



2014 ANNUAL SAFETY REPORT to ERA

Railway Safety Commission

The National Safety Authority for Railways in Ireland



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Reference documents

| Ref. | Document Title | Document ref. | | |
|------|--|----------------------------|--|--|
| /1/ | Directive 2004/49/EC on safety on the Community's | OJ L220, 21.6.2004, p.16 | | |
| | railways (Railway Safety Directive) | | | |
| /2/ | Directive 2008/110/EC amending the Railway Safety | OJ L345, 23.12.2008, p. 62 | | |
| | Directive | | | |
| /3/ | Commission Regulation (EU) No 1077/2012 on a CSM for | OJ L320, 17.11.2012, p. 3 | | |
| | supervision | | | |
| /4/ | Commission Regulation (EC) No 352/2009 on the adoption OJ L108, 29.4.2009, p. 4 | | | |
| | of a CSM on risk evaluation and assessment | | | |
| /5/ | Commission Implementing Regulation (EU) No 402/2013 OJ L121, 3.5.2013, p. 8 | | | |
| | on the CSM for risk evaluation and assessment and | | | |
| | repealing Regulation (EC) No 352/2009 | | | |
| /6/ | Commission Directive 2009/149/EC amending the Railway OJ L313, 28.11.2009, p. 65 | | | |
| | Safety Directive as regards Common Safety Indicators and | | | |
| | common methods to calculate accident costs | | | |

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(Cover photo by courtesy of Neil Dinnen)

Abbreviations

| AB | Assessment Body |
|-------|---|
| CSI | Common Safety Indicator |
| CSM | Common Safety Method |
| CST | Common Safety Target |
| DeBo | Designated Body |
| ECM | Entities in charge of maintenance |
| ERAIL | European Railway Accident Information Links |
| IM | Infrastructure Manager |
| MS | Member-State |
| NIB | National Investigation Body |
| NoBo | Notified Body |
| NRV | National Reference Value |
| NSA | National Safety Authority |
| NSR | National Safety Rule |
| RSC | Railway Safety Commission |
| RSD | Railway Safety Directive |
| RU | Railway Undertaking |
| SPAD | Signal Passed at Danger |

A. INTRODUCTION

A.1 The purpose, scope and other addressees of this report¹

Article 18 of the Railway Safety Directive 2004/49/EC requires the Railway Safety Commission (RSC), as National Safety Authority, to publish an annual report each year concerning its activities in the preceding year and to send it to the European Railway Agency by 30 September at the latest.

The report shall contain information on:

- the development of railway safety, including an aggregation at Member State level of the common safety indicators (CSIs) laid down in Annex I;
- o important changes in legislation and regulation concerning railway safety;
- the development of safety certification and safety authorisation;
- $\circ\;$ results of and experience relating to the supervision of infrastructure managers and railway undertakings.

The scope of this report is the 1600mm gauge national railway system in the Republic of Ireland. This report is addressed to the ERA, the Minister for Transport, Tourism and Sport, the NIB, the RUs, the IM and the ECMs.

¹The report should indicate the intended addressees besides the Agency, especially at national level: Ministry of Transport, NIB, Regulatory Body, Competition Authority, RUs, IM(s), ECMs, NoBos, DeBos, associations of passengers, etc.

A.2 Significant organisational changes affecting the NSA²

The organisational chart of the RSC in year 2014 is shown in figure 1 below.

The Investigating Body (the RAIU) officially transferred from the RSC to the Department of Transport Tourism and Sport on 1st July. Due to an embargo on public sector recruitment, trainee graduate engineers on fixed term temporary contract occupied six positions of Inspector within the NSA. One RSC Inspector, seconded to the role of Investigator within the RAIU, resigned in December 2014.



Figure 1: Staffing of the RSC at end 2014

²Significant organisational changes may be internal (creation of new departments, different allocation of tasks amongst departments, etc.) or external, such as modifications in the institutional relationship with the Ministry of Transport or other public authorities (NIB, Regulatory Body, etc.). This information should only be reported if there are organisational changes compared to the previous year. 7/44 NSA_IE Report 2014_EN_final_version_0.1

B. OVERALL SAFETY PERFORMANCE AND STRATEGY

B.1 Main conclusions on the reporting year³

The Irish network is small, carrying less than one percent of total EU railway traffic, and it continues to have relatively low accident rates per million train-km. It is difficult to pick up any trend in the CSI accidents as the dataset is too small. In 2014, there were four significant accidents, i.e.

- \circ one fatality to a trespasser on the railway, who was struck and killed by a moving train following their attempt to retrieve an item from the track in a station
- \circ one fatality to an intending passenger on a platform, who fell onto the track and was struck and fatally injured by a train, and
- $\circ~$ one collision with a road vehicle at a level crossing, where a passenger train struck a van, seriously injuring the occupant.
- one collision of a passenger train with an obstacle, leading to a derailment (without casualties) and resulting in the railway line concerned to be closed for approximately 12 hours

A car also collided with the side of a passenger train at an unattended level crossing on a public road, without significant injury to the occupant or significant delay to trains.

The CSI incident data again indicates a significant increase in reports of wrong-side signalling failures in 2014 increasing by 50% on the 2013 figure. Conversely, and on a more positive note, the number of SPAD incidents reduced in 2014 by approximately 50%.

B.2 National safety strategy, programmes and initiatives⁴

Work is ongoing to improve the maturity level of safety management in the railway sector. In particular, the RSC has been encouraging the sector players to work towards the excellence in safety management demonstrated by high reliability organisations (HRO).

In November 2014, the RSC commissioned a consultant to undertake a Strategic Management Review of Irish Rail, the state railway in the Republic of Ireland (RU & IM) and to undertake a comparison against a HRO. The work was completed in 2015.

³National safety targets deriving from national safety strategy/programmes/plans (if available); EU safety targets stemming from CSTs/NRVs.

⁴Information on the main elements of the national safety strategy/programme/initiatives (if available), and a brief evaluation of current safety programmes and initiatives and information on future programmes and initiatives (if available at Ministry, NSA and IM levels).

B.3 Review of the previous year⁵

The independent chairperson, who had been appointed by the RSC to oversee the implementation of recommendations made in a *Review of circumstances that may inhibit early identification of critical safety information during an investigation of an accident or incident,* completed this work. This work resulted in the submission of a report in December 2014 to the RSC, additionally a copy of this report was provided to the DTTAS.

