

The background of the cover is a photograph of a cable-stayed bridge at sunset. The bridge's white pylons and cables are prominent, with the warm orange and yellow light of the setting sun reflecting on the bridge's surface. The sky is a mix of blue and orange. The image is framed by several overlapping purple geometric shapes, including triangles and polygons, which create a modern, abstract design.

ANNUAL REPORT 2017



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REPORT OF THE COMMISSIONER TO THE MINISTER FOR TRANSPORT, TOURISM AND SPORT

Minister,

The Commission for Railway Regulation is pleased to submit its annual report for 2017. This is the final annual report under the Commission's current strategy 2015 – 2017.

In August 2017, the outgoing Commissioner Gerald Beesley retired after 7 years of dedicated service to the Commission for Railway Regulation. The Commission and its staff extend its best wishes to Gerald in his retirement. The new Commissioner took up his appointment in December 2017 with the Deputy Commissioner fulfilling the role in the interim.

The CRR had set a challenging programme for 2017 including the safety assessment of the new works associated with the LUAS Cross-City extension, with operations planned to commence in December 2017. Extensive supervisory functions including audit and inspection were planned for 2017 on a risk based analysis. Additionally, railway organisations were monitored to ensure their implementation of required actions issued by the CRR and recommendations of the Rail Accident Investigation Unit aimed at improving railway safety.

The CRR continued its monitoring role of the Infrastructure Manager Multi Annual Contract and provided continuing technical support to the Department with particular emphasis on the implementation of the EU 4th Railway Package.

In fulfilling its function, the CRR undertook a range of activities relating to conformity assessment, authorisation to place in service, supervision and enforcement.

Specifically, 15 letters of authorisation relating to the various stages associated with authorisation to place in service were issued. Of particular note was the interim operation authorisation in relation the LUAS Cross City infrastructure. There has also been extensive engagement between CRR and IÉ-RU and IÉ-IM in relation to conformity assessment for their respective renewed safety certification and safety authorisation, due in March 2018. Eight audits were completed resulting in the identification of 15 minor non-compliances and a further 42 actions required of various railway organisations. A total of 79 inspections of railway organisations were also completed. Formal enforcement in the form of Improvement Plan or Improvement Notice after an audit or inspection was required in eight instances.

REPORT OF THE COMMISSIONER TO THE MINISTER FOR TRANSPORT, TOURISM AND SPORT

The continuing increase in the numbers of passenger journeys on heavy and light rail is of note. In 2017, there was an increase of approximately 6% in heavy rail use and 10% in light rail use, which equates to approximately 83 million passenger journeys in 2017.

The total funding for the functions of the CRR in 2017 was €2.23m. The CRR continues to receive the majority of its funding through the annual levy that the CRR places on the entities that are subject to regulation (€1.61m) with the balance received as Grant in Aid from the Department of Transport Tourism and Sport (€0.62m). The levy is allocated on the basis of the level of authorisation or supervision that each entity will be subject to in that year. The CRR has not had to increase this levy in recent years, and this was again the case in 2017.

The CRR carries out supervision and enforcement functions with an emphasis on support, advice, encouragement, and when necessary, direction.

The CRR received 58 representations relating to a range of heavy and light rail infrastructure and operational issues, all of which were actioned.

While it is not unusual for some degree of tension between regulators and regulated entities to occur, the CRR's 2016 Annual Report referenced the development of a strained working relationship between the CRR as a regulator and IÉ as a regulated entity. The outcome of actions in 2016, as indicated in the 2016 report, resulted in "a better understanding and heightened awareness of the CRR's safety concerns at Board level, which points to a more positive outlook". Continuing regulatory engagement between the CRR and IÉ throughout 2017 was extensive in the context of supervision and the initial stages of IÉ-IM Authorisation and IÉ-RU Certification. The overall positive progress made by the end of 2016 continued and was again evident at the end of 2017.

Railway organisations are required to submit an annual safety report to the CRR by the 30th June each year in regard to the preceding year. The CRR's report on Railway Safety Performance in Ireland for 2016 was produced in 2017, and this has been published on the CRR website www.crr.ie.

The CRR is a member of the International Railway Safety Council (IRSC) and the Commission is to host the International Railway Safety Council annual conference in October 2018. The theme for the Irish conference "Organisational Culture that Values Safety" was presented to the IRSC at the 2017 conference and the proposed theme for the conference was accepted.

As the lease on the CRR's previous office accommodation expired in 2017, new premises were sourced.

Our organisation is totally dependent for its success and achievement on the quality and professionalism of its staff. We would therefore like to extend our thanks to each member of the CRR staff for their continuing commitment, dedication and hard work throughout the year.

Brian Higginson

Commissioner

Mary Molloy

Deputy Commissioner

COMMISSION FOR RAILWAY REGULATION MANAGEMENT GROUP AND ORGANISATION STRUCTURE

MANAGEMENT TEAM



ORGANISATION CHART

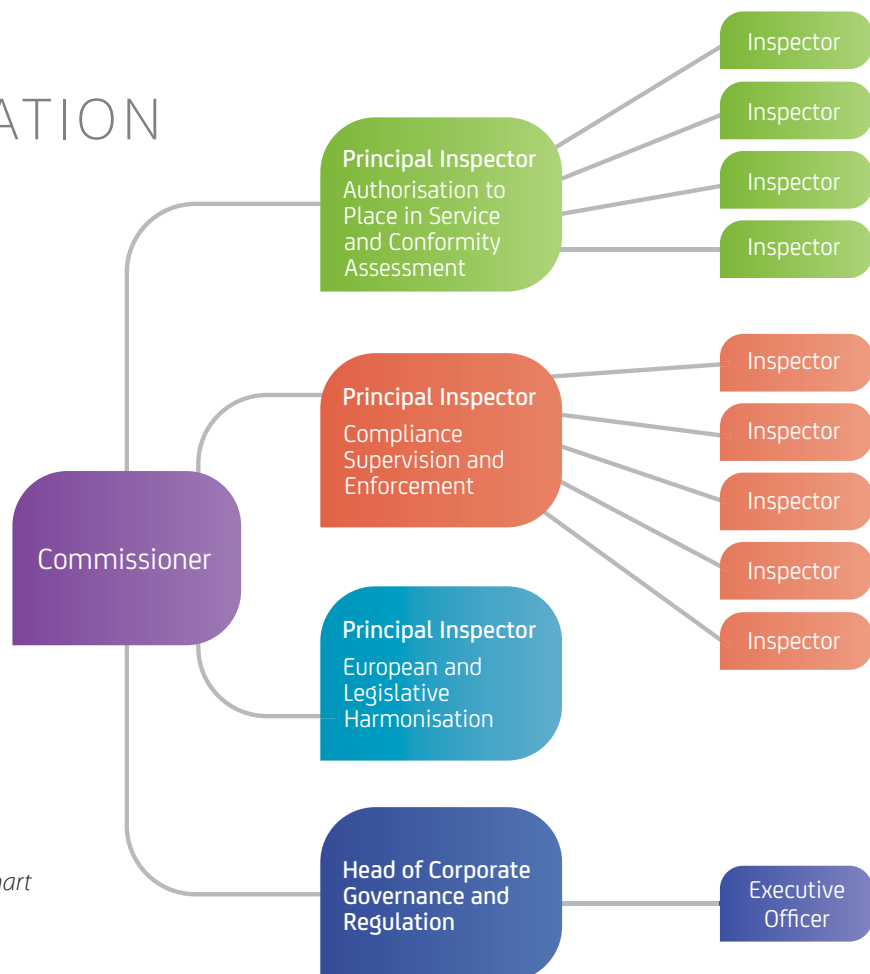


Table 1- CRR Organisational Chart

ROLE OF THE COMMISSION FOR RAILWAY REGULATION

The Commission for Railway Regulation was established on 1st January 2006 under the provisions of the Railway Safety Act (RSA) 2005. In the context of the Railway Safety Directive (EU Directive 2004/49/EC), as reflected in S.I. No.444 of 2013, the CRR is the National Safety Authority for the railway sector in the Republic of Ireland. It is the independent regulatory agency charged with oversight of the safety of heavy and light railway organisations that provided over 80 million passenger journeys in the State in 2017.

The CRR is required to ensure that each railway organisation operating in the State understands and effectively manages the risk to safety associated with its activities. This is achieved in the following ways:

- **Conformity Assessment** – This involves assessing the Safety Management Systems (SMS) of railway organisations to ensure that they conform to all the requirements prior to awarding safety authorisation or safety certification.
- **Authorisation to Place in Service (APIS)** – This involves assessing APIS applications for new or altered railway infrastructure, command control and signalling equipment, energy supply equipment and rolling stock in accordance with National and EU legal provisions.
- **Compliance Supervision & Enforcement** – This involves both audit and inspection for compliance with the procedures and standards prescribed in each SMS approved in conformity assessment, the inspection of railway assets to assess compliance with fitness for purpose criteria, as well as ensuring compliance with safety recommendations through the monitoring of implementation plans and by taking enforcement proceedings where necessary.
- **Entity in Charge of Maintenance** – Providing certification and annual surveillance of entities in charge of maintenance in Ireland in accordance with Commission Regulation EU 445/2011.
- **European & Legislative Harmonisation** - Supporting the harmonisation of legislation with EU Directives and Regulations, and ensuring that the consequent implementation of related technical and procedural measures conforms to mandatory EU requirements.

