

## **Reporting High Risk Defects**

### **Synopsis**

This document defines requirements for recording, analysing and reporting safety-related defects on rail vehicles, their components, systems, sub-systems and related documentation. It also defines requirements for taking action following receipt of a national incident report (NIR).

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## Reporting High Risk Defects

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### Issue record

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

### Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GE/RT8250 issue 1, Safety Performance Monitoring and Defect Reporting of Rail Vehicles, Plant & Machinery	All	04 August 2007

GE/RT8250 issue 1 ceases to be in force and is withdrawn as of 04 August 2007.

### Supply

Controlled and uncontrolled copies of this Railway Group Standard may be obtained from the Corporate Communications Department, Rail Safety and Standards Board, Evergreen House, 160 Euston Road, London NW1 2DX, telephone 020 7904 7518 or e-mail enquiries@rssb.co.uk. Railway Group 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 formal reporting of high risk defects on rail vehicles, including urgent high risk defects, that is defects requiring urgent action; the sharing of information with users of similar rail vehicles and vehicles fitted with similar components, systems or subsystems; and the taking of corrective action.
- 1.1.2 This document also advises that the NIR-Online system is capable of being used for a range of railway equipment and recommends its use for all rail vehicles, equipment and **plant & machinery** as listed in section A2.1 of Appendix A.

### 1.2 Introduction

#### 1.2.1 Background

- 1.2.1.1 This document mandates the arrangements for reporting urgent high risk defects on rail vehicles to a centralised database, so that the information is available to other users of similar rail vehicles and vehicles fitted with similar components, systems or subsystems. The database, known as NIR-Online, is available for use by all rail industry stakeholders. Further details can be found at [www.nir-online.net/](http://www.nir-online.net/).
- 1.2.1.2 The provision of the information on the database is to enable other rail industry parties operating similar rail vehicles and vehicles fitted with similar components, systems or subsystems to determine whether the identified risk is applicable to their own operation, and whether they need to implement actions to mitigate the identified risk.
- 1.2.1.3 The document is structured as follows:
  - Part 2 sets out the arrangements for identifying and reporting high risk defects, and actioning national incident reports (NIRs).
  - Part 3 details the requirements to administer the process.
  - Appendix A gives guidance on how the scope of the system can be widened to incorporate other rail vehicles, equipment and **plant & machinery** for the purpose of advising other users of similar equipment when an urgent high risk **defect** is identified.
  - Appendix B provides a flow chart of the overall process.
  - Appendix C gives guidance on arrangements for safety-related **defect** monitoring.

#### 1.2.2 Supporting documents

- 1.2.2.1 There are no Railway Group documents supporting this Railway Group Standard.
- 1.2.2.2 Form **RT8250** is to be used when advised by Network Rail in accordance with clause 2.2.5.2 of this document. A copy is available via [www.rgsonline.co.uk](http://www.rgsonline.co.uk).

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### Part 2 Requirements for reporting urgent high risk defects

#### 2.1 High risk defects

##### 2.1.1 Assessment of safety-related defects

2.1.1.1 Railway undertakings shall assess all safety-related defects to rail vehicles falling within the scope of this document (see section 4.2). It is recommended that this is achieved through a safety-related **defect** monitoring system. Non-mandatory guidance on safety-related **defect** monitoring is given in Appendix C.

2.1.1.2 Railway undertakings shall share details of high risk defects with other railway undertakings operating similar rail vehicles and vehicles fitted with similar components, systems or subsystems (for example, through user working groups or technical committees). This is especially important where common systems such as AWS and TPWS are involved. Non-mandatory guidance on the use of common monitoring arrangements and data exchange is given in Appendix C.

2.1.1.3 Where a safety-related **defect** has the potential to pose an urgent high risk to other operators of similar rail vehicles and vehicles fitted with similar components, systems or subsystems, the railway undertaking shall use NIR-Online, as set out in section 2.2.

##### 2.1.2 Adverse trends in safety-related defects

2.1.2.1 Where an adverse trend in safety-related defects is identified that has the potential to pose a high risk to operators of similar rail vehicles and vehicles fitted with similar components, systems or subsystems, the railway undertaking shall share details of the adverse trend with other railway undertakings (for example, through user working groups or technical committees). Non-mandatory guidance on sharing details of adverse trends is given in Appendix C.

#### 2.2 Action when an urgent high risk **defect** is identified

##### 2.2.1 Initiation of a national incident report (NIR)

2.2.1.1 When an urgent high risk **defect** is identified on a rail vehicle, the railway undertaking shall initiate a NIR by using the computer generated form on NIR-Online.

