

2022

Annual Safety Performance Report



Department for
Infrastructure

An Roinn

Bonneagair

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Infrastructure

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Contents

Summary	1
1. Introduction	2
NI Rail Network.....	2
National Safety Authority	3
2. Legislative framework	5
The Railways (Safety Management) Regulations (NI) 2006	5
Reporting requirements	5
EU legislation and standards	6
Legislative changes and developments in 2022	6
Domestic legislative developments	6
EU legislative developments	7
3. Development of railway safety	8
Post Covid-19 pandemic.....	8
NSA activities	8
Mainline operators - inspection, audit and supervision	9
Rolling stock maintenance audit.....	9
Permanent way inspection	9
Train driver licensing compliance checks	9
Depot visits	10
Monitoring and supervision	10
Rolling stock maintenance audit.....	10
Permanent way inspection	10
Previous inspections	11
RIDDOR reportable incidents	11
Railway operator activities	11
Railway operator priorities, targets set and outcomes	12
Actions taken to meet targets.....	16
Heritage and tourism operators	18

4. Key statistics	20
Common Safety Indicators	20
Total number of significant accidents/incidents	20
Persons seriously injured, by category of person	21
Persons killed, by category of person	21
Precursors to accidents	22
Train Protection Systems	22
Level crossings	23
Major malfunctions/deficiencies	23
Other accidents and incidents	23
Accidents/incidents reportable to the Rail Accident Investigation Branch	25
5. Development of the system for safety certification and authorisation	26
Safety certificates and authorisations	26
Developments/changes	26
6. Experience of applying relevant Common Safety Methods	27
Common Safety Method for risk evaluation and assessment (CSM-REA)	27
Common Safety Method for monitoring	28
7. Supervision of railway undertakings and infrastructure managers	30
Monitoring and supervision	30
Audit and inspection – NIR	30
Internal audits	30
RSA audits and inspections	30
Audit and inspection – IÉ	31
Annex A: Main legislative framework for rail safety in NI	32

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Summary

This annual safety report, published by the Department for Infrastructure's (the Department) Rail Safety Authority (RSA), provides an overview of rail safety activity within Northern Ireland (NI) during 2022. This was a challenging year for railway operators as passenger numbers and services returned to pre-pandemic levels.

Overall, the total number of incidents and accidents remained quite low in 2022, with one fatality recorded. In addition, the number of precursors to accidents/incidents remained low.

Our focus for railway safety in 2022 was on rolling stock maintenance and management of permanent way assets, and the RSA commissioned the Office of Rail and Road (ORR) to carry out inspection work on both areas within NIR. The RSA then developed reports with recommendations for action, which ranged from enhancement of competency management arrangements to improving recording procedures for rolling stock and permanent way assets.

Throughout 2022, the RSA took forward regular engagement with railway operators on their progress in meeting safety targets and implementing the recommendations of inspection reports.

Going forward, the RSA will continue to work with railway operators to monitor and support their safety activity and undertake targeted activity as part of its monitoring and supervision programme.

1. Introduction

- 1.1. This annual safety performance report for the NI rail network is based on the activities of the RSA as National Safety Authority (NSA) for NI, as well as the information supplied by the two mainline railway operators in NI, NIR and Iarnród Éireann (IÉ). Both NIR and IÉ submitted an annual safety report to the RSA for 2022 as required under [regulation 18\(1\) of the Railways \(Safety Management\) Regulations \(NI\) 2006 \(as amended\)](#) (the 2006 Regulations).
- 1.2. It is important to note that while both mainline operators run cross-border services between Belfast and Dublin, the information presented in this report, specifically the CSI data at section 4, relates to activities on the NI network.
- 1.3. This report covers the period from 1 January 2022 to 31 December 2022 and is concerned with the mainline railway system of NI.

NI Rail Network

- 1.4. Translink is the brand name of the integrated public transport operation of NIR as well as Metro and Ulsterbus. NIR acts as both infrastructure manager (IM) and railway undertaking (RU) or train operating company. NIR operates all mainline domestic services on the NI network and jointly operates the Belfast to Dublin Enterprise service with IÉ.
- 1.5. The Department provides funding to maintain and develop the rail infrastructure and rolling stock. This activity is structurally separate from the delivery of its statutory duties as NSA.
- 1.6. IÉ operates as an RU in NI. A subsidiary of Córas Iompair Éireann, IÉ provides passenger and freight rail services in Ireland as well as operating Rosslare Europort. IÉ jointly operates the Dublin to Belfast Enterprise service with NIR and does not operate any domestic services on the NI rail network.
- 1.7. There are a number of heritage and tourist railways in NI which are privately owned and run, mainly using dedicated track. The Rail Preservation Society for Ireland (RPSI) operated seasonal trains on the mainline during 2022. It should be noted that unlike other mainline operators running domestic services, they do not receive funding from the Department.
- 1.8. All railway operators in NI, including heritage railways, are required to comply with railway safety regulations. In some circumstances, heritage

railways operating on their dedicated tracks and at a line speed that does not exceed 25mph (40kph) may be exempted from some regulations where the Department is satisfied that the safety of passengers and the general public is not compromised.

National Safety Authority

- 1.9. Rail safety is a devolved matter in NI. The Department carries out the role of the NSA for NI (RSA) and is responsible for ensuring railway operators' regulatory compliance with the rail safety regulatory framework. The Department does this in accordance with the [Railway Safety Act \(Northern Ireland\) 2002](#) and associated Regulations. The main legislative framework for rail safety in NI is set out at Annex A.
- 1.10. The Department's key responsibilities as Safety Authority are:
 - To ensure that railway operators manage the rail network efficiently and in a way that meets the needs of users;
 - To encourage continuous improvement in health and safety performance;
 - To secure compliance with relevant health and safety law, including taking enforcement action as necessary;
 - To develop policy and enhance relevant railway health and safety legislation; and
 - To issue or refuse safety certificates to railway operators in accordance with the relevant Regulations.
- 1.11. The statutory functions of the RSA in the Department are exercised by Rail Safety Branch. The Branch is responsible for the monitoring and supervision of railway operators' safety management systems and for conducting audits and inspections of the application and practical deployment of safety management systems.
- 1.12. The Branch also acts as the Competent Authority for interoperability on the rail system. Interoperability is a mainly reserved matter, with the Department for Transport (DfT) legislating on behalf of NI in this area. The RSA works closely with DfT on issues relating to interoperability and engages with them more broadly on rail safety matters.
- 1.13. The RSA also works with the ORR, the NSA for Great Britain (GB), to secure technical support to assist with the discharge of its statutory functions, and with the Health and Safety Executive for Northern Ireland (HSENI), which undertakes statutory functions concerning rail safety and interoperability, and also supports the RSA in the discharge of its functions.