In terms of EU Directive 2012/34, as reflected in S.I. No.249 of 2015, the CRR is the Regulatory Body, Licensing Authority and Independent Monitoring Body for the heavy rail sector in the State. In this context it has the following additional regulatory functions:

- **Licensing of Railway Undertakings** seeking to access the network.
- **Independent Monitoring of the Multi-Annual Contract** between the Minister and the Infrastructure Manager.
- **Oversight of the Iarnród Éireann track access allocation and pricing regime and adjudication on appeals by Railway Undertakings.**

The CRR is also the Competent Authority designated for:

- The transport of dangerous goods by rail in compliance with S.I. 651 of 2010.
- Cableways under S.I. No. 766 of 2007 relating to installations designed to carry persons.
- The purposes of S.I. 399 of 2010 European Communities (Train Drivers Certification) Regulations 2010.

ENTITIES SUBJECT TO REGULATION

The following entities are subject to regulation by the CRR;

Iarnród Éireann - Infrastructure manager, Iarnród Éireann – Railway Organisation, Transdev, Balfour Beatty Rail Ireland Limited, NIR Translink, Bord na Móna, Assenta Rail (maintenance body for the Belmond Grand Hibernian Tourist Train), Railway Preservation Society of Ireland and Heritage Railways.

PASSENGER NUMBERS

Iarnród Éireann

2017 saw continued growth in passenger traffic on the Iarnród Éireann rail network with 45.5 million passenger journeys made, representing an increase of approximately 6% and a return to the peak levels seen back in 2006-8.

LUAS (Transdev)

2017 also saw continued growth on the LUAS light-rail network with 37.6 million passenger journeys made, representing an increase of approximately 10% on 2016. With the opening of the LUAS Cross City (Green Line extension) in December 2017, continued growth is expected.

Trends in passenger journeys are provided in Appendix 1.

STRATEGY OF THE COMMISSION FOR RAILWAY REGULATION

The Commission published its current Statement of Strategy in June 2015. This provides the mission, vision and key objectives for the Commission for Railway Regulation between 2015 – 2017.

Mission: Advancing railway safety.

Vision: Railways that safely deliver.

Objectives:

- Safety: that railway activities throughout the State are conducted with primary regard to safety;
- Compliance: that railway organisations comply with national and EU legal requirements;
- Open Access: that access to the railway network is provided in a fair and transparent manner; and
- Performance & Sustainability: that Infrastructure Manager(s) deliver sustainable railway network capacity and economic value for the State.



REPORT OF PRINCIPAL INSPECTOR - AUTHORISATION TO PLACE IN SERVICE AND CONFORMITY ASSESSMENT

AUTHORISATION TO PLACE IN SERVICE (APIS)

The requirement for the CRR to perform Authorisation to Place in Service on railway systems is mandated by EU and National Legislation. The main EU legal requirements are, the Interoperability Directive (IOD) 2008/57/EC, the Railway Safety Directive (RSD) 2004/49/EC and the common safety method for risk evaluation and assessment EU/402/2013. National requirements are governed by the Railway Safety Act 2005 as amended by SI 444 of 2013. EU and national requirements apply to the heavy rail system while only national requirements apply to the LUAS light rail system.

Meeting the essential requirements as outlined in IOD Annex III is a pre-requisite for APIS. CRR requirements are underpinned by I.S. EN 50126 – railway applications – the specification and demonstration of reliability, availability, maintainability and safety. This is managed through the system life cycle model known as the V-cycle. The V-cycle contains twelve phases – i) Concept, ii) System Definition and Application Conditions, iii) Risk Analysis, iv) Safety Requirements, v) Apportionment of System Requirements, vi) Design and Implementation, vii)

Manufacture, viii) Installation, ix) System Validation, x) System Acceptance, xi) Operation and Maintenance and xii) De-commission. The CRR guidance RSC-G-009 and RSC-G-032 are designed around the V-cycle and have six Stages. These are:

Stage 1 – Concept (V-cycle i)

Stage 2 – Preliminary Design (V-cycle ii and iii)

Stage 3 – Detailed Design (V-cycle iv, v, vi and vii)

Stage 4 – Testing (V-cycle viii and ix)

Stage 5 – Interim Operation (V-cycle x, xi and xii)

Stage 6 – Service Operation (V-cycle x, xi and xii)

Stage 5 Interim Operation is a stage where the safety of a system has been proven but not all evidence of the stipulated requirements and associated administrative paperwork is available.

APIS - Infrastructure

LUAS Cross City (LCC)

The CRR continued to meet with Transport Infrastructure Ireland (TII), Transdev and the Contractor in relation to LUAS Cross City (LCC) throughout the year. In 2017, the CRR issued Letters of Acceptance (LoA) for the following Authorisation to Place in Service (APIS) stages:

- Stage 3 – detailed design,
- Stage 4 – testing, and
- Stage 5 – interim operation.

The Stage 3 LoA was applied for and issued to TII, custodian of assets while subsequent LoAs were applied for and issued to Transdev the LUAS operator. Testing was carried out on the LUAS Cross City (LCC) infrastructure throughout the summer of 2017. Following the successful completion of LCC testing, Transdev applied to the CRR for authorisation to operate LCC. Stage 5 APIS (Interim Operation) of LCC, was granted by the CRR on the 7th of December 2017. Activities to be completed before a Stage 6 Service Operation LoA may be issued include completion of references in safety documentation and an update of Transdev's Safety Management System manual.

Bridges

In 2017 the CRR issued a number of LoAs to IÉ-Infrastructure Manager in relation to new bridge projects.

These projects were:

LoA for service, stage 6

- Overbridge at 116miles 160yards Dublin to Galway Line
- Pedestrian Overbridge at 2miles 635yards at Newcomen Junction Dublin to Sligo Line
- Overbridge at 1mile 300yards Tuam to Claremorris Line

LoA for detailed design, stage 3

- New Road Overbridge at 149miles 115yards Athlone to Westport Line
- New Road Overbridge at 152miles 1100 yards Athlone to Westport Line

Cableways

The CRR, as the Competent Authority for Cableways under S.I. No. 766 of 2007, has maintained its role with respect to Dursey Island Cable Car. The CRR has continued to work with the duty holder, Cork County Council, throughout 2017, including to meet with Cork County Council to discuss future plans for the cableway and potential implications of changes to legislation.

APIS - Signalling and Telecommunications

City Centre Re-Signalling Project (CCRP)

The CCRP provides for reduced signalling headways (the time between two trains passing the same location on a railway line at a defined speed profile) and future additional services in the City Centre area and Northern Line corridor. The project is being implemented in four phases.

Phase 1 covers the area between Malahide/Howth and Killester. A stage 6, service operation (full approval) LoA was issued in May 2017. Phase 3 covers the area from Tara Street to Sandymount. An extension to the stage 5, interim operation LoA for this phase was issued in May 2017 following a request from the IÉ-IM. The extension was requested to allow some post-commissioning activities to be completed. These included small corrections in documentation, amendments to manuals, briefings to staff and completion of as-built drawings.

Phase 2 covers the area from Killester to East Wall Junction and Phase 4 covers the Connolly Station area. Enabling works progressed for Phase 2 during 2017. It is the intention that commissioning of Phase 2 and Phase 4 will take place at the same time. A stage 3, detailed design LoA was issued for Phase 4 in May 2017.

Global System for Mobile Communications – Railway (GSM-R) Phase 1

This project comprises the replacement of the analogue radio system which is used to provide direct communications between train drivers and controlling signalmen/regulators with GSM-R. Phase 1 is the fitment of GSM-R compatible cab radios to the

DART fleet, GSM-R base stations and antennae along the DART route and related works at the Central Traffic Control centre at Connolly. An extension to the stage 5 LoA (issued in 2016) was issued in June 2017.

Iarnród Éireann Hybrid System (IEHS) train protection system

CRR continued to engage with IÉ-IM during 2017 on the technical design of the IEHS system. This engagement identified major technical design issues that required resolution. Another application for Detailed Design was submitted by IÉ-IM to the CRR in June 2017. Design issues continue to be of concern and the CRR engagement with IÉ-IM continued during August, October and December 2017 and continue into 2018.

The IEHS train protection system is a replacement product for the existing Continuous Automatic Warning System and Automatic Train Protection systems. The first stage of the project is the fitment of three train types with the prototype design and associated trackside equipment. A later stage will be the rollout over the entire network.

APIS - Rolling Stock

Belmond Grand Hibernian Tourist Train

The Belmond Grand Hibernian Tourist Train began operation in August 2016 under an interim service stage 5 LoA. In April 2017, IÉ-RU as the Operator, in co-operation with the Keeper of the rolling stock Ireland Luxury Rail Tours Limited, made an application for Stage 6 service operation for which a stage 6 service operation (full approval) LoA was issued in April 2017.

On-Track Machine – Multipurpose vehicle (MPV)

In 2017 IÉ-IM made a stage 1 application for the upgrade of their multipurpose vehicle (MPV), Type Geismar VMB2014, to include a weed spray configuration. A stage 1 concept LoA was issued in November 2017 for this application.

Citadis 502 Trams

The Citadis 502 tram is a 54.7m tram with a carrying capacity of 380 passengers compared to the Citadis 402 tram which is 43.6m long and can carry 320 passengers. During 2017, TII progressed their submissions for design approval for new Citadis 502 trams for operation on Dublin's LUAS light rail network. An application for detailed design, stage 3 was made in November 2017 and a LoA was issued in the same month.

Heritage Railways

Lullymore Heritage and Discovery Park who had received a safety management certificate as an isolated heritage railway in 2016 made a new rolling stock assessment application for two locomotives and a 40 seat carriage. The application was made in accordance with CRR-G-036-A, Guideline for the Safety Assessment of New Rolling Stock for a heritage, museum or tourist railway that operates on its own network, including workshops, vehicles and staff. A letter of acceptance for operation was issued in October 2017.

