

**Railway Group Standard**

**GO/RT3119**

**Issue 3**

**December 2012**

# **Accident and Incident Investigation**

## **Synopsis**

This document mandates requirements for the investigation of accidents and incidents involving more than one duty holder so that system improvements necessary to prevent or reduce the likelihood of recurrence, or mitigate the consequences, are identified and implemented.

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## **Published by**

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

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Railway Group Standard  
GO/RT3119  
Issue 3  
December 2012

## Accident and Incident Investigation

### Issue record

Issue	Date	Comments
One	04 October 2008	Original document
Two	04 September 2010	Contains new and reworded SPAD categories and some additional requirements for lead organisation investigations.
Three	01 December 2012	Contains revised definition of a SPAD and some additional requirements when reporting local investigations.

Amended or additional parts of revised pages have been marked by a vertical black line in the adjacent margin.

### Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GO/RT3119 Accident and Incident Investigation, Issue One	All	04 December 2010
GO/RT3119 Accident and Incident Investigation, Issue Two	All	02 March 2013

GO/RT3119 Issue Two ceases to be in force and is withdrawn as of 02 March 2013.

### Supply

The authoritative version of this document is available at [www.rgsonline.co.uk](http://www.rgsonline.co.uk). Uncontrolled copies of this document can be obtained from Communications, RSSB, Block 2, Angel Square, 1 Torrens Street, London EC1V 1NY, telephone 020 3142 5400 or e-mail [enquirydesk@rssb.co.uk](mailto:enquirydesk@rssb.co.uk). Other Standards and associated documents can also be viewed at [www.rgsonline.co.uk](http://www.rgsonline.co.uk).

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## Part 1 Purpose and Introduction

### 1.1 Purpose

- 1.1.1 This document mandates requirements for the investigation of accidents and incidents involving more than one infrastructure manager and railway undertaking, so that system improvements (including changes to European and national standards, national operating rules and company systems and procedures) necessary to prevent or reduce the likelihood of recurrence, or mitigate the consequences, are identified and implemented.
- 1.1.2 The entitlements and role in the investigation process of railway industry parties and others not directly involved in the event subject to investigation are defined.

### 1.2 Introduction

#### 1.2.1 Background

- 1.2.1.1 The requirements in Part 2 of this document define a procedural framework and common processes for the investigation of accidents and incidents to enable:
  - a) Infrastructure managers, railway undertakings and other railway industry parties cooperate to investigate immediate and underlying causes, identify measures and make recommendations to eliminate or prevent recurrence and to mitigate consequences of accidents and incidents.
  - b) The results of investigations and recommendations to be reported in a structured way.
  - c) Investigations to be completed and the findings made known in a timely way so that lessons are learned (including the need to review risk controls) at the earliest opportunity.
  - d) An awareness of safety lessons relevant to infrastructure managers' and railway undertakings' operations and the recommended actions to apply them.
  - e) Information necessary to support the development of the industry's safety strategies and safety risk models to be produced and reported.
  - f) Changes to Railway Group or European standards or working instructions to be progressed promptly.
- 1.2.1.2 The requirements in Part 2 of this document permit infrastructure managers and railway undertakings to appoint a person independent of either party involved to lead or participate in a formal investigation if required.

#### 1.2.2 Principles

- 1.2.2.1 The requirements of this document are based on the following principles:
  - a) Investigations determine the facts of an accident or incident, its immediate and underlying causes, and make recommendations to eliminate or minimise the risk from such events by addressing the frequency of occurrence and the consequences of the event.
  - b) The investigation processes mandated in this document are not intended as a process for allocating blame or liability.

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- c) The information included in a report of an investigation carried out in compliance with this document is not intended to create any presumption of blame or liability.
- d) No degree of severity or importance is implied either by the use of the provisional collective term or between any of the post-investigation SPAD categories described in this standard.

## 1.2.3 Related requirements in other documents

1.2.3.1 The following Railway Group Standards contain requirements that are relevant to the scope of this document:

- a) GO/RT3118 Incident Response Planning and Management.
- b) Guidance on SPAD incident categorisation and risk ranking referred to in this document, together with associated Provisional SPAD Data Collection Forms RT/3119/A, B, C and D, can be found on the RSSB website [www.rssb.co.uk](http://www.rssb.co.uk).

## 1.2.4 Supporting documents

1.2.4.1 This Railway Group Standard is supported by GO/GN3519 Guidance on Accident and Incident Investigation.

## 1.3 Approval and authorisation of this document

- 1.3.1 The content of this document was approved by Traffic Operation and Management Standards Committee on 18 September 2012.
- 1.3.2 This document was authorised by RSSB on 29 October 2012.

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## Part 2 Requirements for accident and incident investigation

### 2.1 Responsibilities common to infrastructure managers and railway undertakings

#### 2.1.1 Requirement to investigate accidents or incidents

2.1.1.1 Infrastructure managers and railway undertakings shall investigate accidents or incidents to establish:

- a) The events leading up to the accident or incident.
- b) The immediate cause(s).
- c) The underlying cause(s).

2.1.1.2 Infrastructure managers and railway undertakings shall identify system improvements necessary to eliminate or minimise the risk from such accidents or incidents by addressing the likelihood of recurrence and the consequences.