- 1.14. This is the second time the RSA has published the annual safety report for NI as a standalone document, and the format ensures it reflects regulatory requirements and is comparable with other NSAs.
- 1.15. As a result of EU Exit and the continuing requirement under the Windsor Framework and Ireland/Northern Ireland (NI) Protocol for NI to adhere to the EU's rail technical standards regime, the Department will continue to publish the required information for NI only.
- 1.16. Previous UK wide annual safety reports developed by ORR and submitted to the European Union Agency for Railways (ERA) prior to EU Exit, which include NI information and statistics, are available on [ERA's website](#).

2. Legislative framework

The Railways (Safety Management) Regulations (NI) 2006

- 2.1. The purpose of the 2006 Regulations when introduced was to harmonise safety standards. The 2006 Regulations impose prohibitions and requirements in relation to the safety of NI's railways and cover the following key areas:
- Requirements for safety management systems, safety certificates and safety authorisations;
 - Risk assessment, co-operation and reporting requirements; and
 - Requirements relating to safety critical work.

Reporting requirements

- 2.2. Under regulation 18 of the 2006 Regulations, railway operators in NI are required to send to the Department an annual safety report relating to the previous calendar year which contains the following information:
- information on how any railway operator's safety targets are met;
 - the results achieved through putting any railway operator's safety plans into effect;
 - statistics for relevant CSIs;
 - the findings of internal safety auditing carried out; and
 - comments on any deficiencies or malfunctions relating to the running of vehicles or the management of infrastructure relating to the operation in question that may be relevant to the safety of any railway.
- 2.3. The Department is then required to publish a report which includes the following:
- the development of railway safety including an aggregation of all the statistics reported to the Department for the relevant calendar year relating to CSIs which relate to an operation or part of an operation which is carried out on the railway;
 - any important changes in relation to the regulation of railway safety;
 - the development of the system for safety certification and authorisation; and
 - the results of and experience relating to the supervision of railway operators.
- 2.4. Whilst the Department is not required under the current NI legislation to provide information on the experience of the RUs and IMs on the

application of the relevant Common Safety Methods (CSMs), we included these in the 2021 report and in this report.

- 2.5. The 2006 Regulations currently state that the Department must send this annual report to ORR. ORR previously represented NI in its relations with ERA and included NI specific information within a wider UK report. However, as a result of legislative amendments following EU Exit, there are now different reporting requirements for GB and NI. The relevant GB legislation does not provide a mandate for ORR to receive NI safety performance information. Consequently, the RSA will now publish this information for NI only.

EU legislation and standards

- 2.6. Under the Windsor Framework/NI Protocol, the Technical Specifications for Interoperability (TSIs) continue to have direct effect in NI. The recast [Rail Interoperability Directive 2016/797](#) applies in NI “insofar as conditions and technical specifications for placing on the market, putting into service and free movement of railway products are concerned.”¹ To meet the requirements of the Windsor Framework/NI Protocol, during 2021, DfT announced the development secondary legislation to implement for NI the relevant provisions of 2016/797, and work to develop this legislation took place in 2022. In the interim, the RSA engaged with DfT to apply Windsor Framework/NI Protocol requirements in the NI context as required.
- 2.7. The provisions of the [Railways \(Interoperability\) Regulations 2011 \(as amended\)](#) continue to apply in NI in the context of the continued applicability of Directive 2016/797 detailed above.

Legislative changes and developments in 2022

Domestic legislative developments

- 2.8. During 2022 the RSA completed the legislative drafting, consultation and finalisation of three new Level Crossing Orders in conjunction with NIR. These were to allow for the installation and operation of new level crossings and related operational and technical equipment at Cullybackey North, South and Station. RSA were closely involved with the NIR engineers and contractors during the development and installation of these new crossings. These works aimed to improve safety in the operation of the level crossings at these sites for all users.

¹ Ireland/Northern Ireland Protocol, Annex 2, paragraph 28.

- 2.9. The RSA had close involvement in the consideration of the legislative impact of the Retained EU Law (Revocation and Reform) Bill (REUL) amendments with particular focus on the railways and rail safety legislative framework. The RSA took part in a series of projects and meetings with DfT and ORR to consider the impacts from the rail safety perspective in NI.
- 2.10. The RSA continued to progress the review of rail safety. The review examines the role, remit, functions, structure, processes and systems to ensure that the DfI rail safety responsibilities in NI are fit for purpose in a post EU Exit operating environment. Phase 1 of the review – an extensive legislative review to identify the scope and extent of statutory duties – was completed in 2022. The timeline for reporting is late 2023 to early 2024 and is likely to require legislation to implement the agreed recommendations of the review.

EU legislative developments

- 2.11. ERA undertook a consultation on a Digital Rail and Green Freight TSI revision package in 2022. The purpose of the consultation was to obtain the views of those impacted on the content of the proposed amendments to TSIs to reflect policy priorities for both increased application of digital rail solutions and improving the shift to electrification of rail services. TSIs continue to apply directly in NI as a result of the Windsor Framework/NI Protocol and so the proposed revisions would directly impact NI rail operations. DfI responded to the consultation and also provided NIR's feedback via DfT.

3. Development of railway safety

- 3.1. Railway safety in 2022 remained broadly consistent with previous years, with accidents and precursors to accidents remaining in low numbers. Further details on CSIs are provided in section 4.

Post Covid-19 pandemic

- 3.2. In 2022, post pandemic, railway operators returned to a full timetable. Staff and passenger footfall increased within stations and on board services, with a significant increase in leisure travel at evenings and weekends. Subsequently, both operators noted a rise in incidents such as those involving customers boarding and disembarking from trains, and physical assaults on staff. Further details of relevant incidents are provided in section 3. Both mainline railway operating companies continued to update their policies and procedures to reflect the changing health guidance.

NSA activities

- 3.3. The post EU Exit environment continues to pose a challenge for the RSA, with significant resources dedicated to developing an understanding of the applicable standards and to engaging with key stakeholders to share developments and enhance knowledge.
- 3.4. Work was undertaken to review existing relationships with partner organisations who support the RSA in delivering its statutory duties. A number of Memoranda of Understanding (MoUs) with these organisations were developed and finalised in 2022:
 - HSENI (March 2022)
 - The Commission for Railway Regulation (CRR) (April 2022)
 - HSENI and ORR (September 2022)
- 3.5. Regular engagement between the organisations has been implemented to ensure collaboration and sharing of information takes place in a timely manner, and so joint working can be agreed and undertaken as required.
- 3.6. The RSA also continued to develop informal links with other organisations, such as the Rail Safety and Standards Board, to enhance knowledge and understanding of wider developments in the rail safety and standards arena.

