become defective or obscured, for example by sunlight, it may be necessary to introduce an alternative method of train dispatch, this could be:

a) The provision of platform staff.

b) Collaboration between the guard and the driver to jointly carry out the train dispatch procedure, where practicable.

Appendix E Considerations for Platform Staff Dispatch

Appendix E.1 This appendix contains guidance on platform staff dispatch procedures and is grouped by the following technologies and practises:

a) Platform staff dispatch using handsignals to the guard.

b) Platform staff dispatch using handsignals to the driver.

c) Platform staff dispatch using CD/RA indicators.

Appendix E.2 If the risk assessment has identified the position of dispatch staff on the platform as an issue, the following can be taken into account to help determine the designated positioning:

a) The location of the guard and/or the driver in relation to the platform and their view of the train dispatch staff. This includes the positioning of the platform staff to enable the driver to see their hand signals.

b) The location of equipment operated by the platform staff, for example, CD/RA, and the view available from that location; this view should include the entire train dispatch corridor.
c) The characteristics of the platform (for example curvature or platform furniture), and train (for example length, design of doors, operation of doors).

d) The types of passengers that use the platform and their typical behaviours, for example, rushing for the train from the stairs.

e) Any dangers presented by the electrification systems.

Appendix E.3 If more than one member of platform staff are being used during the train dispatch process, a clear definition of the member of platform staff with lead responsibility should be identified and communicated.

Appendix E.4 If a train is stopped out of course at a station at which it is not booked to call, for example, stopped at a signal at danger or stopped by failure, the driver/guard and the platform staff are to come to an understanding as to how the train is going to be safely restarted. Before deciding whether it is safe to restart, the following factors are to be considered:

a) If there is anyone on the platform close to the train.

b) Can the entire length of the train be seen from the position on the platform.

c) Following these checks, if there is anyone close to the train, they should be warned to stand clear.

Appendix E.5 If the entire length on the train cannot be seen, the guard/driver and platform staff are to agree the best method to work collaboratively to safely restart the train.

Platform staff dispatch using handsignals to the guard

Appendix E.6 Where trains are being dispatched by platform staff giving handsignals to the guard, the following factors are to be considered:

a) Does the combined view along the length of the train enable staff involved in the train dispatch process to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

b) If the train consists of slam door stock, all doors are to be visually (and physically, where practicable) checked to ensure that they are closed.

c) If the guard is required to move away from the door controls after the ‘ready to start’ signal has been given, the location which they are moving to provides a better view of the train dispatch corridor and the new method of working has been risk assessed. The platform staff should be informed of the new position at which the guard will be located.

d) The platform staff’s view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

e) Any dangers presented by the electrification systems.

Appendix E.7 If handsignals cannot be viewed by the guard due to darkness or poor visibility, an additional member of platform staff may be required to relay the handsignal to the guard.

Platform staff dispatch using handsignals to the driver

Appendix E.8 Where trains are being dispatched by the platform staff displaying handsignals to the driver, the following factors are to be considered:

a) The combined view along the length of the train enables staff involved in the train dispatch process to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.

b) The platform staff’s view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

c) Any dangers presented by the electrification systems.

Appendix E.9 If handsignals cannot be viewed by the driver due to darkness or poor visibility, an additional member of platform staff may be required to relay the handsignal to the driver.
Platform staff dispatch using CD/RA indicators

Appendix E.10 Where trains are being dispatched by the platform staff operating CD/RA indicators, the following factors are to be considered:

a) The combined view along the length of the train enables staff involved in the train dispatch process to view all train doors as they close and to observe that all external hazard lights/bodyside indicator lights have extinguished.
b) The platform staff’s view of the starting signal, banner repeater or OFF indicator (where provided) is such that it can be checked prior to commencing the train dispatch procedure.

Appendix E.11 If the CD/RA equipment becomes defective, it may be necessary to provide another member of platform staff to relay the close door and right away indications to the driver or introduce an alternative method of train dispatch.

Appendix F Managing Passenger Behaviour

Appendix F.1 This appendix provides guidance on the measures that can be implemented to manage the safe behaviour of passengers at the platform train interface.

Appendix F.2 The hazardous events these measures could help mitigate are illustrated in table 2 Hazardous events that measures to manage the safe behaviour of passengers at the platform train interface can help mitigate on page 54.

Appendix F.3 This appendix is supported by the following appendices:

a) Appendix K Design of Effective Safety Signs and Platform Markings on page 63.
c) Appendix H Design and Delivery of Verbal Announcements on page 59.
d) Appendix L Staff Training and Assessment on page 66.

<table>
<thead>
<tr>
<th>Hazardous events</th>
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<tbody>
<tr>
<td>Passenger struck by train when on platform</td>
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<tr>
<td>Passenger fall from platform (not struck or does not suffer an electric shock)</td>
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<tr>
<td>Passenger fall from platform and struck by train</td>
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<tr>
<td>Passenger fall from platform suffering electric shock</td>
</tr>
<tr>
<td>Passenger trapped in stationary train doors (boarding or alighting)</td>
</tr>
<tr>
<td>Passenger suffers electric shock from electrification or live train-mounted electrical equipment</td>
</tr>
<tr>
<td>Passenger trapped in train doors and train subsequently departs (boarding or alighting)</td>
</tr>
<tr>
<td>Passenger fall between stationary train and platform</td>
</tr>
<tr>
<td>Passenger fall between train and platform and train subsequently departs</td>
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<tr>
<td>Passenger fall between train and platform as train arrives and/or departs</td>
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<tr>
<td>Passenger struck by train door while on platform</td>
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## Hazardous events

<table>
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<th>Event</th>
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<tr>
<td>Passenger injury while boarding train</td>
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<tr>
<td>Passenger injury while alighting train</td>
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<tr>
<td>Passenger alighting or falling from train onto track or non-operational part of the platform</td>
</tr>
<tr>
<td>Passenger boarding train from non-operational part of the platform</td>
</tr>
<tr>
<td>Passenger coming into contact with object/infrastructure on or near the platform</td>
</tr>
<tr>
<td>Passenger slip/trip/fall or other injury while on platform</td>
</tr>
<tr>
<td>Person on train exterior at the platform train interface</td>
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</tbody>
</table>

### Table 2: Hazardous events that measures to manage the safe behaviour of passengers at the platform train interface can help mitigate

Appendix F.4  To be effective, measures to manage the safe behaviour of passengers are to be informed by the risk assessment, taking into account the goals, attitudes and motivations of passengers as well as the capabilities, training and attitudes of staff. In addition, the behaviour of passengers can change when there is disruption, degraded or emergency situations, and it is therefore helpful to consider whether specific approaches are needed.