#### 2.1.2 Decision criteria for when to carry out a formal or local investigation

2.1.2.1 Infrastructure managers and railway undertakings shall use the criteria in Appendices A and B to identify when a formal or local investigation is required.

2.1.2.2 Infrastructure managers and railway undertakings responsible for employees or contractors involved in an operating incident shall provide the necessary information to the infrastructure manager for the purposes of incident risk ranking.

#### 2.1.3 Lead organisation for formal and local investigations

2.1.3.1 Infrastructure managers and railway undertakings shall use the criteria shown in Appendices A and B to decide who the lead organisation will be for the purposes of both formal and local investigations.

2.1.3.2 Infrastructure managers and railway undertakings shall appoint a person who is independent of either organisation to lead the investigation if it is jointly decided that this is the most appropriate action.

#### 2.1.4 Designation of responsible persons

2.1.4.1 Infrastructure managers and railway undertakings shall designate persons to be responsible for managing their processes for leading or contributing to investigations of accidents and incidents.

Appendix C contains mandatory requirements for persons designated to be responsible for managing investigation processes.

2.1.4.2 Infrastructure managers and railway undertakings shall designate persons to be responsible for leading investigations.

Appendix D contains mandatory requirements for persons appointed to lead an investigation.

#### 2.1.5 Physical and witness evidence

2.1.5.1 Infrastructure managers and railway undertakings shall record physical and witness evidence of:

- a) The events leading up to the accident or incident.

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- b) The immediate cause(s) of the accident or incident.
- c) The consequences of the accident or incident.
- d) Any identifiable underlying causes of the accident or incident.

2.1.5.2 Infrastructure managers and railway undertakings shall use the 'RT/3119' designated Provisional SPAD Data Collection forms when investigating signals passed at danger incidents. The RT/3119/A or C forms are for infrastructure managers, and the RT/3119/B or D forms are for railway undertakings. The forms are located on the RSSB website.

2.1.5.3 Infrastructure managers and railway undertakings shall prioritise the collection of evidence according to the following list of subjects:

- a) Perishable evidence.
- b) Interviewing of personnel.
- c) Site visits.
- d) Records of previous related events.

2.1.5.4 Infrastructure managers and railway undertakings shall make the evidence they have gathered available to the person appointed to lead an investigation.

## **2.1.6 Action in response to an investigation**

2.1.6.1 Infrastructure managers and railway undertakings shall evaluate reports of urgent safety problems found during an investigation for relevance to their operations, to identify any need for an immediate response before the completed investigation report and recommendations are published.

2.1.6.2 Infrastructure managers and railway undertakings shall evaluate recommendations made in reports of formal investigations for relevance to their operations.

2.1.6.3 Infrastructure managers and railway undertakings shall document reasons for rejecting any recommendations together with alternative measures for controlling risks identified.

2.1.6.4 Infrastructure managers and railway undertakings shall report to the Safety Management Information System (SMIS) their progress towards implementing recommendations from industry and Rail Accident Investigation Branch (RAIB) investigations that they have accepted.

Appendix E contains non-mandatory information for the reporting of progress towards implementing recommendations.

2.1.6.5 Infrastructure managers or railway undertakings acting as the lead organisation for an incident investigation shall not, if a Signal Sighting Committee (SSC) has been convened, conclude the detailed analysis of the wider evidence until they are in receipt of the SSC report.

## **2.1.7 Release of information to third parties**

2.1.7.1 Infrastructure managers and railway undertakings shall not make public statements or release information to third parties about the progress, evidence or conclusions of an investigation, without the permission of the lead organisation and other railway industry parties involved in the accident or incident being investigated.

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## **2.2 Responsibilities of the lead organisation for formal investigations**

### **2.2.1 Appointment of a person to lead the formal investigation**

2.2.1.1 The lead organisation shall appoint a suitable person to lead the formal investigation according to the mandatory requirements contained in Appendix D.

### **2.2.2 Remit for person appointed to lead the formal investigation**

2.2.2.1 The lead organisation shall, at the earliest opportunity after the accident or incident has occurred, consult affected parties on an appropriate remit for the person appointed to lead the formal investigation. The remit shall require:

- a) Determination of events leading up to the accident or incident, the immediate and underlying cause(s).
- b) Identification of recommendations that could mitigate or eliminate the risk from such accidents or incidents in future.
- c) Reporting of urgent problems found during the investigation to the lead organisation and which justify remedial action before the investigation report is completed.
- d) Completion of the investigation within a defined time limit.
- e) A written report of the investigation containing any recommendations, and in the case of investigations involving a SPAD, specific and final confirmation of its category as specified in Table 2 of Appendix D, or its alternative conclusion (together with the reasons for such a change).

2.2.2.2 The lead organisation shall be responsible for communicating the agreed remit to the person appointed to lead the formal investigation.

### **2.2.3 Participation in formal investigation proceedings**

2.2.3.1 The lead organisation shall invite the following to cooperate in formal investigation proceedings:

- a) Organisations whose employees are directly involved in the accident or incident being investigated, and its cause(s).
- b) Trades unions, recognised by the employer, who represent employees:
  - i) Directly involved in the accident or incident being investigated or its causes.