In 2014 a comprehensive review of the inherent risks associated with the current larnród Éireann signalling and telecommunications systems was undertaken. This review, comprised of a risk assessment and human factors review conducted by independent experts on behalf of RSC, was delivered in Q4, 2014, with the overarching report to be finalised by the RSC in 2015.

The year 2014 saw on-going development of the RSC's Quality Management System to enable the RSC to achieve ISO accreditation.

Also in 2014 the RSC commissioned an independent comparison of the characteristics of larnród Éireann's (IÉ's) RU and IM business units against those of a High Reliability Organisation. This review focused on the safety management systems at a strategic management level and identified a number of findings. To address the findings a road-map was developed to assist IÉ in its own continuous improvement. The five areas of strategic safety management considered as part of the review were:

- Safety Leadership
- Safety Assurance
- Safety Culture
- Safety Competency
- Safety Capability

B.4 Focus-areas for the next year⁶

The task areas that will be the focus of particular attention for the RSC as it continues to deliver on its responsibilities under European and National legislation during 2015 are as follows:

- Continuing co-operation with, and technical support to the DTTAS in the amendment of legislation and development of functions for economic regulation of the railway sector in compliance with Directive 2012/34/EU;
- Recruitment on a permanent basis of the number of competent specialists that are required to keep the RSC adequately resourced from 2015 onward;
- Further professional development of all RSC staff so as to ensure that adequate railway-specific technical and legal knowledge and skills are available within the organisation;
- Continued engagement with the larnród Éireann Railway Undertaking function for the roll out of ECM certification to all passenger and locomotive fleets;

⁵Information on the safety performance and the most important results of (internal) audits, inspections and other feedbacks (e.g. the experience of the certification work).

⁶Indicating the key-areas on which the NSA will focus, related to the reported activities.

- Establishment of Regulatory Body, Independent Monitoring Body and Licensing Authority functions and, subject to legal provisions, re-branding of the RSC as the Commission for Railway Regulation (CRR) in 2015;
- Further development of internal processes and procedures relating to the Quality Management System for the CRR.

The objective of all RSC activities during 2015 will be in accordance with its mission "To advance the safety of railways in Ireland through diligent supervision and enforcement."

C. DEVELOPMENTS IN SAFETY PERFORMANCE

C.1 Detailed analysis of the latest recorded trends

The CSIs⁷ for Ireland are available on the E-RAIL website. The following is an analysis of trends related to CSIs and national safety indicators:

1. Number of fatalities/serious injuries (total and relative to train-km).

As indicated in B.1, traffic levels and accident rates are low. Casualty rates are low to the extent that it is difficult to outline any trends in the data. Please see charts in Annex A.

2. Number of significant accidents (total and relative to train-km).

The number of significant accidents remains at a low point in comparison to previous years. The trend is positive when viewed over the period of five years.

Significant accidents included -

- one fatality to a trespasser on the railway, who was struck and killed by a moving train following their attempt to retrieve an item from the track in a station
- \circ one fatality to an intending passenger on a platform, who fell onto the track and was struck and fatally injured by a train, and
- one collision with a road vehicle at a level crossing, where a passenger train struck a van, seriously injuring the occupant.
- one collision of a passenger train with an obstacle, a large rock that had been pushed from a boundary wall at the top of railway cutting and had landed on the track. The train derailed (without casualties) resulting in the railway line concerned to be closed for approximately 12 hours.

A car also collided with the side of a passenger train at an unattended level crossing, without significant injury to the occupant or significant delay to trains.

3. Number of precursors to accidents.

The number of precursor events in 2014 were mixed, with an increase in the number of wrong-side signalling failures but a reduction in the number of Signals Passed at Danger. Graphs relating to both the aforementioned precursors are included in Annex A.

In regard to wrong-side failures, there was again a large increase in reported incidents. These mainly related to loss of detection at track circuits due to rail-head contamination between October and December but also due to a number of power failures as a result of lightning strikes. Please see graph in Annex A.

2014 saw a mix of other precursor incidents such as an increasing prevalence is weather related events with a number of cutting and embankment failures. There was also a number of low risk derailments in sidings.

⁷CSIs as defined in Annex I to RSD /1/ and in Appendix to Annex I (Commission Directive 2009/149/EC) /6/.

Similar to other years, injuries to customers or visitors to stations remain at a high level with slips, trips and falls being the dominant cause of these injuries. These incidents tend to be of a minor nature and resulting injuries are usually treated by first aid at the station.

The trend in bridge strikes (a national safety indicator), i.e., under-bridge and over-bridge, saw a small reduction to that of 2013, with 87 occurrences in 2014 down from 94 in 2013. While only a small annual reduction, it is significantly less than the 2005 high of 215. Please see graph in Annex A.

4. Cost of significant accidents.

As previously reported, there have been very few significant accidents on the Irish network over the five year period 2010-2014 and this continues to be the case.

5. Technical safety of infrastructure and its implementation, management of safety.

There has been no change in % of tracks with Train Protection Systems (TPS) or Automatic Train Protection (ATP) over the past five years. A limited type of ATP is available on 99 track-km (4.6%) of the larnród Éireann network. A further 900 track-km (41.6%) of the network is equipped with a TPS called the Continuous Automatic Warning System (CAWS), but the remaining 1,166 track-km (53.8%) of the network is not yet equipped with any form of TPS or ATP system.

The number of level crossings on the active network was further reduced in 2014. The number of level crossings in early 2015 stood at 978, down from 1011 at the end of 2013. Continued investment in this area, be that through grade separation or the simple buying of land should see this figure continue to fall.

The CSIs relating to the management of safety are rather tenuous. In general, the RUs and IM normally achieve the audit targets which they set out for themselves. Iarnród Éireann IM completed 173 Rule Book Compliance audits and undertook 1174 Safety Tours. Iarnród Éireann RU completed 14 audits in 2014.