Entity in Charge of Maintenance (ECM)

Entity in charge of maintenance requirements are mandated by the Railway Safety Directive. Each vehicle, before it is placed in service or used on the network, shall have an entity in charge of maintenance assigned to it and, in the case of freight wagons, this entity must be certified. Freight wagons operating in Europe must be maintained by a certified ECM in accordance with Commission Regulation (EU) No 445/2011. In this context, the CRR provide certification and annual surveillance in Ireland and have produced and published on the CRR website applicable guidance, CRR-G-027.

IÉ-RU received an ECM Certificate from the CRR in 2013 for freight. In March 2017, the IÉ-RU Freight ECM year 4 surveillance audit was performed by the CRR. No critical nonconformities were identified.

	Concept	Preliminary Design	Detailed Design	T & C	Interim Operation	Service
APIS Stages	1	2	3	4	5	6
Infrastructure						
LUAS Cross City			√	√	√	
Overbridge – Dublin/Galway Line						√
Overbridge – Dublin/Sligo Line						√
Overbridge – Tuam/Claremorris Line						√
Overbridge – Athlone/Westport Line			√			
Overbridge – Athlone/Westport Line			√			
CCRP – Phase 1						√
CCRP – Phase 3					√	
CCRP – Phase 4			√			
GSM-R Phase 1					√	
Rolling Stock						
Belmond Grand Hibernian Tourist Train						√
On-track machine – MPV	√					
Citidas 502 Tram			√			

Table 2 – Letters of Authorisation to place in Service, issued 2017

CONFORMITY ASSESSMENT

Conformity Assessment of Safety Management Systems are carried out in compliance with the Railway Safety Directive and the Railway Safety Act 2005 amended by SI 444 of 2013. Specific criteria for assessing conformity are detailed in EU Regulation 1158/2010 Safety Certification and EU Regulation 1169/2010 Safety Authorisation.

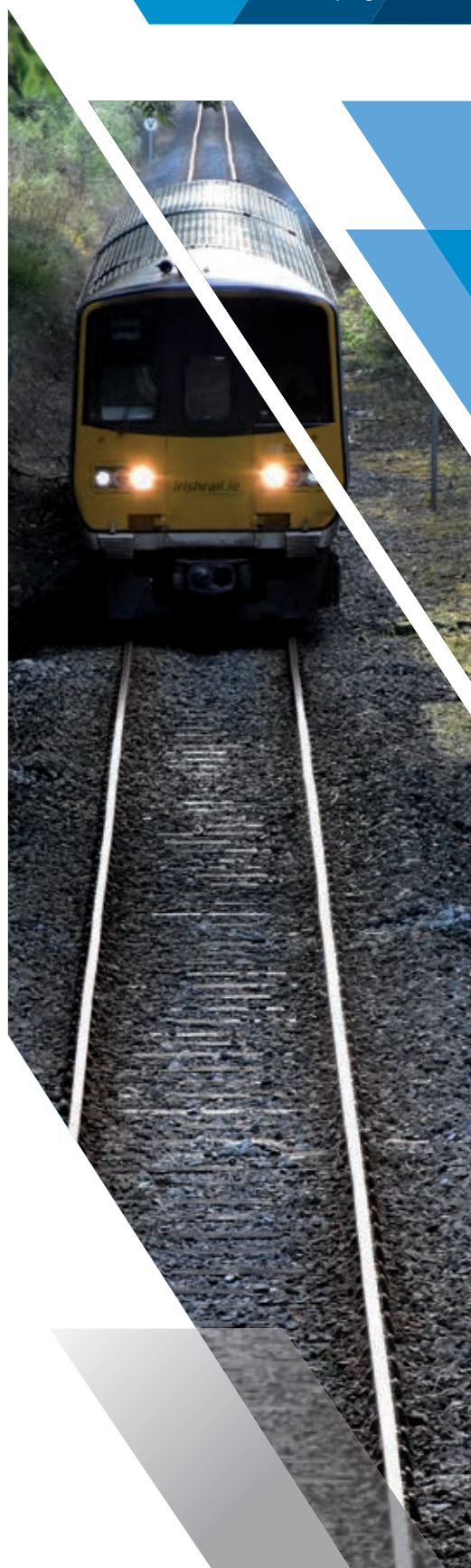
The current five year IÉ-RU Safety Certification and IÉ-IM Safety Authorisation expire at the end of March 2018. In September 2017, the CRR held separate initial meetings with IÉ-RU and IÉ-IM to discuss re-certification/re-authorisation. Following this, the CRR received initial submissions of updated standards necessary for the renewed conformity assessment. There was extensive engagement between CRR and IÉ-IM and IÉ-RU in the last three months of 2017 in relation to the standards submitted.

TRAIN DRIVER LICENSING

The CRR is the competent authority for the purposes on S.I. 399 of 2010 European Communities (Train Drivers Certification) Regulations 2010. As from 29th October 2018, all train drivers must hold a valid Licence to drive on the network. During 2017, the CRR met with IÉ-RU and Balfour Beatty Rail Ireland to agree plans and procedures for submission of Licence applications. It is expected that these applications will be made during the first half of 2018, so that all Licences will be in place before the indicated compliance date.

LICENCING OF RAILWAY UNDERTAKINGS

The CRR as the designated licencing authority under S.I. 249 of 2015 was not required to undertake any activity in 2017.





REPORT OF PRINCIPAL INSPECTOR - COMPLIANCE SUPERVISION AND ENFORCEMENT

SUPERVISION & ENFORCEMENT

The CRR is required to ensure that each railway organisation operating in the State effectively manages the risks to the safety of persons associated with its activities.

To achieve this the CRR develops multi-annual and/or annual supervision plans for every railway organisation operating in the State. The supervision plans include: safety performance review meetings involving senior company executives; audits of railway organisations regarding compliance with their respective safety management systems which are the basis of their certification or authorisation; undertaking sample inspections of assets to ensure that they are fit for purpose. Additionally, reactive activities such as following up on accidents, incidents, dangerous occurrences, or public and other third party representations is undertaken.

Supervision plans are risk based, and the following information is used to inform on the relative risk and the appropriate supervision resource to be applied:

- A railway organisation's safety performance;
- Previous CRR supervision activities and outputs from the same;
- CRR's professional judgement based upon Inspectors experience;
- Industry safety concerns arising from railway accidents and incidents, nationally and internationally;
- Complaints and representations by, or on behalf of staff, passengers, or affected parties; and
- Reactive monitoring, including post-incident compliance inspections.

Proportionality must be applied by the CRR and therefore supervision plans take into account factors such as the size and complexity of the railway organisation. In essence, the more exposed to risk a railway organisation is the more supervision they can expect.

The following sections present an overview of the CRR's supervision activity for 2017.

COMPLIANCE AUDITING (PRO-ACTIVE SUPERVISION)

During 2017, the CRR initiated the audits listed in the following table:

Railway Organisation	Title of Audit	Commenced
Transdev	Managing of Safety Critical Information	February 2017
BBRI	Strategic Management Review & HRO Comparison	May 2017
IÉ-IM	Audit of the procurement of Safety Critical Components	October 2017
IÉ-RU	Audit of the STMA of Persons engaged in operations Duties	November 2017
IÉ-RU	Audit of the Management of Shunting Risk	December 2017

Table 3- Audits undertaken by the CRR in 2017

Of the above audits, the first three listed were also finalised in 2017. In addition, the CRR finalised five audits that were initiated late in 2016. Each of the audits conducted produced outcomes to address findings that arose from the facts ascertained during the audits. CRR inspectors categorise these outcomes depending on the risk they present. CRR Inspectors use the following classification system for these outcomes.

Major Non Compliance (MaNC): an area of non-compliance with an IÉ internal standard, an applicable external standard, or legislation that is evidence of a system failure.

Minor Non Compliance (miNC): an area of non-compliance with IÉ internal standards, an applicable external standard, or legislation that is evidence of a sporadic lapse in implementation of a system or deviation from a system.

Action Required (AR): an area where potential exists for a non-compliance to occur unless remedial action is taken or improvement is made, an isolated error that requires correction, or some other issue where, in the opinion of the auditor action is necessary.

Scope for improvement (SFI): an area highlighted where, in the opinion of the Auditor, system or business improvement can be achieved by the company. Typically this is phrased as a recommendation, the merits and implementation of which should be decided by the audited organisation.

Good Practice (GP): an area highlighted which, in the opinion of the Auditor, is good practice within the industry.

Audit Trail (AT): an area that the auditor believes should have further attention, either by inclusion in the programme for future audits (but not necessarily an external audit item) or by some other means.

The tables overleaf provide further detail on audit outcomes -



Railway Organisation	Title of Audit	Major Non-Compliance	Minor Non-Compliance	Action Required
BBRI	Annex II Criterion 5 Audit Report	0	0	5
Transdev	Strategic Management Review & HRO Comparison	0	3	5
Iarnród Éireann-IM	Management of Track	0	1	11
Iarnród Éireann-RU	Vertical Slice audit of the Operations Department Safety Management System	0	1	5
Iarnród Éireann-IM	Vertical Slice audit of the Infrastructure Manager Operations (IMO) Safety Management System	0	4	6

Table 4 - CRR Audits initiated in 2016 and finalised in 2017

Railway Organisation	Title of Audit	Major Non-Compliance	Minor Non-Compliance	Action Required
Iarnród Éireann-IM	Audit of the procurement of Safety Critical Components	0	2	4
Transdev	Managing of Safety Critical Information	0	0	2
BBRI	Strategic Management Review & HRO Comparison	0	4	4

Table 5 - CRR Audits initiated and finalised in 2017

Railway Organisation	Title of Audit	Audit initiated
Iarnród Éireann - RU	Audit of the selection training, monitoring and assessment of Persons engaged in operations Duties	November 2017
Iarnród Éireann - RU	Audit of the Management of Shunting Risk	December 2017

Table 6 - CRR Audits initiated but not finalised in 2017

For those audits that were finalised in 2017, as indicated in tables above no instances of major non-compliance were identified. Where the audit discovered minor non-compliances with law and/or an approved SMS, the railway organisations concerned were requested to submit an Improvement Plan, in accordance with the requirements of Section 76 of the Railway Safety Act. In the vast majority of cases the railway organisations concerned have already implemented, or are in the process of implementing the agreed corrective and preventative actions.