Or

- ii) Who are called upon to give evidence.
- c) Organisations who own or operate rolling stock or infrastructure involved in the accident or incident being investigated.
- d) Organisations whose personnel or products have been directly involved in the accident or incident.

2.2.3.2 The lead organisation shall not permit the following to attend a formal investigation:

- a) Officers of the British Transport Police or inspectors of the Office of Rail Regulation (ORR), other than as direct witnesses of the accident or incident being investigated.



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- b) Legal representatives, including those of any witnesses or other party to the proceedings.

### **2.2.4 Informing others of SPAD risk ranking and formal investigation results**

- 2.2.4.1 The lead organisation for a formal investigation shall input the results of SPAD risk ranking into SMIS.
- 2.2.4.2 The lead organisation shall inform infrastructure managers and railway undertakings and RSSB of system defects found during a formal investigation that justify urgent remedial action before the completed investigation report is published.
- 2.2.4.3 The lead organisation shall inform infrastructure managers and railway undertakings and RSSB of the conclusions and recommendations made as a result of a formal investigation. This requirement may be met through reporting to SMIS and may be recorded as 'inconclusive' if the incident category or underlying causes cannot be determined.
- 2.2.4.4 The lead organisation shall use Table 2 of Appendix D for confirming the categorisation of an incident that has been initially identified as a SPAD once the full causes are established following SPAD incident (formal) investigation.
- 2.2.4.5 The lead organisation shall communicate the conclusions of each SPAD incident (formal) investigation and recommendations arising from them to:
  - a) The parties whose employees or contractors were involved in the SPAD incident.
  - b) All railway undertakings using the route on which the signal concerned is located or where the in-cab signalled movement authority was exceeded.

### **2.2.5 Report of the formal investigation**

- 2.2.5.1 The lead organisation shall provide a written report of the formal investigation to all infrastructure managers and railway undertakings, other railway industry parties involved in the accident or incident and RSSB. The report of a formal investigation shall include:
    - a) The remit.
    - b) Details of the event under investigation.
    - c) A description of the sequence of events.
    - d) A summary of the deliberations of the investigation team which relates the evidence to their conclusions.
    - e) The immediate and underlying causes of the accident or incident.
    - f) Recommendations, cross-referenced to the part of the report which justify them and clear as to their purpose of eliminating or minimising the risk from future accidents or incidents by preventing or reducing the likelihood of recurrence or mitigating the consequences.
    - g) In the case of investigations involving a SPAD, final confirmation of the SPAD category allocation according to the requirements of Appendix D.3 Alleged SPAD category confirmation.
  - 2.2.5.2 The lead organisation shall specifically address each report recommendation to an infrastructure manager or railway undertaking.
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## **2.2.6 Report of Signal Sighting Committee (formal investigations)**

- 2.2.6.1 The lead organisation for a formal investigation shall check that any Signal Sighting Committee report includes the SSC's professional judgement as to the significance and contribution of any infrastructure factors to the circumstances of the alleged category A SPAD incident with particular regard to staff error.
- 2.2.6.2 The lead organisation for a formal investigation shall make the SSC report available to all parties involved in the alleged category A SPAD incident, and check that any relevant conclusions and recommendations are recorded in the incident investigation report.

## **2.3 Responsibilities of the lead organisation for local investigations**

### **2.3.1 Remit for person appointed to lead the investigation**

- 2.3.1.1 The lead organisation shall provide a remit for the person to lead a local investigation, which requires:
  - a) Determination of the immediate and underlying causes of the event.
  - b) Identification of any local system improvements that could mitigate or eliminate the risk from such accidents or incidents in the future.
  - c) Completion of the investigation within a defined time limit.
  - d) A written report (which may be in a standardised format).
- 2.3.1.2 The lead organisation shall not permit the following to attend a local investigation:
  - a) Officers of the British Transport Police or inspectors of the Office of Rail Regulation (ORR), other than as direct witnesses of the accident or incident being investigated.
  - b) Legal representatives, including those of any witnesses or other party to the proceedings.

### **2.3.2 Informing others of SPAD risk ranking and local investigation results**

- 2.3.2.1 The lead organisation for a local investigation shall input the results of SPAD risk ranking into SMIS.
- 2.3.2.2 The lead organisation shall inform infrastructure managers and railway undertakings and RSSB of system defects found during a local investigation that justify urgent remedial action before the completed investigation report is published.
- 2.3.2.3 The lead organisation shall inform infrastructure managers and railway undertakings and RSSB of the conclusions and recommendations made as a result of a local investigation. This requirement may be met through reporting to SMIS and may be recorded as 'inconclusive' if the incident category or underlying causes cannot be determined.
- 2.3.2.4 The lead organisation shall use Table 2 of Appendix D for confirming the categorisation of an incident that has been initially identified as a SPAD once the full causes are established following SPAD incident (local) investigation.
- 2.3.2.5 The lead organisation shall communicate the conclusions of each SPAD incident (local) investigation and recommendations arising from them to:

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- a) The parties whose employees or contractors were involved in the SPAD incident.
- b) All railway undertakings using the route on which the signal concerned is located or where the in-cab signalled movement authority was exceeded.

