



> Railway Safety
Performance
in Ireland 2019



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Foreword

The Commission for Railway Regulation is pleased to publish its Annual Safety Performance Report for 2019. This report supplements the CRR's Annual Report to the Minister and provides further detail on the safety performance of the railway organisations operating in Ireland.

This is the eleventh year that the Annual Safety Performance Review has been issued. The CRR continuously supervise the safety performance of the principal railway organisations operating in the state. This is done through our Inspectors undertaking audits, inspections and meeting with company executives and managers, to check they are applying and improving their safety management systems.

The primary function of our railways (inc. tramways) is the transportation of people and/or freight safely. In that context passenger numbers on both the Irish Rail network and Luas Tramway saw sizeable increases in 2019 with Irish Rail exceeding 50 million passenger journeys for the first time in its history. Against this backdrop, there were no passenger fatalities on our railways in 2019 and the safety performance of the Irish railway sector was stable.

The collection of the data for this report was conducted against the backdrop of COVID 19 and the associated restrictions put in place. The CRR acknowledges the assistance of all who have provided the data that has allowed us produce this report and so continue one of our key mandates of encouraging and fostering railway safety.

Anthony Byrne
Principal Inspector – Supervision & Enforcement

Executive Summary

This annual safety performance report of the Commission for Railway Regulation (CRR) is prepared for stakeholders and the general public in line with Section 10 of the Railway Safety Act 2005. The data used to compile this report is provided to us periodically throughout the year by the various railway organisations. This report aggregates this data and compares year on year performance together with commentary on several safety performance indicators.

The CRR is the independent railway safety regulator in the Republic of Ireland and is responsible for overseeing the safety of all railway organisations, which in 2019, included Iarnród Éireann, Transdev (Luas Operator), Balfour Beatty Rail Ireland (BBRI), Rhomberg Sersa Ireland, Bord Na Móna (where their railway interfaces with public roads), the Railway Preservation Society of Ireland (RPSI) and a number of smaller heritage railways.

The safety performance of the Irish railway sector is broadly positive, both when compared against previous years and European statistics, and against a continuing increase in passenger journeys and train/tram kilometres travelled.

There were no passenger fatalities in 2019. However, tragically there were seven fatal occurrences on the national heavy and light rail networks, two fewer than in the preceding two years but nonetheless seven too many. Five of these occurred on the Iarnród Éireann network and two on the LUAS Tramway in Dublin. There were no reports of deaths at level crossings.

In Iarnród Éireann, 2019 saw a continued reduction in the number of train collisions, particularly with obstacles on the line. Signals Passed At Danger (SPADs) decreased slightly to 12 in 2019, one fewer than in 2018. The majority of these (10) were attributable to Iarnród Éireann, and Iarnród Éireann have several initiatives underway in this area.

Two of Transdev's safety performance indicators saw significant increases in 2019. These relate to the number

of road traffic collisions between road vehicles and trams and pedestrian contact with tram events. It should be noted, however, that all road traffic collisions were as a result of the road vehicle driver breaking a red traffic light and colliding with the tram. Similarly, pedestrian contact with tram occurrences are, for the most part, due to people being distracted and stepping of footpaths into the path of approaching trams.

Looking wider to Europe, Ireland continues to perform well in terms of the number of accidents, however, Ireland performs less well when it comes to precursor events such as Signals Passed at Danger (SPADs), wrong-side signalling failures, and broken rails.

In 2019, the RAIU concluded 3 investigations and 1 trend investigation. These followed a wrongside door failure at Ashtown Station on the 12th August 2018, a train collision with a buffer Stop in a maintenance depot on the 17th July 2018, the collision of a road vehicle with a train at level crossing XM220 on the 17th August 2018 and a trend investigation into several dangerous occurrences involving Road Rail Vehicles between 2015-2018.

This resulted in 34 new safety recommendations, the largest number in any year since the RAIU was established. The RAIU also commenced 2 investigations in 2019, the first following a passenger getting a hand entrapped in a Luas Tram door at Heuston Station on the 26th of March 2019, and the second a near miss with an Iarnród Éireann signal maintenance worker at Rush and Lusk Station on the 20th June 2019.



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1

Introduction

1.1 Introduction

This is the eleventh Annual Safety Performance report of the Commission for Railway Regulation (CRR), prepared for stakeholders and the general public in line with Section 10 of the Railway Safety Act 2005. This report provides background high level statistics and commentary on a number of safety performance indicators. Performance indicators are guided by the European Common Safety Indicators (CSI), as specified in Directive 2004/49/EC and amended by Directive 149/2009/EC and Directive 2014/88/EU. Further indicators are included in this report to reflect unique aspects and risks particular to the railway sector in Ireland.

1.2 Overview of Report

Safety trends in Ireland for all categories of train incidents are presented and discussed in Chapter 2. In Chapter 3, a brief overview of the public representations received by the CRR is presented. In Chapter 4, a comparison with other European railways shows where the national railway operator in Ireland (Iarnród Éireann (IÉ)) is positioned in terms of railway safety. This includes a brief overview of significant accidents that occurred in other countries in 2019. Chapter 5 concerns the Railway Accident Investigation Unit (RAIU) and recommendations made arising out of their investigations. The status of each recommendation is explained together with details of actions taken to date.

1.3 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. It is the independent regulator of both the heavy and light rail organisations that provided close to 98 million passenger journeys in the State in 2019. Under the Railway Safety Directive

(EU Directive 2004/49/EC), as reflected in S.I. No.444 of 2013¹, the CRR is the National Safety Authority for the railway sector in the Republic of Ireland. As stated in our current Statement of Strategy we are committed to advancing railway safety, the maintenance and further development of high performing and sustainable railway systems and ensuring fair access to the Irish conventional railway network in Ireland through regulation, monitoring, encouragement and promotion.

Further details on the role and function of the Commission may be found on the CRR website www.crr.ie.

1.4 Statistical Qualification

The CRR produces this report to provide stakeholders and the public with information about safety performance of the various Irish railway organisations. The CRR aim for this information to be timely and accurate. Any errors should be brought to the CRR's attention, and every effort will be made to correct them.

It is important to note that the figures used in this report are intended to illustrate broad trends and are not meant to be read as exact calculations. Rounding has been used and this could affect the overall data. The data used to compile this report is provided to us periodically throughout the year by the various railway organisations. This report presents aggregated data and compares year on year performance together with commentary on several safety performance indicators.

While the CRR has made every effort to ensure the accuracy of the data, it takes no responsibility for third party data presented in this report.

¹ In October 2020 the recast Railway Safety Directive EU 2016/798 came into effect through SI 476 of 2020

2 | Railway Safety Trends in Ireland

2.1 Introduction

The safety performance of the Railway Organisations in the Republic of Ireland is considered for the four principal railway sub-sectors that the CRR regulates, namely heavy rail, light rail, public highway interfaces with industrial rail systems, and heritage railways.

2.2 Iarnród Éireann

2.2.1 Operational Statistics

At the end of 2019, the Iarnród Éireann -Infrastructure Manager (IÉ-IM) advised the CRR that its operational network was 1680 route-kilometres, or 2400 km of operational track based upon the Iarnród Éireann Network Statement for 2020. There were no significant

changes to the network or to the operational pattern of trains in 2019.

Passenger journeys increased by approximately 4% on the 2018 figure to 50 million (Figure 1) which is the highest passenger journey figure in the company's history.

Figure 2 shows that IÉ-RU passenger train kilometres increased by approximately 6.7% which is consistent with additional train services offered in 2019 and also reflects the increase in passenger journey growth (4%). Many trains are operating near capacity and the CRR have been advised that the fleet is fully deployed and there are no additional carriages available at this time to increase capacity at present.

