

Trespass risk assessment

Synopsis

This standard sets out requirements and guidance for conducting, implementing and reviewing trespass risk assessments to help transport operators manage risk, mitigate hazards and improve railway safety and performance relating to trespass.

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Part 1 Purpose and Introduction

1.1 Purpose

- 1.1.1 This document sets out a framework for the trespass risk assessment process. It provides requirements and guidance for conducting, implementing and reviewing trespass risk assessments on the GB mainline railway, offering a consistent approach to help reduce instances and risk of trespass.
- 1.1.2 For the purpose of this standard, trespass is the unauthorised access to prohibited areas of the GB mainline railway which can possibly result in injury, harm to human life, or damage to rail assets.
- 1.1.3 The geographical scope of this standard is limited to the GB mainline railway. However, areas such as yards, depots and sidings present trespass risks and also require a risk assessment. It is recommended that these areas are treated in the same way as other mainline railway locations, and this process is also followed for these locations.
- 1.1.4 Arrangements for responding to trespass incidents, including immediate actions and front-line response, are outside the scope of this standard.
- 1.1.5 The framework laid out in this standard creates a consistent industry approach that aligns with the Common Safety Method for Risk Evaluation and Assessment (CSM RA).
- 1.1.6 The requirements and guidance are consistent with legal obligations set out in the Health and Safety at Work etc Act 1974, The Management of Health and Safety at Work Regulations (MHSWR) 1999, the Occupiers' Liability Act 1984, The Railways and Other Guided Transport System (Safety) Regulations (ROGS) 2006 (as amended), and Railway Safety (Miscellaneous Provisions) Regulations 1997.

Background

- 1.1.7 Trespass incidents have a significant impact on the railway network, the industry and on the public. Trespass carries the risk of serious harm, fatalities, delay and asset damage. There is also the potential for transport operators to face fines and court cases if they have not assessed and mitigated risk from trespass.
- 1.1.8 Several incidents have highlighted the level of trespass on the GB mainline and its negative impact. Transport operators have been fined significant sums for trespass incidents and the resulting harm, when it has been found that they have not implemented control measures to prevent or mitigate trespass or have not adequately assessed trespass risk. Fines issued have been as high as £6.5 million.
- 1.1.9 In 2020, RSSB concluded research project T1183, a cross-industry collaborative project focusing on trespass risk assessment. T1183 identified guidance for good practice across industry, and developed a framework for conducting a trespass risk assessment, for industry use. It is at the request of the Trespass Risk Group (TRG) that this consistent, commonly agreed and universally applicable approach to trespass risk assessment is shared with industry as a Rail Industry Standard.

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Legislation

- 1.1.10 The Occupiers' Liability Act 1984 states the responsibility that the occupier or owner of premises or land has towards any person that is not a permitted visitor of their land or premises. If any forms of danger are identified, the occupier is responsible for acting to prevent access to that danger and reducing the risks of injury to a trespasser. The occupier is required to take reasonable care for the safety of trespassers in relation to risk of injury caused by the state of the premises or the occupiers' omissions.
- 1.1.11 The Railway Safety (Miscellaneous Provisions) Regulations 1997 states that rail operators and infrastructure owners have a responsibility to do everything that is reasonably practicable to prevent crime and reduce risks to members of the public by preventing access to the track, making sure the track is clear of lineside materials (that might tempt theft) and ensuring risks to the travelling public are reduced.
- 1.1.12 The Health and Safety at Work Act 1974 states that it is the responsibility of the employers to not expose anyone on their premises, so far as is reasonably practicable, to health and safety risks. This includes people exposed to risk as a result of unauthorised access to the railway infrastructure.
- 1.1.13 The MHSWR requires employers to carry out suitable and sufficient risk assessments for their workplaces and activities. In addition, it sets out the need to review the risk assessment, record the significant findings (if the duty holder employs more than five persons) and implement measures to mitigate risk to health and safety.
- 1.1.14 ROGS requires duty holders to have a safety management system that ensures the control of all categories of risk associated with existing, new or altered infrastructure and railway operations. In accordance with the MHSWR, ROGS requires that transport operators carry out risk assessments to manage the planning, organisation, control, monitoring and review of risks.

1.2 Application of this document

- 1.2.1 Compliance requirements and dates have not been specified because these are the subject of internal procedures or contract conditions.
- 1.2.2 If you plan to do something that does not comply with a requirement in this RIS, you can ask a Standards Committee to comment on your proposed alternative. If you want a Standards Committee to do this, please submit your deviation application form to RSSB. You can find advice and guidance on using alternative requirements on RSSB's website www.rssb.co.uk.

1.3 Health and safety responsibilities

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

1.4 Structure of this document

- 1.4.1 This document sets out a series of requirements that are sequentially numbered. This document also sets out the rationale for the requirement, explaining why the requirement is needed and its purpose and, where relevant, guidance to support the requirement. The rationale and the guidance are prefixed by the letter 'G'.
- 1.4.2 Some subjects do not have specific requirements but the subject is addressed through guidance only and, where this is the case, it is distinguished under a heading of 'Guidance' and is prefixed by the letter 'G'.

1.5 Approval and authorisation of this document

- 1.5.1 The content of this document will be approved by the Traffic Operation and Management Standards Committee on 28 June 2022 [proposed].
- 1.5.2 This document will be authorised by RSSB on 29 July 2022 [proposed].