## **2.3.3 Report of the local investigation**

2.3.3.1 The lead organisation shall include, as a minimum, the following information in its local investigation report (which may be in a standardised format):

- a) A brief description of the event.
- b) A summary of the relevant facts.
- c) Findings as to the immediate and underlying causes.
- d) Identification of recommendations that could mitigate or eliminate the risk from such accidents or incidents in future.
- e) In the case of investigations involving a SPAD, specific and final confirmation of its category as specified in Table 2 of Appendix D, or its alternative conclusion (together with the reasons for such a change).

2.3.3.2 The lead organisation shall specifically address each local investigation report recommendation to an infrastructure manager or railway undertaking.

## **2.3.4 Report of Signal Sighting Committee (local investigations)**

2.3.4.1 The lead organisation for a local investigation shall check that any Signal Sighting Committee report includes the SSC's professional judgement as to the significance and contribution of any infrastructure factors to the circumstances of an alleged category A SPAD incident with particular regard to staff error.

2.3.4.2 The lead organisation for a local investigation shall make the SSC report available to all parties involved in the alleged category A SPAD incident, and check that any relevant conclusions and recommendations are recorded in the incident investigation report.

## **2.4 Responsibilities of infrastructure managers**

### **2.4.1 Preliminary designation of an incident as a SPAD**

2.4.1.1 The infrastructure manager (Network Rail only) shall make the initial assessment of an incident in order to designate it as a provisional SPAD.

2.4.1.2 The infrastructure manager (Network Rail only) shall identify its initial assessment of each alleged SPAD specific incident as 'provisional' by using the information shown in Table 1, prior to full cause investigation and incident confirmation by the designated lead organisation.

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	Description <i>(Notes: No degree of severity or importance is implied within or between these provisional SPAD event types).</i>
<b>Provisional Category A (p) SPAD types</b>	<ul style="list-style-type: none"> <li>When a SPAD is alleged to have occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it.</li> </ul>
	<ul style="list-style-type: none"> <li>When a SPAD is alleged to have occurred and, according to available evidence, the stop aspect, indication or end of in-cab signalled movement authority concerned was not displayed or given correctly, but was preceded by the correct aspects or indications.</li> </ul>
	<ul style="list-style-type: none"> <li>When a SPAD is alleged to have occurred and, according to available evidence, verbal and/or visual permission to pass a signal at danger was given by a handsignaller or other authorised person without the authority of the signaller.</li> </ul>
	<ul style="list-style-type: none"> <li>When a SPAD is alleged to have occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it, but the train driver was unable to stop his train owing to circumstances beyond his control (<i>for example, poor rail head adhesion, train braking equipment failure or malfunction etc.</i>).</li> </ul>

**Table 1 List of provisional Category A (p) SPAD event types**

### 2.4.2 Post-SPAD incident inspection – infrastructure and related factors

2.4.2.1 Infrastructure managers shall make arrangements for an immediate post-SPAD incident inspection of the infrastructure concerned. The type and amount of inspection shall be commensurate with the circumstances of the SPAD incident and the potential consequences that could have arisen.

2.4.2.2 The infrastructure manager (Network Rail only) shall undertake a technical investigation of the signalling system when a specific allegation is made against it.

### 2.4.3 Investigation of SPAD incidents - risk ranking

2.4.3.1 The infrastructure manager (Network Rail only) shall complete the SPAD risk ranking process using the SPAD risk ranking tool.

2.4.3.2 The infrastructure manager (Network Rail only) shall inform railway undertakings of the results of the SPAD risk ranking process and consult with railway undertakings on appropriate measures to mitigate identified risks.

2.4.3.3 The infrastructure manager (Network Rail only) shall complete the SPAD risk ranking before the investigation team meets and provide the results to them as evidence for their consideration and for inputting into SMIS.

### 2.4.4 Criteria for deciding when a Signal Sighting Committee (SSC) is required

GE/RT8037 Signal Positioning and Visibility sets out the requirements for the sighting of signals and the composition of SSCs.

2.4.4.1 The infrastructure manager (Network Rail only) shall convene a SSC to assist investigation of any alleged category A SPAD incident, with the following specific exceptions:

- a) One was convened following a previous category A SPAD incident at that signal and all the following apply:

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- i) Its report is comprehensive and is available to the investigators.
  - ii) The investigators are satisfied that all the factors relevant to the latest alleged category A SPAD incident were considered.
  - iii) The investigators are satisfied that no change has taken place to the signal or at its location, which could affect those factors.
- b) The signal had been commissioned within the previous 12 months.
  - c) The train was wrongly authorised to pass the signal at danger after coming to a stand at the signal.

2.4.4.2 The infrastructure manager (Network Rail only) shall document the decision not to convene a SSC, and keep the decision details with the alleged category A SPAD incident investigation report to be published with the formal investigation report.

## **2.4.5 Remit of Signal Sighting Committee**

- 2.4.5.1 The infrastructure manager (Network Rail only) shall set the remit of the SSC after consulting the railway undertakings involved in the alleged category A SPAD incident.
- 2.4.5.2 The infrastructure manager (Network Rail only) shall include, for consideration in the remit, all risk factors that could contribute to, or result from, a category A SPAD incident.
- 2.4.5.3 The infrastructure manager (Network Rail only) shall check previous records to take into account any renumbering of the signal within the period covered or any minor changes in signal position as a result of a re-signalling scheme.