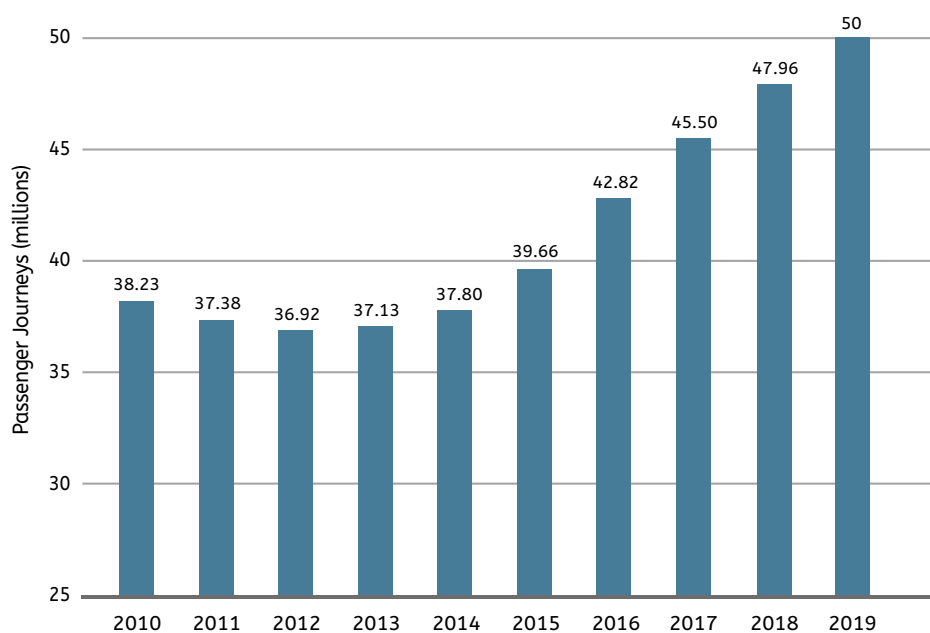
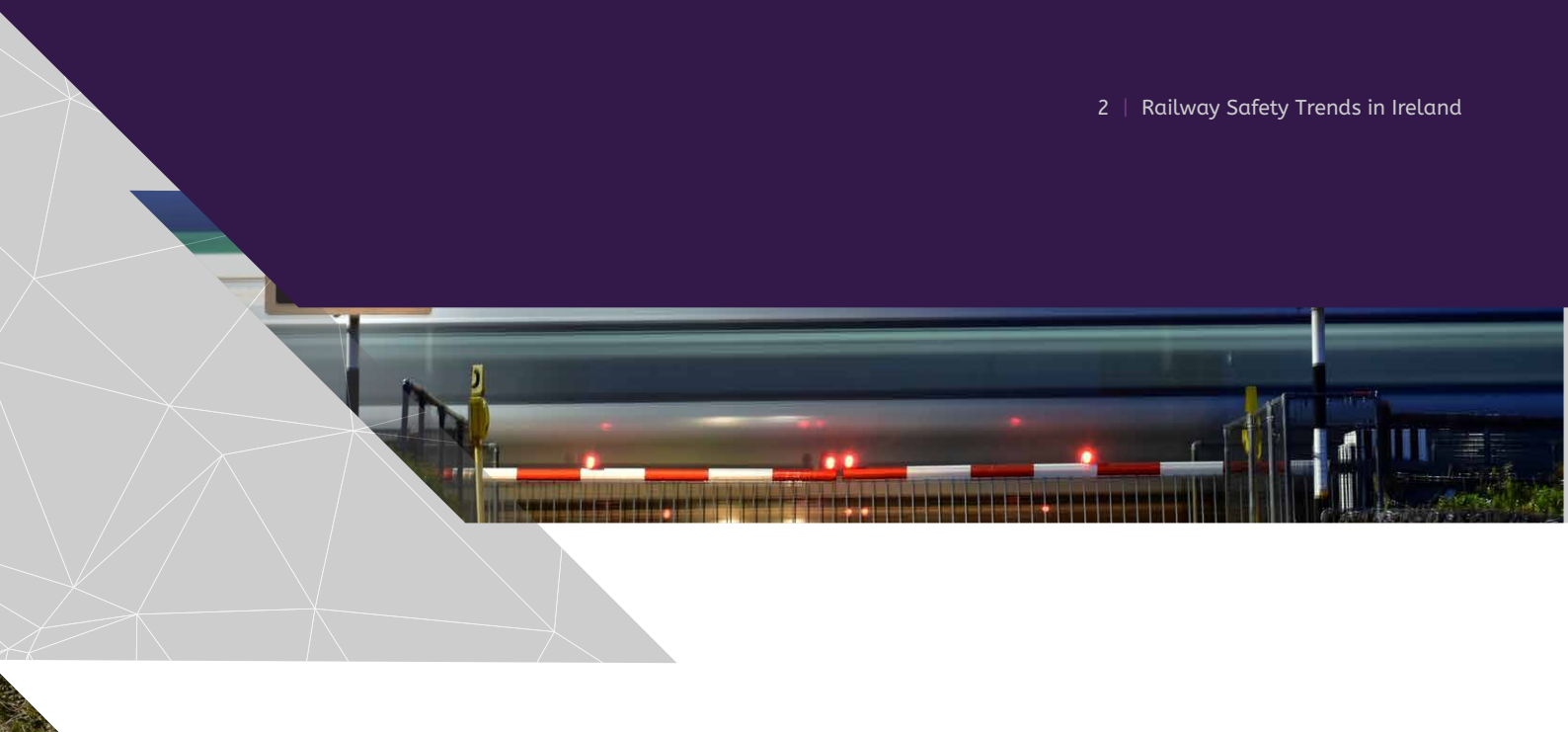


Figure 1: IÉ Passenger Journeys 2010-2019



Freight kilometres have remained stable since 2013 but saw a decrease in 2019 and this was in part due to the Tara Mines to Dublin Port service being curtailed for 4 months due to port infrastructure upgrade work and the cessation of container traffic (the DFDS contract) between Ballina and Waterford in 2018.

In last year's report it was stated that Iarnród Éireann would likely need to recruit additional staff, primarily to the train driving grade given the increased rail traffic. This was borne out in 2019 with employee numbers increasing by approximately 4% (Figure 3). With new infrastructure and rolling stock projects in the pipeline,

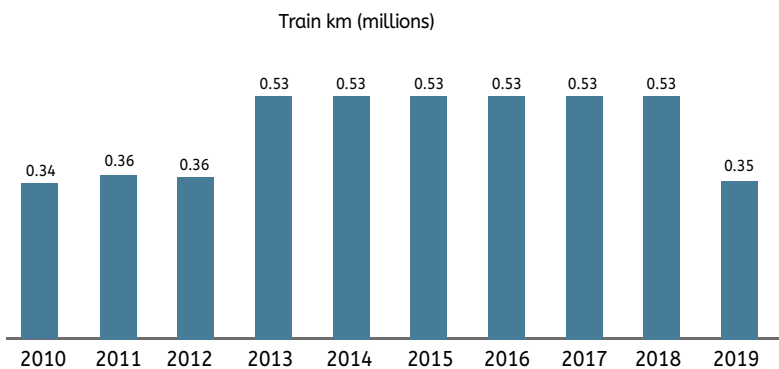
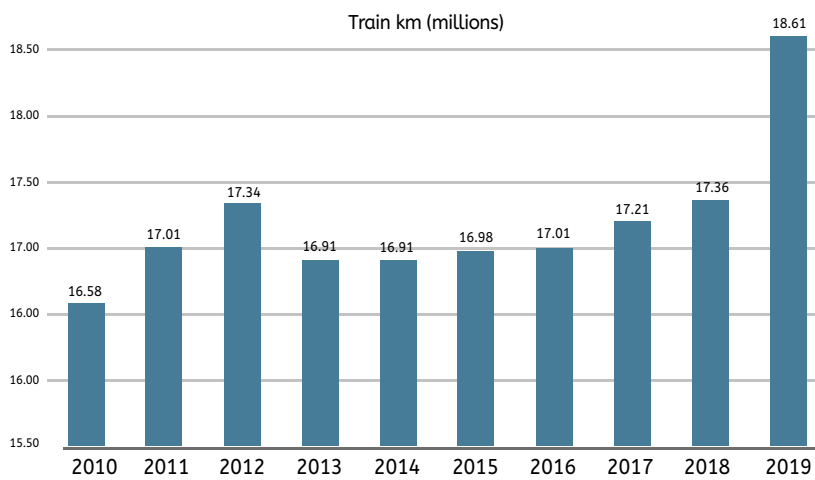


Figure 2: Passenger Train-km (top) Freight Train-km (bottom) on the IÉ-IM Network

Iarnród Éireann undertook a number of recruitment drives to fill vacancies in the train driving grade, engineering and support staff grades. While 2020 will likely see a slowdown in recruitment it is likely further skilled staff will be required particularly in the signalling and electrical engineering domain.

2.2.2 Iarnród Éireann Fatality and Injury Statistics

Table 1 illustrates the fatalities and lost-time injuries reported for employees and fatalities and injuries to third parties on the national railway network for the last ten years.

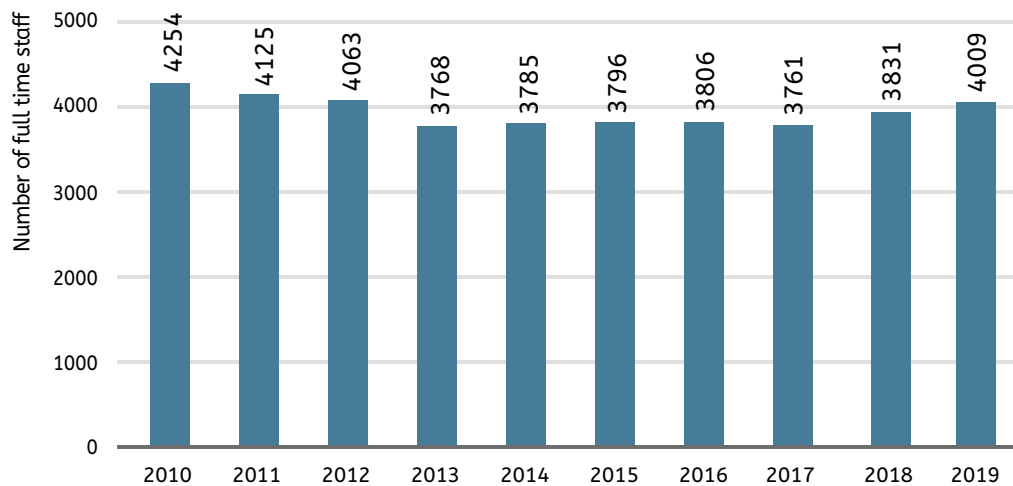


Figure 3: Personnel engaged in full time employment with IÉ (2010 – 2019)

Table 1: IE operational fatality and injury statistics by year (2010 – 2019)