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Part 2 Guidance on trespass and risk assessments

2.1 Guidance on trespass

Guidance

- G 2.1.1 For the purpose of this standard, trespass is defined as the unauthorised access to prohibited areas of the GB mainline railway, which can result in injury, harm to human life, or damage to rail assets. Trespass includes but is not limited to:
- a) Accessing the track for purposes, such as:
 - i) fare evasion;
 - ii) crime (including theft, vandalism, graffiti);
 - iii) anti-social behaviour;
 - iv) social or recreational activity;
 - v) convenience (including shortcuts); and
 - vi) to retrieve dropped items.
 - b) Accessing the track at a station, including via station ramps; and
 - c) Entering the railway boundary to gain unauthorised access to rail plant, vehicles or other assets.
- G 2.1.2 In the context of this standard, trespass is not:
- a) Suicidal or pre-suicidal behaviour. However, it does include trespassers who are exhibiting indications of more general mental health issues that may encourage disinhibited and risk-taking behaviour that can lead to trespass. A 'person in crisis' acting for reasons of suicide or self-harm is dealt with differently. However, some parts of the trespass risk assessment may indirectly address elements of risk of harm from suicidal or pre-suicidal behaviour, where that coincides with accessing railway infrastructure.
 - b) Passengers already travelling on a train accessing otherwise unauthorised parts of the train.
 - c) Level crossing misuse, unless the person is using the crossing as an access point into a permanently unauthorised area such as the track.
 - d) Unauthorised access to controlled or secured areas that are not on the operational railway, for example, secured areas in stations, railway buildings or offices.
-

2.2 Guidance on trespass risk assessments

Guidance

- G 2.2.1 The likelihood of trespass events occurring and the severity of these events vary from location to location. Trespass risk assessments help transport operators to determine:
- a) the factors that affect the likelihood and potential severity of trespass events for each location; and
 - b) the controls required to reduce and manage the risk.
- G 2.2.2 The Common Safety Method for Risk Evaluation and Assessment (CSM RA) is a framework for the railway industry to follow a common risk management process,

where there is a significant change. However, the CSM RA's structure and content may assist transport operators in conducting their trespass risk assessments and, more generally, as part of the overall trespass management strategy.

G 2.2.3 The ORR Guidance on the Application of CSM RA (2018) and GEGN8646 provide guidance on the application of CSM RA.

G 2.2.4 RSSB's 'Taking Safe Decisions' helps organisations take safety into account when making decisions. It describes how to make rational, equitable and defensible decisions. In addition, it provides guidance on applying proportionality to the risk assessment process, so that the time, cost and extent of the assessment is in proportion to the risks in the system and potential risk control costs.

G 2.2.5 Figure 1 illustrates the process for undertaking a trespass risk assessment.

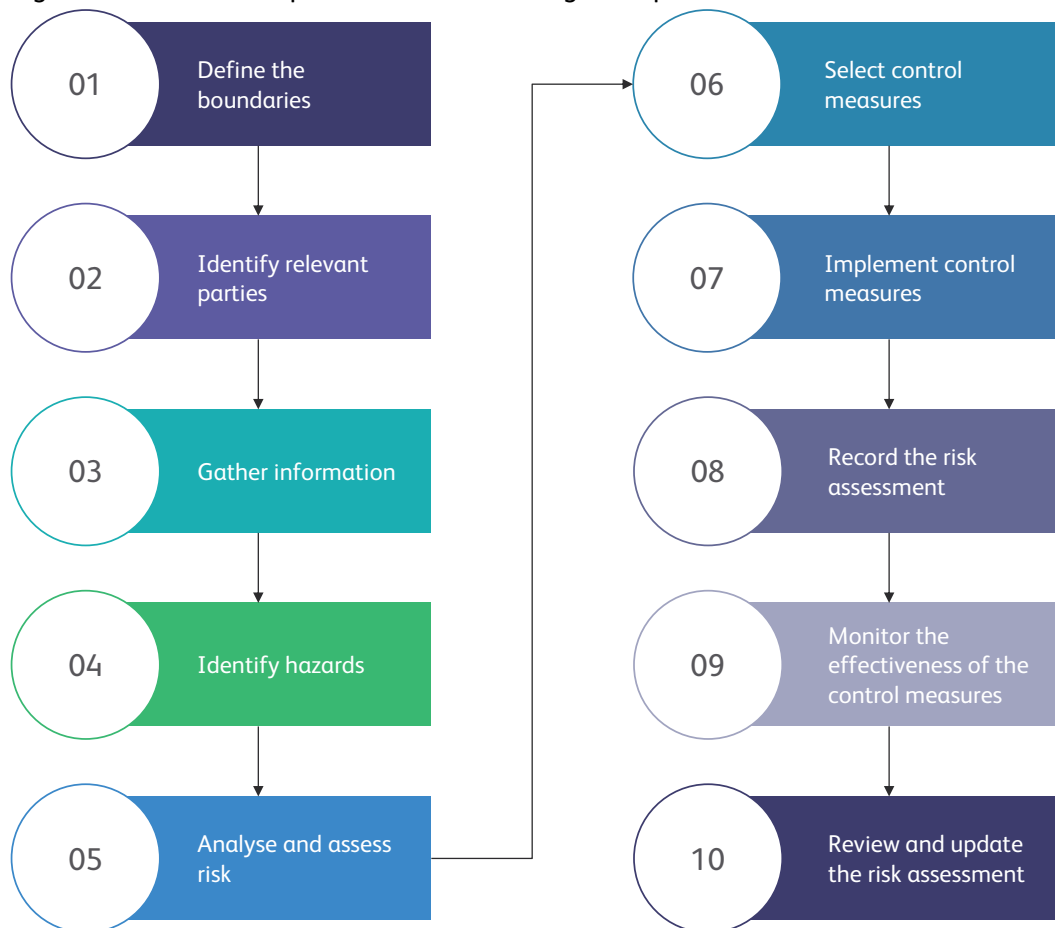


Figure 1: The trespass risk assessment process

Trespass risk assessment

Part 3 The trespass risk assessment process

3.1 Trespass risk assessments

- 3.1.1 Transport operators shall have trespass risk assessments in place to cover all areas of the railway network for which they are responsible.