## **2.5 Responsibilities of railway undertakings**

### **2.5.1 Post-SPAD incident inspection – train and related factors**

- 2.5.1.1 Railway undertakings shall make arrangements for an immediate post-SPAD incident inspection of the train and related factors. The amount of inspection shall be commensurate with the circumstances of the incident and the potential consequences that could have arisen.
- 2.5.1.2 Railway undertakings shall carry out a functional brake test on the train involved in the SPAD incident, except where there is evidence to support that the braking system of the train was not a factor for consideration as a cause of the SPAD incident.
- 2.5.1.3 Railway undertakings shall undertake a technical investigation of the train braking system when a specific allegation is made against it.
- 2.5.1.4 Railway undertakings shall conduct a technical investigation into any train borne equipment associated with the signalling and communications systems if they might have been a contributory factor to the incident.

## Part 3 Application of this document

### 3.1 Application - infrastructure managers

#### 3.1.1 Scope

3.1.1.1 The requirements of this document apply to all accidents and incidents involving an infrastructure manager and another infrastructure manager or railway undertaking.

#### 3.1.2 Exclusions from scope

3.1.2.1 There are no exclusions from the scope specified in clause 3.1.1 for infrastructure managers.

#### 3.1.3 General compliance date for infrastructure managers

3.1.3.1 This Railway Group Standard comes into force and is to be complied with from 02 March 2013.

3.1.3.2 After the compliance dates or the date by which compliance is achieved if earlier, infrastructure managers are to maintain compliance with the requirements set out in this Railway Group Standard. Where it is considered not reasonably practicable to comply with the requirements, authorisation not to comply should be sought in accordance with the Railway Group Standards Code.

#### 3.1.4 Exceptions to general compliance date

3.1.4.1 There are no exceptions to the general compliance date specified in clause 3.1.3 for infrastructure managers.

### 3.2 Application - railway undertakings

#### 3.2.1 Scope

3.2.1.1 The requirements of this document apply to all accidents and incidents involving a railway undertaking and another railway undertaking or infrastructure manager.

#### 3.2.2 Exclusions from scope

3.2.2.1 There are no exclusions from the scope specified in clause 3.2.1 for railway undertakings.

#### 3.2.3 General compliance date for railway undertakings

3.2.3.1 This Railway Group Standard comes into force and is to be complied with from 02 March 2013.

3.2.3.2 After the compliance dates or the date by which compliance is achieved if earlier, railway undertakings are to maintain compliance with the requirements set out in this Railway Group Standard. Where it is considered not reasonably practicable to comply with the requirements, authorisation not to comply should be sought in accordance with the Railway Group Standards Code.

#### 3.2.4 Exceptions to general compliance date

3.2.4.1 There are no exceptions to the general compliance date specified in clause 3.2.3 for railway undertakings.

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## **3.3 Health and safety responsibilities**

- 3.3.1 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.

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### Appendix A Decision criteria – formal investigations

The content of this appendix is mandatory

#### A.1 Criteria for deciding when a formal investigation is required

##### A.1.1 Criteria

- A.1.1.1 Infrastructure managers and railway undertakings shall hold a formal investigation following an event where there may have been a significant failure of control measures under their direct control, leading to a fatality, major injury or a potentially high risk incident.
- A.1.1.2 A formal investigation shall normally be carried out when an event has resulted in:
- a) An alleged SPAD incident which has led to a collision or derailment (Part 2 SPAD accident vulnerability ranking A – accident occurred).
  - b) A higher risk alleged SPAD incident not leading to an accident (Part 3 SPAD risk ranking greater than or equal to 18) or 'near miss' SPAD incidents (Part 2 accident vulnerability ranking B to G inclusive).
  - c) Other alleged category A SPAD incidents when:
    - i) It is clear from early evidence that infrastructure may be a causal factor.
    - ii) The signal is defined as a multi-SPAD signal or will be so defined because of the incident concerned.
- Or
- iii) The driver disputes that a category A SPAD incident has occurred, unless there is objective evidence (SSI data, OTMR, etc) which shows a category A SPAD incident has occurred.
- d) Major injury or fatality to members of the public not at a station when struck by a train, including level crossing users (other than suspected suicide or trespass).
  - e) Major injury or fatality to members of the workforce employed by or contracted to the infrastructure manager when struck by a train.
  - f) Major injury to passengers or members of the public when struck by a train at a station (other than suspected attempted suicide, or trespass).
  - g) Fatality to passengers or members of the public at a station, when boarding or alighting from or when struck by a train (other than suspected suicide or trespass).
  - h) A derailment on a running line.
  - i) A collision on a running line other than in a station, where no SPAD incident has occurred.
  - j) A collision between trains in a station, where no SPAD incident has occurred.



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- k) A train fire where there is injury to or requiring the evacuation of passengers at a location other than a station.
- l) A buffer stop collision at a station where there is injury to people or significant damage to infrastructure or train.
- m) Runaway vehicle incidents where there has been, or there was the potential for, consequent injury to people or significant damage to infrastructure or train.