C.2 Results of safety recommendations⁸

In 2014 the Railway Accident Investigation Unit (RAIU) published investigation reports relating to four occurrences that took place in 2013 and one relating to a series of incidents that initially occurred in 2012 but which expanded into occurrences in 2013. The 2012-2013 investigations (published in 2014) were:

- Possession Incidents: Trend Investigation
- Operational Irregularity: Dundalk-Newry 23rd March 2013
- DART wrong-side door failure: Salthill 10th August 2013
- Structural failure of Platform Canopy: Kent Station 18st December 2013
- Rock fall at Plunkett Station, Waterford: 31st December 2013

All resulted in the making of safety recommendations and these are listed in the table below.

| Date Report Published | Title of Report | No. of safety recommendations made | Duty Holder |
|--------------------------------|--|--|----------------|
| 27 th February 2014 | Trend Investigation into Track | 6 | IÉ-IM |
| | Possession related Incidents | | |
| 28 th April 2014 | Operational Irregularity during Single | 2 | . 4 |
| | Line Working between Dundalk & | 3 | IE-IM |
| | Newry | | |
| 30 th July 2014 | DART wrong-side door failure, | | 14 511 |
| | Salthill & Monkstown Station, 10th | 4 | IE-RU |
| | August 2013 | | |
| 7 th November 2014 | Structural failure of a platform | _ | . 4 |
| | canopy at Kent Station, Cork | 5 | IE-IM |
| | 18th December 2013 | | |
| 18 th December 2014 | Rock fall at Plunkett Station, | _ | .4 |
| | Waterford, | 3 | IE-IM |
| | 31st December 2013 | | |

The following tables present the individual safety recommendations made by the Railway Accident Investigation Unit (the NIB in the Republic of Ireland). They are tabulated by report and include a brief summary of the safety measures or actions taken and the status of their implementation.

The RSC categorise the status of recommendations as being either 'Open', 'Complete' or 'Closed'. These are defined as follows:

Open (In progress) - Feedback from implementer is awaited or actions have not yet been completed.

Complete - Implementer has advised that it has taken measures to effect the recommendation and the RSC is considering whether to close the recommendation.

Closed - Implementer has advised that it has taken measures to effect the recommendation and the RSC is satisfied that the work has been completed and has closed the recommendation.

⁸The list may be exhaustive or present a selection of the most relevant recommendations received. NSA_IE Report 2014_EN_final_version_0.1

R2014 – 001- Trend Investigation into Track Possession related Incidents

(Report Published 27-02-14)

Summary:

In 2012, larnród Éireann (IÉ) had four possession related incidents within the space of one week. These incidents led to the RAIU to initiate a trend investigation on the 27th February 2012.

The scope of the trend investigation included the four aforementioned incidents and all other relevant reported possession incidents that occurred between January 2009 and January 2013.

Initial analysis of these incidents identified recurring issues with possession planning therefore this investigation has focused on the management and execution of possession planning. Due to the recurring nature of these issues the RAIU have also examined how IÉ manage internal post incident recommendations previously made in the area of possession management.

C

| Recommendation 1 (1-2014) | IÉ (Infrastructure Manager) should develop a formal possession planning meeting framework that is consistent through the IÉ network. | |
|---------------------------------|---|--|
| Action/s taken / in progress | The Civil Engineering department wrote a number of new Work instructions and these are now being used in the possession management activity. | |
| Status | Closed | |
| | | |
| Recommendation 2 (2-2014) | IÉ (Infrastructure Manager) should review the application of Back-to- Back possessions and implement actions to eliminate any informal practices that do not comply with IÉ Rule Book. | |
| Action/s taken / in progress | The Safety, Training and Civil Engineering departments reviewed the practice of having back-to-back possession and amended its possession management-training course. | |
| Status | Closed | |
| | | |
| Recommendation 3 (3-2014) | IÉ (Infrastructure Manager) should establish a possession planning procedure that ensures protection arrangements are based on the work to be delivered and are verified by a suitable member of staff and formally communicated to all relevant personnel. | |
| Action/s taken / in progress | The Civil Engineering department wrote a new Quality Management standard together with associated work instructions. | |
| Status | Closed | |
| | | |
| Recommendation 4 (4-2014) | IÉ (Infrastructure Manager) should monitor and review entries into Section "Engineering works requiring absolute possessions – Section T Part III" of the Weekly Circular to ensure that the information | |

| | published in this document is accurate and credible. |
|---------------------|--|
| Action/s taken / in | No action advised to date |
| | |
| Status | Open / In Progress |
| | |
| Recommendation 5 | IÉ (Infrastructure Manager) should review the current process for late |
| (5-2014) | changes to possessions to ensure changes to possession arrangements |
| | are verified by a suitable member of staff and formally communicated |
| | to all relevant personnel. |
| Action/s taken / in | No action advised to date |
| progress | |
| Status | Open / In Progress |
| | |
| Recommendation 6 | IÉ (Infrastructure Manager) should undertake a review of possession |
| (6-2014) | incidents that have occurred over the last four years to ensure that |
| | reports are completed and recommendations are identified and |
| | addressed. |
| Action/s taken / in | No action advised to date |
| progress | |
| Status | Open / In Progress |

R2014-002 - Operating irregularity during Single Line Working between Dundalk and Newry

(Report Published 28-04-14)

Summary:

On Friday, 22nd March weather conditions between Dundalk and Newry were such that there was a heavy downfall of snow and localised flooding in the area, causing landslips. This resulted in degraded conditions on the railway line running cross-border between the Republic of Ireland and Northern Ireland. Single Line Working (SLW) with a Pilotman was introduced over the *Down Line*, between Dundalk and Newry, to keep the rail services operational.