CRR Inspectors also report on identified areas of good practice within the industry. The CRR cited 30 such good practice items in 2017 across a number of railway organisations including:

- IÉ-IM's IMO department have actively sought and implemented a hazard reporting system to aid dispersed staff;
- IÉ-IM's IMO department have proactively sought to inform staff of lessons learned and information of international incidents;
- IÉ-RU's running of an annual safety conferences as it helps to raise the profile of safety within the organisation and helps promote staff awareness of current issues;
- Alstoms (Tram Maintenance Contractor) were identified as having traits consistent with high reliability organisations;
- Transdev's introduction of their Service Delivery Application (SDA) has enabled an efficient approach to driver assessment;
- BBRI's strong safety culture was evident at all levels within the organisation and were seen to actively seek information on issues that may be a safety concern.

POST INCIDENT INSPECTIONS (Reactive Supervision to Accidents or Incidents)

The CRR operates a 24 hours/day, 364 days /year on-call roster, to respond to an accident, incident or other dangerous occurrence notifications. In 2017, the CRR received a total 53 notifications and mobilised to a number of these either immediately

or in the following days after the event to inspect the site. The majority, 31, related to the IÉ network, 13 occurred on the LUAS network, 3 involved BBRI On-Track Machines, 4 occurred at Bord Na Móna level crossings, 1 Door fault on an Northern Ireland Railways train and 1 involving a Railway Preservation Society of Ireland train.

Tragically, there were nine fatal occurrences on the IÉ network during 2017 and one fatal occurrence on the LUAS network. The circumstances of eight of these fatalities (7 on the IÉ Network and 1 on the LUAS network) indicated apparent self-harm. There were several other incidents that under slightly different conditions could have also resulted in serious consequences, these included:

- Person struck by train near Malahide station, 21st January 2017;
- Person struck by train near Clongriffin station, 1st April 2017;
- A person struck by train near Park Level Crossing on the Ennis to Limerick line, 29th October 2017.

Incidents notified to the CRR, other than those incidents which were apparent self-harm, were further investigated. In any instance where safety was deemed to be at risk, the CRR sought the necessary assurances that mitigation measures had been put in place by the relevant organisation.

INSPECTIONS

Inspections of a railway organisations assets and/or operations is also used as part of the CRR's compliance supervision activities. In 2017, the CRR undertook a total of 79 Inspections which focused on:

- Railway assets with particular reference to rolling stock, stations, level crossings and other structures, e.g., bridges;
- Iarnród Éireann's management of change;
- Event Management (Transdev, and the Railway Preservation Society of Ireland); and
- Light Rail infrastructure, trams and monitoring of LUAS Cross City interface works.

During 2017 the CRR also carried out inspections of all operational self-contained heritage railways.

CRR Inspectors also took the opportunity to travel in Iarnród Éireann locomotive and railcar cabs to assess the operations and the condition of the permanent way, with 20 such assessments take place in 2017.

All outcomes arising from these inspections are being progressed by the railway organisation concerned, and the CRR is monitoring remediation of all safety critical issues.

ENFORCEMENT

Section 7 of the RSA 2005 provides the CRR with wide ranging powers of enforcement. These powers range from requesting an Improvement Plan, to serving an Improvement Notice or Prohibition Notice, and if necessary, applications to the High Court, while the CRR also has the power to revoke a Safety Authorisation or Safety Certificate. In utilising its powers of enforcement the CRR, wherever possible, employs the principle of proportionality whereby the aim is to respond using the appropriate powers in reacting to any failing or apparent failing of a railway organisation. In 2017, the following enforcement measures were initiated by the CRR:

Section 76 of the RSA 2005 – Improvement Plan

2 Improvement Plans were requested following audits:

- CRR Audit of BBRI's Strategic Management
- CRR Audit of the Chief Civil Engineer's department's (Iarnród Éireann) procurement of Safety Critical Components

5 Improvement Plans were requested following inspections:

- CCR Inspection of Iarnród Éireann – Infrastructure's (IÉ-IM) management of scour susceptible bridges;
- CCR Inspection of Iarnród Éireann – Railway Undertaking's (IÉ-RU) internal monitoring of the carriage of dangerous goods;
- CCR Inspection of IÉ-IM's management of scour susceptible bridges;

- CCR Inspection of IÉ-IM's management of competence of Persons Required to Conduct IM Operating Duties;
- CCR Inspection of IÉ-RU's Drogheda Train Maintenance Depot.

Section 77 of the RSA 2005 – Improvement Notice.

1 Improvement Notice and 1 extension to an existing Notice were served following:

- Transdev for failing to comply with section 39(6) of the Railway Safety Act, and specifically in relation to facilitating a consultation programme for employees;
- Extension of time granted to Improvement Notice served on Iarnród Éireann, in 2016, relating to their Drugs and Alcohol policy.

Section 78 of the RSA 2005 – Prohibition Notice

- No Prohibition Notices were served in 2017.

IMPLEMENTATION OF AUDIT, INSPECTION AND POST-INCIDENT INSPECTION OUTCOMES

The implementation of corrective actions is monitored by the CRR on an on-going basis.

A three-tier status flagging system is applied to monitor the railway organisation's progress towards closure of the action.

A detailed breakdown for audit outcomes, inspection outcomes and post-incident inspection outcomes for each of the principal railway organisations since 2014 is provided in Appendix 2.

Safety Recommendations made by the Railway Accident Investigation Unit (RAIU), although directed at the railway organisation(s) concerned, are in the first instance addressed to the CRR. It is the responsibility of the CRR to ensure that the safety recommendations issued by the RAIU are taken into consideration and acted on by the railway organisations. The status of current safety recommendations issued by the RAIU is detailed in Appendix 3.

SUPERVISION MEETINGS

A key element of the CRR's supervision regime are safety performance review meetings. These meetings involve CRR Inspectors meeting with executives and safety managers from the various railway organisations to review their ongoing safety performance. This includes a thorough review of recent occurrences (serious accidents, accidents and incidents), a review of the railway organisations' safety performance indicators, their management of change and commitment to continuous improvement. These meetings also monitor the implementation of safety outcomes and recommendations made in reports issued by the Railway Accident Investigation Unit (RAIU).

17 safety performance review meetings were held with railway organisations in 2017.

OTHER RAILWAY ORGANISATIONS

In addition to Iarnród Éireann and Transdev (LUAS Operator), the CRR also supervise the following railway organisations -

Balfour Beatty Rail Ireland

Balfour Beatty Rail Ireland (BBRI), operate and maintain the On-Track-Machine fleet on behalf of Iarnród Éireann – Infrastructure Manager. Their principal activity is track maintenance using bespoke railway vehicles, e.g., a tamper, which is a specific train that corrects/improves track geometry. They do not carry passengers, and much of their work is undertaken at night.

Bord Na Móna

Bord Na Móna (BNM) own and operate a sizeable industrial railway used for the transport of peat. The CRR supervise BNM where their railway interfaces with public roads, i.e., at level crossings and bridges over/under the railway.

Heritage Railways

The CRR monitor the operations of a small number of self-contained heritage railways. In 2017 the following heritage railways were operational and subject to supervision.

- Diffin Lake Railway, Oakfield, Raphoe, Co Donegal;
- Finntown & Glenties Railway, Co Donegal;
- Listowel Lartigue Monorail, Co Kerry;
- Waterford & Suir Valley Railway (W&SVR);
- Irish Steam Preservation Society, Stradbally, Co Laois;
- Lullymore Heritage & Discovery Park Limited, Rathangan, Co Kildare.

A listing of heritage railways in Ireland may be seen at Appendix 5.

The Railway Preservation Society of Ireland

The Railway Preservation Society of Ireland (RPSI) is also a railway organisation which operates steam and diesel hauled heritage trains. However, it operates services on the Iarnród Éireann railway network which presents different and additional risks. Furthermore, as a Railway Undertaking (RU) under the EU Railway Safety Directive, the RPSI are subject to a different supervision regime that is commensurate with the risks it imports onto the Iarnród Éireann network. As an RU, the RPSI has received safety certification based on the acceptability of its Safety Management System, compliance with which is also supervised by the CRR.

The CRR undertook two inspections of the RPSI in 2017, one checking the rolling stock maintenance, the other reviewing its operations during one of its seasonal events.

INDUSTRY ALERTS

The CRR receives industry safety alerts from the European Union Agency for Railways (EUAR) as and when required. When considered appropriate, this information is furnished to all relevant railway organisations operating in the State for their review and action as necessary. Additionally, EU and international accidents would be highlighted to railway organisations to ensure similar occurrences here in Ireland are minimised. For example following the tragic accident in Croydon, UK on the 9th November 2016 the CRR sought assurances from Transdev, the operator of the Dublin LUAS trams, that systems were in place to minimise the risk of a similar occurrence in Dublin during 2017.

REPRESENTATIONS

In 2017, the CRR received 58 representations relating to a range of heavy and light rail infrastructure and operational matters. This was the same number received in 2016, (See Figure 1 below for representation trend details). Of the 58 representations received in 2017, 49 related to IÉ infrastructure or operations, 6 to the LUAS system with the remainder being mainly of either a general, legislative, or network nature.