Rationale

- G 3.1.2 This requirement helps transport operators meet their legal obligations under MHSWR and ROGS. These regulations require transport operators to carry out risk assessments to manage the planning, organisation, control, monitoring and review of risks.
- G 3.1.3 Trespass risk assessments enable transport operators to identify areas of risk, implement suitable controls and prevent and mitigate trespass effectively.
- G 3.1.4 In addition, trespass risk assessments help prevent harm by identifying aspects of potential trespass risk. Insufficient, inappropriate, or non-existent trespass risk assessments can have fatal consequences, if the full scope of the risk has not been assessed and sufficiently controlled. Adopting a consistent industry process for risk assessing trespass decreases trespass risk, and reduces associated harm, delay and financial impact. Reducing trespass also helps to reduce other forms of crime on the railway, for example theft and vandalism, which also impact on safety and performance.

Guidance

- G 3.1.5 A Guide to ROGS (2021), Section 4, contains guidance and information on conducting risk assessments on the railway, including:
- a) The purpose and process of risk assessments;
 - b) Specific requirements; and
 - c) Guidance on what 'suitable and sufficient' means in the context of risk assessments, and how this concept can be applied.
- G 3.1.6 RSSB's Good Practice Guide to Assessing Trespass Risk (2020) contains guidance on how to undertake a trespass risk assessment, including the stages, detailed inputs, methods for evaluating and scoring risks, and example control measures.

Guidance on areas of high-risk potential

- G 3.1.7 It is good practice for transport operators to carry out specific trespass risk assessments for areas with a higher risk potential, which may include areas with specific characteristics that present an increased risk of trespass.
- G 3.1.8 An area of higher risk potential could be one with identified incident hotspots, high footfall stations, or significant electrical risk. There may also be areas where there are more unique characteristics present that require specific focus and attention, for example, an access point for possessions that regularly has equipment drop-offs and rail plant stabled near the railway boundary. Locations such as yards, depots and

sidings are also likely to have higher trespass risk, therefore warranting specific risk assessments.

3.2 Define the boundaries

- 3.2.1 The lead transport operator shall define the boundaries of the trespass risk assessment.
- 3.2.2 The transport operator that controls the main boundary and a significant part of the potential control and mitigation measures to prevent trespass shall lead the trespass risk assessment process.

Rationale

- G 3.2.3 Defining the boundaries of the trespass risk assessments help transport operators:
 - a) determine the scope of the assessment: and
 - b) identify other relevant parties that will take part in the assessment.
- G 3.2.4 Assigning a lead means that a transport operator is accountable for the overall process and that actions take place, including the actions to implement the trespass risk assessment and its monitoring thereafter. Without a clear lead the trespass risk assessment process is less likely to be effective and successful.

Guidance on the boundaries of the assessment

- G 3.2.5 Transport operators use their judgement, based on evidence and information, to determine the area, boundaries and scope of each risk assessment. For example, a trespass risk assessment may cover a line of route incorporating a number of stations, if the area has a similar risk profile throughout and all risks are assessed.
- G 3.2.6 It is good practice to check the boundaries of all surrounding and adjacent trespass risk assessments, to prevent having inadvertent gaps in the geographical area covered by the risk assessment.

Guidance on who leads the assessment

- G 3.2.7 The lead transport operator is the one that controls the main boundary and the significant part of the potential control and mitigation measures. For example, for a normal stretch of track on the GB mainline railway, this is likely to be the infrastructure manager. For a trespass risk assessment specific to the limits of a major station, then the lead is the station facility owner (SFO).
- G 3.2.8 When the assessment is initiated due to a proposed change (see Appendix A), the proposer of the change may be best placed to lead the assessment in relation to the risks associated with that specific change. However if the change proposer is not a transport operator, they may not have the requisite knowledge and information to carry out an effective trespass risk assessment. In this case, it is good practice that the lead is as in clause G 3.2.7, and the change proposer is involved as a key relevant party.

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Guidance on the lead assessor's experience

- G 3.2.9 It is good practice for the assessor with lead responsibility for managing the trespass risk assessment to have experience and knowledge of:
- a) Conducting risk assessments;
 - b) The process and methods in the CSM RA;
 - c) The area covered by the assessment; and
 - d) Railway trespass management and prevention.
- G 3.2.10 If the lead assessor does not have risk assessment experience, it is good practice to have a risk specialist supporting with the technical risk elements.

3.3 Identify relevant parties

- 3.3.1 To undertake the trespass risk assessment, the lead transport operator shall identify relevant parties and collaborate with them.
- 3.3.2 The lead transport operator shall agree with the relevant parties the arrangements for managing the risk assessment process.

Rationale

- G 3.3.3 ROGS places a duty on transport operators to cooperate and agree procedures for working in collaboration.
- G 3.3.4 Collaboration with relevant parties and the adoption of a joint approach leads to an informed and universally accepted trespass risk assessment. This enables the identification of common hazards and helps determine suitable mitigations and controls that can be implemented jointly. It also supports a cost-effective trespass mitigation strategy and promotes cross-industry collaboration to tackle trespass risk.

Guidance on identifying relevant parties

- G 3.3.5 The trespass risk assessment boundary helps identify relevant parties. As a minimum, it is good practice to involve representatives from the following organisations who operate within the boundary of the risk assessment:
- a) Infrastructure managers;
 - b) Station Facility Owners (SFOs); and
 - c) Train and freight operators who run services within the boundary area.
- G 3.3.6 Other relevant stakeholders that can contribute to and support the risk assessment include:
- a) The British Transport Police;
 - b) Local security patrol representatives or contractors;
 - c) Infrastructure contractors;
 - d) External stakeholders. For example, key railway neighbours, such as the headteacher of a school that borders the railway boundary, where the school children have been identified as a high-risk trespass group;
 - e) Transport operators who manage stations, depots or sidings within or bordering the area;

- f) Level crossing managers; and
- g) Distribution Network Operators, in locations where power is provided for the railway. For example, where substations or similar facilities are within the boundaries of the assessment.