Category	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	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	
Fatal injury to passenger due to a train accident at level crossing	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	
Fatal injury to passenger attempting to board or alight from train	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	2	0	0	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	
Fatal injury to employee at a level crossing due to train in motion	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	
Fatal injury to employee not due to train in motion	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	
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	
Fatal injury to employee not due to train in motion	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	2	0	0	0	0	0	0	0	0	0	
Fatal injury to customer or visitor, no train involved	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	8	7	5	4	6	2	5	12	9	4	
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	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	
Injury to passenger attempting to board or alight from train	64	46	41	39	45	48	79	57	74	76	
Injury to passenger travelling on train, other than due to a railway accident	28	10	27	43	18	15	31	33	46	38	
Railway infrastructure: third party non fatal injuries											
Third party at level crossing injury involving a train	0	1	2	0	0	0	0	0	1	1	
Level crossing user injury not involving a train	0	2	5	1	0	0	0	0	1	1	
Railway infrastructure: non fatal injuries to other persons											
Injury to customer or visitor to premises	85	113	116	193	205	146	192	321	199	288	
Injuries to other persons including unauthorised persons	0	0	5	3	0	1	2	6	0	2	
Railway operations: non fatal employee injuries											
Employee lost time accident involving train movement or train accident	11	7	13	5	21	3	1	15	13	7	
Employee lost time accident while working on railway not due to train in motion	27	22	32	39	43	32	30	30	13	35	
Railway infrastructure: non fatal employee injuries											
Employee lost time accident involving train movement or train accident	1	2	1	0	0	0	0	0	0	0	
Employee lost time accident while working on railway not due to train in motion	30	23	32	41	25	6	23	22	26	24	
Employee lost time accident while working at level crossing not due to train in motion	0	0	1	1	2	0	3	1	1	0	
Entity in charge of maintenance and maintenance workshops: non fatal employee injuries											
Employee lost time accident involving train movement or train accident	0	0	0	0	0	0	0	0	0	0	
Employee lost time accident while working on railway not due to train in motion	10	18	10	14	18	13	11	10	12	15	

2.2.2.1 Fatal Injuries

There were no passenger fatalities or serious injuries in 2019, but as in previous years there were a number of trespasser fatalities with five recorded in 2019, four of which involved trains in motion. Whenever possible the CRR refers to a coroner’s verdict, to assist in classifying the circumstances surrounding a fatality.

2.2.2.2 Passenger Injuries (Customer & Visitor injuries)

As reported in previous years, the data indicates that the largest proportion of incidents occur to persons during time spent at stations as opposed to time spent on trains and in 2019 this was no different. This trend is common across many railways in Europe.

Injuries to persons (customers or visitors) on railway premises remain at the largest single group with slips, trips and falls being the dominant cause of these injuries. There was a notable increase in injuries to customers and visitors to premises in 2019 compared to 2018 with a clear upward trend now visible (Figure 4). This is perhaps to be expected given there has been a steady increase in passenger numbers in recent years (Figure 1). The fact that the number of injuries to passengers attempting to board or alight from trains has remained broadly similar for the past 4 years against the backdrop of increasing passenger numbers is positive.

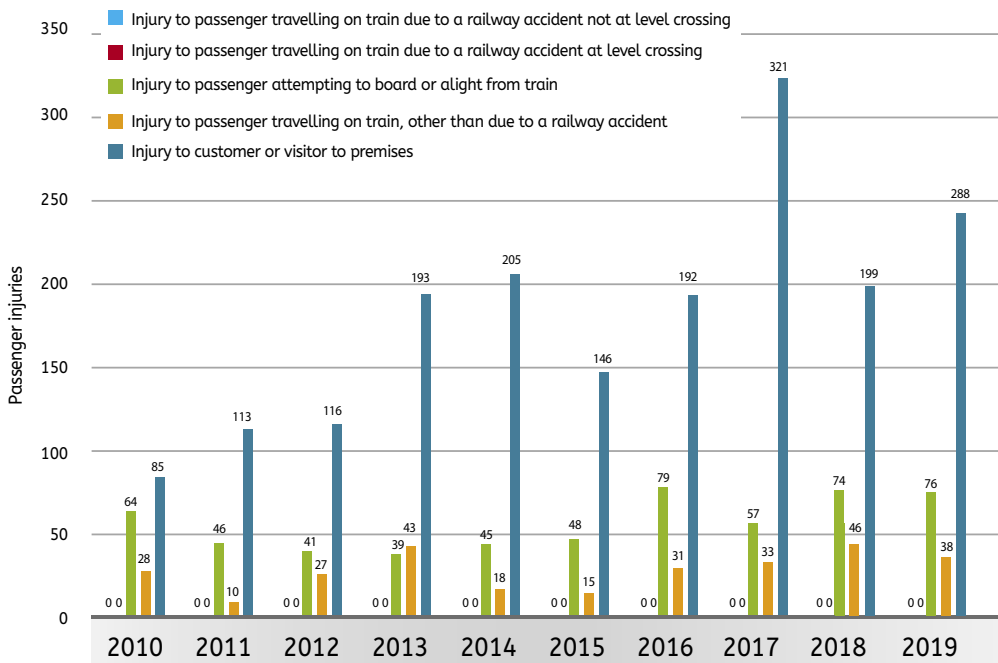


Figure 4: Passenger Injury Statistics by year

2.2.2.3 Employee Injuries

Employee injuries are categorised in the first instance by the sector of the railway system in which they work, i.e., Railway Operations, Infrastructure maintenance/ projects and Entity in Charge of Maintenance (ECM)².

The figure for Lost Time Accidents (LTA) to persons, not involving moving trains was broadly in line with that in 2015 – 2017, but significantly higher than the figure for 2018. However comparison of the figures for the past 10 years does make the 2018 figure seem anomalous. This increase is to an extent offset by a continued decline in arguably the more serious accident category of LTA involving trains in motion, (Figure 5).

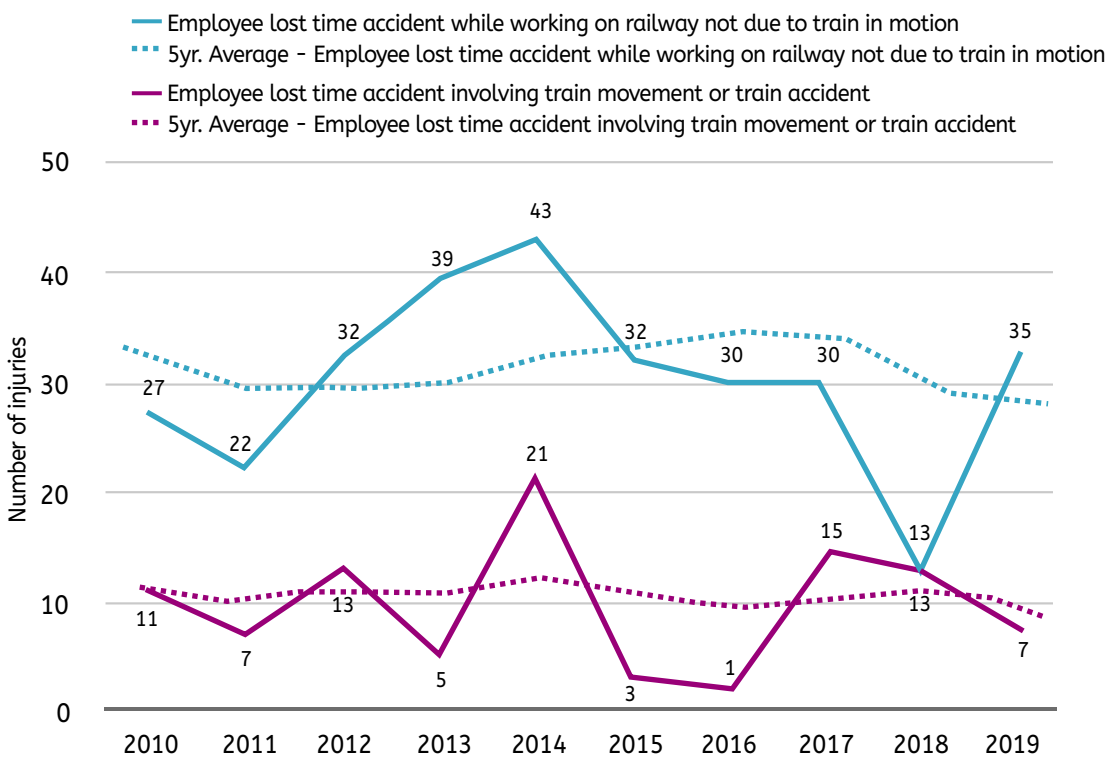


Figure 5: Employee Injury statistics by year (Railway Operations)

² ECMs are organisations that are certified to undertake maintenance of rolling stock, typically freight vehicles but also passenger trains in the case of Iarnród Éireann – Railway Undertaking.

The injuries to employees in the railway infrastructure sector remained unchanged in 2019 (Figure 6), with 26 Lost Time Accidents (LTA) to persons, not involving trains in motion, while the Entity in Charge of Maintenance (ECM) data shows a second year of

increasing accidents (Figure 7). The CRR were advised of an increasing number of LTA accidents involving staff with limited work experience, i.e., apprentices (Figure 7) but that additional safety measures, such as enhanced on-the-job monitoring, were being implemented.