On the morning of Saturday 23rd March, an operating irregularity took place in that Pilotman did not follow correct Rule Book procedures and a second train was allowed to enter the section of line where SLW was in operation.

| Number of recommendations made | | 3 |
|---------------------------------|---|--|
| Recommendation 1 (7-2014) | IÉ should review the signalling infrastructure cross -border with a view to commissioning the bi-directional signalling. | |
| Action/s taken / in progress | IÉ-IM and NIR-RU (Translink) convened a meeting to review the commissioning of the bi-directional signalling. It was deemed that the cost involved in the project would be disproportionate to the benefits. The RSC accepted IÉ-IM's assessment. | |
| Status | Closed | |
| | | |
| Recommendation 2 | IÉ should review their | training, assessment and competency of |

| (8-2014) | signalmen and pilotmen in relation to SLW with Pilotman to ensure they are confident in performing their respective duties during SLW and are familiar with the routes covered. |
|---------------------------------|---|
| Action/s taken / in progress | No action advised to date. |
| Status | Open / In progress |
| | |
| Recommendation 3 (9-2014) | IÉ should review current communication procedures with regard to the updated communication equipment now available. |
| Action/s taken / in progress | No action advised to date. |
| Status | Open / In progress |

R2014-003 - DART Wrongside Door Failure, Salthill & Monkstown Station, 10th August 2013

(Report Published 30-07-14)

Summary:

At approximately 08:50 hours (hrs.) on Saturday 10th August 2013, the driver of the DART service from Howth to Greystones was stopped at Salthill & Monkstown Station, when he noticed that the blue Door Interlock Light, a light used by drivers for confirmation that the passenger doors are closed, was illuminated while the rear passenger doors of the train were open. After a number of checks, the driver found that the *coupler* was damaged and the rear units of the train were incorrectly *coupled*. He contacted the Chief Mechanical Engineer's Department (CME) and the train was taken out of service and sent to Fairview Depot for inspection.

| Number of recommendations made | | 4 |
|---------------------------------|---|--|
| Recommendation 1 (10-2014) | The Chief Mechanical Engineer's department should review and modify their design for the DART auto-couplers to ensure a more robust coupler circuit that will provide assurance that both coupler electrical heads have connected correctly and that coupler circuits are continuous throughout the train consist. Any modification made should be documented in Rolling Stock Design Standards. | |
| Action/s taken / in progress | The CME advised that the DART coupler design circuits were revised and was documented through an 'engineering change request'. | |
| Status | Closed | |
| | | |
| Recommendation 2 (11-2014) | The CME (IÉ RU) shoul console (EMU Fleet) to completed successfully has failed). | d introduce a visual indicator on the driving o indicate to the driver that coupling has been y (or a visual or audible indication that coupling |
| Action/s taken / in progress | The CME advised that and this included the a submitted to demonst | the EMU coupler design circuits were revised addition of a visual indicator in the cab. Evidence rate same. |

| Status | Complete |
|---------------------------------|--|
| | |
| Recommendation 3 (12-2014) | DART Operations (IÉ RU) should update the applicable EMU Drivers' Manuals to include specific guidance on the requirement for the examination of couplers. The update should also include guidance on associated testing of coupler integrity and guidance on any indications in the driving cab that would assist the driver in detecting any coupler failure. |
| Action/s taken / in progress | No action advised to date. |
| Status | Open / In progress |
| | |
| Recommendation 4 (13-2014) | The CME (IÉ RU) should review and modify the processes set out in their SMS for closing recommendations to ensure recommendations from investigations are recorded, monitored and closed. When these processes have been established, they should be audited (by a party external to the CME) at predefined intervals to ensure compliance. |
| Action/s taken / | CME reviewed its process with the Safety Compliance Manager and have agreed its process |
| Status | Complete |

R2014-005 - Structural failure of a platform canopy at Kent Station, Cork, 18th December 2013 (*Report Published 7-11-14*)

Summary:

At approximately 15:01 hours (hrs.) on Thursday 18th December 2013 the canopy over Platforms 1 and 2 at Kent Station, Cork, was exposed to unusually high winds and collapsed. The canopy consisted of a mainly timber cantilevered roof supported by seventeen cast-iron columns which were braced longitudinally by lattice girders. The design of each column included a decorative feature at the base of the column at which fourteen of the seventeen columns fractured. This feature acted as a stress raiser and therefore an inherent weak point in the design. A structural dynamics and wind loading study was undertaken by Fluvio R&D Limited (Fluvio) to determine the collapse mechanism. This work concluded that the structure initially failed at the end furthest away from the station and then the columns fractured sequentially towards the station. This model was supported by witness statements and CCTV footage. The work also calculated that a peak wind speed of between 39 metres per second (m/s) and 50 m/s would be required to initiate the collapse and concluded that speeds of this magnitude would be associated with a rare event.

| Number of recommendations made | | 3 |
|--------------------------------|---|--|
| Recommendation 1 (20-2014) | IÉ IM should identify a a risk-based approach these assets, during ro | Il cast-iron structures on the network. From this, should be taken in relation to the inspection of utine inspections, in terms of any risks |

| | associated with cast-iron. |
|---------------------------------|--|
| Action/s taken / in progress | All similar structures to that at Cork Kent Station have been identified. The RSC have requested further information and await its submission. |
| Status | Complete |
| | |
| Recommendation 2 (21-2014) | IÉ IM should establish a formalised procedure for managing the risk associated with the adverse effects of high winds. |
| Action/s taken / in progress | The Civil Engineering department have revised and updated its standard relating to Structural Inspections. Additionally a technical bulletin was written and briefed to all relevant staff. |
| Status | Complete |
| | |
| Recommendation 3 (22-2014) | IÉ IM should review the structural and annual inspection regimes for Buildings & Facilities (B&F) to ensure all assets are inspected in accordance with the prescribed standards and any associated documentation is completed appropriately. |
| Action/s taken / in progress | A new B&F compliance section has been created with new standards and work practice developed. The RSC await submission of some further evidence before closing this safety recommendation. |
| Status | Complete |

R2014 – 006- Rock fall at Plunkett Station, Waterford, 31st December 2013

(Report Published 18-12-14)

Summary:

At approximately 18:45 hours (hrs.) on Tuesday 31st December 2013, the *Signalman* at Waterford Central Cabin (Signal Cabin) heard a loud rumble from outside. When the Signalman went out onto the steps of the Signal Cabin to investigate, he saw that a large portion of the *rock face* running adjacent to the station had collapsed onto the two tracks, which run under the Signal Cabin and through Plunkett Station (Waterford).