Guidance on agreed arrangements for managing the risk assessment process

- G 3.3.7 Once relevant parties have been identified, the lead assessor agrees with them all arrangements for managing the trespass risk assessment process. This includes:
- a) Allocating accountabilities and responsibilities within the risk assessment process;
 - b) Deciding how representatives will contribute to and support the risk assessment;
 - c) When and how the risk assessment will be undertaken;
 - d) What information is required and who will support with its provision; and
 - e) What methods will be used for risk identification, analysis and evaluation.

Guidance on the knowledge and experience to undertake the risk assessment

- G 3.3.8 A trespass risk assessment benefits from the combined knowledge, experience and understanding of the area being assessed, its features and the operational context. It is good practice to have representatives who have this relevant and local knowledge involved in the risk assessment. This includes knowledge and understanding of:
- a) The infrastructure: for example, track layout, electrification, assets, depots and sidings, running lines.
 - b) The train service: frequency, speed, train types.
 - c) Stations: platforms, stopping patterns and footfall patterns.
 - d) Access: location of key access points, and any common unauthorised access points that are known about.
 - e) The surrounding land: its usage, boundaries, population density, and interfaces between railway land and other stakeholders.
 - f) The location of other buildings or structures that might be appealing for trespass destinations, either on track or by the boundary: for example, sheds, derelict buildings, radio masts, or disused signal boxes.
 - g) Local area knowledge: for example: shortcuts, hangouts, graffiti hotspots.
 - h) The history of the location and any trespass incident event information.
 - i) The current monitoring situation: for example, station staffing resourcing, presence and timing of track patrols, existence of CCTV, and any other applicable security patrol information.
 - j) Influencing passenger and staff behaviour.
 - k) Human factors: for example, to understand the motivations behind trespass, and therefore likely trespass types in each area.

3.4 Gather information

- 3.4.1 Transport operators shall gather information relevant to the features of the rail site within the boundaries of the trespass risk assessment and its surrounding areas.

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Rationale

- G 3.4.2 An effective trespass risk assessment is informed by accurate, up to date and relevant information relating to the area, in order to identify the trespass hazards and risks.

Guidance

- G 3.4.3 The features of the rail site and its surrounding areas inform the trespass risk assessment. Sources that can provide that information include track diagrams, control logs and the railway's safety management system. Other illustrative sources of information include photographs, diagrams, drawings, track layouts and site visit evidence.

- G 3.4.4 Information on relevant rail features, surrounding land and event information include:

a) Infrastructure and assets:

- i) Track layout;
- ii) Line speeds, train types, train frequency;
- iii) Electrification type (if present): overhead or conductor rail;
- iv) Level crossings: location and type;
- v) Geography of site: visibility, vegetation, cuttings, embankments;
- vi) Stations: including footfall, train timetable and staffing;
- vii) Signalling assets, structures and radio masts;
- viii) Nearest permanent staff locations and staffing levels: for example, to understand where locations are where monitoring and real-time reporting is possible;
- ix) Bridges or parapets: location and heights; and
- x) Specific elements, characteristics or features within the rail boundary: for example, a regular possession site, locations that may be attractive to graffiti artists or disused signal boxes.

b) Access information:

- i) Boundary information: fencing;
- ii) All access gates; and
- iii) Other identified trespass access points.

c) Surrounding area:

- i) Types of surrounding land use;
- ii) Specifics of key buildings and locations, for example, schools, hospitals;
- iii) Known shortcuts; and
- iv) Any other relevant characteristics or assets: for example, disused buildings.

d) Incident information:

- i) Previous incidents of recorded trespass;
- ii) Incident data recorded as other incident types, for example vandalism or theft;
- iii) Reported information on trespass incidents that have not made it to an official log, but have for example made local news or been reported through other unofficial means such as social media reports;

- iv) Delay information as a result of trespass; and
 - v) Historic prosecution information.
-

3.5 Identify hazards

- 3.5.1 Transport operators shall identify the hazards relevant to the scope of the risk assessment that could import trespass risk.

Rationale

- G 3.5.2 Identifying the relevant and contributory factors to trespass help transport operators determine the overall trespass risk.

Guidance

- G 3.5.3 Transport operators use the information gathered as part of requirement [3.4](#) to identify the trespass hazards.
- G 3.5.4 It is good practice to conduct a trespass HAZID (hazard identification) exercise. This is a qualitative technique for the identification of hazards and threats that may cause death or injury. Information and guidance on the structure, template and purpose of the trespass HAZID can be found in RSSB's Good Practice Guide to Assessing Trespass Risk (2020).
-

Guidance on types of trespass

- G 3.5.5 Understanding the possible motivations and reasons behind trespass in different locations helps identify trespass hazards. In addition, by identifying the type of trespass that might occur, transport operators can also determine effective mitigations. Therefore, it is good practice to understand the area's socio-demographics. For example, a surrounding population with a high percentage of school-aged children with limited other recreational opportunities or the existence of known hangout sites or attractive sites for graffiti.

Guidance on existing basic trespass mitigation measures

- G 3.5.6 When identifying hazards, it is good practice to ascertain the basic existing trespass control measures already in place and whether they are effective and functioning as intended. If they are not performing as intended, they could be hazards. For example, a boundary fence that may not be as robust or that is damaged could allow trespassers easy access. A list of these basic control measures is included in clause [G 3.10.7](#).

3.6 Analyse and assess risk

- 3.6.1 Transport operators shall analyse and assess the trespass risk associated with the hazards identified.