The CRR gives a high degree of attention to any representation concerning railway safety made by either railway staff, railway passengers, members of the public, or others. The CRR ensures that representations are addressed.

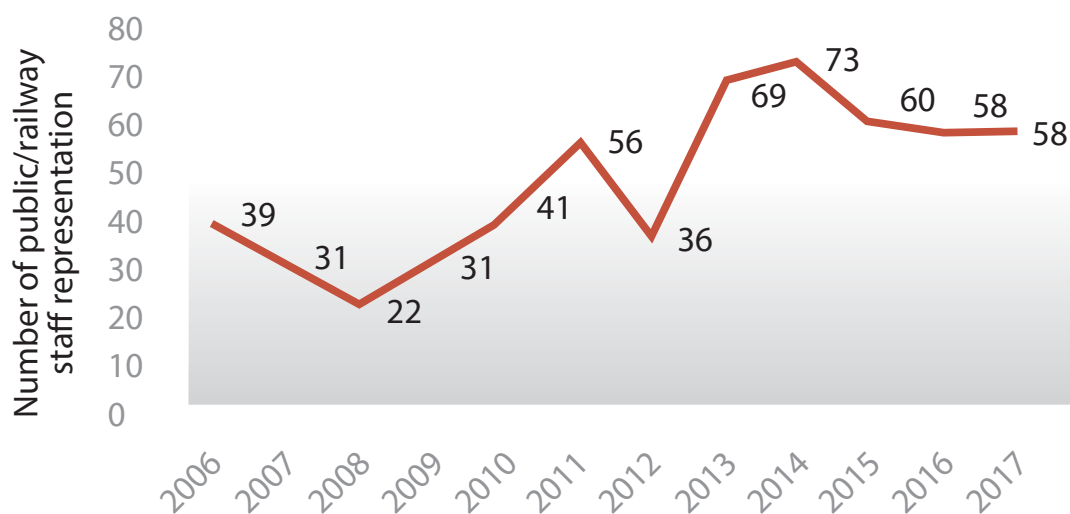


Figure 1 - Representations received by the CRR

SAFETY PERFORMANCE

At the safety performance review meetings with the various railway organisations, their 'year-to-date' safety performance is reviewed and discussed. Safety performance indicator data is presented by the railway organisations and detail / explanation is provided when requested. This review process as indicated, informs further and future aspects of the CRR's supervision plans.

The CRR publishes a separate report annually giving a detailed analysis of railway safety performance in Ireland. This report for 2017 as with the previous reports, will be published later in the year to facilitate receipt of complete validated year data from all railway organisations.

Some of the safety performance data for railway organisations available at the time of publication of this annual report are presented in Appendix 4.





REPORT OF PRINCIPAL INSPECTOR - EUROPEAN AND LEGISLATIVE HARMONISATION

RAILWAY INTEROPERABILITY AND SAFETY IN A SINGLE EU RAILWAY AREA

The year 2017 marked a period of intense activity in the development of EU law governing railways, particularly the instruments supporting the fourth railway package of EU railway law, which aims for regulatory convergence combined with the opening up of the market for railway products and services.

In 2016, the technical and market pillars of the fourth package were finalised, culminating in three recast railway directives concerning railway safety, railway interoperability and the single railway area. The regulation for the EU Agency for Railways (ERA) was also recast, making it the central authority for the certification of railway undertakings and authorisation of railway vehicles operating internationally (effective from mid-2019) and consolidating its role as the system authority for the European Rail Traffic Management System (ERTMS).

The directives on railway safety and interoperability are supported by technical instruments that facilitate their implementation, including common safety methods, and technical specifications for interoperability.

To ensure that the industry stakeholders, the member states and the national safety authorities (NSAs) are adequately consulted, a new expert group comprised of member state and industry representatives was set up in parallel with the Railway Interoperability and Safety Committee (RISC), to advise on the reformed technical instruments.

In 2017, the existing technical instruments were reformulated and new ones were drafted. The new instruments will apply once the new directives are transposed into national law. The drafts proposed by the EU Commission in connection with the technical pillar of the fourth railway package, were intensively scrutinised and amended by the expert group before presentation to the RISC committee for acceptance.

In 2017, the CRR represented the State at the five meetings of the expert group, and at the three meetings of the RISC committee. The CRR actively contributed, both directly and in writing, to the detailed discussions at the expert group and RISC leading to the formation of implementing acts on single safety certificates and on practical arrangements for vehicle authorisation, and to the delegated acts on CSMs for safety management systems and for supervision,

and to their acceptance by the RISC committee. The CRR also contributed to initial discussions on the implementing act dealing with fees and charges for services rendered by the Agency and the NSAs in relation to applications for international safety certifications and vehicle authorisations.

The CRR also participated in the Single European Railway Area conference in Amsterdam in June 2017, where it presented its views and suggestions regarding effective transposition of EU technical directives into national law.

ASSISTANCE TO THE DEPARTMENT OF TRANSPORT, TOURISM AND SPORT

In 2017, the CRR acquired an updated set of transposition tables for the recast railway safety and interoperability directives from the EU Commission, and provided these to the Department of Transport, Tourism and Sport. These tables are designed to assist EU states on the harmonised transposition of these two directives.

The CRR consulted in depth with the IÉ-RU and IÉ-IM to develop the draft national implementation plan for the EU technical specification for interoperability (TSI) concerning railway operations and traffic management. The CRR also consulted with the IÉ-IM and the Department when drafting a national implementation plan for the TSI concerning persons with reduced mobility. Both draft plans were sent by the CRR to the Department of Transport, Tourism and Sport so that the Department could in turn notify them officially to the EU Commission on behalf of the State.

The CRR also provided objective advice to the DTTAS concerning the need to update the national legislation for the testing of safety critical railway workers for the presence of drugs or alcohol.

INTERNATIONAL RAILWAY SAFETY COUNCIL

The International Railway Safety Council (IRSC) provides a forum for an in-depth exchange of experience and lessons for improving railway safety and is exclusively devoted to railway safety issues. The CRR has agreed to host the 2018 IRSC Conference in October 2018. The CRR developed its theme for the conference "Organisational Culture that Values Safety" and presented its proposal to the IRSC at the 2017 conference in Hong Kong in October 2017. The CRR also made a specific presentation to the plenary session of safety regulators concerning railway organisational safety culture, which reflected the theme of IRSC 2018. The proposed theme was accepted by the IRSC and throughout 2017 the conference steering committee with representatives from the main railway organisations in Ireland has progressed the planning for the conference.

CARRIAGE OF DANGEROUS GOODS

The CRR continues to provide the examination and the certification service for dangerous goods safety advisors through the Chartered Institute of Logistics and Transport.





REPORT OF HEAD OF CORPORATE GOVERNANCE AND REGULATION

CORPORATE GOVERNANCE AND ADMINISTRATION

Corporate governance comprises systems and procedures by which enterprises are directed and controlled. In this regard, the CRR has adopted the Code of Practice for the Governance of State Bodies, as published by the Department of Public Expenditure and Reform. The Code of Practice was updated in September 2016, and the CRR in 2017 commenced its review to implement measures to ensure compliance with the revised code requirements.

FINANCE

Funding for the CRR is provided in part by a Safety Levy on the various railway organisations and in part by an Exchequer Grant.

In 2008 the CRR invoked the provision of section 26(1) of the Railway Safety Act 2005 whereby the Commission, with the consent of the Minister and the Minister for Finance, may make regulations imposing a levy on railway undertakings. The Regulations for 2017 are contained in Statutory Instrument No.87 of 2017. The application of funds by the CRR is illustrated below:

	2016 (€ million)	2017 (€ million)
Budget	2.01	2.23
Exchequer Grant	0.42	0.62
Levy Requirement	1.59	1.61
Operating costs	1.90	*
Surplus	(0.11)	*

Table 7 - CRR funding sources

* Full Accounts for 2017 are subject to audit by the Comptroller and Auditor General.

STATEMENT ON INTERNAL FINANCIAL CONTROL

The CRR acknowledges its responsibility for ensuring that an effective system of internal financial control is maintained and operated. The system can provide reasonable but not absolute assurance that assets are safeguarded, transactions are authorised and properly recorded, and that material errors or irregularities are either prevented or would be detected in a timely manner.

Maintaining the system of internal financial controls is a continuous process and the system and its effectiveness are kept under ongoing review.

The CRR confirms that all appropriate procedures for financial reporting, internal audit, procurement, and asset disposal are being carried out.

The CRR annual audited accounts are published separately to this report.

TOTAL CRR STAFF REMUNERATION

Salary pay scale range		Number of employees	
From	To	2016	2017
€60,000	€69,999	-	6
€70,000	€79,999	-	-
€80,000	€89,999	1	1
€90,000	€99,999	3	3
€100,000	€109,999	-	-
€110,000	€119,999	-	-
€120,000	€129,999	-	-
€130,000	€139,999	1	1

Table 8 – CRR employee salary breakdown

A breakdown of total employee remuneration over €60,000, in increments of €10,000 is disclosed pursuant to DPER circular 13/2014.

The Commissioner's salary for 2017 was €133,555. The Commissioner retired on 29th August 2017 therefore the remuneration to the Commissioner in 2017 was €88,092. In addition expenses to the value of €1,804 were paid.

The Commissioner did not receive any bonus or perquisites in the year.

The Commissioners retirement benefit entitlements are in line with standard entitlements in the model public sector defined benefit superannuation scheme.

TAX COMPLIANCE

The CRR is compliant with regard to its tax obligations.

TRAVEL AND EXPENSES

The CRR is compliant with all relevant Department of Finance / Department of Public Expenditure & Reform circulars on travel, subsistence and associated expenses.