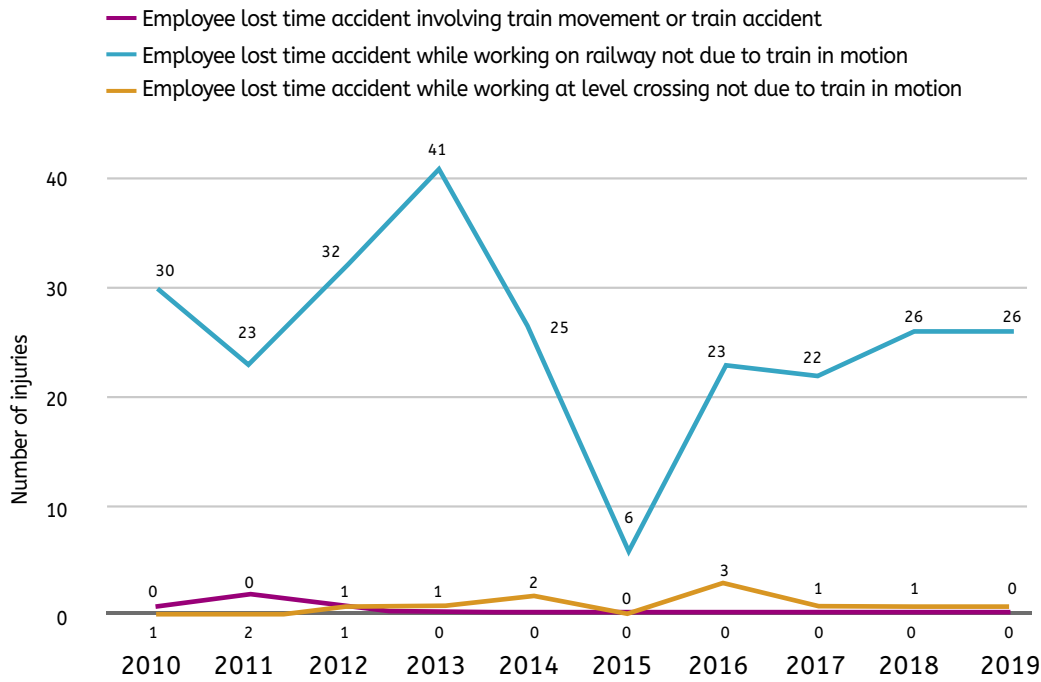


Figure 6: Employee Injury statistics by year (Railway Infrastructure)

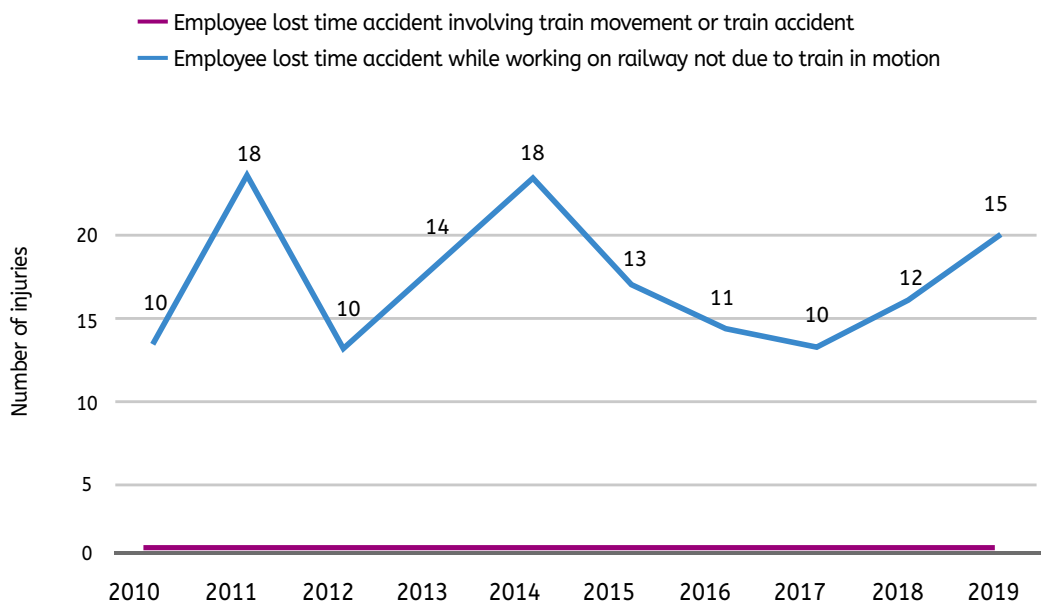


Figure 7: Employee Injury statistics by year (Railway ECM)

2.2.3 Iarnród Éireann Operational Incident Statistics

2.2.3.1 Train Collisions

Train collisions can pose a significant risk to passengers, train crew, third parties, and the environment. There are several categories of train collision, e.g., collision with road vehicles, with animals, with obstacle etc. Figure 8 illustrates the trend for collisions over the last 10 years.

Figure 8 is supported by Table 2 and Figure 9 to aid understanding of the data. In figure 9 two categories, 'Total Collisions with Obstacles on the line' and 'Train Collisions with large animals', have been separated to enhance understanding of the data. The overall data shows a continued decrease in collisions in 2019.

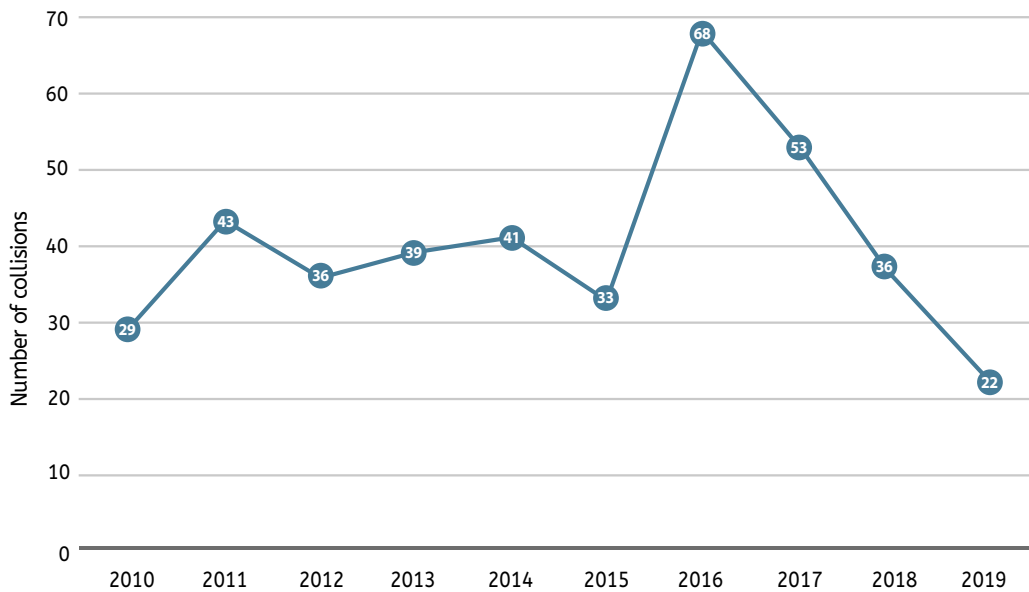


Figure 8: Total Collisions by year

Category	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Train collision with passenger or goods train on running line	0	0	0	0	0	0	0	0	0	0	
Train/railway vehicle collision in station or possession movement	0	0	1	1	1	1	1	2	1	1	
Train collision with a motor vehicle at a level crossing	2	1	2	1	2	0	0	3	1	2	
Train collision with pedestrian at a level crossing	1	0	0	0	0	0	0	0	0	0	
Train collision with attended gates at a level crossing	1	0	0	0	0	1	0	0	0	0	
Train collision with road vehicle obstructing the line (not at a level crossing)	0	0	1	1	0	1	1	0	0	0	
Train collision with other obstacle on the line	1	7	6	7	29	1	31	25	23	8	
Train collision with large animal(s) on the line	24	35	26	29	9	29	35	23	11	11	
TOTAL	29	43	36	39	41	33	68	53	36	22	

Table 2: Train Collision Statistics detail by year Part 1

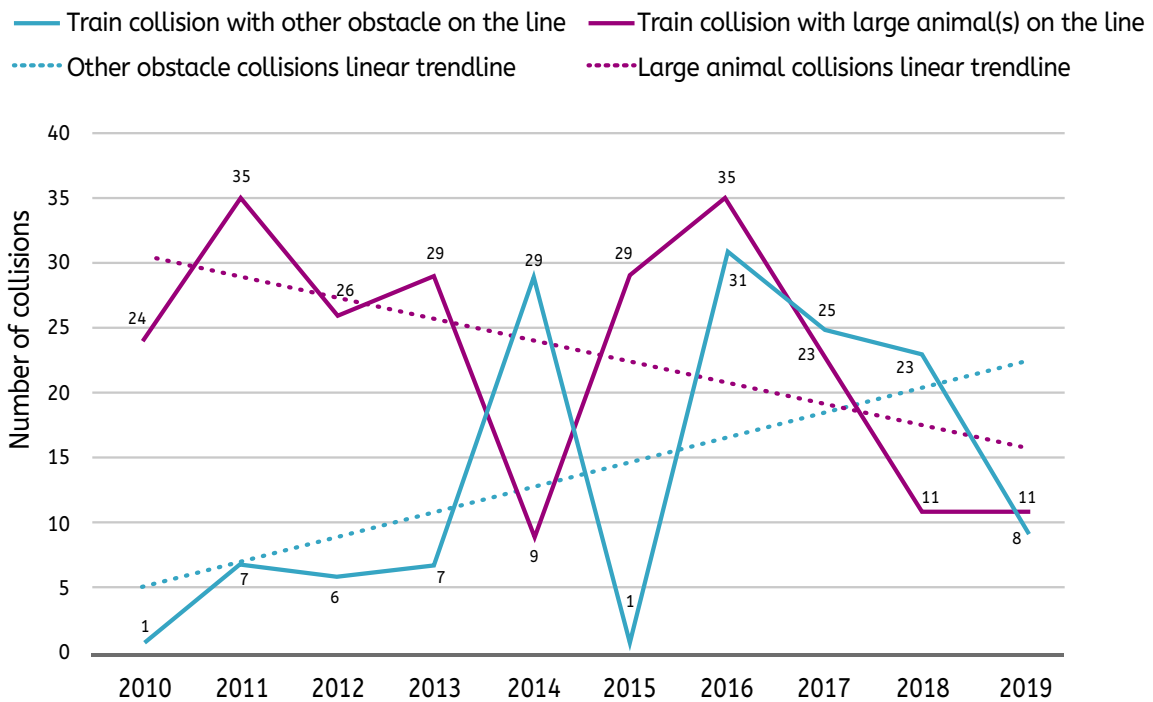


Figure 9: Train Collision Statistics detail by year, part 2

There has been some volatility in the data between 2013 and 2018, but since 2016 the trends are moving in a positive direction, i.e. collisions have been reducing with Table 2 showing that the in most categories the number of train collisions is zero or very low.