Appendix F.5  Measures can be combined to help mitigate the likelihood and severity of hazardous events, for example, staff interactions with passengers, combined with monitoring and passenger education. They can also be used to help support safe dispatch, for example through crowd control.

Appendix F.6  The development, review and implementation of measures to manage the safe behaviour of passengers should therefore be part of a consistent and integrated strategy for promoting desirable behaviour.

Appendix F.7  Measures have been grouped as follows:

- a) Platform management.
- b) Customer information.
- c) Passenger education.
- d) Monitoring.
- e) Crowd management.
- f) Staff interactions.

Appendix F.8  Implementing these measures may require, for example, changes to procedures, equipment and/or staff roles and responsibilities. Principles of change management are provided at the end of this appendix and the requirements set out in Part 2 are to be used to inform any risk assessment required.

Appendix F.9  Infrastructure and rolling stock design can also help to influence passenger behaviour, for example:

- a) Reducing stepping distances, such as through altering platform heights and/or widths or the introduction of platform or trainborne gap fillers.
- b) Creating a platform recess.
- c) Removal of structures on the platform that cause passengers to walk or wait close to the platform edge.
- d) Designing clear hustle alarms that passengers understand.
- e) Introducing sophisticated obstacle door detection and protection.
Appendix F.10  These approaches are outside the scope of this standard and References on page 72 provides standards and research that can be consulted.

Platform management
Appendix F.11 Platform management can encourage safe passenger behaviours. For example:

a) Removal of potential slip, trip and fall hazards on the platform.

b) Use of salt and grit on platforms for icy conditions and slip resistant surfaces can reduce slip hazards.

c) Good housekeeping on the platform. This includes keeping the platform clear of objects, litter and vegetation that could cause an obstruction during checks of the train or pose a risk to passenger movements.

d) Reduction in the use of platform vehicles to reduce the risk of passengers walking or waiting too near the platform edge.

Customer information
Appendix F.12 Provision and location of customer information, in the station, on the platform, on the train and/or prior to entering the station can be considered to help passengers make informed and safe decisions regarding their travel, especially those with impairments and/or reduced mobility. Examples include:

a) Well-positioned signage, wayfinding, notices and instructions in the station, on the platform and on the train, that are simple to locate, read and understand can help to direct and inform passengers without causing pinch points.

b) Clearly publicised facilities within stations; for example, waiting rooms, concourses and platforms.

c) Real time and easily accessible information about journeys and services can help passengers plan their journeys, especially during service disruption.

d) Real-time information on train length, formation and stopping positions can help passengers plan their waiting position on the platform.

e) Information on the location of accessible carriages so passengers and staff can be prepared for boarding or alighting as soon as the train arrives.

f) Clearing of information on specific departures in a timely manner may reduce the risk of passengers rushing and trying to board the train as the doors are closing.

g) On-board announcements of upcoming stations. These could be automated or from a member of staff. For services that do not have on-board announcements, illuminated and/or additional station name boards mounted on the platform may help passengers identify which station they are arriving at, enabling them to identify the right time to alight.

h) On-board announcements indicating which side of the train doors will open. This can help passengers arrange themselves such that those alighting can move towards the correct side and obstacles (such as luggage and bicycles) can be moved.

i) Display and communication of policies for luggage, cycles and pushchairs, including space available on trains.

j) The type of assistance available, especially for those with impairments and/or reduced mobility.

k) The location and number of customer information screens can be used to provide information and influence where people stand in the station and on the platform. This can be useful to avoid pinch points.

Appendix F.13 Different forms and combinations of media can be used to provide timely customer information and direction (see passenger education below).

Appendix F.14 Information, where possible, can be provided in various languages to address use of the railway by different nationalities, particularly at stations with international transport links.
Passenger education

Appendix F.15 Passenger education campaigns (in stations, on platforms and on-board trains) can be implemented to influence passenger behaviour by raising awareness of risks associated with the PTI and the types of safe behaviours passengers should exhibit.

Appendix F.16 For example, an awareness-raising campaign on door trapping, could focus on:

a) The meaning of the door close alarm.
b) How doors respond to obstructions, for example, passengers may think they reopen like lift doors.
c) The risk of harm associated with closing doors.
d) The actions that can be taken to avoid door trappings.

Appendix F.17 Passenger education campaigns can also be used to communicate relevant bylaws and company policies, such as those associated with the consumption of alcohol, for example ‘dry trains’.

Appendix F.18 Passenger education campaigns can use multiple formats to communicate messages such as:

a) Targeted announcements in the station, on the platform and on the train.
b) Customer information screens.
c) Online and press media.
d) On-board magazines.
e) Radio.
f) Safety signage and posters.
g) Mobile devices.
h) Customer events and interventions in schools.

Appendix F.19 For example, real time platform specific announcements, coupled with safety signs, can be used to:

a) Encourage passengers to take additional precautions such as holding onto pushchairs or securing wheelchair brakes when trains pass through the platform.
b) Encourage them to move safely away from the platform edge.
c) Warn passengers (especially those with pushchairs or in wheelchairs) of passing trains (passenger and/or freight) and the potential risk this creates.

Appendix F.20 The forms of communication should be appropriate for the type of information communicated and the type of passengers receiving the information.

Monitoring

Appendix F.21 Real-time monitoring of passengers, in the station, on the platform or on the train can be used to help target interpersonal interactions and/or announcements. People who may be at greater risk are to be monitored particularly closely. Appendix L Staff Training and Assessment on page 66 provides examples.

Appendix F.22 Real-time monitoring can also be used to recognise and support crowd management.

Appendix F.23 The competence management system for staff who monitor passengers should include how to recognise behaviour that increases the risk of accidents and how to maintain overall awareness so as to avoid becoming fixated on a specific set of behaviours or passengers and missing other behaviours that may increase risk. Example passenger behaviours to include in training are provided in Appendix L Staff Training and Assessment on page 66.
Crowding

Appendix F.24 Crowding can have a negative effect on passenger behaviour. For example, crowding on the station, platform and/or on the train, can induce anger, confusion, anxiety, pushing and standing too close to the platform edge or train doors (when on the train). Crowding can also create blind spots in the dispatch corridor.