A.1.1.3 It is not mandatory to carry out a formal investigation into an event meeting the criteria in clause A.1.1.1 and A.1.1.2 if the RAIB decides to conduct an investigation into the accident or incident, provided the lead organisation shows that:

- a) A formal investigation would duplicate (in terms of objectives and evidence requirements) that by the RAIB and its costs and impact on individuals would exceed the benefits from a formal investigation.
- b) The RAIB investigation will enable the infrastructure manager or railway undertaking to meet the objectives set out in section 1.2.1.1 of this document.

A.1.1.4 A formal investigation shall normally be carried out into an accident or incident meeting the criteria in clause A.1.1.1 and A.1.1.2, when it is within the scope of a study by RAIB of a class of events but the RAIB study is not specific to that accident or incident.

A.1.1.5 Exclusion of a category of incident from the criteria above does not prevent infrastructure managers and railway undertakings deciding to carry out a formal investigation into such an accident or incident.

## **A.2 Criteria for deciding the lead organisation for a formal investigation**

### **A.2.1 Formal investigation to be led by the infrastructure manager**

A.2.1.1 The infrastructure manager shall normally lead a formal investigation when there has been:

- a) An alleged SPAD incident which has led to a collision or derailment (Part 2 accident vulnerability ranking A – accident has happened).
- b) A higher risk alleged SPAD incident not leading to an accident (Part 3 SPAD risk ranking greater than or equal to 18) or 'near miss' SPAD incidents (Part 2 accident vulnerability ranking B to G inclusive).
- c) Other alleged category A SPAD incidents when:
  - i) It is clear from early evidence that infrastructure may be a causal factor.
  - ii) The signal is defined as a multi-SPAD signal or will be so defined because of the incident concerned.
  - iii) The driver disputes that a category A SPAD incident has occurred, unless there is objective evidence (SSI data, OTMR, etc) which shows a category A SPAD incident has occurred.

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- d) Major injury or fatality to members of the public not at a station when struck by a train, including level crossing users (other than suspected suicide or trespass).
- e) Major injury or fatality to members of the workforce employed by or contracted to the infrastructure manager when struck by a train.
- f) Major injury or fatality to passengers or members of the public when struck by a train at a station (other than suspected attempted suicide, or trespass).
- g) Fatality to passengers or members of the public at a station, when boarding or alighting a train (other than suspected suicide or trespass).
- h) A derailment on a running line.
- i) A collision on a running line other than in a station, where no SPAD incident has occurred.

A.2.1.2 The infrastructure manager responsible for the management and operation of the station concerned shall normally be the lead organisation for events at stations in category e) and events in categories f) and g).

### **A.2.2 Formal investigation to be led by the railway undertaking**

A.2.2.1 The railway undertaking shall normally lead a formal investigation when there has been:

- a) An alleged category A SPAD incident except where shown in A.2.1.1 c) i) to iii).
- b) Major injury or fatality to members of the workforce employed by or contracted to the railway undertaking when struck by a train not at a station.
- c) A collision between trains in a station where no SPAD incident has occurred.
- d) A train fire where there is injury to or requiring the evacuation of passengers at a location other than a station.
- e) A buffer stop collision at a station where there is injury to people or significant damage to infrastructure or train.

A.2.2.2 Where more than one railway undertaking is involved and one of the criteria listed in section A.2.2.1 applies, negotiation between them will be needed to determine which takes the role of lead organisation.

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## Appendix B Decision criteria – local investigations

The content of this appendix is mandatory.

### **B.1 Criteria for deciding when a local investigation is required**

#### **B.1.1 Criteria**

B.1.1.1 A local investigation shall normally be carried out into the following events:

- a) Lower risk alleged category A SPAD incidents not leading to an accident (Part 3 SPAD risk ranking less than 18 and Part 2 accident vulnerability ranking H, I or J).
- b) Runaway vehicle incidents where there is no actual, or potential for, injury to people or significant damage to infrastructure or train.
- c) Buffer stop collisions where there is no injury to people or significant damage to infrastructure or train.
- d) Traction and rolling stock defects on a running line likely to affect system safety or resulting in the evacuation of the train.
- e) Train fires where there is no injury to passengers and no evacuation is required other than at a station.

### **B.2 Criteria for deciding the lead organisation for a local investigation**

#### **B.2.1 Local investigation to be led by the infrastructure manager**

B.2.1.1 The infrastructure manager shall normally lead a local investigation into:

- a) Lower risk alleged SPAD incidents not leading to an accident (Part 3 SPAD risk ranking less than 18), and near miss SPAD incidents (Part 2 accident vulnerability ranking H, I or J), if it is clear from the early evidence that the infrastructure may be a causal factor.

#### **B.2.2 Local investigation to be led by the railway undertaking**

B.2.2.1 The railway undertaking shall normally lead a local investigation into:

- a) Lower risk alleged category A SPAD incidents not covered by clause B.2.1.1 a) and not leading to an accident (Part 3 SPAD risk ranking less than 18), and near miss SPAD incidents (Part 2 accident vulnerability ranking H, I or J).
- b) Station overruns (not involving a SPAD incident).
- c) Runaway vehicle incidents where there is no actual, or potential for, injury to people or significant damage to infrastructure or train.
- d) Buffer stop collisions where there is no injury to people or significant damage to infrastructure or train.
- e) Traction and rolling stock defects on a running line likely to affect system safety or resulting in the evacuation of the train.
- f) Train fires where there is no injury to passengers and no evacuation is required other than at a station.