There are however two categories which have consistently been a cause for concern over the years. The number of collisions with 'other obstacle', typically trees/branches that fall onto railway lines following adverse weather, reduced in 2019 to a 4-year low of 8 events.

As discussed in previous reports, animals, (cattle, deer and to a lesser extent sheep) are a major contributor to collision statistics in Ireland and have the potential for serious consequences. There were 11 train collisions with large animal occurrences in 2019, the same as in 2018 which maintains the downward trend observed in recent years.

2.2.3.2 Level Crossings

Level crossings remain a significant risk to the railway and to level crossing users. However, there were no fatal accidents at level crossing in 2019. The last fatal accident at a level crossing from a collision between a train and a road vehicle was in 2010.

The long established trend, as shown in Figure 10 and Figure 11 is a decrease in the number of level crossings; there were 1701 level crossings in 2004 vs. 934 recorded for 2019. Figure 10 illustrates the number of level crossings on active lines. Sustained efforts by Iarnród Éireann have contributed greatly to reducing the risk presented by level crossings through closure or upgrade.

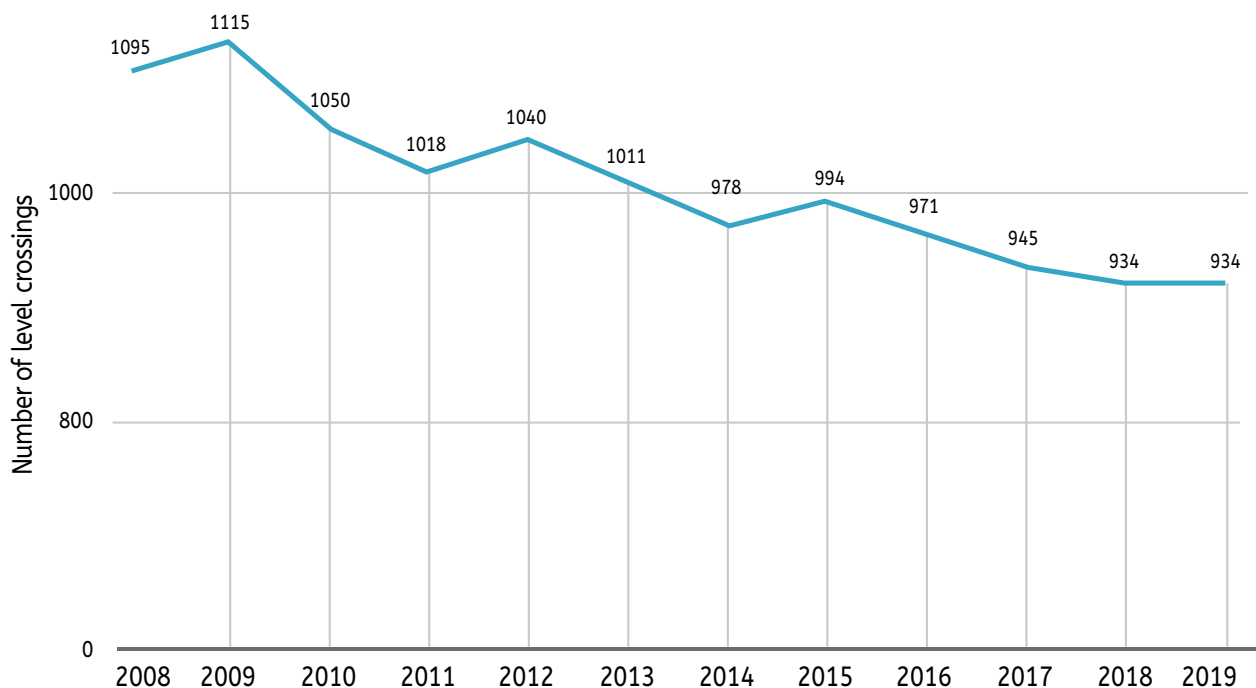


Figure 10: Number of level crossings by year

The breakdown of level crossings by type and year in Ireland is shown in Figure 11. Occupation level crossings on public roads, that is those that require the road user to manually open and close gates remain the highest risk type of level crossing, closely followed by passive 'Field type' level crossings which are those a farmer might use if they have land on both sides of a railway. The number of level crossings remained

the same in 2019 as in 2018 albeit there were a small number of designation changes. In 2019, Iarnród Éireann finalised plans to introduce a 'Decision Support System' at certain level crossings which is intended to improve safety and it is expected that a number of installations will be authorised to be placed in service/ commissioned in 2020. 8 Decision Support Systems were authorised and commissioned in 2020.

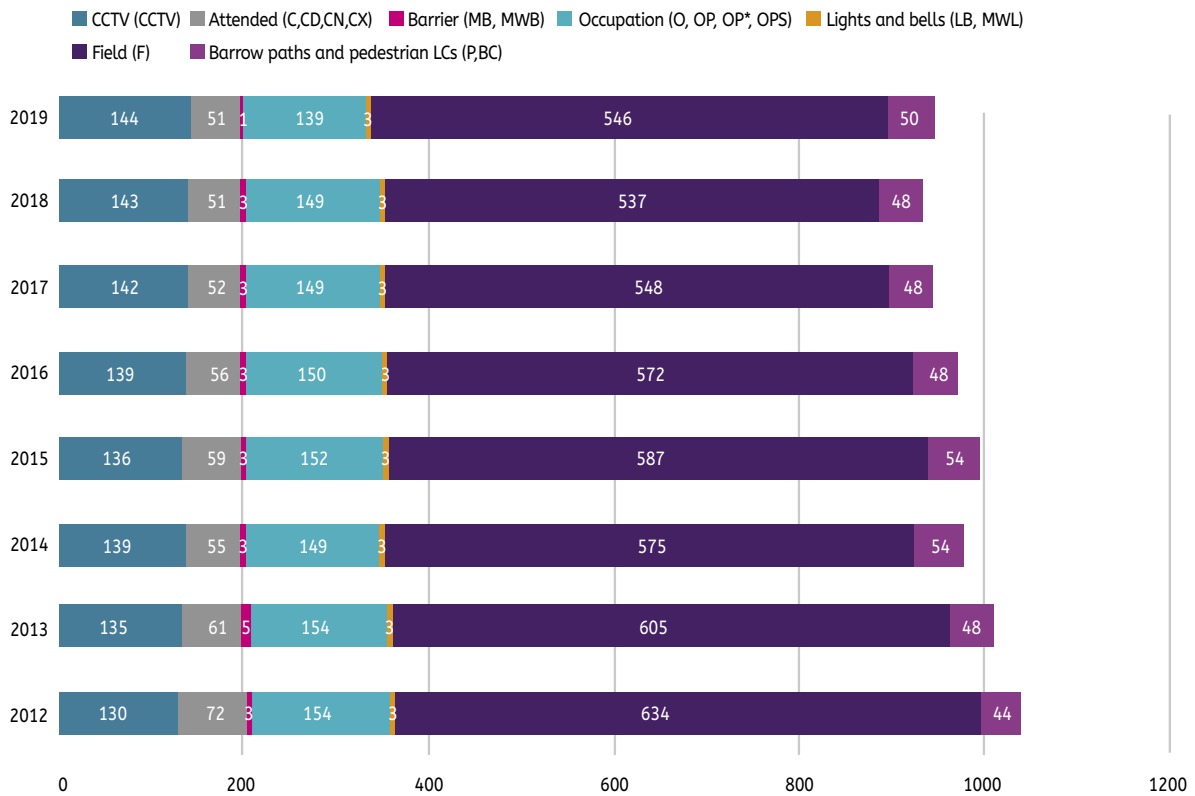


Figure 11: Level Crossing by type in Ireland

2.2.3.3 Train Derailment

The number of train derailments reduced from 5 in 2018 to 2 in 2019 (Figure 12) with both involving IÉ-RU trains. The first of these took place in Portlaoise Traincare Depot and occurred to an Intercity Rail Car that was being moved, at low speed, from one line to another.

The second derailment occurred at Bray Station in County Wicklow and involved an out of service DART undertaking a low-speed movement. No passengers

were onboard and in neither occurrence were there any injuries only minor damage to the track infrastructure.

The immediate cause of the occurrences, as reported by the internal investigation reports, was, in the case of the Portlaoise derailment due to minor lapses of attention by railway personnel while in the of the Bray derailment the investigation concluded it was a culmination of factors including track geometry, train speed, rail head conditions etc.