2.2.1.2 Where the root cause of the **defect** is known at the first time of generating a report, a **complete** NIR shall be generated.

2.2.1.3 Where the root cause of the **defect** is not known, an **initial** NIR shall be generated giving the details known to date.

2.2.1.4 It is permissible to generate one (or more) **interim** NIRs where investigation into the root cause of the **defect** highlights further important information.

2.2.1.5 A **concluding** NIR shall be generated when the root cause of the **defect** has finally been identified.

2.2.1.6 The **interim** and **concluding** NIRs shall quote the **initial** NIR reference number.

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### **2.2.2 Content of a national incident report (NIR)**

- 2.2.2.1 The NIR shall provide a level of detail sufficient to enable recipients to develop an action plan where the subject matter of the report affects that recipient.
- 2.2.2.2 Where known, the root or underlying cause of the **defect** shall be detailed.
- 2.2.2.3 All fields within NIR-Online shall be completed where details are known.

### **2.2.3 Actions upon receipt of a national incident report (NIR)**

- 2.2.3.1 Railway undertakings shall acknowledge receipt of a NIR on NIR-Online within 24 hours of issue of the NIR.
- 2.2.3.2 Railway undertakings receiving a NIR shall decide whether to initiate any necessary action for similar rail vehicles or vehicles fitted with similar components, systems or subsystems under their control.
- 2.2.3.3 Railway undertakings receiving a NIR shall ensure that their suppliers (including leasing companies) are made aware of urgent high risk defects discovered in items or services of the types they supply, and the need for any corrective action by them.
- 2.2.3.4 It is recommended that when railway undertakings are aware that a supplier supplies more than one railway undertaking, a collaborative approach should be taken to reduce the number of occasions when the same information is repeated to individual suppliers.

### **2.2.4 Reporting action taken in response to a national incident report (NIR)**

- 2.2.4.1 Following receipt of a NIR, railway undertakings shall input to NIR-Online the relevance (or not) of the NIR to their organisation (for example, if they operate similar railway vehicles or vehicles fitted with similar components, systems or subsystems in similar circumstances). If the NIR is relevant to their organisation, the railway undertaking shall record any actions to be taken by themselves or their supplier as a result of receiving the NIR.
- 2.2.4.2 Railway undertakings shall close out NIRs they have input as relevant to their organisation, and record the close-out action taken in a timely manner.

### **2.2.5 Unavailability of NIR-Online**

- 2.2.5.1 Railway undertakings shall advise Network Rail if NIR-Online is unavailable when attempting to submit a NIR (other than during planned unavailability advised by Network Rail).
- 2.2.5.2 When advised by Network Rail (because NIR-Online is unavailable), railway undertakings shall fax the NIR to Network Rail using the report form **RT8250** (available via [www.rgsonline.co.uk](http://www.rgsonline.co.uk)). The fax number to be used is specified on form **RT8250**.
- 2.2.5.3 Railway undertakings shall advise Network Rail of alternative contingency arrangements for the receipt of a NIR.

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### Part 3 Administration of NIR-Online

#### 3.1 Administration of NIR-Online – responsibilities of Network Rail

- 3.1.1 Network Rail shall administer access to NIR-Online and advise all users of the administrative arrangements.
- 3.1.2 Network Rail shall verify and maintain the list of recipients of NIRs. Recipients shall include those set out in clause 3.1.3 of this document. Consideration shall also be given to including representatives of other organisations involved in the rail industry.
- 3.1.3 Access to NIR-Online shall be available to railway undertakings, infrastructure managers and their relevant suppliers. NIR-Online shall also be available to Vehicle Acceptance Bodies, Notified Bodies, rolling stock leasing companies, train manufacturers, the Association of Train Operating Companies and the Rail Safety and Standards Board.
- 3.1.4 Network Rail shall:
- a) Validate *initial* or *complete* NIRs to either:
    - i) Accept the report.
    - ii) Reject the report if it is considered to duplicate an existing NIR.
    - iii) Reject the report if it is considered that incorrect information has been submitted.
    - iv) Reject the report if it is considered malicious or vexatious.
  - b) Monitor receipt of NIR acknowledgements.
  - c) Follow up, after 24 hours, when acknowledgement of receipt of the NIR has not been received from a railway undertaking.

#### 3.2 Administration of NIR-Online – responsibilities of railway undertakings

- 3.2.1 Railway undertakings shall notify Network Rail of current contact details for receipt of NIRs. A unique address shall be provided for this purpose.