Mainline operators - inspection, audit and supervision

- 3.7. The RSA completed two full audits in 2022, one of NIR RU relating to rolling stock maintenance and one of NIR IM on track/permanent way. The RSA also undertook checks for compliance with the [Train Driving Licences and Certificates Regulations \(Northern Ireland\) 2010](#) and visited two NIR depots.

Rolling stock maintenance audit

- 3.8. The rolling stock maintenance audit highlighted both the effectiveness of NIR's current arrangements for its ageing rolling stock and made recommendations to enhance and improve upon these arrangements. Areas for action included implementing robust arrangements for confirming staff capability and competence, improvements to arrangements for the maintenance of ageing rolling stock, and ensuring staff access to relevant maintenance information and work recording. Specifically in terms of ageing rolling stock, NIR took forward work on defect/trend analysis, with a focus on analysing fault trends, leading to the development and implementation of a Fleet Reliability Action Plan.

Permanent way inspection

- 3.9. The permanent way inspection report highlighted positive aspects of NIR's current arrangements for management of permanent way assets, particularly around the dedication and knowledge of staff. Issues to address included track geometry management, and to more broadly enhance and improve upon existing arrangements. Specific areas for action highlighted included: the development and implementation of a risk-based plan for regular track geometry measurement across the NIR network; arrangements for hazardous tree and boundary management to inform maintenance and management works; formalisation of the Track Condition Retention programme and outputs from it; and the wider introduction of the Enterprise Asset Management System.

Train driver licensing compliance checks

- 3.10. The RSA carried out a series of compliance checks of NIR's management of train driver licensing and certification.
- 3.11. The aims of the compliance check were to:
- review the management arrangements for train driver licensing and certification that NIR has in place; and

- undertake an assessment of practical compliance with the relevant regulations.
- 3.12. The inspection consisted of a meeting with key NIR staff, a presentation of NIR's systems for managing train driver licences and certificates and spot checks of train driver licences and route cards at Great Victoria Street and Lanyon Place stations.
- 3.13. Overall, the compliance check inspection provided a positive assessment of NIR's approach. An area for improvement was identified in relation to the potential for moving from the current manual system to a digital system for supporting the processes for managing train driver licensing and certification.

Depot visits

- 3.14. NIR facilitated RSA visits to York Road and Adelaide depots in May 2022. NIR staff explained health and safety practices and safe systems of work for the different areas of train maintenance, which varied from paint workshops to mechanical and heavy machinery workshops. There were demonstrations of shunters safely bringing trains into the yard, at minimum speed, for washing and maintenance care.

Monitoring and supervision

- 3.15. The RSA continued to engage with railway operators to undertake monitoring and supervision activities in 2022. Hybrid and in person meetings were undertaken as public health guidelines changed. Follow-up activity was also undertaken between meetings to monitor the implementation of the audit recommendations.

Rolling stock maintenance audit

- 3.16. NIR planned to take actions to address the recommendations from the rolling stock maintenance audit. These included an in-depth review of the Engineering Competence Management System with the development of a proposal for the implementation of an improved system and external support to embed any new working practices.

Permanent way inspection

- 3.17. For the permanent way inspection, the RSA engaged with NIR on a quarterly basis to seek updates on the actions they took to implement the recommendations. These actions included:

- Utilisation of the IÉ Track Recording Vehicle in the short term to ensure regular track geometry measurement across the NIR network while investigation into a long term solution took place.
- A pilot study to identify the number of trees in poor condition that might impinge on the running lines. A very low percentage of trees sampled were diseased apart from Ash, and none found in the register already identified as hazardous.

Previous inspections

- 3.18. The reports from previous years with outstanding or long term recommendations (structures asset management and user worked level crossings) continued to be monitored.
- 3.19. Many of the recommendations from the user worked crossings report were addressed within the previous reporting year with minor issues outstanding. NIR continued to meet the recommendations through the closure of user worked crossings and successfully closed 13 crossings (8 active and 5 disused). The User Worked Crossing Safety Improvement Programme continues to work towards the upgrade of 10 crossings. NIR also undertook preparatory work on the Enterprise Asset Management System to enable the effective tracking of interventions on an asset basis, in order to provide an 'auditable trail' of interventions for each asset.

RIDDOR reportable incidents

- 3.20. Translink noted that there were six RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 1997) reportable incidents in 2022 – further details are provided below. Translink took remedial action as required. The RSA did not investigate any of these incidents.

Railway operator activities

- 3.21. Railway operators continued to set and monitor safety targets, with regular reporting and reviews to ensure mitigations are developed as appropriate. Safety performance trends were closely monitored and reported periodically within each operator and to the RSA.
- 3.22. Overarching safety plans were also developed, with the aim of driving continuous improvement in the safety of the railways. In order to achieve

this, both operators undertook recognised industry approaches such as the following:

- Independent external audits
- Compliance verification
- Internal audits
- Safety tours, planned general inspections and management reviews
- Action plans responding to regulatory inspections
- Responding to issues raised through regulator safety performance meetings
- Progress with actions from accident investigations and audits reviewed at safety meetings
- Performance indicators and progress on safety actions are periodically reported and reviewed at safety meetings

Railway operator priorities, targets set and outcomes

- 3.23. This section focuses on the targets set by and the activity of NIR as it relates solely to the NI rail network. Where IÉ has highlighted similar issues to NIR, this is noted in the relevant section.
- 3.24. The main areas of focus for safety activity across the NI network in 2022 have been passenger and staff safety, the platform train interface, operational and fleet safety, and safety at level crossings.
- 3.25. NIR has set a range of targets across IM and RU operations. A selection of these are detailed out below.

Passenger accidents

<u>2021 Target</u>	<u>2021 Target Outcome</u>	<u>2022 Target</u>	<u>2022 Target Outcome</u>	<u>Year on Year Change</u>
≤ 110	45	≤ 110	76	31

- 2022 saw an increase in passenger footfall, increasing the potential for accidents. One injury was RIDDOR reportable, however there were no major injuries recorded. 43 incidents involved no injury to passengers.