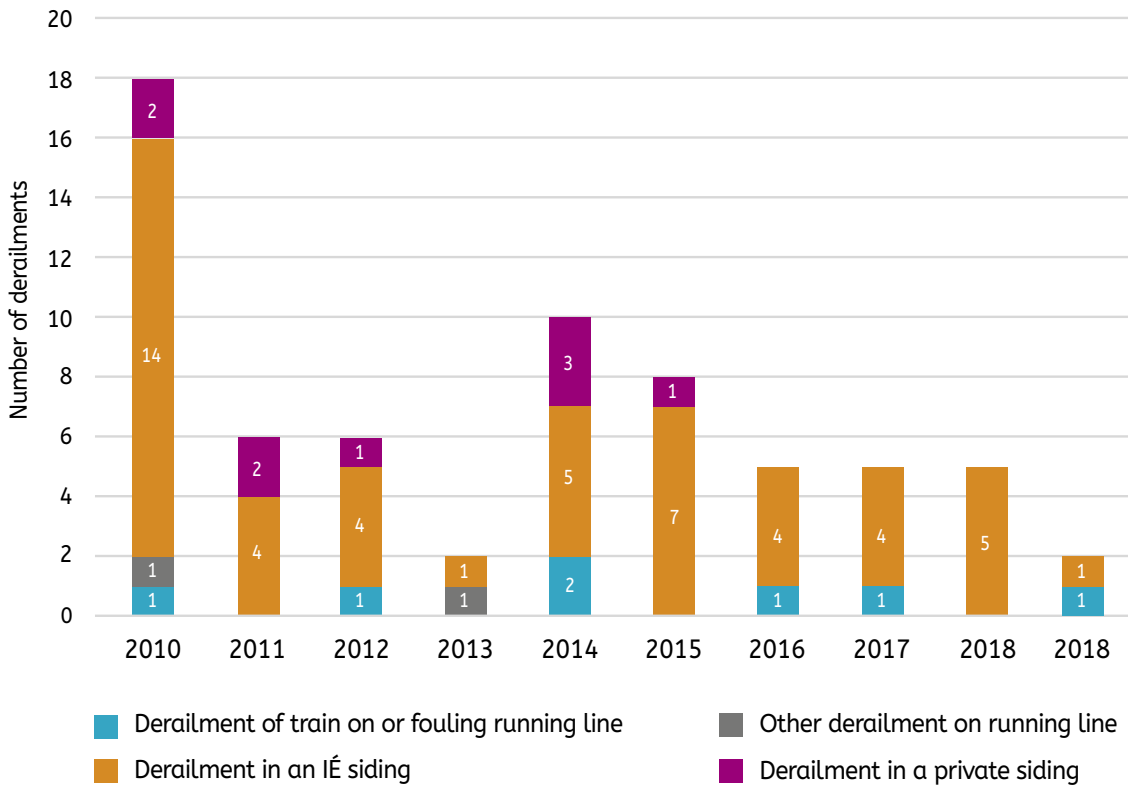


Figure 12: Train Derailments by Year

2.2.3.4 Signals Passed at Danger (SPAD)

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 regularly during its supervisory meetings with IÉ-IM, IÉ-RU and other mainline railway undertakings. The trend in recent years has been a steady decline; although data for 2018 was higher than the previous year but which again decreased slightly in 2019. (Figure 13).

All SPAD occurrences are analysed by the respective railway organisation and are classified as being either a low/medium or high-risk event. In 2019 there were no high risk SPAD occurrences. The breakdown of the 12 SPAD events in 2019 were as follows; IÉ-RU – 10, BBRI – 1 (the Railway Organisation previously responsible for track maintenance) and Rhomberg Sersa – 1, the current Railway Organisation responsible for track maintenance.

2.2.4 Iarnród Éireann Rolling Stock Incidents

Iarnród Éireann operates several different fleets in provision of rail services and there were no changes to these in 2019. The IÉ-RU fleet include:

- Intercity Diesel Multiple Unit (22000 class), maintained in Portlaoise Traincare depot
- Diesel Multiple Unit (29000, 2800, 2600 classes), maintained in Drogheda and Limerick
- Electrical Multiple Unit (8100, 8200, 8500 classes), maintained in Fairview, Dublin
- Locomotives (201, 071 classes), maintained in Inchicore, Dublin
- Passenger Carriages (Mark IV and DeDietrich), maintained in Inchicore, Dublin and York Road, Belfast
- Freight wagons (of various types), maintained in Limerick

There are a number of key safety performance indicators pertaining to rolling stock (Figure 14), specifically:

- Fire or smoke incidents
- A train dividing (parting) while in service
- Failure of Rolling Stock Axle Bearing
- Door issues

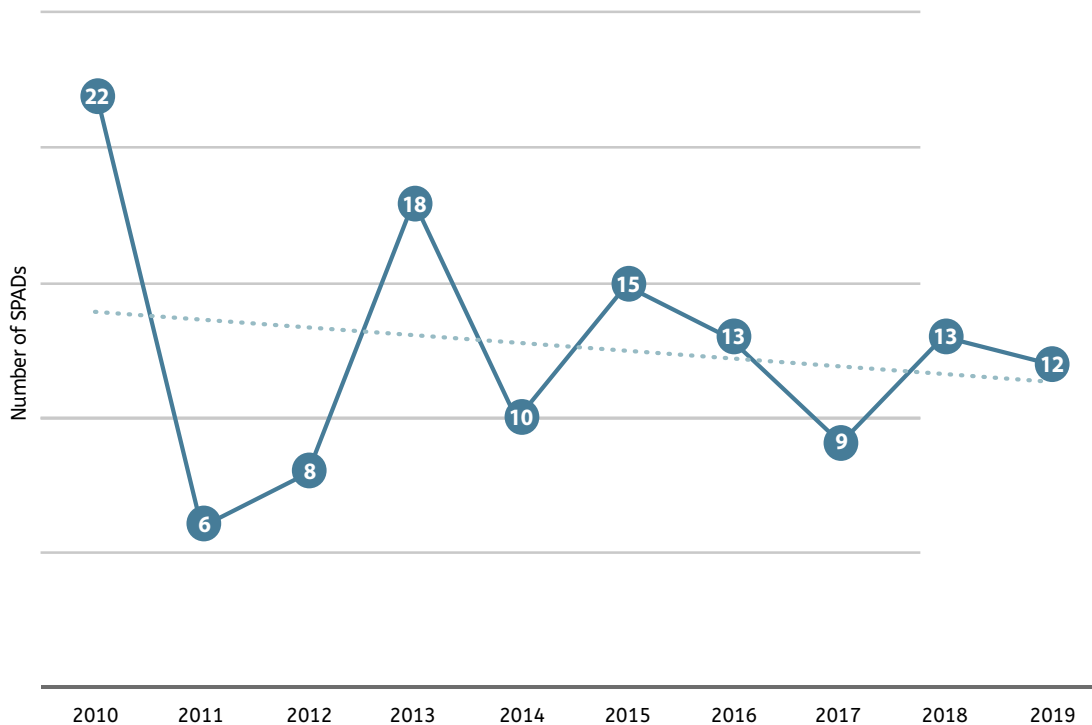


Figure 13: IÉ SPADs by year

Failures with rolling stock can potentially have very serious consequences. The number of reported occurrences increased in 2019 as may be seen (Figure 14). All reported occurrences (16) were in the fire/smoke category with 10 smoke (but no fire) events and 6 fire occurrences. Of the 6 fire occurrences 2 occurred on the 29000 fleet and 4 on the 22000 (ICR) Fleet. None resulted in injury and all were relatively minor being extinguished by the on-board fire suppression systems, with the exemption of 1 occurrence that involved a failed battery that led to a side panel detaching from an ICR near Heuston Station, Dublin. A number of fire suppression related safety initiatives were planned for 2020 by Iarnród Éireann which should see a reduction in the number of fire/smoke occurrences.

2.2.5 Iarnród Éireann Infrastructure Incidents

The IÉ-IM network currently extends to approximately 1680 route kilometres (km) or 2,400 km of operational track and includes c.4,440 bridges, c. 1,100 point-ends, c.970 level crossings, 144 stations, 3,300+ cuttings

and embankments, 372 platforms and 13 tunnels. The network includes main line, Dublin suburban and commuter passenger routes, together with freight-only routes.

The railway network in Ireland is abundant in legacy structures such as bridges, tunnels and station buildings, many of which would be in excess of 100 years old. Given their age and usage these assets are vulnerable and if not maintained could fail resulting in harm, damage or loss. However, regardless of age, all assets must be inspected and maintained at varying prescribed frequencies in order to keep them fit and safe for use. To reduce the likelihood of an asset failing Iarnród Éireann – Infrastructure Manager undertake thousands of inspections and preventative maintenance activities each year. Nonetheless, incidents do occur and data relating to some of these is now presented.