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Rationale

- G 3.6.2 This requirement helps determine the likelihood and severity of incidents, providing information on consequence of trespass.

Guidance

- G 3.6.3 Assessing risk levels can be done via quantitative estimation or qualitative means. Quantitative estimation uses numerical data on incident frequency and consequence to estimate the risk of future events. Qualitative risk rating uses data and information to inform the rating of factors. The risk rating ranges from 'very low' to 'very high'. It is good practice to use a combination of both methods, as this is most effective for understanding trespass risk.
- G 3.6.4 The RSSB website provides guidance on quantified risk estimation and risk rating for trespass risk analysis.
- G 3.6.5 RSSB's Good Practice Guide to Assessing Trespass Risk (2020) contains guidance on analysing and assessing risks, including on quantitative risk estimation. Table 1 in the document provides context for trespass frequency, using the FUSION database to inform on parameters of 'very high' to 'very low' trespass frequency. It also provides guidance on understanding what is acceptable risk and whether it has been sufficiently reduced.
- G 3.6.6 CSM RA provides principles on risk acceptability of the system under assessment.
- G 3.6.7 It is good practice to carry out further analysis if there are indications of a higher trespass risk. For example:
- a) A history of trespass events occurring.
 - b) Appeal of theft: including cable, other metal, plant, technology, diesel fuel - for example, from on-track plant (OTP). Assets or locations where this is a particular risk might require specific focus, such as substations, or areas where plant or vehicles are left for some time or overnight.
 - c) Hangout and recreation: for example, disused signal boxes or buildings that offer a draw as a 'hangout' location, structures or areas appealing as graffiti locations, or locations for hideouts post-crime.
 - d) Crime: locations where there are high levels of crime in the surrounding area.
 - e) Population: a younger population demographic might suggest a higher trespass risk.
 - f) Schools: presence in surrounding land of schools, especially where age groups pose a trespass risk. For example, a senior school where there is a culture of hanging out on the railway, or a station that significant numbers of schoolchildren use to get to and from school.
 - g) Monitoring ability: secluded areas where passers-by, witnesses, patrollers, railway staff or others are very unlikely to see trespass occurring, and therefore less able to report and prevent at the time.
 - h) Possessions: possession access sites, or where plant is regularly stabled either adjacent to the boundary fences (offering potential access) or where rail plant stabled within the boundaries presents an appealing destination for trespass for purposes of recreation or theft. This includes access for possessions importing a

risk via the security measures for locked gates, or where a number of different parties have access to the keys.

- i) Access: for example, possible access from bridges, parapets, roofs or similar onto the railway.
- j) Older or less effective fencing creating weak spots in the boundary resilience.
- k) Hotspots for possible mental health related trespass issues, such as proximity to a mental health treatment facility.
- l) High-consequence trespass areas, such as those with high-speed rail, electrification risk, poor visibility, or difficult egress.
- m) Where reports, warnings or local knowledge have identified that trespass has occurred, or trespass would be possible, even if no specific events have been witnessed or recorded in official logs.

3.7 Select control measures

- 3.7.1 Transport operators shall select control measures to mitigate the identified trespass risks.

Rationale

- G 3.7.2 This requirement helps transport operators meet their legal obligations under ROGS by putting mitigation measures in place to address risks or changes that affect the risk assessment.
- G 3.7.3 Trespass risk controls help mitigate the likelihood and severity of trespass events, reducing the potential for harm. Selecting controls allows the targeting of the specific trespass risk, and therefore effective mitigation.

Guidance on risk control measures

- G 3.7.4 The principle for selecting control measure is to identify those that help reduce trespass risk 'As Low As is Reasonably Practicable' (ALARP). Applying the principle of ALARP to risk control measures helps to identify whether the proposed controls are suitable.
- G 3.7.5 The RSSB website has tools and methods on risk reduction to identify and decide on trespass risk controls and whether these will reduce risk. Other relevant documents include RSSB's Evaluating Effectiveness of Trespass Detection and Prevention Methods T1168 (2020).
- G 3.7.6 RSSB's Trespass Interventions Framework T1168 (2020), provides guidance on the match of risk controls to types and motivations for trespass, the effectiveness of interventions and their suitability.
- G 3.7.7 The RSSB website provides an industry trespass bowtie, illustrating the relationship between risk controls or safety barriers and the hazards they intend to prevent or mitigate, including a detailed risk analysis for the bowtie.
- G 3.7.8 Similar rail sites to those being assessed, where control measures are already in place, can provide an insight into available control measures. For example, how the implemented control measures have reduced trespass incidents. The risk controls

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implemented in high-risk locations such as in modern and new-built stations can provide a reference point.

G 3.7.9 Methods to inform the approach to risk controls and mitigations include:

- a) Hierarchy of risk control principles: Eliminate, reduce, inform, control (ERIC).
- b) The Four 'E's: interventions can be thought of as Engineering, Enabling, Enforcement and Education.

G 3.7.10 Table 1 maps trespass risk controls from RSSB's Trespass Interventions Framework T1168 (2020) to the ERIC hierarchy, and to the four 'E's to demonstrate some possible control measures and how these would fit in each level of the hierarchy.

Hierarchy	Example interventions	4 'E's
Eliminate the hazard	Mid platform fencing	Engineering
Eliminate the hazard	Trackside fencing	Engineering
Eliminate the hazard	Anti-climb measures	Engineering
Reduce the risk	Platform and gates	Engineering
Reduce the risk	Static CCTV	Enabling
Reduce the risk	Station Staff	Enabling
Inform and influence people	School education	Education
Inform and influence people	Warning signs	Enabling
Inform and influence people	Posters	Education
Control measures for residual risk	Yellow warning signs / hatchings	Engineering
Control measures for residual risk	Engaging local action groups	Enabling
Control measures for residual risk	Targeting at risk groups	Education

Table 1: Risk controls matrix

Guidance on proportionality and suitability of risk controls

G 3.7.11 Applying proportionality principles supports the development of practical and cost-effective mitigation measures, where the cost is not grossly disproportionate to the benefit. This allows effective targeting of control measures where these are most beneficial.