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- B.2.2.2 Where more than one railway undertaking is involved and one of the criteria listed in section B.2.2.1 applies, agreement between them will be needed to determine which takes the role of lead organisation.

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## Appendix C Requirements for persons responsible for managing the investigation process

The content of this appendix is mandatory.

### **C.1 Requirements**

#### **C.1.1 Designation and role**

C.1.1.1 Infrastructure managers and railway undertakings shall designate one or more persons within their organisation who will:

- a) Manage the organisation's processes for leading or contributing to investigations of accidents and incidents.
- b) Establish a system for the downloading, security and analysis of event recording equipment such as train data recorders, signalling equipment event recorders and voice recording media.
- c) Manage the interface with other railway industry parties when required by GO/RT3119.
- d) Establish the remit for an investigation.
- e) Provide administrative support for the investigation process, including facilities for witnesses.
- f) Confirm that the remit has been met at the end of the process.
- g) Update company and railway industry safety management information records.
- h) Track the organisation's progress in implementing recommendations from investigations (including those to which it was not a party) that it has accepted as applicable to its operations.

#### **C.1.2 Competence**

C.1.2.1 Infrastructure managers' and railway undertakings' persons designated to manage the investigation process shall be conversant with:

- a) The requirements of GO/RT3119 and its application.
- b) The organisation's activities, safety management system and interfaces.
- c) The statutory framework for railway safety and accident investigation.
- d) The appropriate railway operations and engineering environment (or have access to appropriate competent technical advice) to enable them to prepare remits and evaluate reports and recommendations.
- e) The appropriate administrative skills to support the investigation process, including the allocation of sufficient time and adequate facilities.

## Appendix D Requirements for persons appointed to lead an investigation

The content of this appendix is mandatory.

### D.1 Persons appointed to lead a formal investigation

#### D.1.1 Requirements

- D.1.1.1 Infrastructure managers and railway undertakings shall designate persons within their organisation to lead formal investigations, unless a person independent of the parties involved in the accident or incident is chosen to lead the investigation of an accident or incident.
- D.1.1.2 The person appointed to lead a formal investigation shall not have any direct line management responsibility for the staff, contractors or equipment involved in the accident or incident under investigation.

#### D.1.2 Competence

- D.1.2.1 Persons appointed to lead formal investigations shall be conversant with the requirements of GO/RT3119 and its application and have appropriate:
- Experience in accident or incident investigation (or be provided with the necessary training and other support to develop the necessary skills).
  - Technical competence to conduct the investigation, or access to competent technical advice on those aspects outside their own technical competence.
  - Technical competence to identify safety matters which justify urgent action before the final report is completed.
  - Technical competence to identify the need for and make recommendations.

### D.2 Persons appointed to lead a local investigation

#### D.2.1 Requirements

- D.2.1.1 Infrastructure managers and railway undertakings shall designate persons within their organisation who will lead local investigations.

#### D.2.2 Competence

- D.2.2.1 Persons appointed to lead local investigations shall:
- Be conversant with the requirements of the relevant sections of GO/RT3119.
  - Possess (or be provided with the necessary training and other support to develop) the necessary skills for investigations within scope of their responsibility.
  - Possess the technical competence covering the matters raised by the accident or incident under investigation.
  - Be able to meet record keeping and reporting requirements.

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## D.3 Alleged SPAD category confirmation

### D.3.1 Requirements

D.3.1.1 The lead organisation shall confirm provisional SPAD categories in their final written report using the details in Table 2.

	<b>Description</b> <i>(Notes: No degree of severity or importance is implied within or between these confirmed category A SPAD types).</i>
<b>Confirmed Category A SPAD types</b>	<b>A1</b> When a SPAD has occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it.
	<b>A2</b> When a SPAD has occurred and, according to available evidence, the stop aspect, indication or end of in-cab signalled movement authority concerned was not displayed or given correctly, but was preceded by the correct aspects or indications.
	<b>A3</b> When a SPAD has occurred and, according to available evidence, verbal and/or visual permission to pass a signal at danger was given by a handsignaller or other authorised person without the authority of the signaller.
	<b>A4</b> When a SPAD has occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it, but the train driver was unable to stop his train owing to circumstances beyond his control ( <i>for example, poor rail head adhesion, train braking equipment failure or malfunction etc.</i> ).

**Table 2: List of confirmed Category A SPAD event types**

D.3.1.2 The lead organisation shall, if their investigation concludes that the incident is not to be confirmed as one of the SPAD categories in Table 2, liaise with the infrastructure manager to consider recording the event as an operating incident.

## Appendix E Explanatory note on progress reporting requirements

The content of this appendix is not mandatory.