Workforce Safety

<u>Key risk area</u>	<u>2021 Target</u>	<u>2021 Target Outcome</u>	<u>2022 Target</u>	<u>2022 Target Outcome</u>	<u>Year on Year Change</u>
Rail Operations Staff Accidents (including Contractors)	≤ 12	5	≤ 12	10	5
Rail Fleet Engineering Staff Accidents	≤ 12	11	≤ 10	9	-2
Employee Assaults (including Contractors)	No target set	43	No target set	60	17
Staff Fatalities	0	0	0	0	0

- **Rail Operations staff accidents (including contractors)** – Two of these were RIDDOR reportable, however neither were classed as major injuries.
- **Rail Fleet Engineering staff accidents** – Only one of these injuries was RIDDOR reportable, however it was not classed as a major injury.
- **RU employee assaults (including contractors)** – Physical assaults to staff increased by 66% on the previous year. Verbal assaults to staff decreased by 16.6% from the previous year.

<u>Key risk area</u>	<u>2021 Target</u>	<u>2021 Target Outcome</u>	<u>2022 Target</u>	<u>2022 Target Outcome</u>	<u>Year on Year Change</u>
Infrastructure Manager Staff Accidents (including Contractors)	3% improvement on 5 year average	14	3% improvement on 5 year average	27	13
Infrastructure (T3, T2 and Red Zone PAC Inspections)	Ensuring increase in PAC activity in line with an increase in possessions and project activities on the network	T3: 245 T2: 46 Red Zone: 39	Ensuring increase in PAC activity in line with an increase in possessions and project activities on the network	T3: 145 T2: 32 Red Zone: 28	T3: -100 T2: -14 Red Zone: -9
Infrastructure Worksite Safety Inspections and Visits	Ensuring increase in PAC activity in line with an increase in possessions and project activities on the network	118	Ensuring increase in PAC activity in line with an increase in possessions and project activities on the network	185	67

- **IM staff accidents (including contractors)** – NIR noted an increase in incidents, however this can be attributed to an increase in work sites (1390 in 2021 to 2580 in 2022). The target for 2022 was 1 accident for every 77 sites, and NIR reported a figure of 1 accident for every 92 sites, thus remaining within target. 2 RIDDOR reportable injuries were noted.
- **IM Protection Assurance Coordinator (PAC) inspections** - 7.5% of the 2580 worksites underwent a PAC inspection. There was a decrease in the number of sites inspected compared to 2021, when 25.25% of the 1390 worksites were inspected.
- **IM Safety, Health and Environment (SH&E) assurance activities** - There was an increase of 36.2% in the amount of site inspections and visits undertaken between 2021 and 2022. With the increase in worksites from 1390 to 2580, NIR recruited external contractors to work alongside SH&E advisors, carrying out site assurances activities which allowed for this increase. However, given the increase in worksites from 1390 to 2580, the total percentage of worksites inspected in 2022 was 7.17%, which was a decrease from 2021's figure of 8.48%.

Operational targets

<u>Key risk area</u>	<u>2021 Target</u>	<u>2021 Target Outcome</u>	<u>2022 Target</u>	<u>2022 Target Outcome</u>	<u>Year on Year Change</u>
Category A SPADs	≤ 3	3	≤ 3	2	-1
TPWS Brake Demands (No SPAD)	≤ 6	5	≤ 6	10	5
Failure To Call	≤ 6	5	≤ 6	4	-1
Station Overruns	≤ 10	5	≤ 10	10	5
Wrong Side Doors Enabled	≤ 1	0	≤ 1	1	1
Stop Short	≤ 5	1	≤ 5	2	1
Wrong Routing (Taken)	≤ 12	3	≤ 12	3	0
Collisions	No target set	28	No target set	41	13
Infringement of Train Operating Rules	No target set	34	No target set	47	13
Potential Self Harm	No target set	104	No target set	97	-7
Anti-social Behaviour	No target set	158	No target set	142	-16
Derailments	0	0	0	0	0
Level Crossings Incidents	3% improvement on 5 year average	PRC: 71 UWC: 178	3% improvement on 5 year average	PRC: 86 UWC: 167	PRC: 15 UWC: -11

- IM – Level crossings – public road crossing (PRC) misuse** - During 2022 there was a decrease in PRC misuse. This was within the 3% target reduction on the 5 year average which was 116.4. Improvement and modernisation initiatives have been driven by a multi-agency group, which includes Translink departments, DfI Roads, PSNI and HSENI.
- IM – Level crossings – user worked crossing (UWC) misuse** - There were 167 UWC misuse instances in 2022. The 5 year average was 145. This was outside the 3% improvement on 5 year average target which was 140.65 incidents. The increase is down to one persistent misuser.

- **RU – Category A Signals Passed At Danger (SPADs)** – One SPAD was rated as potentially severe and further details are provided in section 4.
- **RU – Collisions** – Collisions reported increased in 2022. These included collisions with debris, animals and vegetation, the majority of which resulted in no damage (13) or a minor delay (13). Three collisions were with members of the public as a result of suspected self harm and trespass – two fatalities and one major injury were recorded.
- **RU – Potential self harm** – Incidents of self harm decreased in 2022. This category covers a broad range of incidents which can include reports of concern to physical attempts.
- **RU – Anti-social behaviour (ASB)** – 142 incidents of ASB were recorded in 2022, representing a decrease of over 15% on 2021.

Actions taken to meet targets

- 3.26. To meet targets on **passenger safety**, NIR continued to deliver a range of interventions throughout 2022 to reduce the risk of slip, trips and falls, including signage, automated passenger announcements, and social media campaigns. These initiatives have been designed to improve safety and regulate passenger flow to and from the platforms.
- 3.27. In addition, both operators undertook initiatives targeted at improving **safety for their staff and contractors**. For NIR, these included the following:
 - The facilitation of a **Contractor Safety Forum**, providing a platform for sharing lessons learned, discussion of good practice and the provision of feedback to NIR on the effectiveness of policies and procedures.
 - Delivery of a **Track Worker Safety Campaign**, designed to raise awareness of the risks present to those working on the network and to encourage best practice. Activities included Toolbox Talks and the continued issuing of safety alerts where applicable.
 - Launch of the **Engineering Safety Improvement Project**, reinforcing the key corporate message of 'Safety is Everyone's Responsibility' through a QR code reporting system. This system enables any employee or contractor to report a near miss, safety incident or accident at the touch of a button.