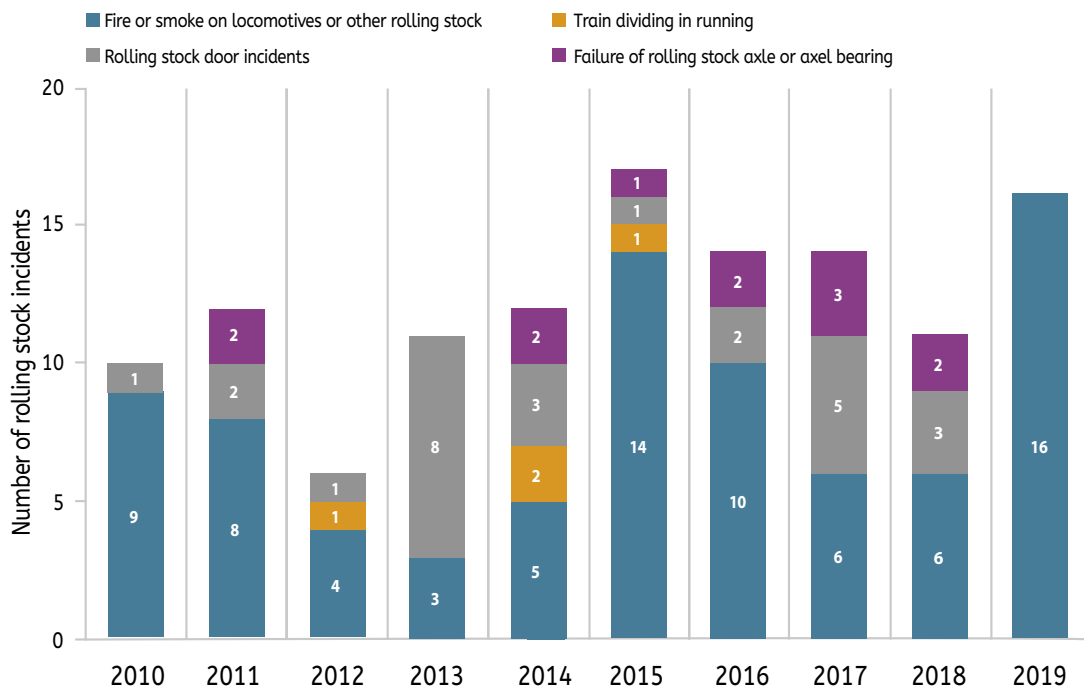


Figure 14: Rolling Stock Incidents by year

2.2.5.1 Broken Rails and Fishplates

ÍÉ-IM personnel visually inspect the track and associated assets at least once per week. Engineers and the Infrastructure Manager also inspect the track several times each year using a dedicated Inspection Car. The rails themselves are ultrasonically tested at least every 2 years, with the vast majority tested annually. In

2019, there were 2 broken rails both on the Dublin to Cork mainline and both discovered by track patrolling staff (Figure 15) maintaining the low incident rate of such events. Neither event resulted in a train accident, but it remains a high-priority for Iarnród Éireann – Infrastructure Manager to continue its rail renewals programme and to improve track formation through ballast cleaning and track stabilisation activity.

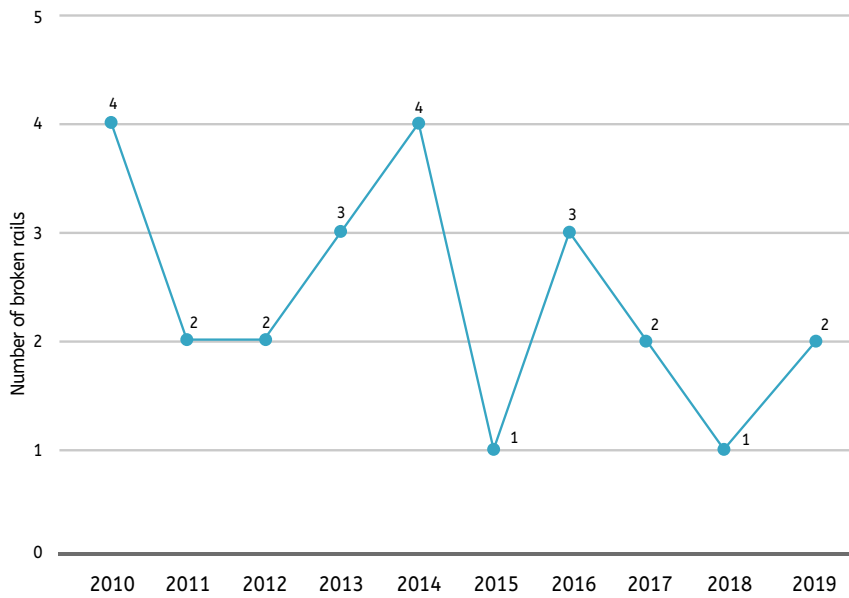


Figure 15: Broken Rails by year

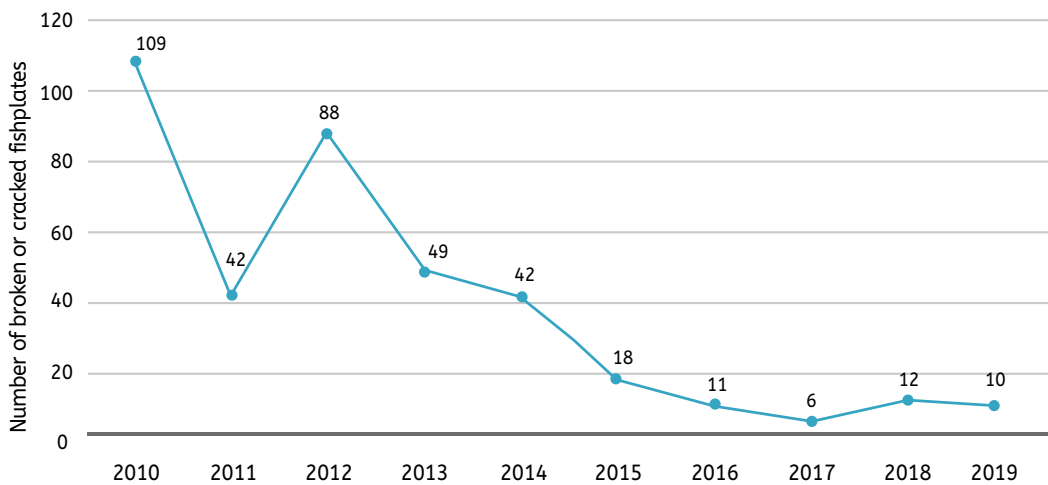


Figure 16: Cracked or Broken Fishplates on the IÉ Network, by year.

A fishplate is a special bolted connection that joins two rails together. Should one break then the rail is not continuous and could, in certain circumstances, lead to a derailment. The trend for 'Cracked or Broken Fishplates' has once more decreased in 2019 following a slight increase in 2018 (Figure 16). Numbers are now at a level that further reductions will be more difficult to achieve, rather continued vigilance by track inspection staff is needed to ensure they are identified proactively and repaired accordingly.

As has been noted in previous reports, the large decrease over the 10-year period may be attributed to the installation of continuous welded rail (CWR) initiated under the Railway Safety Investment Programme (1998-2013) which has continued since, albeit in smaller quantities.

2.2.5.2 Bridge Strikes

Ireland railways some of which predate the 1850s are, in the main, built radiating from Dublin. Today, there are in excess 4400 bridges of varying structure types on the rail network. All must be inspected and maintained by

IÉ-IM at various periodicities depending on numerous factors such as their age, type, location etc.

In terms of simple categorisation there are two categories of railway bridge to be inspected. The first is a where a road is over the railway (over bridge) and the second is where the railway is over a road (under bridge). A bridge strike is where a road vehicle strikes the parapet or roadside containment of an over bridge or where a road vehicle strikes the underside of a railway bridge over a road (under bridge).

Both types of occurrence can, in certain circumstances, result in very severe consequences such as causing a track misalignment or structural weakness or failure either of which could result in a train derailment.

The total number of bridge strikes, i.e., both under-bridge and over-bridge, decreased by 16% in 2019 compared to 2018 (79 vs. 95 in 2018) with the decrease being attributable to the reduction in under-bridge strikes (Figure 17). Overall, the trend for both under-line bridges has been falling since 2010 while it has largely remained level for over-line bridge strikes.

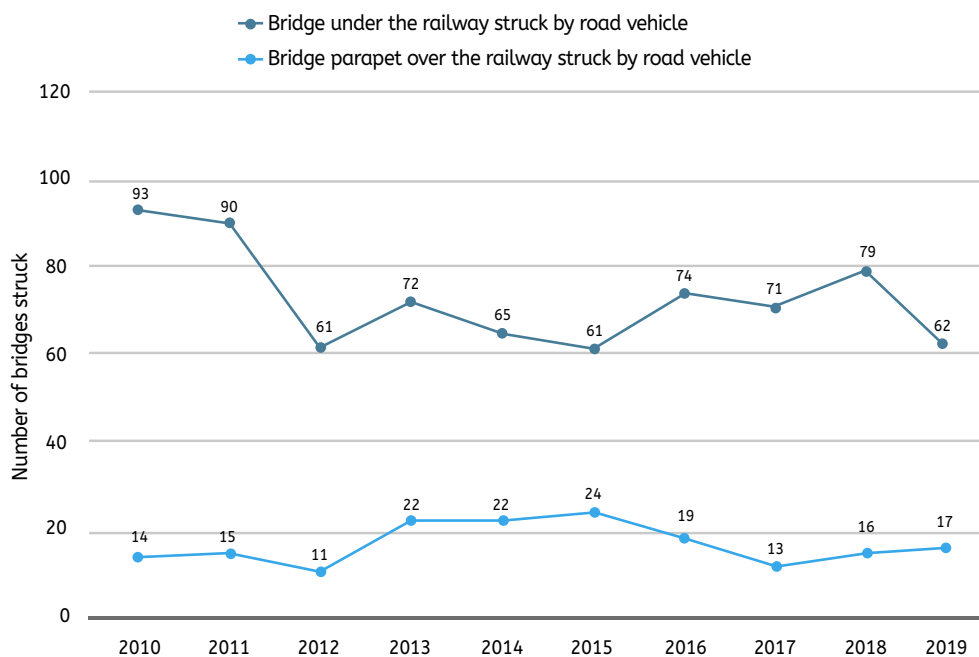


Figure 17: Railway Bridges struck by road vehicles

2.3 On Track Machine Contract

Iarnród Éireann – Infrastructure Manager (IÉ-IM) have, since, 2014 contracted external railway organisations to operate and maintain their fleet of On-Track Machines (OTMs). Balfour Beatty Rail Ireland Limited (BBRI) operated and maintained this heavy track maintenance equipment under contract to Iarnród Éireann – Infrastructure until July 2019 after which time the contract was taken over by Rhomerg Sersa Ireland (RSI). Both BBRI and RSI are classified as a Railway Undertaking (RU) under the Railway Safety Act 2005 and have an approved Safety Management System (SMS).