Appendix F.25 Plans should be in place for recognising and managing crowding on and off the train, during normal, perturbed, degraded and emergency situations as well as special events, such as concerts, racing events and sports matches.

Appendix F.26 Plans could include approaches such as:

a) Controlling access to the platform to reduce crowding on the platform.

b) Deploying additional staff allocated to the areas where significant crowding occurs.

c) Using office-based staff to support station/platform staff during times of severe disruption.

d) Establishing communication links and protocols between station and platform staff and train crew to warn of potential crowding, either in the station, on the platform or on the train.

e) Opening exit gates during busy times to help to alleviate congestion.

f) Identifying and removing pinch points caused by station furniture to reduce crowding in these areas.

Appendix F.27 Crowd management plans are to be regularly reviewed by considering examples of situations that could occur and then applying the plans to see if those situations could be managed. This can be achieved through simulated and/or desktop exercises.

Appendix F.28 Training in crowd control is to be provided and can include:

a) How to monitor crowd density and recognising crowding situations.

b) Effective communication skills and protocols, including conflict management.

c) Understanding own and other roles.

d) Use of technology systems, including CCTV, customer information systems, PA and dynamic signage, radio and telephone communications, automatic gate lines.

Staff interactions

Appendix F.29 Staff in the station, on the platform and/or on the train can positively influence passenger behaviours and support passengers. Such staff include:

a) Ticket office staff.

b) Dispatch staff.

c) Station and concourse staff.

d) Customer service personnel within the station and on the train.

e) Gate line staff.

f) Staff responsible for revenue collection at the station and/or on the train.

g) Call centre staff who may assist with train bookings, queries and complaints.

Appendix F.30 These staff can:

a) Provide directions and/or information to support passenger decision making and wayfinding.

b) Help passengers who may be at greater risk of a PTI incident in the station, on the platform, on and off the train. For example, providing assistance to passengers with impairments and those with reduced mobility.

c) Provide and/or co-ordinate with other members of staff to provide passengers, who may be at greater risk of a PTI incident, with assistance.

d) Communicate to passengers the type of behaviours they should exhibit, either face-to-face, through general safety announcements and/or announcements targeted to specific behaviours in the station, on the platform or on the train. For example, staff can make timely announcements to boarding and
alighting passengers not to board or alight when the door alarm sounds, or drivers could make announcements that are delivered on the train and on the platform.
e) Recognise and act to stop passenger behaviours that can increase risk at the PTI, for example, rushing through the station, obstructing doors or standing too close to the platform edge. This could be through talking to the passenger, targeted announcements or recording and reporting the behaviour.
f) Report accidents, incidents, near misses, complaints, issues and hazards that are relevant to the safe management of passengers at the PTI.
g) Provide seasonal assistance for luggage or when there is a large event on.


Appendix F.32 The competence management system for staff who are responsible for managing passenger behaviour or have the opportunity to influence behaviour should include the behaviours and circumstances that require intervention, what interventions are expected and how to effectively apply them, for example how to make announcements or interact with passengers to achieve maximum effect and a change in behaviour. Further guidance on this is provided in Appendix L Staff Training and Assessment on page 66.

Change management

Appendix F.33 Implementing measures to encourage safe behaviours amongst passengers may require change to procedures, equipment and/or staff roles and responsibilities. To support change, the following principles can be followed:

a) Obtaining management buy-in and support, including finances and resources required to implement the change. The level of buy-in and support can reflect the scope, cost and complexity of the change.

b) Engagement and involvement of relevant personnel, including change champions, if applicable. This can include involvement in the decision-making processes, where reasonably practicable. The level of engagement and involvement can reflect the scope, cost and complexity of the change.

c) Communicating the change, including purpose, scope, benefits and additional support to be provided.

d) Changing or providing additional training and instructions, where required, to support implementation. This can be considered for both managers and front-line staff.

Appendix H Design and Delivery of Verbal Announcements

Appendix H.1 The guidance in this appendix applies to non-mandatory verbal announcements or warnings delivered in stations, on platforms and on trains.

Appendix H.2 Where announcements are used, the provision of visual information should be considered to improve effectiveness. This can also help cater for different passenger groups, such as those with hearing impairments, those whose first language is not English and passengers who may be wearing headphones.

Purpose

Appendix H.3 Recorded announcements are suitable to provide information and give instructions but might have limited influence on the behaviour of regular passengers, due to the repetitive nature of the messages and the influence of other factors on their behaviour.

Appendix H.4 Recorded announcements are best used to provide routine information and instructions aimed at inexperienced passengers. The exception to this is an announcement giving information that passengers find useful for the completion of their journey and are therefore listening out for (for example, platform and station information). Recorded announcements are also suitable to reinforce messages through repetition or to provide a timely reminder of hazards and required behaviour.
Appendix H.5  Live announcements are more likely to be complied with than recorded announcements as they are more likely to be perceived as being accurate and up-to-date. They are most effective when used in real time to target specific behaviours, situations and people (for example, delivered by a person who can see the platform at the time when the instruction is required to be followed).

Appendix H.6  The visible presence of the announcer, for example on the platform, in the station or on the train, is likely to provide the greatest compliance because people will know that someone is watching whether they comply or not, and can take further action if they do not.

Appendix H.7  Targeted announcements, identifying a specific individual, will generally achieve greater compliance.

Appendix H.8  Recorded and live announcements delivered in stations, on platforms and on trains are to be clearly audible. Inconsistent and poor-quality announcements are likely to reduce the effectiveness of any instructions.

Appendix H.9  It is helpful to consider the purpose of the message being communicated through the announcement. Is it to provide information? To keep passengers informed? Or to give instruction? For example, during an emergency, announcements provide instructions to passengers about what they should do.

Appendix H.10 Depending on the purpose, the delivery, content and timing of the message might change.

Appendix H.11 So that announcements are delivered clearly, consideration is to be given to the following:

a) Chimes: All announcements should be preceded by a chime to indicate an announcement is due to be made.

b) Speakers: Sufficient quantities of speakers are to be provided so that announcements are transmitted to all required areas, for example in the station, on the platform and/or on the train.

c) Volume: There should be a significant difference between the level of background noise and the level of the announcement. 'Inclusive mobility – a guide to best practice on access to pedestrian and transport infrastructure', published by the Department for Transport (DfT), recommends at least a +5dB signal/ambient noise ratio for passengers with hearing impairments. The volume of audible announcements should not cause discomfort to passengers or staff. Volume should be consistent throughout the areas the announcements are being delivered.

d) Repetition: In a station environment, all announcements can be repeated at least once.