- Development and implementation of a **Plant, Equipment and Materials (PEM) Sheet** – this has helped to serve as a control measure to ensure that no equipment is left on the railway line and so to reduce the risk of accidents. The form features a guidance section, offering advice on how to mark equipment to make it as visible as possible and advising the respondent to consider anything which may be a distraction to a driver.
 - There was an increase in station overruns in 2022 compared to 2021. To help decrease this, **Low Adhesion Briefing** for drivers has continued along with a Daily Low Adhesion Forecast by hour of day and line. This gives train drivers more detailed information of the level and location of risk of a low adhesion incident. A number of forums have been set up to consult with all staff to reduce the risk of infringements.
- 3.28. Both NIR and IÉ noted an increase in the number of **passenger accidents** in the context of the return to growth of passenger numbers post Covid. NIR highlighted that there was an increase in passenger incidents not resulting in injury, which was attributed to increased reporting.
- 3.29. In focussing on the **safety of the platform train interface**, initiatives continue to be implemented to reduce the risk of slips, trips and falls for both staff and passengers. For NIR, this included signage and automated passenger announcements, along with the roll-out of social media campaigns. These initiatives have been designed to improve safety and regulate passenger flow to and from the platform. An initiative has been introduced by staff called ‘If you see it pick it up’ to further reduce the risk of slips, trips and falls and keep stations and platforms tidy.
- 3.30. In terms of **operational safety**, during 2022 there have been modifications to rail vehicles to make them safer for train crew and passengers, as well as more reliable. These included:
- Enterprise Generator Van upgrades, with three of the four vehicles now completed and in service. These upgrades focussed primarily on reliability with the two generator engines fitted in each van being replaced with new generators. This has resulted in improved fuel consumption, lower emissions and a reduction in noise emitted.
 - The fitting of ‘shark teeth’ decals to all 43 Class 3000 and Class 4000 units during 2022. These act as a visual prompt to boarding and alighting passengers that there is a hazard and

dissuades them from obstructing or interfering with train doors as they close.

- The delivery of targeted training and development for train drivers to reduce the risk of overspeeding or passing a signal at danger.

3.31. NIR IM has made further progress in their long-term plan to reduce the number of **user worked level crossings**. These types of level crossings typically represent a significant risk area for the rail network as a result of the interaction between members of the public and the rail network. NIR's Level Crossings Management Group meets regularly and is focussed on reviewing level crossings and developing mitigation methods, and ongoing management of level crossing risk. In 2022, NIR's ongoing work on level crossings included the closure of 13 user worked level crossings, the commencement of level crossing renewals at Cullybackey, upgrades of 10 user worked crossings over the network with the installation of telephones, and infrastructure upgrades to other user worked crossings.

3.32. An additional area of focus for both NIR and IÉ was **addressing anti-social behaviour**. During 2022, there were a number of instances of anti-social behaviour on trains and at stations across the NI network, affecting both passengers and staff. While there has been a reduction in incidents when compared with 2021, NIR continue to implement initiatives to address ASB. These included the continued operation of the Safe Transport Team, delivering a visible, reassuring presence for staff, passengers, and members of the public, and the introduction of body mounted cameras, made available for front line staff. Since the introduction of cameras, there has been a decrease in the number of verbal assaults on staff reported. IÉ noted an increase in ASB, and undertook activities such as risk assessments at stations to develop a security risk management plan, the use of covert station CCTV and real time direct communication between IÉ and An Garda Síochána rapid response hubs to assist on-board customer service officers.

Heritage and tourism operators

3.33. The heritage railways in NI operate under Section 27 of the [Regulation of Railways Act 1868](#). During 2022, the RSA carried out inspections and site visits to the five operational heritage and tourism railways:

- Giant's Causeway and Bushmills Railway Company
- Peatlands Park Railway

- Bulrush Horticulture Ltd
- Downpatrick and County Down Railway Company
- The Railway Preservation Society of Ireland (Whitehead Operations)

3.34. The site visit and inspection of Downpatrick and County Down Railway Company was a follow up to the 2021 relicensing visit to inspect progress against the issues identified during that inspection. It was found that Downpatrick and County Down Railway had addressed the issues identified.

3.35. The site visits to the remaining four heritage railway operators were for the purpose of relicensing. The RSA was accompanied by HSENI colleagues. The inspections were carried out to review the respective sites and operations from the rail and health and safety perspectives, similar to those undertaken by ORR in GB. The respective licenses were renewed and issued during 2022 and remain extant for a period of five years. The RSA will continue to carry out safety review inspections of heritage operators on an annual basis.

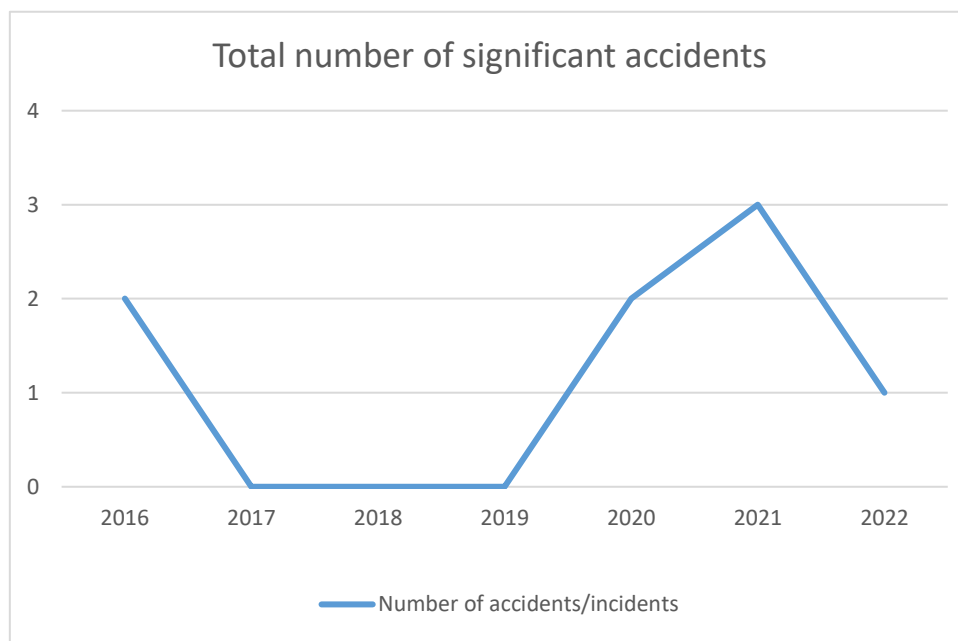
4. Key statistics

- 4.1. The CSIs and key performance indicators (KPIs) in relation to accident and incident precursors have been consistently quite low in numbers and have indicated a safe rail network.