| Number of recommendations made | | 5 | | | |
|---------------------------------|---|---|--|--|--|
| Recommendation 1 (23-2014) | IÉ IM CCE should complete a thorough review of CCE-STR-STD-2100 in relation to the application of condition ratings on assets to ensure that condition ratings are a true reflection of the condition of the asset; and that the appropriate inspection frequency is applied. | | | | |
| Action/s taken / in progress | This standard has been reviewed and has been superseded. | | | | |

| Status | Complete | | | |
|---------------------------------|--|--|--|--|
| | | | | |
| Recommendation 2 (24-2014) | IÉ IM CCE should complete a thorough review of the Cuttings, Embankments and Coastal/River Defences Inspection Card set out in CCE-STR-STD-2100 to ensure that Structures Inspectors have the correct means to complete the card without the requirement for alterations to templates or defined terms. The process of approval of these Inspection Cards should also be reviewed to ensure that they are reviewed and approved by the STSE. | | | |
| Action/s taken / | Structural asset inspection cards were reviewed and have been | | | |
| in progress | updated and incorporated in a updated standard | | | |
| Status | Complete | | | |
| | | | | |
| Recommendation 3 (25-2014) | IÉ IM CCE should complete thorough reviews of CCE-STR-STD-2100 and CCE-STR-GDN-2802 in terms of maintenance requirements to ensure consistency throughout both documents. | | | |
| Action/s taken / in progress | No action advised to date. | | | |
| Status | Open / In Progress | | | |
| | | | | |
| Recommendation 4 (26-2014) | IÉ IM CCE should fully adopt the compliance verification process and ensure the process includes an effective means of reviewing the quality of documents completed by staff. | | | |
| Action/s taken / in progress | The Civil Engineering department have advised that the compliance verification process is being implemented and have written a 'Process Document to explain this' the RSC are considering the submitted evidence. | | | |
| Status | Complete | | | |
| | | | | |
| Recommendation 5 (27-2014) | IÉ IM CCE should review its Competence Management System in terms of both: its identification and tracking of mandated refresher training for Structures Inspectors competence; and its annual review of Structures Inspectors inspection work. | | | |
| Action/s taken / in progress | The Civil Engineering department have revised and updated its standard relating to Structural Inspector Competence and are implementing it. | | | |
| Status | Closed | | | |

C.3 Measures implemented not in relation to safety recommendations⁹

The RSC undertake Post Incident Inspections (PII) following all reportable accidents and incidents (excluding acts of self-harm by adults at railway stations and level crossings) and often identify areas of concern. In such cases the RSC can and do make PII Outcomes. The following table lists those areas of concern, the action taken by the RSC and a brief summary of any safety measure introduced by an RU or IM.

| RSC PII's Outcomes | | | | | | | | | |
|--------------------|----------------|---------------|------|------|--------|------|-------|------|------|
| | | Open Complete | | | Closed | | Total | | |
| Year | No. of Reports | AR's | NC's | AR's | NC's | AR's | NC's | AR's | NC's |
| 2014 | 3 | 11 | 3 | 0 | 0 | 0 | 0 | 11 | 3 |

| Area of concern | Description of the trigger | Safety measure introduced | | | |
|---------------------------------|---------------------------------------|------------------------------------|--|--|--|
| The Infrastructure Manager's | Collision of train with a landslip at | The RSC checked the IM's | | | |
| inspection and maintenance of | the 38 ¼ milepost on the Kilkenny to | compliance with standards and make | | | |
| cuttings and embankments | Waterford line. | a number of 'recommendations' that | | | |
| | | are currently being implemented. | | | |
| The Infrastructure Manager's | Procedural irregularity leading to a | The RSC checked the IM's | | | |
| processes for managing overhead | dangerous occurrence at Malahide | compliance with standards and make | | | |
| line isolations, | involving an isolation of 1,500V-DC | a number of 'recommendations' that | | | |
| | traction power. | are currently being implemented. | | | |
| The Infrastructure Manager's | A rock fall at Rushbrooke, Cork. | The RSC checked the IM's | | | |
| inspection and maintenance of | | compliance with standards and make | | | |
| cuttings and embankments, and | | a number of 'recommendations' that | | | |
| specifically steep rock faces. | | are currently being implemented. | | | |

Table 2 – Safety measures not triggered by safety recommendations

D. SUPERVISION¹⁰

D.1 Strategy and plan(s)

The RSC's Supervision Programme fulfils the supervision function of the RSC in a professional and efficient manner. This is achieved through the development of multi-annual SMS audit plans and a number of annual supervision plans, one for each railway organisation operating in the Republic of Ireland. These annual plans include three core supervision activities namely, audits, inspections and meetings with the RUs and IMs.

This supervision programme formally arranges the RSC's activities to supervise the safety performance of the RUs & IMs operations. The following railway organisations were subject to RSC supervision in 2014:

- Iarnród Éireann Railway Undertaking (IÉ-RU)
- Iarnród Éireann Infrastructure Manager (IÉ-IM)
- Balfour Beatty Rail Ireland Railway Undertaking (BBRI) (track maintenance machines)

⁹A list of the most important safety measures introduced by the NSA and information on the underlying reasons for their application.

- Railway Preservation Society of Ireland– Railway Undertaking (RPSI)
- Northern Ireland Railways (Translink) Railway Undertaking (NIR-RU)

The RSC's supervision is risk based, so railway organisations, be they an RU or IM, that expose passengers, staff and the public to risk are supervised commensurate to the level of risk to which they are exposed, or which they expose others to. The RSC targets activities that it considers to give rise to the greatest risks and primarily undertakes audits of their SMS, checking that it is effective and is being implemented.

To assist in the development of annual supervision plans, the RSC use a variety of inputs that include:

- Reviewing the larnród Éireann Risk Model
- Tracking and monitoring of key safety performance indicators
- Statistical tracking of accidents, incidents and dangerous occurrences
- NIB reports and safety recommendations
- Public or other complaints
- Previous RSC supervision findings and outcomes
- Intelligence from APIS and conformity assessment

Each railway organisation's annual plan is a live document and can change. All changes to annual plans are recorded with justification for the change. An example of a change to the supervision programme in 2014 was:

• The addition of an audit of the largest heritage railway operator in the state following information provided to the Supervision Team by the Conformity Assessment Team.

D.2 Human resources

Essentially, of the seven Inspectors available within the NSA, four are needed to give full-time support the Principal Inspector for Supervision and Enforcement to deliver the RSC's annual supervision programme. However in 2014, 4 equivalent Inspectors was not available full time and therefore the RSC engaged suitable consultants to undertake an audit if the Infrastructure Managers, Signalling and Train control Systems.