IRISH LANGUAGE COMMITMENT

The CRR is committed to implementing the relevant parts of the Official Languages Act 2003. CRR signage and stationery are currently in both Irish and English.

FREEDOM OF INFORMATION

The CRR was included among the organisations listed under The Freedom of Information Act 2014 and is committed to conforming to the principles of this Act. In 2017, there was one FOI request received and granted with the response issuing within the statutory timeline.

CUSTOMER CHARTER

The Customer Service charter was updated in 2013 and is available on the CRR's website. This charter describes the level of service a customer can expect to receive from the CRR.

RISK MANAGEMENT

The CRR has a risk management system in place to review key risks to its business. This is currently under review in the light of the revised Code of Practice for the Governance of State Bodies.

CODE OF ETHICS AND BUSINESS CONDUCT

A Code of Ethics and Business Conduct was put in place in 2016 for the Commissioner and all CRR staff, and is currently under review in the light of the revised Code of Practice for the Governance of State Bodies.

ANNUAL ENERGY EFFICIENCY REPORTING

In 2017, the CRR reported the organisation's energy performance in 2016 to the Sustainable Energy Authority of Ireland as required under EU regulations. In 2016, the CRR had made a 67.7% saving in energy consumption. The CRR continues to work towards improving public sector energy efficiency and will be reporting its performance and fulfilling its legal obligation to report energy data.

REVIEW OF CRR GOVERNANCE ARRANGEMENTS

In 2017, the CRR initiated a review of its governance arrangements in view of the update of the Code of Practice for the Governance of Public Bodies 2016. The CRR is undertaking this review on the basis of 'comply or explain', and it will put in place the required agreements with the Department of Transport Tourism and Sport during 2018.

STATEMENT OF STRATEGY 2015 – 2017

The current Statement of Strategy is now in its final year with the new strategy to be presented to the Minister in June 2018. The process of developing the new strategy for the CRR will commence in early 2018.



MARKET REGULATION FUNCTIONS

In accordance with the initial Multi-Annual Railway Infrastructure Contract (Contract), dated the 13th June 2014, between the Minister for Transport, Tourism and Sport and Iarnród Éireann (Infrastructure Manager), the Minister had appointed the then Railway Safety Commission (RSC) to undertake the roles of the "Railway Regulator" as per the contract.

The Railway Regulator (now the Commission for Railway Regulation) is designated to act as the Independent Monitoring Body to monitor and review the performance of the Infrastructure Manager. The Railway Regulator is required to provide the Minister with a report on the progress made by the Infrastructure Manager in regard to the programme of works and an assessment of the performance of the Infrastructure Manager in delivering infrastructure services as measured against the Key Performance Indicators.

On the 3rd March 2017, the CRR issued its IÉ-IM MAC Annual Report for 2016 to the Minister.

Throughout 2017, the CRR continued its independent monitoring function in relation to 2017 MAC expenditure and has issued quarterly reports to the Minister.

REPORT UNDER THE PROTECTED DISCLOSURES ACT 2014

Under the Protected Disclosures Act 2014, every public body is required to publish a report on the number of protected disclosures made to the public body in the preceding year and the action taken (if any) in response to the protected disclosures. In 2017, the Head of Administration, in the context of their role as a prescribed person under the Protected Disclosures Act 2014, did not receive any protected disclosures from parties external to the Authority.



APPENDIXES

APPENDIX 1 - PASSENGERS ON NATIONAL NETWORK AND LIGHT RAIL SYSTEM

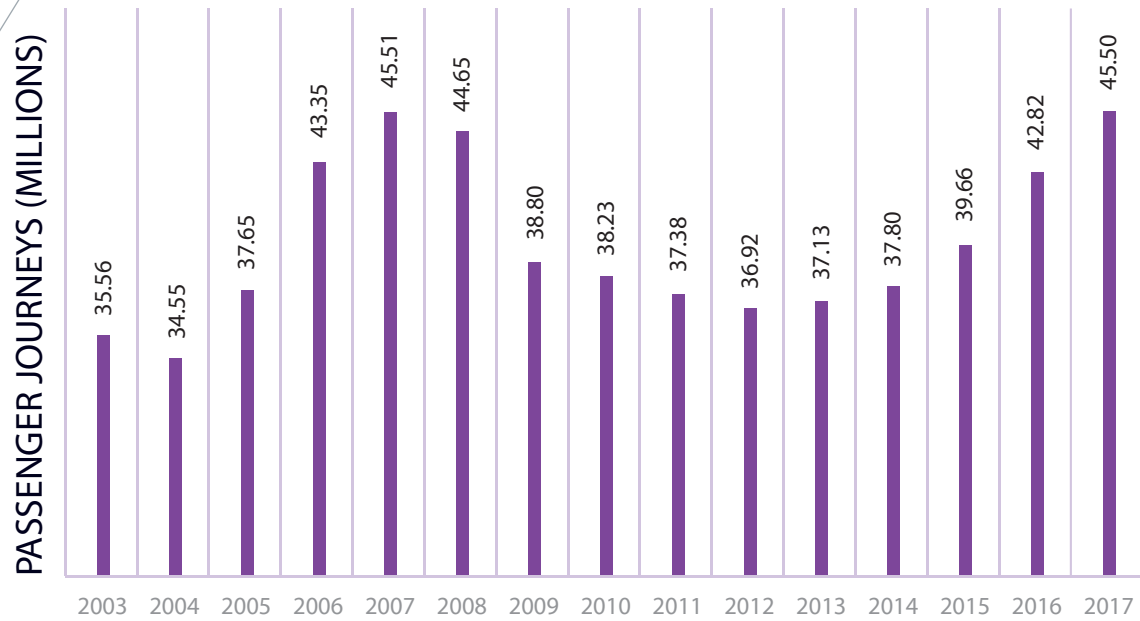


Figure 2 - Passenger journeys on national network

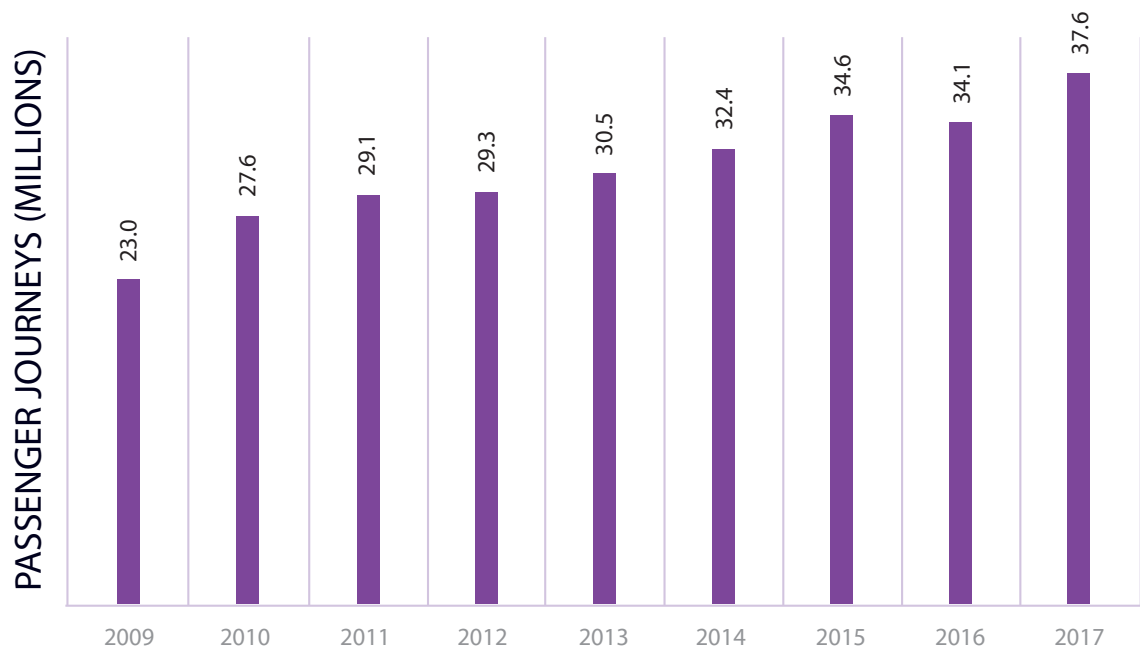


Figure 3 - Passenger journeys on LUAS network

APPENDIX 2 – CRR AUDIT AND INSPECTION OUTCOMES 2017

		CRR Audit Outcomes					
		OPEN		COMPLETE		CLOSED	
	Year	AR's	NC's	AR's	NC's	AR's	NC's
IÉ-IM	2014	100	40	0	0	127	23
	2015	33	16	0	0	194	49
	2016	6	3	5	5	216	57
	2017	22	10	7	3	221	61
IÉ-RU	2014	78	28	1	0	12	2
	2015	71	26	1	0	31	6
	2016	18	6	48	16	46	13
	2017	10	1	43	12	64	22
LUAS	2014	54	6	0	0	2	0
	2015	50	4	0	0	22	3
	2016	22	2	26	2	28	3
	2017	27	5	25	1	29	4
BBRI	2014	5	4	0	0	0	0
	2015	0	0	0	3	5	1
	2016	1	0	6	1	10	4
	2017	8	4	3	0	15	5
RPSI	2014	11	3	0	0	0	0
	2015	11	2	0	0	0	1
	2016	9	2	2	0	3	1
	2017	9	2	2	0	3	1
NIR	2014	2	1	0	0	0	0
	2015	2	1	0	0	0	0
	2016	8	4	0	0	0	0
	2017	8	4	0	0	0	0

Table 9 - CRR Audit outcomes

		CRR Inspection Outcomes					
		OPEN		COMPLETE		CLOSED	
	Year	AR's	NC's	AR's	NC's	AR's	NC's
IÉ-IM	2016	2	0	0	0	0	0
	2017	11	5	0	0	0	0
IÉ-RU	2016	2	1	0	0	0	0
	2017	14	5	2	1	1	1
NIB	2016	3	0	0	0	0	0
	2017	0	0	3	0	0	0

Table 10 - CRR Inspection outcomes

		CRR Post Incident Inspection Outcomes					
		OPEN		COMPLETE		CLOSED	
	Year	AR's	NC's	AR's	NC's	AR's	NC's
IÉ-IM	2014	27	10	0	0	0	0
	2015	14	3	0	0	13	7
	2016	11	7	2	0	26	9
	2017	11	3	1	0	28	13
IÉ-RU	2014	6	3	0	0	0	0
	2015	9	4	0	0	2	0
	2016	3	1	6	3	5	1
	2017	0	0	8	4	7	1

Table 11 - CRR Post-Incident Inspection outcomes

APPENDIX 3 – RAIU RECOMMENDATIONS

Recommendations issued by Rail Accident Investigation Unit on foot of their Investigation Reports.