Common Safety Indicators

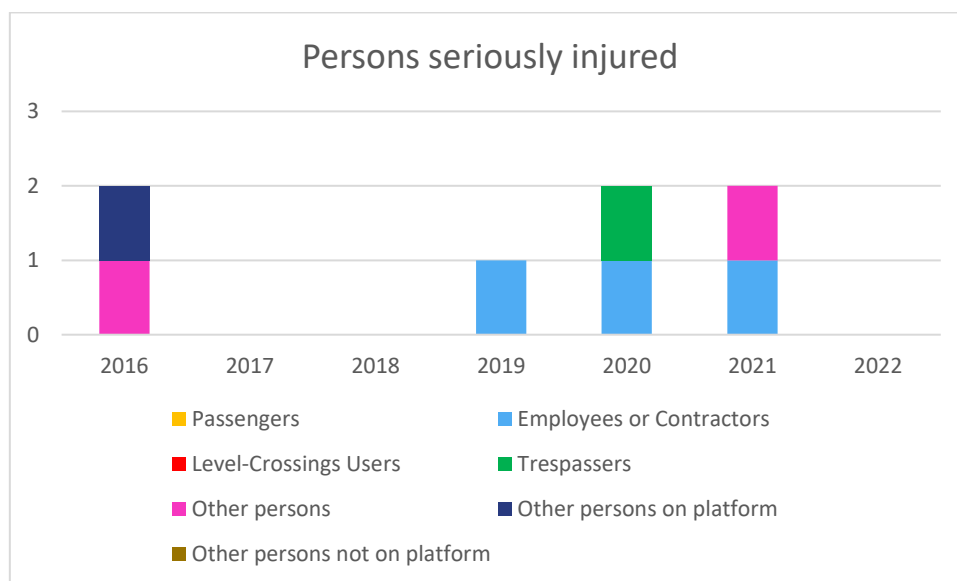
- 4.2. An aggregation of the statistics reported to the RSA for 2022 relating to CSIs is provided below. These statistics cover the last seven calendar years and have been provided by NIR. Overall, numbers of incidents and accidents have remained low between 2016 and 2022.

Total number of significant accidents/incidents



- 4.3. One significant accident was recorded on the NI rail network in 2022, relating to accidents to persons caused by rolling stock in motion (with the exception of suicides and attempted suicides).

Persons seriously injured, by category of person

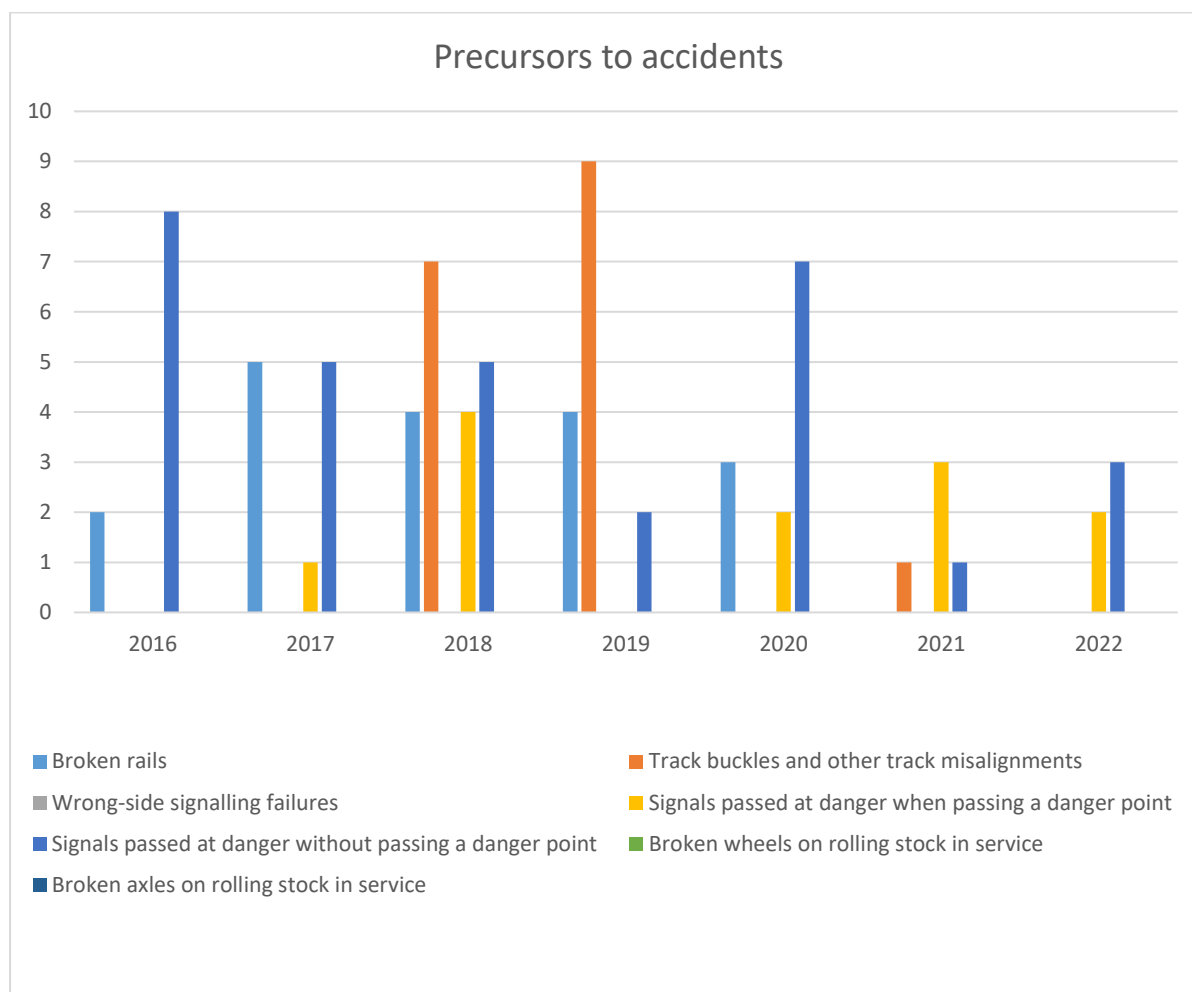


- 4.4. In 2022, there were no recorded serious injuries to employees or contractors on the NI rail network. A serious injury is categorised as an injury resulting in hospitalisation for more than 24hrs.

Persons killed, by category of person

- 4.5. One fatality as a result of an accident was recorded in 2022 (see paragraph 4.12). There were no fatalities recorded over the prior six year period. There were, however, a total of 10 recorded suspected suicides between 2016 and 2022.

Precursors to accidents



- 4.6. Five precursors to accidents were recorded on the NI rail network in 2022. This follows the trend set in 2021 which represented a reduction of 50% or more in the total number of precursors to accidents on each of the previous years to 2016, where the total precursors were ten or more.