Appendix H.12 Consideration can also be given to the gender of voice announcements as this may affect the extent to which which people pay attention to the announcement and connect to the content of the announcement.

**Timing of announcements**

Appendix H.13 Safety announcements are most effective when delivered at the time of the action, activity or behaviour, where increased awareness is required and/or when an action or behaviour is required. They should also be framed in a positive manner such as ‘stand clear’ as oppose to ‘do not stand’. For example:

a) On-board announcements such as ‘stand clear of the closing doors’ delivered before the door is closing and/or when trapped items are detected in the doorway.

b) Messages to encourage people to keep away from the platform edge delivered when people are too close to the edge and when it is especially important to keep away from the edge, such as when the train is arriving, about to leave or passing through at high speed.

Appendix H.14 Verbal announcements that are delivered too frequently may annoy passengers and are unlikely to have a positive effect on behaviour.

Appendix H.15 Safety announcements can be further enhanced by addressing areas of limited passenger knowledge. For example, to help reduce the potential for door trappings, messages could:
a) Make clear the meaning of the door alarm and the action to take.
b) Emphasise how doors react to obstructions, such as bag straps and scarfs, and the need to stand clear of closing doors and not obstruct them.

Content of announcements

Appendix H.16 Verbal announcements might be used to provide a warning or information. In both cases, an instruction might also be necessary to inform passengers what to do in response.

Appendix H.17 Warning messages delivered as verbal announcements should include the following components:

a) Detail of the person speaking, for example, ‘this is the guard speaking’.
b) Explicit description of the hazard.
c) Impact and severity of potential consequences.
d) Instructions about how to avoid the consequences, for example, what people should do and when.

Appendix H.18 The content of the message should:

a) Be brief.
b) Use simple language in the present tense and in a positive manner such as ‘stand clear’ as opposed to ‘do not stand’.
c) Avoid slang or jargon.

Appendix H.19 The person delivering the message should:

a) Use a moderate to fast pace, avoid speaking in monotone voice or making lengthy pauses.
b) Use a tone that demonstrates the message is important and speak in a calm manner.
c) Clearly enunciate and avoid hesitation.
d) Use active voice, for example, ‘passengers on platform two stand away from the platform edge’.
e) Use a first-person conversational tone, in the same way they would communicate with a friend or colleague.
f) Use commands such as ‘must’ instead of ‘shall’ to convey a sense of urgency, when communicating targeted actions to be taken.

Appendix H.20 Alert words can be used at the beginning of an announcement to attract attention and communicate the importance of the announcement. More important announcements can be identified with stronger alert words so that they will be attended to more than less important announcements. Examples of alert words that might be used in verbal announcements are ‘danger’, ‘warning’, ‘caution’ and ‘notice’. ‘Danger’ is perceived to be stronger than ‘warning’ and ‘caution’. ‘Notice’ has the lowest perceived strength of these examples.

Appendix H.21 Verbal announcements can provide passengers with information that allows them to either wait in the right place in good time for the arrival of the train or by the train doors for alighting the train. If passengers do not have necessary information in time, then they will be inclined to rush and this can increase the chance of accidents during boarding or alighting. Verbal announcements are one method to deliver this information. As well as basic information, such as the platform number, it can be beneficial to give information that informs passengers what part of the platform to wait on or which side of the train doors will open.

Appendix H.22 At large, busy stations, it may not always be possible to provide all train-related announcements during peak hours as the number of announcements required is likely to be high. Doing so is likely to hinder clear understanding by passengers. In these conditions, priority should be given to providing announcements for services that are running outside of their specified timetable allocation, emergencies, platform changes, cancellations and to long distance or special services. This information can be provided on the train, for example when there are connecting services. Consideration should be given to
providing announcements for train services likely to be used by inexperienced passengers. Targeted announcements on platforms can also be used.

Appendix H.23 If a last call announcement is made, this should be stated prior to the announcement of the train details.

Appendix H.24 Communications with passengers can be more effective if traincrew and/or station and platform staff can put themselves in the position of the passenger and consider what type of information they would want if they were the passenger. For example, what service information would they need? What would be the best way to get their attention? What would be the best way to explain risk at the PTI and the actions they should take to be safe?

Appendix H.25 Guidance on the wording of safety signs provided in Appendix K Design of Effective Safety Signs and Platform Markings on page 63 is also applicable to the wording of verbal announcements.

Appendix H.26 Effective communications will be influenced by a range of other factors. It is therefore helpful to consider the impact of the following factors when designing and delivering verbal announcements or warnings:

a) Communication system. How reliable and suitable is the system? Can it deliver good quality communications? Does the equipment support real-time targeted communications; for example, roving microphones for platform staff?

b) Workload, operational demands and task prioritisation. Do staff have time to make announcements? Are other tasks and demands prioritised over making announcements?

c) Non-technical skills and knowledge. Do staff have the communication skills to make effective announcements? Do they have a view of targeted areas and the situational awareness to know when to make the announcements? Do they understand the risks and actions that need to be communicated? Do they have the knowledge and training to understand what makes for good communication and well-structured messages?

d) Attitude. Do staff see the benefit in making announcements to passengers? Are they confident about making announcements?

Appendix H.27 Further guidance on effective communications can be found in RSSB research project T1065:

a) Identifying and Developing Good Practice in Making On-Train Announcements in the Event of an Incident: Guidance for Managers.

b) Identifying and Developing Good Practice in Making On-train Announcements in the Event of an Incident: Training Material.

Appendix H.28 Both are cited in References.

Appendix J Design of Effective Safety Posters and Messaging for Passengers

Appendix J.1 Posters and messaging are appropriate to convey simple direct communications about risks to discourage inappropriate behaviours and to encourage appropriate behaviours. These can be presented in stations, on platforms and trains, on social media and other suitable formats such as journey planners accessed through smart phones.

General design principles

Appendix J.2 Posters and messaging need to stand out so they compete with other advertising and eye-catching features in the station, on the platform and train. The input of relevant specialists or professionals might be beneficial to create effective posters and/or messaging.