G 3.7.12 The RSSB website provides guidance on how to carry out a cost benefit analysis, to ascertain how the cost of the risk control compares to its safety benefits.

- G 3.7.13 RSSB's Good Practice Guide to Assessing Trespass Risk (2020) contains guidance on how to conduct a cost benefit analysis for trespass risk controls.
- G 3.7.14 Transport operators implement risk controls, where they deem them to be proportionate, suitable and sufficient to reduce and mitigate risk to an acceptable level.
- G 3.7.15 Other factors include:
- a) Availability of risk reduction options;
 - b) Local feasibility; and
 - c) Social considerations.
- G 3.7.16 When implementing risk controls, and assessing their impact on risk, to reduce it to an acceptable level, transport operators analyse and justify the controls with reference to the following:
- a) Application of standards;
 - b) Comparison to a reference system;
 - c) A judgement of whether the level of risk control is proportionate;
 - d) The re-application of the risk rating scheme after identifying additional risk controls;
 - e) An assessment of the risk of death in terms of whether this is as low as reasonably practicable (ALARP); and
 - f) A comparison of the net costs of additional risk controls against the estimated value of safety improvements.
- G 3.7.17 It is good practice to assess the extent to which proposed risk controls may introduce risk not relating to trespass and the impact this could have on proposed safety benefits.

3.8 Implement control measures

- 3.8.1 Transport operators shall implement the trespass control measures selected to mitigate trespass risk.

Rationale

- G 3.8.2 Implementing risk controls enables transport operators to fulfil their legal obligations under Reg 19 (5) of ROGS to control and mitigate trespass risk.

Guidance

- G 3.8.3 It is good practice for transport operators to agree and assign responsibilities for the implementation and ownership of trespass control measures.
- G 3.8.4 The owner of the risk control may be:
- a) The organisation or individual that has implemented the control measure;
 - b) The organisation or individual that owns the point of unauthorised access;
 - c) The owner of the property where the harm may occur; or

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- d) The owner of land through which a trespasser may travel from the point of access to a place of harm.
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3.9 Record the risk assessment

3.9.1 The lead transport operator shall record details of the trespass risk assessment, which includes as a minimum:

- a) The reason why the assessment was initiated;
- b) The organisations involved, and the agreed responsibilities for managing the risk assessment process.
- c) Relevant site information;
- d) Results of the assessment, including:
 - i) Identified risk factors and hazards;
 - ii) Risk analysis scores and rationale for decisions;
 - iii) Agreed mitigation and control measures, their owners, and rationale for decisions; and
 - iv) Where no risk control measures are recommended, the rationale for this decision.
- e) The next review date; and
- f) The lead transport operator shall share the risk assessment with the relevant stakeholders.

3.9.2 The lead transport operator shall share the risk assessment record with the relevant parties.

Rationale

G 3.9.3 Recording the details of the trespass risk assessment help transport operators meet their legal obligations under Regulation 19(4) of ROGS.

G 3.9.4 This provides a record of the assessment process, what decisions were made and why, which includes the risk acceptance decision, risk controls to be implemented, and the rationale for these. These records can act as 'corporate memory' to support future reviews and assessments, by noting the context of previous decisions and information. Records are also valuable if different people carry out future reviews or trespass risk assessments.

G 3.9.5 Sharing and making the outcomes of the risk assessment available supports monitoring, as it provides information for comparison and monitoring of any changes and their effectiveness.

Guidance

G 3.9.6 Appendix B shows examples of what type of information is included in the trespass risk assessment record.

G 3.9.7 The lead transport operator has overall control and responsibility for keeping the records secure and accessible to those who require access to them.

- G 3.9.8 RSSB's Good Practice Guide to Assessing Trespass Risk (2020) contains a detailed example structure for a risk assessment report.
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3.10 Monitor the effectiveness of the control measures

- 3.10.1 Transport operators shall monitor and assess the effectiveness of the control measures implemented as part of the trespass risk assessment.

Rationale

- G 3.10.2 Effective monitoring of control measures helps determine the extent to which trespass risk is being managed and mitigated, and the efficacy of the measures implemented.
- G 3.10.3 Assessing monitoring outcomes allows transport operators to identify areas for improvement – including if residual risk could be reduced further through the implementation of additional controls – to inform action plans and business cases to address improvement areas.
- G 3.10.4 Monitoring supports the regular trespass risk assessment review process by providing quantifiable and qualitative information to the reviewers.

Guidance

- G 3.10.5 Monitoring includes the extent to which the processes and measures from the trespass risk assessment:
- a) are working as intended to prevent trespass effectively;
 - b) are being implemented by staff, including resourcing required in comparison with resources applied; and
 - c) have introduced new risks through implementation that need to be assessed and controlled.
- G 3.10.6 To support effective monitoring, transport operators gather up to date, relevant information and event data on the effectiveness of the measures implemented. Sources of information that can be used for monitoring purposes include:
- a) National Disruption Fusion Unit (NDFU): Fusion database;
 - b) TRUST: Network Rail data collected for delay attribution;
 - c) SMIS: nationwide rail database for recording the rail industry's safety-related events;
 - d) Control Centre Incident Log (CCIL): Network Rail daily incident managing and logging tool;
 - e) Confidential Incident Reporting and Analysis Service (CIRAS);
 - f) Close call system information;
 - g) Publication of industry guidance and research, for example, by RSSB, Rail Delivery Group (RDG), trade unions or the UK Rail Research and Innovation Network (UKRRIN);
 - h) Outputs and good practice shared at the Train Accident Risk Group (TARG) and local safety groups (for example, Operations Risk and Mitigation Groups, also known as OpsRAMs), which may have insights on the results from risk assessments

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and monitoring activity of parts of other parts of the railway with similar characteristics and risks to those being monitored; and

- i) Investigation reports such as those produced by the Rail Accident Investigation Branch (RAIB), the Office of Rail and Road (ORR) or internal to the transport operator.