#### 3.3 Unavailability of NIR-Online

- 3.3.1 Network Rail shall have a contingency plan to receive and distribute NIRs when NIR-Online is unavailable.
- 3.3.2 Network Rail shall implement the contingency plan when notified of the unavailability of NIR-Online, and it determines that NIR-Online will be unavailable for an unacceptable period.

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### Part 4 Application of this document

#### 4.1 Application - infrastructure managers

##### 4.1.1 Scope

4.1.1.1 The requirements of Part 3 of this document apply to Network Rail acting as the administrator of NIRs through the NIR-Online system.

##### 4.1.2 Exclusions from scope

4.1.2.1 There are no exclusions from the scope specified in section 4.1.1 for Network Rail.

##### 4.1.3 General compliance date for infrastructure managers

4.1.3.1 This Railway Group Standard comes into force and is to be complied with from 04 August 2007.

4.1.3.2 After the compliance dates or the date by which compliance is achieved if earlier, Network Rail is 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.

##### 4.1.4 Exceptions to general compliance date

4.1.4.1 There are no exceptions to the general compliance date specified in section 4.1.3 for infrastructure managers.

#### 4.2 Application - railway undertakings

##### 4.2.1 Scope

4.2.1.1 The requirements of this document apply to the reporting of all high risk defects on rail vehicles.

##### 4.2.2 Exclusions from scope

4.2.2.1 The requirements of this document are not mandatory for the reporting of high risk defects on the following types of vehicle:

- a) Possession-only rail vehicles
- b) Any other rail vehicle operating exclusively on infrastructure outside the scope of Railway Group Standards (for example, in depots).

4.2.2.2 Appendix A gives further advice about the use of the NIR-Online system in the case of the vehicles listed in clause 4.2.2.1.

##### 4.2.3 General compliance date for railway undertakings

4.2.3.1 This Railway Group Standard comes into force and is to be complied with from 04 August 2007.

4.2.3.2 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.

##### 4.2.4 Exceptions to general compliance date

4.2.4.1 There are no exceptions to the general compliance date specified in section 4.2.3 for railway undertakings.

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### **4.3 Health and safety responsibilities**

- 4.3.1 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 Application of NIR-Online to other rail vehicles, equipment and **plant & machinery**

The content of this appendix is not mandatory and is provided for guidance only.

#### A.1 **Defect reporting**

A.1.1 Historically, any safety-related **defect** found on rail vehicles, equipment and **plant & machinery** used in the railway environment could be reported using the NIR system, if a competent engineer within a rail industry company decided that the **defect** was of a type that had the potential to pose an urgent high risk to other operators of the same or similar items.

A.1.2 The current NIR-Online system is capable of handling this information and it is strongly recommended that the system continues to be used to report urgent high risk defects on all rail vehicles, equipment and **plant & machinery** used in the railway environment.

#### A.2 **Other rail vehicles, equipment and **plant & machinery****

A.2.1 It is permissible for users of other rail vehicles, equipment and **plant & machinery** to utilise the facilities provide by NIR-Online to communicate urgent high risk defects to the following:

- a) Items of mechanical and electrical equipment, including portable/transportable infrastructure **plant** and work equipment.
- b) **Plant** and work equipment used for, or in association with, the construction, alteration, renovation, repair, maintenance or inspection of railway infrastructure.
- c) Equipment used on stations to move people or materials.
- d) Items of equipment associated with the maintenance of rail vehicles and **plant & machinery**.
- e) Other rail vehicles operating on infrastructure outside the scope of Railway Group Standards (for example, in depots).
- f) Possession-only rail vehicles.

A.2.2 Track, electrification and signal & telecommunications equipment are specifically excluded.

A.2.3 Where NIR-Online is adopted by users of other rail vehicles, equipment and **plant & machinery**, the users should notify Network Rail of current contact details for receipt of NIRs. A unique address should be provided for this purpose.

#### A.3 **Acknowledging receipt of a national incident report (NIR)**

A.3.1 Non-railway undertakings should acknowledge receipt of a NIR within 72 hours.