Train Protection Systems

- 4.7. The NI rail network has a total of 301km of operational line. At the end of 2022, 98% of tracks had Train Protection Systems (TPSs) in operation providing warning. 40% of tracks had TPSs providing warning and automatic stop, and 16% of tracks had TPSs with warning, automatic stop and discrete supervision of speed.

Level crossings

- 4.8. In 2022, the NI rail network had 134 level crossings in operation of which 71 were active level crossings and 63 were passive. Of the active level crossings, nine had automatic user-side warning, 42 had automatic user-side protection, and three had automatic user-side protection and warning, and rail-side protection. 17 of the active level crossings were manual crossings.
- 4.9. The number of level crossings in operation has been reduced over the seven year period. These reductions have specifically been made to passive level crossings, with a reduction of 43 crossings since 2016.

Major malfunctions/deficiencies

- 4.10. One incident concerning the detachment of a non-passenger crew access door on an Enterprise generator van was reported in 2022. This door suffered a hinge failure but remained on the vehicle. Following the incident, the van had remedial repairs completed to prevent a reoccurrence. Two other vans were inspected by NIR technicians with no serious defects found and subsequently underwent body repair work to permanently close this door.

Other accidents and incidents

- 4.11. In addition to the incidents mentioned previously in section 4, a further three incidents took place during 2022 on the NI network and were reported to the RSA:

- **Train struck equipment left on the track** (February 2022)

An IE train travelling from Dundalk to Newry (at approximately 73 miles per hour) struck a profile grinder that had been left in the cess after night-time possession works. The profile grinder was significantly damaged during the incident. No injuries were reported, however one panel of the train was damaged.

The investigation into the incident revealed that there was not an adequate check that the site was clear and only half of the site was walked with the aid of a head torch.

RSA undertook consideration of the incident, taking on board similar precedents, for example, the Rail Accident Investigation Branch (RAIB) report on the collision at Knockmore Junction. The RSA subsequently wrote to NIR highlighting RAIB's

recommendation on the implementation of a formalised process for checking that lines are safe after engineering work is complete and before the line is handed back to the rail operator and reopened to regular rail traffic. The RSA made additional recommendations to prevent this type of incident from happening in future:

- **Control of Plant and Machinery for Engineering Works** – The system of managing plant and machinery should be extended so each item of machinery or tool used, and who it is allocated to, is clearly recorded.
 - **Lighting of Engineering Works** – NIR implemented a requirement for all tools and equipment used on or near the line to be marked with fluorescent tape. The RSA made an additional recommendation that floodlighting should be the last thing removed at the end of overnight works.
 - **Review of Documentation and Processes for Safe Systems of Work** – The RSA recommended NIR prioritise this review to ensure that the relevant lessons learned from this incident can be incorporated in arrangements for any such engineering works in the future.
- **Category A Signal Passed at Danger** (July 2022)

A train running on the Belfast to Dublin line passed a signal at danger without authority, with the train slowing and coming to a complete stop approximately 140m past the signal.

NIR's investigation noted that there were two temporary speed restrictions on a short space of track prior to the signal and that there was a resulting loss of focus on the signal.

The train brakes were tested after the incident and found to be performing within tolerance.

NIR set out a range of actions to be taken forward following the incident, including briefing for drivers on lessons learned and a review of the management of temporary speed restrictions.

- **Uncontrolled movement of a tamper unit** (December 2022)

This incident involved the movement of a tamper unit, a piece of on track machinery, at the site of new track installation being undertaken by a contractor. No injury or damage was caused.

NIR's investigation established that, when switching from working to driving mode, the brakes were not engaged as required. The tamper unit rolled as it was stopped on a gradient, coming to rest a few feet from two track workers moving a temporary buffer. The investigation report outlined areas for action, ranging from briefing staff on operating procedures, the potential for modification to the machinery to ensure automatic braking, and staff training on exclusion zones around on track machinery.

Accidents/incidents reportable to the Rail Accident Investigation Branch

- 4.12. In 2022, RAIB conducted a preliminary examination into the circumstances of a fatality at Ballymena (referred to at paragraph 4.5). The purpose of a preliminary examination is to gather sufficient evidence and information to enable RAIB to identify the circumstances surrounding an accident and determine whether a full investigation would likely lead to recommendations to improve the safety of the railways. In the case of Ballymena, RAIB decided not to conduct a full investigation.
- 4.13. The RSA also engages with NIR on their considerations of the recommendations of relevant RAIB reports and safety digests to understand how learning from incidents on the GB network is practically deployed on the NI network.
- 4.14. The RSA also continues to engage with railway operators on incidents which do not meet the criteria for RAIB investigation, and monitors any mitigations or improvements implemented to reduce the risk of future incidents.

5. Development of the system for safety certification and authorisation

Safety certificates and authorisations

- 5.1. The 2006 Regulations set out the arrangements for safety certification and authorisation in NI.
- 5.2. NIR RU holds Part A and Part B safety certificates issued under the 2006 Regulations. These certificates were last issued in 2018. NIR RU also holds a railway undertaking licence, issued by the RSA, and Part A and Part B safety certificates for cross-border services issued by CRR.
- 5.3. IÉ holds a Part A safety certificate issued by CRR which the RSA has deemed a Part A certificate valid in NI, and a Part B certificate issued by the RSA.
- 5.4. No safety certificates were issued, amended or revoked in 2022. No updated, amended or part safety authorisations were issued in 2022.
- 5.5. No requests were received from other NSAs to verify or access information relating to a Part A certificate of an RU that has been certified in the UK but applies for a Part B certificate in another EU member state.
- 5.6. The RSA will continue to support railway operators in developing applications for certificates and authorisations as required.

Developments/changes

- 5.7. No changes to the regime for safety certification and authorisation, or changes to the strategy and procedures governing this area, were made in 2022.
- 5.8. The RSA continues to engage regularly with the rail sector, sharing information and feedback as required.

6. Experience of applying relevant Common Safety Methods

- 6.1. 2022 was the second year for which railway operators in NI were asked to provide information on their experience of applying the CSMs for risk evaluation and assessment and monitoring. It is anticipated that, for future calendar years, this feedback and analysis will develop as further experience is gained in examining the application of relevant CSMs.

Common Safety Method for risk evaluation and assessment (CSM-REA)

- 6.2. NIR noted the following:

Railway undertaking

- 20 technical changes relevant to fleets were assessed in line with the Engineering safety management system change control process and authorised for implementation. None of these proposed changes were deemed to be significant for the purposes of applying this CSM.
- During 2022 the remaining four of seven lengthened Class 4000 units were accepted for passenger operations. The vehicle approvals were managed through the relevant approvals process and included the application of the requirements of the CSM-REA. NIR appointed an independent Assessment Body and Designated Body to assess compliance with applicable standards.