G 3.10.7 Monitoring includes checking basic trespass mitigation measures that are already in place, including those not specifically implemented as a result of a trespass risk assessment. For example:

- a) Boundary fencing: checking its integrity and effectiveness, maintenance and monitoring schedules, and the effectiveness of any repairs to these.
- b) Access points: checking if gates are correctly secured, locked with the correct padlock, and that arrangements around key management and access privileges are correct and robust.
- c) Possession arrangements: checking arrangements for possessions or on-track plant access points are suitable and robust, that access gates are not left open, unattended or unsecured, particularly when used for equipment drop offs.
- d) Checking the existence and visibility of correct warning signage, particularly in those areas with electrification risk and associated signage.
- e) Correct operation of closed-circuit television (CCTV) or monitoring technology: if present, that it is operating correctly, correctly located, and there are sufficient staff to monitor output.
- f) Heights of bridges or parapets and therefore access potential.
- g) Reporting systems: checking the process for reporting, recording, and acting on incidents of trespass is clear, robust, understood and workable.
- h) Stabled trains: checking the procedure and location of any stabled trains such that they are not posing a particular appeal for trespass purposes, or allow access to overhead electrified lines.
- i) Plant: checking the arrangements and location of stabled plant, that they are not left unattended for longer than necessary, that plant is not in a position outside the railway boundary where it could provide an access route via climbing on the plant, and that they are not positioned so as to allow access to overhead electrified lines.

3.11 Review and update the risk assessment

3.11.1 Transport operators shall:

- a) agree the next scheduled review date for the trespass risk assessment; and
- b) review the trespass risk assessment on or before the agreed scheduled review date.

3.11.2 Transport operators shall review their trespass risk assessment when:

- a) A change is introduced to, or within, the boundaries of the trespass risk assessment that may affect its outcomes;
- b) A recent significant trespass incident, or multiple, more minor incidents, have highlighted a weakness in the existing control measures;
- c) New information, equipment, technology, or strategies becomes available;

- d) When monitoring arrangements indicate an urgent review is required; or
- e) There is a significant change to neighbouring land use or socio-demographics.

Rationale

- G 3.11.3 These requirements help transport operators meet their legal obligations under Regulation 19 (2) and (3) of ROGS, which requires risk assessments to be reviewed.
- G 3.11.4 Risk assessments are relevant to the time and date they were conducted. The purpose of regular reviews is to keep effective mitigation and control measures. The review helps determine:
 - a) If the identified control measures manage the existing risks;
 - b) If existing processes and measures to manage the trespass risks, as planned, are appropriate;
 - c) If additional controls are required; and
 - d) The extent of assessment required to identify and inform changes to existing controls, or the development and implementation of additional controls.
- G 3.11.5 The existence of trigger criteria demonstrates that something has changed, and therefore the original trespass risk assessment is no longer valid and up to date. There may be increased or new risks or new developments or information to be assessed and mitigated against.

Guidance

- G 3.11.6 The review can be initiated by any of the relevant parties involved in trespass risk assessment.
 - G 3.11.7 Where the review indicates that the current risk assessment remains valid, a new review date is agreed upon and recorded, along with the evidence to justify the decision.
 - G 3.11.8 The arrangements for review include:
 - a) Reasons and 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, including decisions made, and subsequent actions taken; and
 - f) The storage, communication, implementation and evaluation of results, analysis, decisions and actions.
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Appendices

Appendix A Criteria for a targeted risk assessment

- A.1 This appendix details criteria and situations that may indicate to transport operators that they may need to conduct a more targeted risk assessment or that an existing risk assessment requires review due to changes or developments.

Problem led

- A.2 Where incident evidence, specific site characteristics or use indicates there may be a high trespass risk, requiring a specific risk assessment to address these issues in depth. Examples:

- a) The frequency of trespass incidents suggesting the existence of a hotspot. Table 1 in T1183 'Good practice guide to assessing trespass risk' contains guidance on what might suggest an increased frequency of trespass.
- b) A high-risk incident occurring that suggests a weakness in the trespass management system, and the potential for another high-risk incident.
- c) Identification of a high-risk location, for example, a disused signal box that has been identified as a desirable location for unauthorised access and therefore trespass.
- d) Recent reports or information suggesting the occurrence of previously unnoticed trespass events, that indicate a problem exists that has not previously been noticed.
- e) Presence of an access point for possessions, and the stabling of rail plant either by a boundary fence or on the track.
- f) Areas with overhead line equipment (OLE), third rail system or any other risk of electrical injury.

Solution led

- A.3 Where the availability of new technology, equipment (including infrastructure) or research leads to an assessment of where these measures can be implemented as a trespass risk control. Examples:

- a) Technology that can help mitigate, detect or prevent trespass, such as a new type of more accurate surveillance systems, or automated technology that can detect trespass.
- b) Infrastructure, such as strengthened fencing, end of platform technology, or clearer signage.
- c) Research, such as information that identifies new or different methods for trespass prevention or highlights different risk areas not previously considered.

Change or development led

- A.4 Where any change to the infrastructure, location, surrounding assets, or surrounding land use may lead to a change in trespass risk. Examples:

- a) New infrastructure, such as a new station, depot, siding, substation or running line.