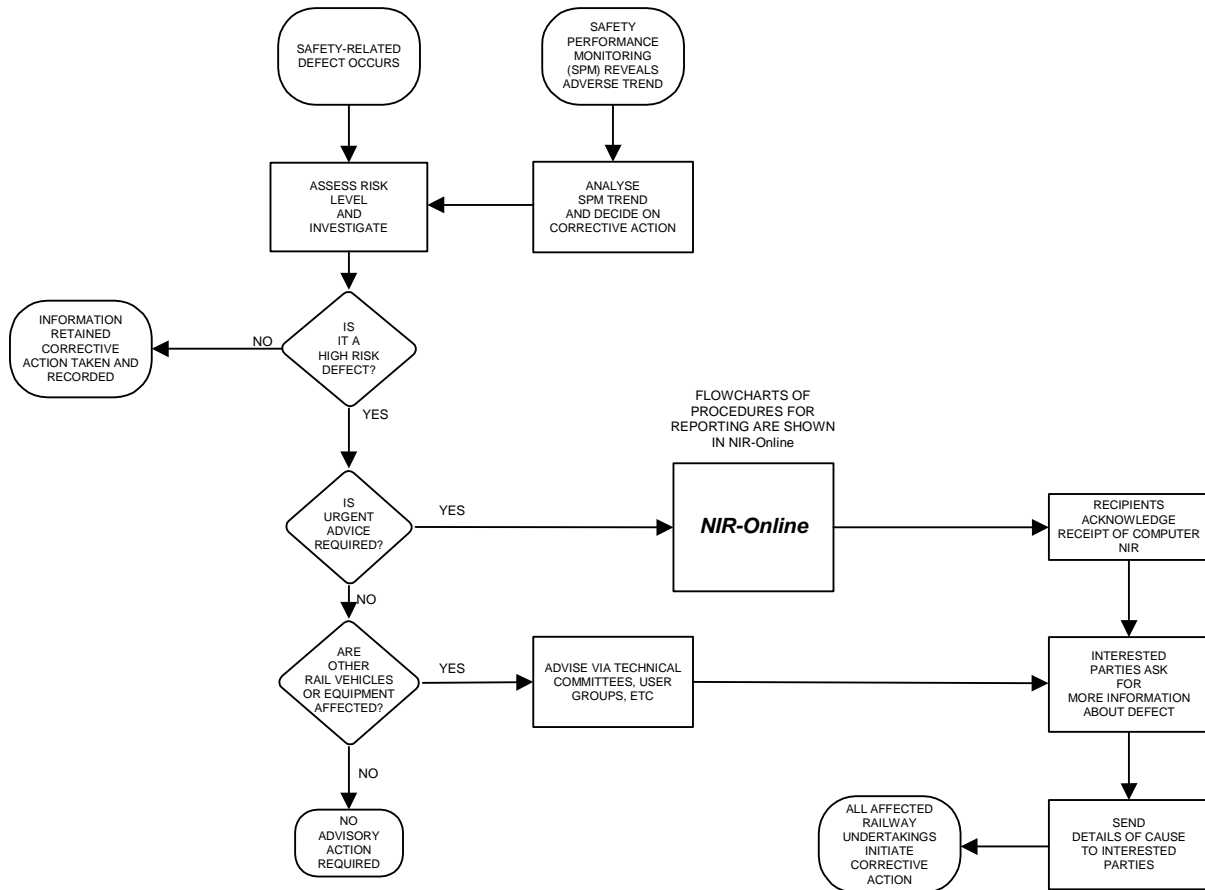
A.3.2 Network Rail should follow up, 72 hours after issue of the NIR, when acknowledgement of receipt of a NIR has not been received from a non-railway undertaking.

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## Appendix B Flow Chart – Urgent safety-related defects

The content of this appendix is not mandatory and is provided for guidance only.

This flow chart illustrates the arrangements set out in this standard.



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### Appendix C Safety-related defect monitoring

The content of this appendix is not mandatory and is provided for guidance only.

#### C.1 General

- C.1.1 Companies in the rail industry should have systems in place through which they react positively and with the appropriate degree of urgency whenever a safety-related defect is discovered or advised to them. Defects include parts and components missing from rail vehicles that, whilst not affecting the integrity of the vehicle, if expelled at high speed could cause damage or injury.
- C.1.2 Companies in the rail industry should have common monitoring arrangements to facilitate the sharing of information and to provide the ability to transfer/exchange data between users, through which they react positively whenever an adverse trend develops that could affect the safety of, and other users of, the railway.
- C.1.3 Companies in the rail industry should ensure that their suppliers advise them of safety-related defects that adversely affect, or have the potential to adversely affect, safety on the railway. Railway undertakings should not delegate to contractors or suppliers the responsibility for the reporting of safety-related defects through NIR-Online.