RAIU Recommendations					
Year	Reports	Open	Complete	Closed	Total
2010	6	1	0	25	26
2011	6	1	5	11	17
2012	3	2	1	10	13
2013	3	1	0	9	10
2014	6	5	1	21	27
2015	2	2	1	1	4
2016	3	14	0	6	20
2017	1	9	0	0	9
		35	8	83	126

Table 12 - RAIU Recommendations

APPENDIX 4 – SAFETY PERFORMANCE INDICATORS

Category	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	Trend
Railway operations: passenger fatal injuries													
Fatal injury to passenger due to a train accident, not at level crossing	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to passenger due to a train accident at level crossing	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to passenger travelling on a train, other than in train accident	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to passenger attempting to board or alight from train	0	0	0	0	0	0	0	0	0	0	0	0	
Railway infrastructure: third party fatal injuries													
Fatal injury to third party at a level crossing involving a train	0	1	1	0	2	0	0	0	0	0	0	0	
Fatal injury to third party at a level crossing not involving a train	0	0	0	0	0	0	0	0	0	0	0	0	
Railway operations: employee fatal injuries													
Fatal injury to employee at a level crossing due to train in motion	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to employee due to train in motion (other than at a level crossing)	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to employee not due to train in motion	0	0	0	0	0	0	0	0	0	0	0	0	
Railway infrastructure: employee fatal injuries													
Fatal injury to employee at a level crossing due to train in motion	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to employee due to train in motion (other than at a level crossing)	0	0	0	0	0	0	0	0	0	0	0	0	
Fatal injury to employee not due to train in motion	0	0	0	0	0	0	0	0	0	0	0	0	
Railway operations: fatal injuries to other persons													
Fatal injury due to train in motion not at level crossing	0	1	0	0	0	0	0	0	0	0	0	0	
Fatal injury to customer or visitor, no train involved	0	1	0	0	0	0	0	0	0	0	0	0	
Fatal injury involving train in motion on railway or level crossing where trespass or suspicious death was indicated	7	5	8	3	8	7	5	4	6	2	5	9	
Railway operations: non fatal injuries to passengers													
Injury to passenger travelling on train due to a railway accident not at level crossing	0	0	0	2	0	0	0	0	0	0	0	0	
Injury to passenger travelling on train due to railway accident at level crossing	0	0	0	0	0	0	0	0	0	0	0	0	
Injury to passenger attempting to board or alight from train	55	50	43	17	64	46	41	39	45	48	79	57	
Injury to passenger travelling on train, other than due to a railway accident	41	35	22	40	28	10	27	43	18	15	31	33	
Railway infrastructure: third party non fatal injuries													
Third party at level crossing injury involving a train	0	1	0	0	0	1	2	0	0	0	0	0	
Level crossing user injury not involving a train	0	1	1	1	0	2	5	1	0	0	0	0	
Railway infrastructure: non fatal injuries to other persons													
Injury to customer or visitor to premises	72	70	54	56	85	113	116	193	205	146	192	0	
Injuries to other persons including unauthorised persons	0	1	0	0	0	0	5	3	0	1	2	0	
Railway operations: non fatal employee injuries													
Employee lost time injury involving train movement or train accident	15	7	8	13	11	7	13	5	21	3	1	0	
Employee lost time injury while working on railway not due to train in motion	38	36	37	31	27	22	32	39	43	32	30	30	
Railway infrastructure: non fatal employee injuries													
Employee lost time injury involving train movement or train accident	0	1	1	0	1	2	1	0	0	0	0	0	
Employee lost time injury while working on railway not due to train in motion	31	42	42	34	30	23	32	41	25	6	23	0	
Employee lost time injury while working at level crossing not due to train in motion	2	4	0	0	0	0	1	1	2	0	3	0	
Entity in charge of maintenance and maintenance workshops: non fatal employee injuries													
Employee lost time injury involving train movement or train accident	0	0	0	1	0	0	0	0	0	0	0	0	
Employee lost time injury while working on railway not due to train in motion	30	36	27	21	10	18	10	14	18	13	11	0	

Table 13 - Fatalities and injuries on national network

Note: Data in fields highlighted in yellow are not yet available or validated. Complete data will be published in the CRR annual Railway Safety Performance Review Report 2017.

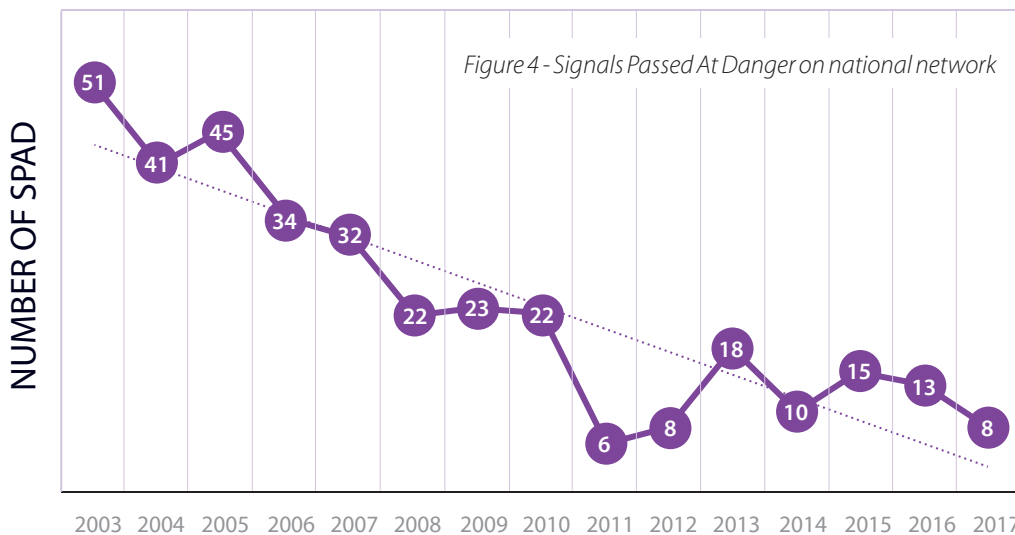
Train collision statistics by category

Category	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	
Train collision with passenger or goods train on running line	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Train/railway vehicle collision in station or possession movement	2	0	1	1	0	1	1	0	0	1	1	1	1	1	2	
Train collision with a motor vehicle at a level crossing	1	2	2	1	4	4	0	2	1	2	1	2	0	0	3	
Train collision with pedestrian at a level crossing	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	
Train collision with attended gates at a level crossing	2	4	2	2	2	1	0	1	0	0	0	0	1	0	0	
Train collision with road vehicle obstructing the line (not at a level crossing)	2	0	0	0	0	0	0	0	0	1	1	0	1	1	0	
Train collision with other obstacle on the line	4	10	8	5	9	17	10	1	7	6	7	29	1	31	25	
Train collision with large animal(s) on the line	43	40	42	43	42	33	20	24	35	26	29	9	29	35	23	
TOTAL	54	56	55	53	58	56	31	29	43	36	39	41	33	68	53	

Table 14 - Train collisions on national network

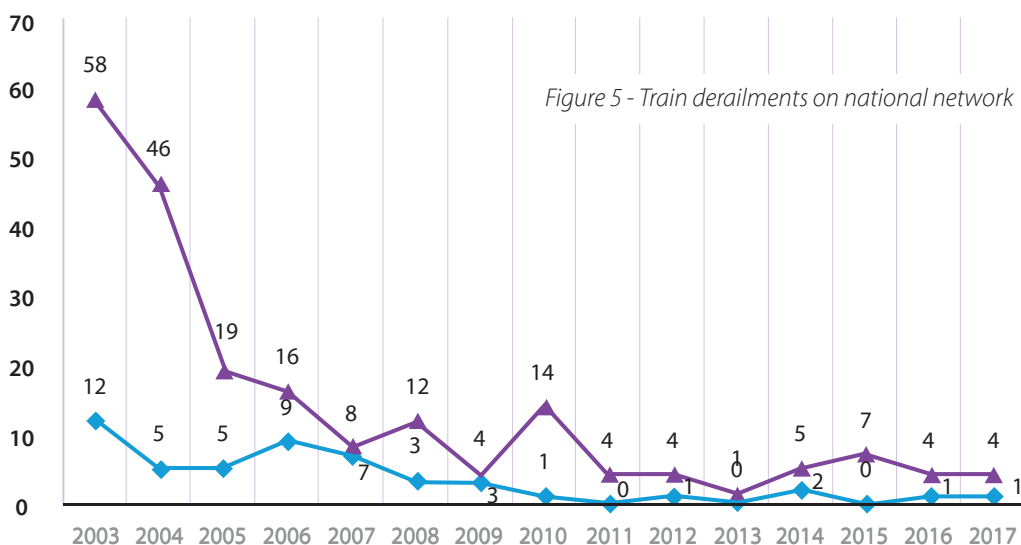
Signals Passed At Danger (SPADs)

A SPAD is defined as having occurred when a train passes a stop (red) signal without authority. SPADs are a particular precursor event that the CRR monitors at its supervisory meetings with IÉ. The trend in recent years has been a steady decline.