- b) Refurbished or upgraded assets or infrastructure, such as a station, route, depot, siding or running line.
- c) Removal of assets or infrastructure, such as the removal of a level crossing or closure of a station.
- d) Rail traffic changes, such as an increase in train frequency or an increase in line speed. This could indicate the potential for higher consequences for trespass incidents, and therefore an impact on the overall risk level.
- e) A change in adjacent land use, for example a new school or new housing developments.
- f) Security measures, for example, changes in local station staffing or frequency of security patrols.

Strategy led

A.5 Where a strategy for continuous improvement highlights the need to review existing trespass risk assessments. Examples:

- a) Development or alteration of national or organisational trespass prevention strategies.
- b) Development of action plans for a specific location or route.

Temporary risk assessment

A.6 There may be circumstances where it is beneficial to conduct a trespass risk assessment that will be in place for the duration of a temporary change. Examples:

- a) Roadworks with temporary road traffic diversions, creating associated increased pedestrian trespass risk at a railway location for the duration of the works.
- b) The running of a heritage train, which is importing specific trespass risk on its route, as people want to be able to see it.
- c) Building work occurring on adjacent land to the railway, where the potential for access via scaffolding has been introduced and requires consideration and mitigation.

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Appendix B Trespass risk assessment records

B.1 Examples of what type of information is included in the risk assessment record.

Content requirements	Example content includes
Why the risk assessment was initiated.	<p>Details and an explanation on what prompted this specific assessment to be undertaken, for example:</p> <ul style="list-style-type: none"> a) As part of the regular review process. b) New information leading to a review, including details of this information. c) A change to railway infrastructure or local area land use requiring a more specific assessment, including details of this change.
Relevant stakeholder organisations and agreed responsibilities.	<ul style="list-style-type: none"> a) Which organisations were identified as interested parties. b) Which organisation was identified as having lead responsibility, and why this was decided. c) Which organisations contributed to the risk assessment, and in what capacity. <p>It is additionally useful to include details of:</p> <ul style="list-style-type: none"> a) The roles or positions that the contributors hold. For example, Station Manager, Safety Manager. b) The names and contact details of those who were directly involved and contributed to the risk assessment. Any information of this nature is retained in line with the General Data Protection Regulations (GDPR) legal requirements.
Site information.	<ul style="list-style-type: none"> a) Key infrastructure and rail features. b) Access points. c) Surrounding area information. d) Local socio-demographics. <p>This may also include any diagrams or photographs gathered; however, these may be better placed in an Appendix.</p>

Content requirements	Example content includes
Risk factors and analysis scores.	<ul style="list-style-type: none"> a) Full description of the risks identified and assessed. b) What method was used to evaluate risks and the contributory factors considered. c) Effectiveness of existing control measures. d) Explanation for evaluation results and why the risk level was accepted, or if not, why it was not.
Risk controls.	<ul style="list-style-type: none"> a) Risk controls that were considered, and their estimated effectiveness. b) Detail of the controls chosen to be implemented, and their location, including rationale for this. c) Details of controls either not chosen to be implemented including the rationale for this. d) Details of implementation plan and control owner. e) Justifications for the acceptance of the resultant level of risk, as shown in section 3.6.
Next required review date.	The rationale for why the specified review date was chosen, and why this is appropriate, with reference to the risk level identified.

Table 2: Records of a trespass risk assessment

Trespass risk assessment

Definitions

hazard	A condition that could lead to an accident. Source: <i>CSM RA</i>
hazard identification (HAZID)	The process of finding, listing and characterising hazards. Source: <i>CSM RA</i>
infrastructure manager (IM)	Has the meaning given to it in the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended), but is limited to those infrastructure managers who hold a safety authorisation issued in respect of the mainline railway. Source: <i>ROGS</i>
railway undertaking (RU)	Has the meaning given to the term 'transport undertaking' in the Railways and Other Guided Transport Systems (Safety) Regulations 2006 as amended, but is limited to any private or public undertaking the principal business of which is to provide rail transport services for goods and/or passengers, with a requirement that the undertaking must ensure traction. Source: <i>ROGS</i>
risk	The combination of the likelihood of occurrence of harm and the severity of that harm (specifically defined in <i>CSM RA</i> regulation as: the frequency of occurrence of accidents and incidents resulting in harm (caused by a hazard) and the degree of severity of that harm).
risk acceptance criteria	The terms of reference by which the acceptability of a specific risk is assessed; these criteria are used to determine that the level of a risk is sufficiently low that it is not necessary to take any immediate action to reduce it further. Source: <i>CSM RA</i>
risk analysis	The systematic use of all available information to identify hazards and to estimate the risk. Source: <i>CSM RA</i>
risk assessment	The overall process comprising a risk analysis and a risk evaluation. Source: <i>CSM RA</i>
risk estimation	The process used to produce a measure of the level of risks being analysed, consisting of the following steps: estimation of frequency, consequence analysis and their integration. Source: <i>CSM RA</i>
transport operator	An infrastructure manager or railway undertaking.

References

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

RGSC 01	Railway Group Standards Code
RGSC 02	Standards Manual

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CSM RA	Commission Implementing Regulation (EU) 402/2013 on the common safety method for risk evaluation and assessment. Amended by (EU Exit) Regulations 2019 (SI 2019/837) [amended
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Occupiers' Liability Act 1984

Railway Safety (Miscellaneous Provisions) Regulations 1997

GDPR

The General Data Protection Regulation

MHSWR

The Management of Health and Safety at Work Regulations 1999

ORR guidance on the application of CSM RA (2018)

Common safety method for Risk Evaluation and Assessment. Guidance on the application of Commission Regulation (EU) 402/2013. Office of Rail and Road. September 2018.

ROGS

The Railways and Other Guided Transport System (Safety) Regulations 2006 (as amended)