#### C.2 Defect reporting system

##### C.2.1 Requirement

- C.2.1.1 All companies in the rail industry should have a defect reporting system in place that records safety-related defects, the result of subsequent investigations and any corrective actions taken.
- C.2.1.2 There should be a system to enable an assessment to be made to determine if the defect is high risk and whether it merits an urgent advice (via NIR-Online) to other parties in the rail industry. The assessment should be undertaken by an engineer, appointed by the rail industry company, who has relevant knowledge and experience to assess such risks.

##### C.2.2 Recorded data

- C.2.2.1 The defect reporting system should enable the following data to be reported (where appropriate):
- Date, time, location and description of incident.
  - Rail vehicle, plant or machinery identifying number.
  - The train service, including description number and configuration (for example, push-pull) where appropriate.
  - Use being made of plant & machinery.
  - Description of defect and, if known, the root cause.
  - Identification of the system that has given rise to the safety-related defect.
  - Remedial action taken, including any operating restrictions applied.
  - Identification of nearest rail vehicle door or wheel. The requirements for the identification of vehicle door and wheel positions are set out in appendix A of [GM/RT2459](#).

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- i) Any other relevant data (including, for example, component catalogue number/s or part number/s).

### C.2.3 Transfer of information

- C.2.3.1 The **defect** reporting system should include details of the **defect** and any consequential operating restrictions to be passed on to other train crew or personnel who may take over operation of the rail vehicle, equipment or **plant & machinery**.

### C.2.4 Advice to operators

- C.2.4.1 The **defect** reporting system should require reported safety-related **defect** data to be advised to those operating the affected rail vehicle, equipment or **plant & machinery**, and include corrective actions carried out.

### C.2.5 Feedback reports

- C.2.5.1 The **defect** reporting system should provide, to those who initially report a safety-related **defect**, the details of the cause of the **defect** and subsequent action taken.

### C.2.6 Corrective action

- C.2.6.1 The rail industry company's appointed engineer should investigate the cause of the high risk **defect** and identify and implement the necessary corrective action.

## C.3 Defect monitoring

- C.3.1 The **defect** recorded in the reporting system should be analysed to enable trends to be monitored and to identify adverse trends.
- C.3.2 The NIR-Online system should be periodically interrogated to identify defects relating to rail vehicles, equipment and **plant & machinery** relevant to the rail industry company's particular operations.
- C.3.3 The results of such analysis should be used to determine whether changes to the rail industry company's maintenance plan are required.

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### Definitions

#### Accident

An unplanned, uncontrolled event which has led to death, ill health, injury, damage or other loss.

#### High risk defect

A safety-related defect that caused or had the potential to cause:

- a) The death or injury of any person.
- b) An accident to the rail vehicle itself.
- c) An accident to any other rail vehicle, equipment or plant & machinery.
- d) Damage likely to endanger the safety of:
  - i) Any person or animal
  - ii) Trains
  - iii) The infrastructure
  - iv) The environment.

In the context of this document, this definition includes discovery of a deficiency in authorised documentation or systems that could, if implemented, cause a high risk defect as defined above.

#### Incident

An unplanned, uncontrolled event, which could have led to an accident. (This definition also covers a 'near miss'.)

#### National incident report (NIR)

A report of an urgent high risk defect relating to rail vehicles, equipment or plant & machinery made using NIR-Online.

#### NIR-Online

A web-based application used to initiate, disseminate and manage reports (known as national incident reports) of urgent high risk defects relating to rail vehicles, equipment and plant & machinery.

The web address of NIR-Online is <http://www.nir-online.net/>.

#### Rail vehicle

Any vehicle described as traction and rolling stock (that is, locomotives, multiple units, coaching stock or wagons) and on-track machines, used outside a possession.

#### Safety-related defect

Failure of, or damage to, a rail vehicle, equipment or plant & machinery, or component or system thereof, which prevents or impairs its intended function and could cause an accident or incident.

#### Urgent high risk defect

A high risk defect that gives rise to the need to undertake an urgent campaign check, component replacement or repair programme, or fleet, equipment or plant & machinery withdrawal. 'Urgent' in this context means an action taken immediately, or, additionally to any planned maintenance or repair.

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## References

The Catalogue of Railway Group Standards and the Railway Group Standards CD-ROM give 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).

### Documents referenced in the text

RGSC 01 The Railway Group Standards Code

#### Railway Group Standards

[GM/RT2459](#) Data to be Displayed on Rail Vehicles

#### RSSB documents

Form [RT8250](#) Urgent Safety-Related **Defect** Report Form

### Other relevant documents

#### Railway Group Standards

[GO/RT3350](#) Communication of Urgent Operational Advice

#### Other documents

SI 3163:1995 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)