### E.1 Reporting of progress towards implementing recommendations

- E.1.1 Clause 2.1.6.4 of this document requires infrastructure managers and railway undertakings to report to RSSB, their progress made towards implementing recommendations from RAIB investigations that they have accepted. It is the result of an agreement between the Office of Rail Regulation (ORR) and RSSB.
- E.1.2 ORR will use the Safety Management Information System (SMIS), managed by RSSB on behalf of infrastructure managers and railway undertakings, as the source of information for tracking progress to make its reports to the RAIB under regulation 12 of the Railways (Accident Investigation and Reporting) Regulations, 2005.
- E.1.3 A single reporting process is provided, enabling infrastructure managers and railway undertakings to report progress to the safety authority, as well as to meet the requirement in clause 2.2.4.2 of GO/RT3119, to report to RSSB progress made on recommendations accepted from formal investigations. One process will suffice for industry and ORR purposes.
- E.1.4 The ORR is the safety authority for the GB railway network.



# Accident and Incident Investigation

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## Definitions

### Accident

An unwanted or unintended sudden event or a specific chain of such events which have harmful consequences; accidents are divided into the following categories: collisions, derailments, level-crossing accidents, accidents to persons caused by rolling stock in motion, fires and others.

### Immediate cause(s)

An unsafe act or unsafe condition which causes an accident or incident.

### Incident

Any occurrence, other than accident or serious accident, associated with the operation of trains and affecting the safety of operation.

### Infrastructure manager

“infrastructure manager” means a person who –

- a) In relation to infrastructure other than a station, is responsible for developing and maintaining that infrastructure or, in relation to a station, the person who is responsible for managing and operating that station, except that it shall not include any person solely on the basis that he carries out the construction of that infrastructure or station or its maintenance, repair or alteration; and
- b) Manages and uses that infrastructure or station, or permits it to be used, for the operation of a vehicle.

*(Note: This definition sourced from The Railways and Other Guided Transport Systems (Safety) Regulations 2006)*

### Investigation

A process conducted for the purpose of accident and incident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safety recommendations.

### Formal Investigation

A formally structured investigation of an accident or incident, led by an infrastructure manager, railway undertaking or a person independent of all the parties involved in the accident or incident, applying processes mandated in this document.

### Lead organisation

The railway undertaking or infrastructure manager responsible for managing the processes of local or formal investigations defined in this document and identified by applying criteria defined in Appendix B of this document.

### Local investigation

An investigation of an accident or incident, for which a formal investigation is not required, by an infrastructure manager or a railway undertaking, using its defined company procedures and requirements in respect of remit and results defined in this document.

### 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.

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### **Safety authority**

The national body entrusted with the tasks regarding railway safety in accordance with Directive 2004/49/EC (the Railway Safety Directive). In Great Britain the safety authority is the Office of Rail Regulation (ORR).

### **SMIS**

Safety Management Information System: a computer database managed by RSSB containing details of events reported by or on behalf of infrastructure managers and railway undertakings.

### **SPAD**

Signal passed at danger means any occasion when any part of a train proceeds beyond its authorised movement to an unauthorised movement;

“unauthorised movement” means to pass -

- (a) a trackside colour light signal or semaphore at danger, order to STOP, where an Automatic Train Control System (ATCS) or train protection system is not operational;
- (b) the end of a safety related movement authority provided in an ATCS or train protection system;
- (c) a point communicated by verbal or written authorisation laid down in regulations;

or

- (d) stop boards (buffer stops are not included) or hand signals,

but excludes cases in which –

- (e) vehicles without any traction unit attached or a train that is unattended run away past a signal at danger; or
- (f) for any reason, the signal is not turned to danger in time to allow the driver to stop the train before the signal.

*Note: Further information (together with associated forms) on the SPAD incident categorisation and risk ranking system used in this document can be found on the RSSB website at [www.rssb.co.uk](http://www.rssb.co.uk)*

### **Underlying cause(s)**

Any factors which led to the immediate causes of accidents or incidents, or which resulted in such causes not being identified and mitigated.

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## 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 [www.rgsonline.co.uk](http://www.rgsonline.co.uk).

RGSC 01                      Railway Group Standards Code  
RGSC 02                      The Standards Manual

## Documents referenced in the text

### Railway Group Standards

GO/RT3118                  Incident Response Planning and Management  
GE/RT8037                  Signal Positioning and Visibility

### RSSB documents

GO/GN3519                  Guidance on Accident and Incident Investigation  
RT/3119/A                  Provisional SPAD Data Collection Form (Infrastructure Managers)  
RT/3119/B                  Provisional SPAD Data Collection Form (Railway Undertakings)  
RT/3119/C                  Provisional SPAD Data Collection Form (Infrastructure Managers) for ERTMS  
RT/3119/D                  Provisional SPAD Data Collection Form (Railway Undertakings) for ERTMS

### Other references

Directive 2004/49/EC Railway Safety Directive  
The Railways and Other Guided Transport Systems (Safety) Regulations 2006  
The Railways and Other Guided Transport Systems (Safety) (Amendment) Regulations 2011  
The Railways (Accident Investigation and Reporting) Regulations 2005

## Other relevant documents

### Railway Group Standards

GO/RT3350                  Communication of Urgent Operating Advice  
GI/RT7006                  Prevention and Mitigation of Overruns – Risk Assessment  
GE/RT8047                  Reporting of Safety Related Information  
GE/RT8250                  Reporting High Risk Defects  
GE/RT8000/M3              Managing incidents, floods and snow