Train derailments

Train derailments remain at low levels with one reported occurrence on a running line in 2017. This was the low speed derailment of a Dart Train just north of Dun Laoghaire station on the 13th September in which there were no serious passenger injuries. This accident is currently under investigation by the Railway Accident Investigation Unit.



LUAS - Road traffic Accidents (Collisions) involving trams

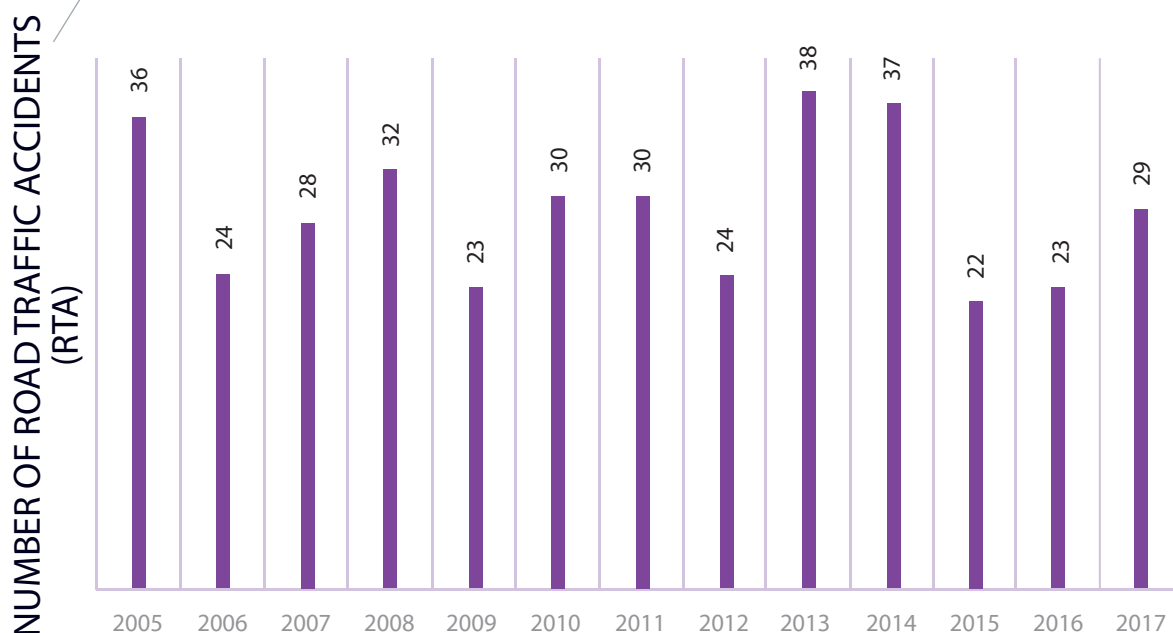


Figure 6 - LUAS road traffic accidents

LUAS - Signals Passed At Danger (SPADs)

SPAD events also occur on the LUAS network, albeit the signalling system doesn't automatically identify these. Rather it relies on the driver to self-report that they passed a signal at danger. Only limited statistics are available for this indicator, given in light-rail parlance it is considered a relatively new safety performance category. This said, in 2017 there were a reported 28 SPAD occurrences compared to 21 in 2016. The reason behind this increase, is at this stage not yet understood, but improved knowledge and understanding has perhaps led to improved reporting by tram drivers.

LUAS - Tram derailments

Tram derailments remain at low levels with none reported in 2017. Figure 7 illustrates the history of derailments since operation commenced back in 2005.

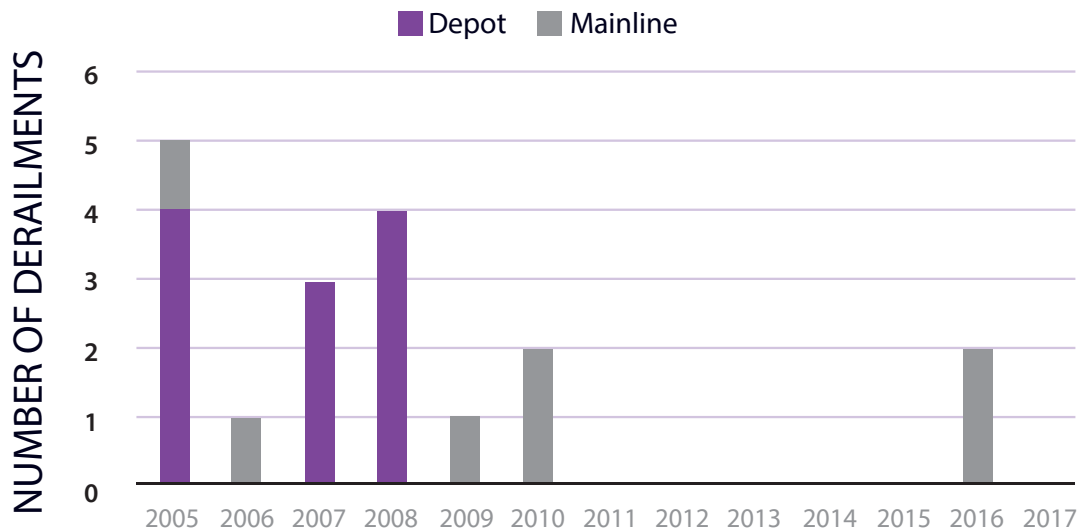


Figure 7 – LUAS derailments

Bord na Móna

In 2017 BNM reported four occurrences to the CRR all involving level crossings. These occurrences were;

- A low speed derailment
- A low speed collision with a parked car that was left fouling the railway line
- Level crossing gates left closed and locked across a public road
- Level crossing gate that was not restrained correctly and blow open across a public road.

No injuries were sustained to either a BNM employee or member of the public and relatively minor damage was sustained to infrastructure.

Heritage Railways

There were no reported occurrences at any heritage railway in 2017. That said, CRR inspectors undertook to visit each of the heritage railways in 2017 undertaking inspections of rolling stock and infrastructure assets and their respective safety management systems.

Railway Preservation Society of Ireland

There was one reported occurrence in 2017 involving an RPSI train in which a train collided, at slow speed with a buffer stop in Connolly Station. The train was not in passenger service at the time and only minor damage was sustained to the buffer stop. That said the CRR are investigating the incident.

APPENDIX 5 – HERITAGE RAILWAYS

Heritage Railways with a current Safety Certificate

Difflin Light Railway Oakfield Park Raphoe Co Donegal	The Difflin Light railway is a private narrow gauge railway, 4.5km long, in the grounds of Oakfield Park Demesne, Raphoe, Co Donegal. The line runs through a variety of landscaped gardens with features which include, lawns, lakes, woods, meadows and streams.
Cumann Traenach na Gaeltachta Láir Fintown Co Donegal	Cumann Traenach na Gaeltachta Láir is a narrow gauge railway 4.8km long. The railway runs from Fintown to a point known as a 'Head of Lake'. The railway is a community owned project funded by Government and open to the public on specified dates.
Irish Steam Preservation Society Narrow Gauge Railway Stradbally Co Laoise	The Irish Steam Preservation Society Narrow Gauge Railway, the Stradbally Woodland Express is located in the woodlands of Stradbally Hall Estate is a narrow gauge railway 800m long. The railway is operated for heritage and leisure purposes by volunteers.
Lartigue Mono Railway John B Keane Road Listowel Co Kerry	The Lartigue Mono Railway, LMR, is located on the John B. Keane Road, Listowel, Co. Kerry. The railway has approximately 1000 metres of monorail track, There is one engine, which is an exact reproduction of the original engines, save that the present engine (62 Loco No. 4 0-2-0) is diesel driven.
Lullymore Heritage & Discovery Park Ltd, Lullymore Rathangan Co Kildare	Lullymore Heritage Railway is a 1km looped journey through rehabilitating cutaway peatlands in Lullymore Heritage & Discovery Park Ltd, Rathangan, Co Kildare
Waterford and Suir Valley Railway Kilmeadan Station Kilmeadan Co Waterford	The Waterford and Suir Valley Railway is a narrow gauge railway between Kilmeadan Station and Bilberry, Waterford city. It runs on a section of the abandoned Waterford to Mallow railway line. The length of the railway is 10km.

APPENDIX 5 – HERITAGE RAILWAYS

Heritage Railways that do not hold a current Safety Certificate and are currently not in Operation

Cavan & Leitrim Railway Dromod Co Leitrim	The Cavan & Leitrim Railway is a narrow gauge railway 0.8km long. The railway extends from Dromod station to a point approximately 90 meters from the Mohill-Dromod road on the original track of the Cavan & Leitrim Railway.
Tralee-Dingle Steam Railway Co Ltd Town Hall Prince's Quay Tralee Co Kerry	The Tralee-Dingle Railway is a narrow gauge railway of 3km in length and extends from Ballyard Station at Tralee to Blennerville Station part of the closed Tralee to Dingle railway line.
West Clare Railway Co Ltd Moyasta Junction Kilrush	The West Clare Railway is a narrow-gauge railway, extending over 4km of track. The railway is centred on the former station at Moyasta, near Kilrush Co Clare where the original station house has been restored to a museum. The line in use runs over the original track bed of the West Clare Railway.



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