D.3 Competence

Inspectors involved in undertaking supervision activity on behalf of the RSC are competent engineers with relevant industry experience supplemented by further academic qualifications. An increasing number of RSC Inspectors are professionally qualified being Chartered Engineers. Six of the seven RSC inspectors are currently undertaking MSc studies at the University of Birmingham, UK in addition to numerous bespoke training courses. All training records are maintained and any competencies requiring refresher training are captured and managed appropriately.

D.4 Decision–making¹¹

The Railway Safety Act 2005, as amended, provides for enforcement activity. The RSC applies the principles for national safety authority supervision and additionally applies a principle of escalation, allowing it to strive to achieve compliance without resorting to enforcement. However, on occasions where non-compliance is identified, an Improvement Plan is requested or an Improvement Notice is served. Furthermore, should a risk be identified that is considered to be immediate and substantial an RSC Inspector may serve a Prohibition Notice. Persons in receipt of notices have a statutory right of appeal. The RSC's criteria regarding decision-making are publically available in guidance on the website, <u>www.rsc.ie</u>. The following enforcement activities were initiated in 2014:

- 1. Improvement Plan requested from Iarnród Éireann Infrastructure Manager following a topic audit finding deficiencies in their maintenance and operation of the Traffic Control and Signalling System.
- 2. Improvement Plan requested from Iarnród Éireann Railway Undertaking following an SMS Audit that reviewed the Management of Train Driver Training and Competence.
- 3. Improvement Plan requested from Iarnród Éireann Infrastructure Manager following a Vertical Slice SMS audit finding deficiencies in the Chief Civil Engineer's department.
- 4. Improvement Plan requested from larnród Éireann Infrastructure Manager following a topic audit finding deficiencies in their management of On-Track-Machines (Yellow Plant) and Road-Rail Vehicles in engineering possessions.
- 5. Improvement Plan requested from larnród Éireann Infrastructure Manager following a topic audit finding deficiencies in their management of over-head line equipment (OHLE) and power distribution maintenance.
- 6. Improvement Plan requested from Iarnród Éireann Infrastructure Manager following a SMS audit finding deficiencies in their training and Competence processes.
- 7. Improvement Plan requested from Iarnród Éireann Infrastructure Manager following a Post Incident Inspection into a train collision with a landslip.
- 8. Improvement Plan requested from larnród Éireann Infrastructure Manager following a Post Incident Inspection into a procedural irregularity involving the isolation of the over-head line equipment.
- 9. Improvement Plan requested from Balfour Beatty Rail Ireland Railway Undertaking following a SMS audit finding deficiencies in their Train Driver training and Competence processes.

D.5 Coordination and cooperation¹²

The following Memoranda of Understanding remained in place in 2014:

- with the Health & Safety Authority (Labour Inspectorate);
- with the Department for Regional Development which is the NSA in Northern Ireland.

In that context, the RSC met with its both organisations sharing information on plans for supervision and highlighting areas of concern.

¹¹Decision-making criteria on how the NSA monitored, promoted and enforced compliance with the regulatory framework and on the procedure for establishing those criteria, and main complaints submitted by RUs and IMs on decisions taken during supervision activities and the replies given by the NSA.

¹²Agreements in force during the reporting year with NSAs from other MS for coordinated supervision activities and a summary of the content of those agreements, and cooperation arrangements in force during the reporting year with other NSA and their practical use.

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D.6 Findings from measures taken

Whenever the RSC identifies non-compliance, enforcement activity commences. This may be either requesting an Improvement Plan or serving an Improvement Notice. The RSC define non-compliance as follows:

Major Non Compliance (MaNC): an area of non-compliance with a Railway Organisation internal standard, an applicable external standard, or legislation that is evidence of a system failure. In such cases it is typical for the RSC to serve an Improvement Notice.

Minor Non Compliance (miNC): an area of non-compliance with Railway Organisation internal standard, an applicable external standard, or legislation that is evidence of a sporadic lapse in implementation of a system or deviation from a system. In such cases it is typical for the RSC to request an Improvement Plan.

In 2014, 23 non-compliances were identified and the five tables in annex B summarise these.



E. CERTIFICATION AND AUTHORISATION

E.1 Guidance¹³

There were no new Guidelines published in 2014.

E.2 Contacts with other NSAs

- 1. There were no requests from other NSAs asking for information on a Part A certificate of a RU certified in Ireland applying for a Part B certificate in the other MS.
- 2. There were no requests to other NSAs asking for information on a Part A certificate of a RU certified in the other MS applying for a Part B certificate in Ireland.

E.3 Procedural issues

There were no cases when the issuing time for Safety Certificates or Safety Authorisations (after having received all necessary information) exceeded the 4 months foreseen in Article 12(1) of the Railway Safety Directive.

E.4 Feedback¹⁴

There is no mechanism allowing RUs or IMs to express opinions on issuing procedures/practices or to file complaints and a summary of the opinions and complaints presented and the actions undertaken by the NSA. However, the RSC at all times works together with the applicant to ensure a clear understanding of requirements and to speedily resolve any issues that arise.

¹³Information on the issuing, publication and possible update of guidance by the NSA on how to obtain Part A/B certificates and authorisations.

 $^{^{14}}$ information on existing mechanisms – e.g. questionnaire – allowing RUs or IMs to express opinions on issuing procedures/practices or to file complaints and a summary of the opinions and complaints presented and the actions undertaken by the NSA.



F. CHANGES IN LEGISLATION

F.1 Railway Safety Directive /1/

In 2011, the European Commission expressed concern regarding anomalies between the Railway Safety Act 2005 and the Railway Safety Directive which had not been adequately addressed by transposition. These included significant variances in terms and definitions used in the Act.

The European Union (Railway Safety) Regulations, SI No. 444 of 2013, were published on 29thNovember 2013. This set of Ministerial Regulations correctly transposed the Railway Safety Directive and amended the Railway Safety Act 2005 in a way that maintains national rules for railway systems that are outside the scope of the transposition.