Infrastructure manager

- In 2022 the IM Change Management Register contained four capital projects classed as significant under the CSM-REA:
 - Belfast Transport Hub
 - Northern Ireland Railways Operating Centre (NIROC)
 - Train radio upgrade
 - Electrification Programme
- One new technical product approval was completed during 2022, the introduction of the Schweizer Vamos System, which is a fully automatic solution designed to improve safety in user worked crossings.

- A new technical product approval for the use of composite sleepers commenced in 2021. This was not classed as significant and was ongoing during 2022.
- 6.3. IÉ RU noted that, during 2022, 20 applications for safety approval were submitted to the RU Safety Approvals Panel relating to 17 individual change projects. Four projects were noted to be significant for the purpose of applying this CSM, however none of these significant projects had progressed to the point of entering service in 2022. None of these projects related to rolling stock used on the cross-border service.

Common Safety Method for monitoring

- 6.4. NIR noted its use of first, second and third line monitoring activities to provide management, and both internal and external stakeholders, with confidence in levels of compliance and the effectiveness of its health and safety monitoring arrangements.
- 6.5. NIR highlight the information management arrangements that are in place to ensure effective two-way communication throughout the organisation. Information arising from, for example, internal and external audits, outcomes of accidents and investigation reports or staff and contractors reporting/feedback, is disseminated as appropriate. A combination of both safety management processes and location audits are scheduled each year to develop audit programmes. The programmes take account of the current risk profile, which is based on safety performance indicators, findings from internal and external reviews, incident investigations and trend analysis and the Hazard Register. The IM's focus is on verifying and testing the correct application and the effectiveness of all the processes and procedures in the safety management system, including the technical, operational and organisational risk control measures. Programmes are regularly reviewed to ensure ongoing effectiveness.
- 6.6. The RU noted that the competence of safety critical staff was an area of focus in 2022, with a two-pronged approach being adopted. External expertise was engaged to review current train crew competency management system (CMS) arrangements, with findings informing a CMS development project and a review of performance against current CMS programmes. Location audits focussed on areas with newly recruited staff to provide assurance on their competency and performance.
- 6.7. NIR has established a suite of key safety performance indicators, and trends are monitored and reviewed via TSMIS (Translink Safety Management Information System) which was undergoing upgrades during

2022. The output of monitoring activity is captured in periodic performance reports and reviewed at a number of forums throughout the organisation's hierarchy. Performance is communicated via safety and risk management meetings, safety committees, safety briefings and newsletters. NIR has arrangements in place to regularly monitor both leading and lagging indicators to analyse and evaluate the safety management system in order to ensure its ongoing effectiveness.

- 6.8. NIR commenced work to update their TSMIS and replace the Rail Validation System in 2022, which should enhance information and reporting arrangements.
- 6.9. NIR has developed action plans, with responsibility for achievement assigned as appropriate. Where weaknesses are identified they are subject to the development of a corrective action plan, assigned an owner and monitored to completion via a divisional tracker by NIR. Strategic planning takes place to implement the relevant management system, and progress monitoring, review and tracking takes place as required to ensure the actions within the plan can be delivered. Based on the results of their monitoring activity, NIR has a process in place for determining whether it is necessary to implement preventative, corrective or both types of measures. Status of corrective actions are monitored at monthly KPI meetings with senior management and reported at monthly safety management meetings. NIR are examining options to enhance their monitoring activity to ensure a more cohesive approach in line with the CSM for monitoring, which will be an area of focus in 2023.
- 6.10. IÉ RU highlight a wide range of monitoring activity, for example, both internal and external independent audits, discussion of the findings of monitoring programmes at formal safety meetings and reporting on and review of performance indicators and progress on safety actions. Where deficiencies are identified, these are rectified through corrective actions.

7. Supervision of railway undertakings and infrastructure managers

7.1. The day-to-day supervision of the health and safety performance of the railway industry is delivered under the 2006 Regulations where the NSA is the Department. The Department continues to work closely with CRR as well as NIR and IÉ on all EU issues and mutual railway safety matters as they impact on the shared service between Belfast and Dublin.

Monitoring and supervision

7.3. The RSA hosts regular monitoring and supervision meetings with: NIR – infrastructure manager

- NIR – railway undertaking
- IÉ – railway undertaking

7.4. These meetings typically involve safety updates from the railway operators and monitoring of progress in implementing recommendations arising from audits and inspections.

Audit and inspection – NIR

Internal audits

7.4. The number of internal audits completed by the NIR RU in 2022 was 17. These covered areas ranging from depot audits, independent vehicle inspections and competency management system audits. The number of actions raised as a result of these audits was 76 and there were no major non-conformances identified. The number of internal auditing activities conducted by or on behalf of the NIR IM during 2022 was 24. There were no major or significant non-conformances identified. The IM audit programme included an audit of contractors and subcontractors' safe systems of work.

RSA audits and inspections

7.5. To undertake the programme of audit and inspection, the RSA draws on the technical support and advice of railway engineers, fleet engineers and health and safety experts from ORR or HSENI. The RSA then works with the designated technical experts to develop a remit for each audit and inspection. During 2022, two inspection reports were completed and handed over to NIR for action: Track/permanent way (IM)

- Rolling stock maintenance (RU)

A summary of the findings of these reports is contained in section 3.

- 7.6. Recommendations from completed inspections feed into an action log for the supervisory process to monitor NIR's progress in implementing the agreed response to the recommendations. This monitoring takes place during quarterly meetings.

Audit and inspection – IÉ

- 7.7. No inspections of IÉ were undertaken by the RSA in 2022.

Annex A: Main legislative framework for rail safety in NI

[Transport Act \(Northern Ireland\) 1967](#)

[Railway Safety Act \(Northern Ireland\) 2002](#)

[The Railways \(Safety Management\) Regulations \(Northern Ireland\) 2006](#)

[The Cross-border Railway Services \(Working Time\) Regulations \(Northern Ireland\) 2008](#)

[The Train Driving Licences and Certificates Regulations \(Northern Ireland\) 2010](#)

[The Railways \(Interoperability\) Regulations 2011](#)

[The Rail Vehicle Accessibility Regulations \(Northern Ireland\) 2014](#)

[The Private Crossings \(Signs and Barriers\) Regulations \(Northern Ireland\) 2014](#)

[The Railways Infrastructure \(Access, Management and Licensing of Railway Undertakings\) Regulations \(Northern Ireland\) 2016](#)