Appendix J.3 Messages and tone can be tailored (for example, is the message conveyed using humour or in a serious way) to appeal to the attitudes and motivations of the target group of passengers. For example, some passengers value speed of journey more than other factors, so messages that refer to delay as a
potential consequence can be targeted towards them. Different groups of passengers will respond favourably to different messages (for example, regular travellers, commuters, leisure travellers, children and inexperienced travellers) and need to be targeted accordingly.

Appendix J.4 Posters and messaging can be changed regularly so that they continue to catch the audience’s attention.

Text
Appendix J.5 Use brief, direct messages, that convey a clear action and avoid small text or long explanations. For example, in the platform context, examples of messages that could be conveyed are:

a) Stay away from the platform edge.
b) Stay behind the yellow line while waiting.
c) Always walk when on the platform.
d) Arrive in good time for your train.
e) Move along the platform away from the entrance.
f) Keep objects below head height.

Appendix J.6 Use large and clear text that can be easily read from a distance. The colour of the text should contrast strongly with the background.

Graphics
Appendix J.7 Graphics can help to convey the message and make it eye-catching (especially if vibrant colours are used). They are to:

a) Be simple illustrations that can be seen from a distance.
b) Illustrate the nature of the hazard, the potential consequences of unsafe behaviours and, where possible, the desired behaviour.

Appendix J.8 Common symbols can be used to quickly and clearly convey some messages without the need for text. For example, a red circle with a diagonal line through it is universally used to denote prohibited behaviours.

Appendix J.9 However, the use of too many different colours can make posters and messaging more difficult to read.

Position
Appendix J.10 Position posters and messages in the normal line of sight of people and in a prominent place where users are likely to be and have time to read and digest the messages. For example, waiting on the platform, sitting or standing on the train or walking a typical route through the station.

Appendix J.11 Posters and messages should be positioned so that they do not cause a distraction to a passenger, driver and/or staff member responsible for dispatching the train.

Appendix J.12 The same principles apply to positioning messages on social media or other systems; for example, position in line of sight, a prominent place where users browse or click to, considering when people will use social media or other systems and have time to read and digest the messages.

Appendix J.13 Guidance from Appendix H Design and Delivery of Verbal Announcements on page 59 and Appendix K Design of Effective Safety Signs and Platform Markings on page 63 can help to inform the content and wording of posters and messaging.

Appendix K  Design of Effective Safety Signs and Platform Markings

Appendix K.1 The guidance in this appendix applies to non-mandatory safety signs and platform markings that can help to promote safe behaviour of people on the platform. Requirements for mandatory signs are
Appendix K.2 Safety signs and platform markings can be used to promote safe behaviour. For example:

a) Safety signs on the platform and bodyside of the train, coupled with platform markings can help to alert people of hazards that can be mitigated through encouraging sensible passenger behaviour.

b) Demarcating the platform edge, for example a white line or yellow line, can provide a clear indication of the safe platform area and, if enforced, can help keep passengers away from the platform edge.

c) Where possible, markings on the platform can inform passengers of the train door positions, allowing passengers to be better prepared to board the train when it arrives, although this can cause crowding around particular doorways.

d) The provision of tactile information on the platform, guidance paths and surfaces that provide information to visually impaired people can be used to inform and guide passengers with visual impairments.

e) Consideration of a ‘no go’ area marking on the platform in relation to DCO operation and why this is important.

Appendix K.3 Safety signs are best used to present specific, authoritative and instructional messages that relate to specific hazards and can be provided in the station, on the platform and/or on the train.

Appendix K.4 Safety signs and platform markings are to be positioned so they are:

a) Associated with the hazard referred to.

b) Conspicuous.

c) Far enough from the hazard to allow enough time to take any action needed to avoid the hazard.

d) In the natural line of sight of a person waiting in a typical position, seating on the train or walking a typical route in the station or on the platform.

e) Not obscured, for example, when the platform or train gets busy.

f) Not positioned so that they cause obscuration of signalling equipment or impair the view of dispatch staff.

g) Not in a position where they will impede passenger movement, flow or safety.

Appendix K.5 GIRT7016 Interface between Station Platforms, Tracks and Trains contains mandatory requirements regarding the location of isolated columns used to mount signs and other constraints that need to be taken into consideration when choosing the position of safety signs.

Appendix K.6 The use of a yellow line to control the risk from the aerodynamic effects of passing trains is specified in GIRT7016.

Appendix K.7 Where a yellow line is not required according to GIRT7016, a yellow line can be used to delineate the area at the platform edge where it is not safe to wait or walk. This can assist with the management of passengers by providing a clear indication of the safe platform area. The use of a yellow line for this purpose may be relevant on platforms that tend to get crowded or where passengers are still waiting after a train has departed.

Appendix K.8 If used solely to delineate the edge of the waiting area and not to control aerodynamic risk, the yellow line may be positioned closer to the platform edge than specified in GIRT7016 so that the space available for waiting is maximised and, in crowded situations, passengers are less tempted to use the clear space between the line and the platform edge as a path.

Appendix K.9 The position of the yellow line used to delineate the safe waiting area should not be less than 500 mm from the platform edge.
Appendix K.10 The position of the yellow line used to delineate the safe waiting area from the platform edge will be most effective if passengers are made aware of its meaning and if it is referred to in associated announcements, signs, posters and staff interactions.

Appendix K.11 When determining the position of the yellow line the following can be considered, as part of the risk assessment:

a) The size of the area at the platform edge that is considered to be an unsafe waiting area.
b) The platform width and the amount of space that will be available for waiting.
c) Areas where the platform width is reduced.
d) The expected density of people using the platform.
e) The impact of the platform marking on movement on the platform.
f) Consistency with other platform markings within the station.
g) Platform length.
h) Features that will concentrate people in certain areas such as entrances and exits, platform canopy and retail outlets.
i) Position of the tactile strip (if provided) – guidance on the design of accessible stations is provided in the DfT’s Accessible Train Station Design for Disabled People: A Code of Practice (2010).

Visual design

Appendix K.12 To be effective, safety signs and platform markings need to be eye-catching and readable from the distance they are intended to be viewed.

Appendix K.13 The principles set out in BS EN ISO 7010:2012+A6:2016 can be used to help design signs. BS EN ISO 7010:2012+A6:2016 covers how to use shapes, colours and symbols to create signs with specific meanings. It specifies the use of supplementary signs, including arrows, and the combination of signs. It provides information on the selection of sign sizes. See References on page 72.

Appendix K.14 The design of safety signs and platform markings are to be consistent with the design of other signs and markings used within the relevant environment (for example, station, platform and/or train) to maximise familiarity and comprehension.