The transposition of the Railway Safety Directive and amendment of the Railway Safety Act 2005 was finalised on the adoption of the European Union (Railway Safety)(Reporting and Investigation of Serious Accidents, Accidents and Incidents) Regulations, SI No. 258 of 2014, on 12thJuly 2014. These Ministerial Regulations re-established the Investigating Body within the Department of Transport, Tourism and Sport so that it might be functionally independent of the Safety Authority, while remaining independent in its legal structure, organisation and decision making from the railway undertakings, infrastructure manager, charging body, allocation body and notified bodies.

F.2 Changes in legislation and regulation¹⁵

Table 2 of annex B indicates the relevant changes in the national regulatory framework (legislation and regulation) concerning railway safety during the reporting year.

- How the NSA carries out the tasks described in Article 16(2) of the RSD /1/
- How the MS intends to achieve the goals described in Article 4 of the RSD /1/
- The implementation of other EU requirements in national legislation concerning railway safety.

The legal reference indicates where to find the provision: which part of a law (i.e. articles) is relevant. The title, body, date of adoption and ID number are indicated and abbreviations explained. It is specified if the change relates to a new law or to an amendment to existing legislation.

Besides the reasons for introducing the changes, additional information may be provided on the entities that triggered the process (if different from the NSA), the consultation phase, etc.

¹⁵Table 2 of annex C describes relevant changes in legislation and regulation during the reporting year. The changes may relate to:



G. APPLICATION OF THE CSM ON RISK EVALUATION AND ASSESSMENT¹⁶

G.1 NSA experience

1. Decisions taken by the proposers on the level of significance of a change (e.g. too lax) The RSC is satisfied that the RUs and IM apply the CSM on risk evaluation and assessment through a safety validation process in accordance with their safety management system.

2. Applications of the risk management process by the proposers

For the evaluation of change, the CSM on risk evaluation and assessment is applied in accordance with larnród Éireann Safety Management Standards IÉ-SMS-13 and IÉ-SMS-14:

- o IÉ-SMS-13 Operational or organisational significant changes;
- IÉ-SMS-14 Significant technical changes affecting vehicles or significant changes concerning structural subsystems where required by Article 15(1) of Directive 2008/57/EC /6/ or by a TSI.

As part of the RSC's proactive supervision of duty holders, the RSC met quarterly with the principal Infrastructure Manager and Railway Undertaking operating in the Republic of Ireland. The purpose of this meeting was to review and monitor duty holders safety performance in the preceding quarter. A standing item presented by the duty holder and subsequently discussed at these meetings was the duty holder's management of change insofar as the change related to plant, equipment, infrastructure, operations or organisation.

The principal IM and RU have an approved SMS that includes a description of procedures and methods to carry out risk evaluation and implement risk control measures whenever a change of the operating conditions or new material imposes new risks, (Commission Regulations (EU) No 1158/2010 and 1169/2010, Annex II, criterion M). The RSC can and does review the duty holders' management of change.

In 2014 the principal IM and RU used the CSM RA for change management a number of times. These included:

- Dublin city centre re-signalling Phase 3&4
- o Safety Validation of National Level Crossing System
- Modification of MkIV Axle Boxes
- o DART Coupler Interlock Modification
- o 8100 Sanding Control Modification
- Introduction of Platform Marker Boards DART
- o Introduction of Driver Reminder Appliance
- New 3/6/9 car operation of ICR Fleet
- DART fleet fitting of grab handles
- Re-instating parking brake at speed functionality on 26/27/28/29000 DMUs

Commission Implementing Regulation (EU) No 402/2013 /5/ on the CSM for risk evaluation and assessment repeals Regulation (EC) No 352/2009 /4/ with effect from 21 May 2015.

¹⁶The application of the CSM on risk evaluation and assessment [Commission Regulation (EC) No 352/2009] /4/ remained voluntary until 1 July 2012 with respect to operational or organisational significant changes. The reporting on the application of the CSM was voluntary until that date.



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- o Validation of changes to the Operation of the Barrow Bridge
- Accident/Incident Management System
- o Alterations to Rule Book
- Level Crossing Changes
- o GSM-R System
- o Miscellaneous small signalling changes

3. Involvement of Assessment Bodies

For each APIS project reviewed, a safety assessment report was provided which included a statement of independence of the Assessment Body.

4. Interface management

This matter is dealt with in each case by the proposer with the cooperation of the relevant rail-sector actors through the application of their respective SMSs.

G.2 Feedback from stakeholders¹⁷

The CSM on risk assessment is integrated into the RU's and IM's safety validation processes, and they provide a quarterly update to the NSA.

The RSC also carried out an anonymous online survey of all supervised duty holders which expressly asked for their feedback and opinions. The survey was sent to senior representatives in every RU and IM and a response rate of 85% was achieved. The survey canvased feedback in relation a number of areas that included:

- The NSA's communication with stakeholders
- The NSA's supervision processes, consistency and interaction
- The NSA's approach to proportionality

The survey did not explicitly question stakeholders on the CSM on risk assessment but it did canvas feedback on the NSA's work. Stakeholders were generally satisfied with the RSC's approach to supervision but they did question some supervision activity findings and outcomes and the potential volume of findings.

G.3 Revision of NSRs to take into account the EC regulation on CSM on risk evaluations and assessment

The Regulation applies directly to the Member State and to all nominated actors, e.g., RU, IM, ECM, NoBo and DeBo. There is no national rule to define whether a change is significant or not.

¹⁷Existing procedures – e.g. questionnaire – allowing RUs and IMs to express their experiences on the EC regulation on CSM on risk evaluation and assessment and a summary of the experiences presented and possible actions undertaken by the NSA.



H. DEROGATIONS REGARDING ECM CERTIFICATION SCHEME

All freight wagons have certified ECM. There were no derogations in year 2014 to the ECM certification scheme, decided in accordance with article 14a(8) of Directive 2008/110/EC /2/.