Appendix K.15 As far as possible, safety signs and platform markings are to be understood without the need to read text so that people who do not have a full comprehension of English still benefit from them. RSSB (2003) Engineering · Improvements to Safety Signage on Passenger Trains: Guidelines for Symbol Design and Testing contains information on how to design and test new symbols for use on safety signs.

Content and wording


Appendix K.17 Safety signs and platform markings should include three components:

a) Explicit illustration of the hazard.
b) Description of illustration of the impact and severity of potential consequences.
c) Instructions about how to avoid the consequences.

Appendix K.18 An alert word such as ‘danger’, ‘warning’, or ‘caution’ can be used to attract attention to the sign and to give an indication of the severity of the hazard.

Appendix K.19 Examples of alert words that might be used on platform safety signs are ‘Danger’, ‘Warning’, ‘Caution’ and ‘Notice’. ‘Danger’ is perceived to be stronger than ‘Warning’ and ‘Caution’. ‘Notice’ has the lowest perceived strength of these examples.

Appendix K.20 To enhance readability:
a) Use short, concise expressions.
b) Use simple, short and directive words (that is, describe what they need to do) where possible.
c) Use active sentences, for example ‘Stand behind the yellow line’, rather than ‘Standing too close to the edge is dangerous’.
d) Be consistent in word order and use.
e) Where a statement describes a sequence of events, present words in the order of required actions.

Appendix K.21 Avoid:

a) Statements which rely on punctuation.
b) Informal or humorous as this may dilute the meaning and importance of the message.
c) Negative statements.
d) Double or multiple negatives.
e) Qualifying negatives, for example, ‘except’.
f) Vague modifiers, for example ‘many’.
g) Redundant modifiers, for example ‘sufficient’, ‘enough’.
h) Contradictory modifiers, for example ‘quite extreme’.
i) Weak modifiers, for example ‘quite’, ‘rather’, ‘well’, ‘fairly’.
j) Phonetic confusions, for example ‘hear’ versus ‘here’.
k) Common semantic confusions, for example ‘continuously’ versus ‘continually’.
l) Jargon, use plain English where possible.

Appendix K.22 Further information relevant to safety signs and platform markings can be found in References.

Appendix L Staff Training and Assessment

Appendix L.1 This appendix provides guidance to inform the training and assessment of dispatch staff (drivers, guards/conductors and platform staff, specifically in relation to their dispatch duties) and staff who are not responsible for dispatch but have an opportunity to influence passenger behaviour.

Appendix L.2 This information complements existing guidance contained in:

a) Developing and maintaining staff competence: Railway Safety Publication 1’, November 2016; and
b) RS100 Good practice guide on competence development.

Appendix L.3 This appendix provides guidance on:

a) Risk-based training needs analysis.
b) Training and assessment objectives.
c) Methods to train and assess.
d) Incorporating passenger behaviour into training.
e) Non-technical skills.
f) Amending training and assessment in light of change.

Risk-based training needs analysis

Appendix L.4 To identify the required knowledge, technical and non-technical skills as well as the standards of performance expected, a training needs analysis or risk-based training needs analysis can be completed. This can be informed by the risk assessment as well as platform train interface risk data from the RSSB Safety Risk Model (https://www.rssb.co.uk/rail-risk-portal).

Appendix L.6 This analysis can be used to:

a) Prioritise training and assessment requirements.
b) Determine the type and content of training and assessment required to initially develop knowledge, technical and non-technical skills to the required standard.
c) Determine the frequency of refresher training and reassessment to maintain or continually develop the required knowledge, technical and non-technical skills.

Appendix L.7 Knowledge, technical and non-technical skills can be identified and developed for normal, perturbed, degraded and emergency operating conditions as well as special events (a concert or sporting event, for example). This is because risk and associated controls can differ during these conditions, so additional knowledge and skills may be required.

Appendix L.8 The risk-based training needs analysis can help to identify which, if any, safety-critical activities are non-essential for train operation in perturbed, degraded and emergency operating conditions, taking into consideration additional risk that may be introduced through not completing these activities.

Example training and assessment objectives

Appendix L.9 Training and assessment can be used to enable and ensure staff:

a) Understand the definition of the PTI and the risks relevant to the operational context.
b) Are able to effectively respond to a PTI incident.
c) Can recognise behaviour that increases the risk of accidents and effectively intervene. The risk assessment should be used to inform this.
d) Can identify relevant risks and are able to take suitable action to help mitigate these risks.
e) Understand their role and responsibilities in relation to train dispatch and/or influencing passenger behaviour.
f) Understand the contributory factors influencing PTI risk, including the behaviours and decisions of passengers.
g) Help to manage passengers during normal, degraded or emergency operations as well as times of crowding.

Appendix L.10 In addition to this, training and assessment can be used to enable and ensure dispatch staff can:

a) Carry out their dispatch tasks reliably in a systematic way, in line with company procedures, so that the complete area that needs to be checked is considered every time the train safety check is performed. For example, checking the train from front to rear, checking each door portal and the dispatch corridor from front to rear, monitoring during train departure, where possible, and re-starting the process if interrupted.
b) Prioritise train dispatch tasks above other duties, such as ticket collecting or answering questions.
c) Implement alternative methods of dispatch that may be introduced during degraded operations or following dispatch equipment failure.
d) Clearly understand when passengers should be treated as being potentially trapped in train doors and the action that should be taken. In the case of trains with manually closed (slam doors), this training should also clearly define the methods of determining that slam doors are correctly closed before the train starts away from the platform.
e) Clearly understand the possible impact on passenger behaviour when using audible alarms, and potential actions they could take.

Example training and assessment methods

Appendix L.11 Multiple methods of training and assessment can be used. These can include but are not limited to:
a) Classroom based learning and assessment, using activities, exercises and videos.
b) Simulator and/or simulated scenario based training and assessment, covering normal, perturbed, degraded and emergency situations.
c) On-the-job training, coaching and assessment, including peer learning.
d) E-learning and self-directed learning and assessment.

Appendix L.12 The following can also be used to support development and learning:

a) Staff inductions.
b) Safety days, briefings and team talks. This could include the use of RSSB Red DVDs (see https://www.rssb.co.uk/opsweb) as well as company specific DVDs and media.
c) Company articles illustrating examples of where staff have successfully influenced passengers’ decisions and behaviours.
d) Booklets, checklists, procedures, decision-making aids and briefing notes.
e) Feedback, coaching, safety conversations and safety tours.

Understanding passenger behaviour

Appendix L.13 Particular passenger behaviours have the potential to increase risk and can be covered within training, along with example ways to influence behaviour.

Appendix L.14 Examples passenger behaviours include:

a) Intoxicated or under the influence of drugs, for example they may be unsteady on their feet or confused. RSSB has published guidance on managing alcohol risks to personal safety and security on the railway: https://www.rssb.co.uk/Library/improving-industry-performance/2016-09-guidance-managing-alcohol-risks.pdf
b) Impaired, for example, with reduced mobility, sensory and/or visual impairment. This could be supplemented with specific disability awareness training.
c) Not regular users of the railway and/or the station, for example they may be hesitating or looking around as if lost.
d) With suitcases, pushchairs, carrying bikes or other baggage; for example, they may be struggling with luggage, a pushchair or other heavy/awkward baggage.
e) Elderly and/or with children.
f) Part of a mixed group where some people are travelling and some people are not.
g) Waiting, walking or sitting very near the platform edge.
h) Leaning on the train or over the platform edge.
i) Running towards the platform and/or along the platform.
j) Not paying attention to surroundings because of a distraction; for example, a newspaper, phone, tablet or headphones.
k) Trying to get on or off the train too late when the doors are closing.
l) Running or rushing in general.
m) Looking for an item dropped on the track or close to the platform edge.
n) Interfering with the train (for example, banging on the windows, trying to open the doors when they are already locked).
o) Messing around on the platform.
p) Carrying objects above head height (for example, helium balloons, selfie sticks, child on parent’s shoulders, and items allowed by the conditions of carriage).

Non-technical skills

Appendix L.15 Non-technical skills refer to the social, cognitive and personal skills that can enhance task completion. Example non-technical skills that can be developed for staff are set out in Table 3 Example non-
**technical skills for staff** on page 69. Further details can be found in the RSSB project T1064 Developing tools to extend non-technical skills to non-driver roles.

Appendix L.16  Staff can be trained to use techniques such as Risk Triggered Commentary to help them apply these non-technical skills.

<table>
<thead>
<tr>
<th>Non-technical skill category</th>
<th>Example description for dispatch staff</th>
<th>Example description for staff not responsible for dispatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situational awareness</td>
<td>Attention to detail and maintaining concentration during the train safety check, maintaining overall awareness of risks and passenger behaviour on the platform during dispatch</td>
<td>Maintaining overall awareness to be able to recognise passenger behaviours associated with risk at the PTI</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Taking a systemic approach when monitoring and checking doors and following the dispatch procedure each time</td>
<td>Checking that passengers are not putting themselves at risk through their behaviour</td>
</tr>
<tr>
<td>Communication</td>
<td>Clear and correct instructions to staff and passengers during dispatch, including assertive communication when challenging passengers’ unsafe behaviour</td>
<td>Communicating correct customer information, including assertive communication when challenging unsafe passenger behaviour</td>
</tr>
<tr>
<td>Decision making and action</td>
<td>Diagnosing and solving problems, acting in a timely manner and making effective decisions to maintain the safety of passengers during dispatch tasks</td>
<td>Deciding on the correct course of action if a potential risk at the PTI has been spotted</td>
</tr>
<tr>
<td>Co-operation and working with others</td>
<td>Treating passengers with respect, and working with other staff to complete dispatch duties, where applicable</td>
<td>Supporting passengers by providing information and treating them with respect</td>
</tr>
<tr>
<td>Workload management</td>
<td>Prioritising dispatch tasks and staying calm during very busy periods such as peak travel and disruption. Managing periods of low work and the transition from low to high workload</td>
<td>Knowing when to prioritise influencing passenger behaviour over other tasks</td>
</tr>
<tr>
<td>Self-management</td>
<td>Confidence to challenge passengers who are exhibiting unsafe behaviours and maintaining knowledge of techniques to use during dispatch;</td>
<td>Feeling confident and showing initiative to challenge passengers who are exhibiting unsafe behaviours</td>
</tr>
</tbody>
</table>
Table 3: Example non-technical skills for staff

<table>
<thead>
<tr>
<th>Non-technical skill category</th>
<th>Example description for dispatch staff</th>
<th>Example description for staff not responsible for dispatch</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>for example, Risk Triggered Commentary</td>
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</table>

Trainers, assessors and line managers

Appendix L.17 To help staff develop and apply the required knowledge and skill, the knowledge, technical and non-technical skills of relevant trainers, assessors and front-line managers can be developed. This can include, for example:

a) Knowledge of PTI risk and contributory factors influencing PTI risk informed by the risk assessment.

b) Understanding the knowledge and skills required by staff and the standard of performance that is expected of them.

c) Understanding the methods and approaches that can be used to develop, assess and support the application of the required knowledge and skills.

d) Development of their own non-technical skills to enhance their communication and coaching.

Change

Appendix L.18 Training and assessment may need to be amended or provided in line with any changes that may occur, for example, to the dispatch process or locations where staff work. The risk-based training needs analysis, along with the risk assessment and outputs from CSM RA (if applicable) can be used to determine additional training and assessment requirements.

Appendix L.19 Staff are to be trained and competent to undertake new/additional tasks in advance of any implementation.
Definitions

Alert word
A word presented at the beginning of a verbal warning to indicate the level of priority or hazardous nature of the event. Alert words include words such as ‘danger’, ‘warning’ and ‘caution’.

Infrastructure manager
Infrastructure manager, as defined in the Railways and Other Guided Systems Regulations 2006, means an organisation who: a) In relation to infrastructure other than a station, is responsible for developing and maintaining that infrastructure; b) in relation to a station, the organisation who is responsible for managing and operating that station, except that it shall not include any organisation solely on the basis that they carry out the construction of that infrastructure or station or its maintenance, repair or alteration; c) manages and uses that infrastructure or station, or permits it to be used, for the operation of a vehicle.

Railway undertaking
A transport undertaking, as defined in the Railways and Other Guided Systems Regulations 2006, whose safety certification covers operation of trains on the managed infrastructure, as defined in the Railway Group Standards Code.

Test target object
An object used for simulating incidents when testing the train dispatch system or process. Test target objects should be the same as or similar to (and no more difficult than) those that would be expected to be seen during train dispatch. GEGN8560 Guidance on Engineering Requirements for Dispatch of Trains from Platforms provides guidance on suitable test target objects.