CSIs data charts





¹⁸ Please refer to Appendix of Annex I of the RSD /1/ as modified by Commission Directive 2009/149/EC /6/.























































Note - IE-ATP is a TPS - it is not classified as an ATP under Directive 2014/88/EU



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ANNEX B - CHANGES IN LEGISLATION

Table 1

| RSC and its Amendments | Transposed (Y/N) | Legal Reference | Date of entry into force | |
|----------------------------------|------------------|-----------------|--------------------------|--|
| Directive 2004/49/EC | N (Incomplete) | SI 61 of 2008 | 06/03/2008 | |
| Directive 2008/57/EC | Y | SI 419 of 2011 | 13/08/2011 | |
| Directive 2008/110/EC | Y | SI 70 of 2011 | 23/02/2011 | |
| Commission Directive 2009/149/EC | Y | SI 70 of 2011 | 23/02/2011 | |
| Directive 2004/49/EC | Y | SI 444 of 2013 | 25/11/2013 | |
| Directive 2004/49/EC | Y | SI 258 of 2014 | 12/06/2014 | |



Table 2

| Legislation And Regulation | | Date of entry into | | |
|--|-----------------------|--------------------|---|--|
| | Legal reference | force | Description of change | Reasons for the change |
| Concerning the NSA | SI No. 258 of 2014 | 12/07/2014 | Without prejudice to the right of the safety authority to investigate and report on railway accidents and incidents to determine compliance with safety management systems and safety targets, these ministerial regulations establish the investigating body within the parent civil service department, so that it might be functionally independent of the safety authority while remaining independent in its legal structure, organisation and decision making from the railway undertakings, infrastructure manager, charging body, allocation body and notified bodies. | European Commission required amended transposition. |
| Concerning NoBos, DeBos, ABs, third party entities for registration, examination, etc. | | | | |
| Concerning RUs/IMs/ECMs | SI No. 258 of 2014 | 12/07/2014 | Clarification of requirements in regard to notification of accidents and incidents | To harmonise terms and definitions with those used in the Railway Safety Directive. |
| Implementation of other EU requirements (if concerning railway safety) | | | | |



Annex C – NSA Audit of RUs and IM - findings of non-compliance

RSC Audit of IÉ Maintenance and Operation of the Traffic Control and Signalling System

Report Issued : 20/06/2014

Non-compliance with SET-QMS-006-002 5.2.3: Equipment Calibration- Insufficient evidence was available to demonstrate that lÉ have implemented a consistent equipment calibration regime in accordance **SET-QMS-006-002 5.2.3**.

Non-compliance with SET-SMS-008 V2.0 Section 4.6.2: Compliance Verification- The evidence present does not demonstrate adequately that IÉ-SET compliance checks of 15% are being performed for the RONBD and CAWS/ATP equipment

RSC Audit of Iarnród Éireann's Chief Civil Engineers Safety Management System

Report Issued : 21/07/2014

Non Compliance with Compliance Verification Requirements The CCE Department could not demonstrate compliance with CCE-SMS-008 clause 4.6.2, Compliance Verification across the CCE business.

Non-compliance with CCE-TMS-420 clause 3.6.3 CCE-TMS-420 section 3.6.3 requires the STSE carries out an annual, documented review of each Structures Inspector. Evidence was not available to confirm that these have taken place.

Non-compliance with CCE-SMS-009 Appendix 9 Evidence was not available to demonstrate compliance with the requirements of CCE-SMS-009 Appendix 2 "Approved supplier of Safety Critical equipment" Letter.

Non-compliance with CCE-STR-STD-2100 Section 6.2.1 Evidence was not available to demonstrate compliance with the requirements of CCE-STR-STD-2100 Section 6.2.1, Structural Inspection of SET Structures.

RSC Audit of - Iarnród Éireann's Management of OTMs and RRVs in Possessions

Report Issued : 13/11/2014

Evidence of Certification of an RRV in Accordance with I-PLM-5001 RRVs in IE-IM possessions were noncompliant with I-PLM-5001 clause 1.2.6 requiring evidence of certification of a Road/Rail Vehicle in accordance with I-PLM-5001 (including expiry date) to be displayed on a Road/Rail Vehicle.

RSC Audit - An audit of Iarnród Éireann's Train Driver Training and Competence

Report Issued : 19/12/2014

IÉ-RU do not have provisions in place to ensure compliance with OPS-SMS-3.0 Section 8.2

Evidence unavailable to demonstrate compliance with RU-SMS-014 regarding changes to the CMS

Evidence unavailable to demonstrate compliance with OPS-SMS-1.2 Section 6.2.1 Item 4 for document control



RSC Audit of - Iarnród Éireann's Management of OHLE and Power Distribution Maintenance Report Issued : 05/06/2014

Non-Compliance with IM-SMS-014 section 3.3.1.1

Evidence is not available to demonstrate compliance with IM-SMS-014 with regards to introduction of new OHLE Standards and Work Procedures

Non-Compliance with SET-SMS-001 section 5.12.3.4 Evidence is not available to demonstrate the operation or output of a system for compliance verification

Non-Compliance with SET-SMS-001 section 7.20 Evidence is not available to demonstrate maintenance audits for electrification have been undertaken.

Non-Compliance with IM-SMS-001 section 7.11.9 Electrification Risk Registers are not reviewed monthly and actions identified are not closed in a timely manner

RSC Audit of - Iarnród Éireann's Safety Management System Annex II, Criterion N.(Training and Competence)

Report Issued : 02/04/2014

Non-compliance with Commission Regulation (EU) No 1169/2010 Appendix N1 (f) The evidence present does not demonstrate adequately that a consistent process within IÉ-IM is present to manage competence following long term absence.

RSC Audit of - BBRI - RU Management of Train Driver Training & Competence Report Issued : 22/12/2014

BBRI-RU are non-compliant with BBRI standard IMP-RP-SAF 23 Issue: 01 Training and Competence Verification Management, clause 8.1 h

BBRI-RU are non-compliant BBRI standard IMP-RP-SAF 23 Issue: 01 Training and Competence Verification Management clause 8.2 d

BBRI-RU are non-compliant with their SMSM P-BBRISMS-1031 Issue: 2.0, page 14 of 71, Figure 3: Document Map.

BBRI-RU are non-compliant with IMP-RP-SAF 23 Issue: 01 clause 7.11 which should provide for a Long Term Absence procedure for drivers/operators returning to work.

RSC Audit of –Northern Ireland Railway's SMS - Annex III Criterion – A.4. Emergency Preparedness & A.5 Accident / Incident investigation

Report Issued : 22/12/2014

Non-compliance with section B2.1.6 of NIR Translink Operations (NIR-RU) Part B SMS Engagement with Part B Infrastructure Manager (IÉ-IM)

END OF REPORT