Train dispatch process
This encompasses the agreed mode of train dispatch for each class of train and the associated procedures required to implement this mode of dispatch.

Train safety check
The process carried out before giving the ‘ready to start’ signal to the member of train-crew, or starting the train to check that nothing is potentially trapped on the outside of the train and it is safe to start the train. In the case of manually closed doors, the train safety check also checks whether the doors are properly closed.
References

The Catalogue of Railway Group Standards gives the current issue number and status of documents published by RSSB. This information is also available from http://www.rssb.co.uk/railway-group-standards.co.uk.

RGSC 01 Railway Group Standards Code
RGSC 02 Standards Manual

Documents referenced in the text

Railway Group Standards

GERT8000 Rule Book
GERT8000HB16 AC electrified lines
GERT8000HB17 DC electrified lines
GERT8060 Engineering Requirements for Dispatch of Trains from Platforms
GIRT7016 Interface between Station Platforms, Track and Trains
GIRT7033 Lineside Signs
GLRT1210 AC Energy Subsystem and Interfaces to Rolling Stock Subsystem

RSSB Documents

GEGN8560 Guidance on Engineering Requirements for Dispatch of Trains from Platforms
GIGN7616 Guidance note for Interface between Station Platforms, Track and Trains
GLGN1620 Guidance on the Application of the Control of Electromagnetic Fields at Work Regulations
RIS-2703-RST Rail Industry Standard for Driver Only Operated On-Train Camera/Monitor Systems
RIS-3702-TOM Rail Industry Standard for Management of Route Knowledge for Drivers, Train Managers, Guards and Driver Managers
RSSB (2017) Risk associated with train dispatch. Consolidation of current knowledge
RSSB T1065 Identifying and developing good practice for making on-train announcements in the event of an incident: guidance for managers and training material
### Passenger Train Dispatch and Platform Safety Measures

**RSSB T1037**  
Investigation of passenger vehicle footstep positions to reduce stepping distances and gauging constraints

**RSSB T1029**  
Designing a tool to support duty holders in the assessment of platform/train interface risk [http://pti.rssb.co.uk/](http://pti.rssb.co.uk/)

**RSSB (2016)**  
Taking Safe Decisions

**RSSB (2016)**  

**RSSB (2016)**  

**RSSB (2015)**  
The Platform Train Interface Strategy

**RSSB (2015)**  
The Platform Aerodynamic Risk Assessment Tool [https://www.rssb.co.uk/rail-risk-portal](https://www.rssb.co.uk/rail-risk-portal)

**RSSB T535**  
Assessing the impact of increased numbers of CCTV images on driver only operation of trains

**RSSB (2003)**  

**RS/100**  
Good practice guide on competence development

### Other References

**BS EN ISO 7010:2012+A6:2016**  
Graphical symbols. Safety colours and safety signs. Registered safety signs

**Common Safety Method for Risk Evaluation and Assessment (CSM RA)**  
The CSM RA is a framework that describes part of the common mandatory European risk management process for the rail industry

**Department for Transport**  
Accessible Train Station Design for Disabled People: A Code of Practice (2010)

**Health and Safety Executive**  
The Health and Safety Executive [www.hse.gov.uk/msd/manualhandling.htm](http://www.hse.gov.uk/msd/manualhandling.htm) provides guidance in relation to occupational health and safety risk assessment

**Health and Safety Executive**  
Health and Safety at Work etc Act 1974

**Health and Safety Executive**  
The Control of Electromagnetic Fields at Work Regulations 2016

**Health and Safety Executive**  
The Electricity at Work Regulations 1989

**NR L2 TEL 31111**  
Design & Installation Requirements for Driver Only Operation (Passenger)
Office of Rail and Road
Developing and maintaining staff competence: Railway Safety Publication 1, November 2016

The Railway and Other Guided Transport Systems (Safety Regulations) 2006
Regulations introduced to put the requirements of the 2004 European Railway Safety Directive into practice in Great Britain

Other relevant documents

Railway Group Standards

GORT3437
Defective On-Train Equipment

GMRT2111
Rolling Stock Subsystem and Interfaces to AC Energy Subsystem

RSSB Documents

GIGN7633
Guidance on Lineside Signs

GIGN7634
Index for Lineside Signs

RIS-2747-RST
Functioning and Control of Exterior Doors on Passenger Vehicles

RSSB T1064
Developing tools to extend non-technical skills to non-driver roles

RSSB 2014
Working Together. Wheel Chair Good Practice Guide

RSSB 2015 and 2016
Lend a Helping Hand Campaign. See https://www.rssb.co.uk/opsweb

RSSB 2016
The Platform Train Interface Strategy: Technical Report

RSSB 2016
Leading Health and Safety on Britain’s Railway: A Strategy for Working Together

RSSB 2016

RSSB 2016

RSSB 2017

RSSB 2017
Applying Risk Triggered Commentary to Train Dispatch - A staff booklet: https://www.rssb.co.uk/
RS/800 Managing drivers on routes undergoing significant change

T605 Evaluating techniques, including modelling and contingency planning, for managing crowded trains as a result of service disruption, local events or sheer weight of rush hour traffic

T656 Design for Crowd Behaviour

T759 Improving the methods used to provide access to and from trains for wheelchair users

T764 Evaluation of the benefits of yellow lines on non-high speed platforms

T834 Reducing accidents through inclusive design: steps, stairs and ramps

T881 Evaluating wayfinding systems for blind and partially sighted customers at stations

T1035 Evaluating technological solutions to support driver only operation train dispatch

T1054 Evaluating Platform Gap Fillers to Reduce Risk at the Platform/Train Interface

T1057 Investigating the risks posed by luggage to passengers and staff on trains and stations

T1068 Supporting a fair culture - creating appropriate plans after incidents

T1102 Optimising door closure arrangements to improve boarding and alighting

Other References

Office of Rail and Road Railway Safety Principles on Driver Controlled Operation

Office of Rail and Road Goal-setting Principles for Railway Safety (2016)

PRM TSI 2004 Persons with Reduced Mobility Technical Specification for Interoperability

Rail Accident Investigation Branch Occupied wheelchair contacting a passing train at Twyford station 7th April 2016. Report 01/2017

Rail Accident Investigation Branch Passenger trapped and dragged under a train at West Wickham 10 April 2015. Report 03/2016


Transport Research Laboratory Qualitative study of passenger behaviour at the PTI