This requires they are compliant with the same relevant law as other RUs as they conduct train movements on the IÉ network.

In 2019 RSI employed a total of 58 staff, 39 of which would be classified as safety critical workers, i.e., train drivers and those acting in a maintenance capacity. RSI does not operate any passenger services and completes most of its work at night, outside peak and daytime periods. The total train kilometres for the OTM fleet in 2019 was 109968 km comprising 49823 by BBRI (January to July) and 60,145km by RSI from July through to the end of the year. This represented a 10% increase on the 2018 figure suggesting greater usage of the valuable fleet of machines.

Table 3 shows the reported occurrences for the OTM RU in 2019, including two SPADs but no derailments. The first of these SPADs occurred in March 2019 at Kildare Station and involved a BBRI OTM Driver who was driving the Ballast Cleaner. The second SPAD occurred in November 2019, at Drogheda Station and involved a RSI

OTM Driver who was driving a Track Inspection Car. In both cases the associated internal investigation reports cited the drivers experienced a lapse in attention and passed a red signal. Neither occurrence resulted in any accident or injury.

There was also 1 collision with a road vehicle at a level crossing on Wexford Quay. This location is an open section of track and rail line speed is limited to 5 mph. As a result of this risk control measure the collision was at a low speed and only the car sustained minor damage.

In terms of rail infrastructure damage incidents these were, all, of a minor nature. Typically, these occur during track alignment shifts and certain movable parts of the OTM come into contact with track infrastructure. In 2019 there were two incidents where a sleeper was damaged and one incident in which an axle counter (a rail mounted device for detecting the presence of a train) was struck by part of the OTM.

Following the elevated number of incidents in 2017 the then contractor BBRI instigated a programme of pre-work walkouts to confirm what pieces of infrastructure (level crossing slabs, axle counters, SET ducting etc.) would be temporarily removed prior to OTM work taking place. This proved very effective in reducing the number of incidents. This practice has continued with the current OTM contractor and continues to yield positive results.

Occurrence	2017	2018	2019
SPAD	1	2	2
Derailments	2	0	0
Collisions	0	0	1
Minor occupational injuries	2	1	1
Rail infrastructure damage incidents	20	4	3

Table 3: OTM occurrences

2.4 Transdev (Luas) Statistics

The Dublin Light Rail system, including all trams and tramway infrastructure is owned by Transport Infrastructure Ireland (TII). Transdev has been operating the Luas light rail system since it commenced operation in June 2004 and in late 2019 were contracted to continue operation of LUAS service as well as undertaking infrastructure and rolling stock maintenance.

The LUAS comprises two lines, the Red Line which is 20kms in length and has 32 Stops and the Green Line which is 24.5km in length and has 35 Stops. 2019 also saw continued growth on the LUAS light-rail network with just over 48 million passenger journeys made, representing an increase of approximately 15% on the 2018 figure (41.8 million). The figures reflect the first full year of the capacity enhancement of the Green

Line, and a further addition of two newly extended trams brought into service in late 2019, (Figure 18). This continues the long-term trend for increasing passenger journeys, which has accelerated greatly in recent years.

2.4.1 Fatal Injuries

There were no passenger fatalities or serious injuries in 2019, however there were two pedestrian fatalities. The first of these occurred on the 14th February 2019 at an uncontrolled pedestrian crossing between Cookstown and Hospital Stops on the LUAS Red Line. The second fatal accident occurred on the 11th March 2019 between the Belgard Road junction and the Kingswood Tram stop, again on the Red Line on a section of the tramway where pedestrians would not be expected.

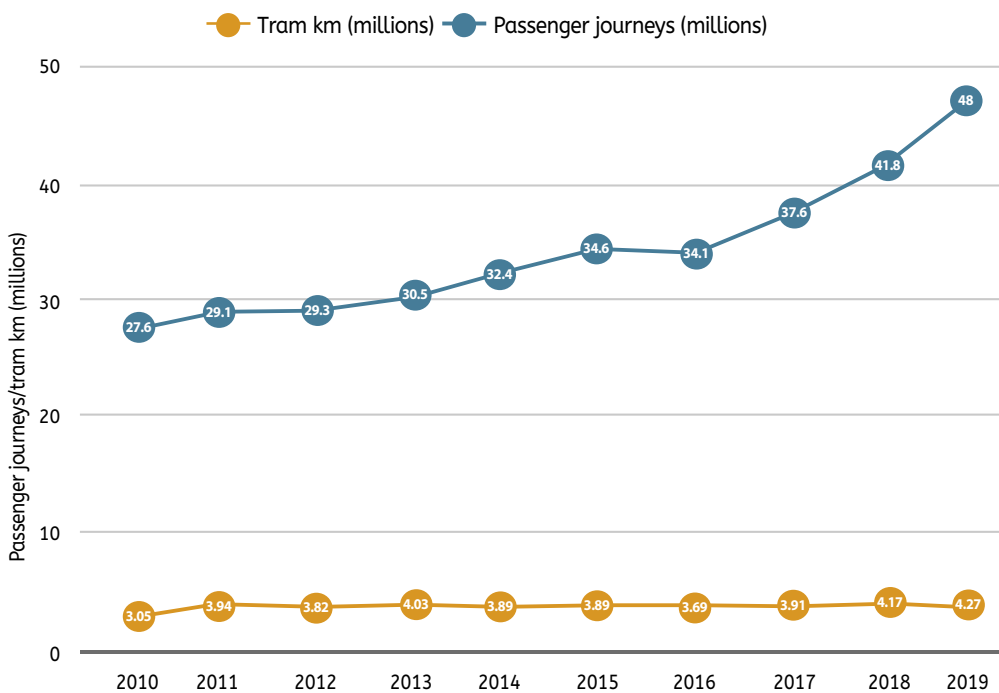


Figure 18: Luas passenger journeys & Tram-km travelled

2.4.2 Road Traffic Collisions

A significant proportion of LUAS tracks co-exists with road traffic and pedestrian movements, most notably in Dublin city centre. The Luas operates primarily by 'line of sight' which is typical of the majority of light rail systems around the world, but in contrast to heavy rail. Given that the Luas shares sections of the carriageway with road vehicles and other road users, road traffic collisions

(RTCs) and collisions with cyclists and pedestrians do occur.

The number of road traffic collisions has been on an increasing trend since 2015 and saw a significant increase in 2019, The 2019 figure rose by approximately 1/3 to 38 from 25 in 2018 (Figure 19). The increase was entirely attributable to the Red line, where collisions

increased from 17 in 2018 to 30 in 2019. Of the total number of collision (38), 21 were as a result if a road vehicle breaking a red light with the remaining 17 attributed to road vehicles infringing the trams swept path, that is the space swept out by the front and sides of the vehicle body, or any other part of the structure of the vehicle as it moves.

Of the 21-red light infringements, 19 were on the Red Line with just 2 on the Green Line. As a consequence, the number of RTC per million tram kilometres rose in 2019 (Figure 20) normalising for the increasing in tram kilometres run. In terms of accident blackspots Davitt Road/Suir Road Junction and Cookstown Way/Tallaght Hospital junction accounted for half of the tram contact with vehicle occurrences at junctions in 2019 but there is no significant trend.

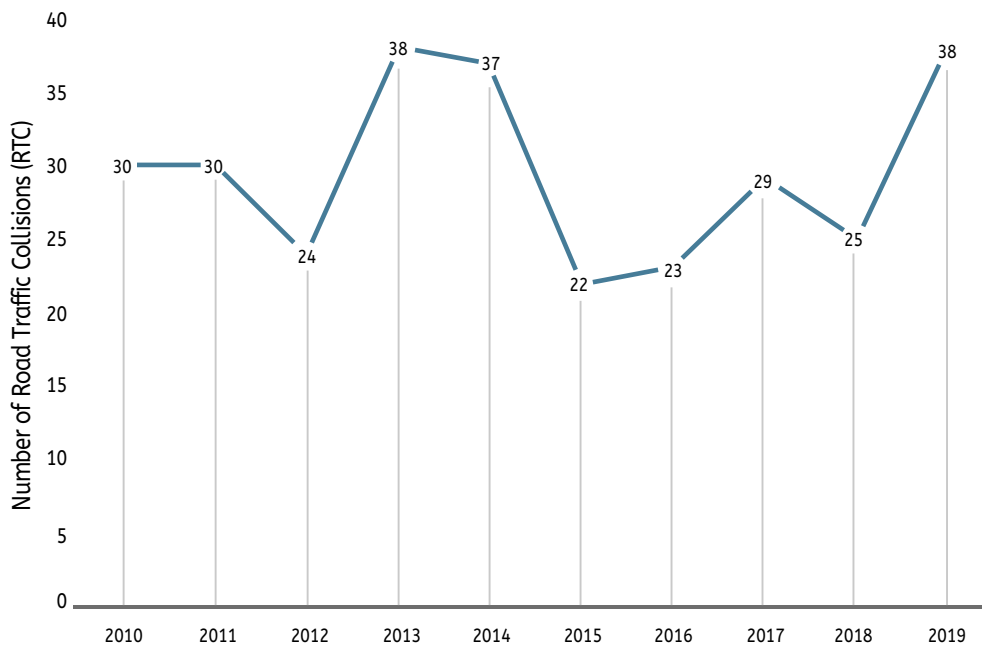


Figure 19: Number of Road Traffic Collisions involving a tram

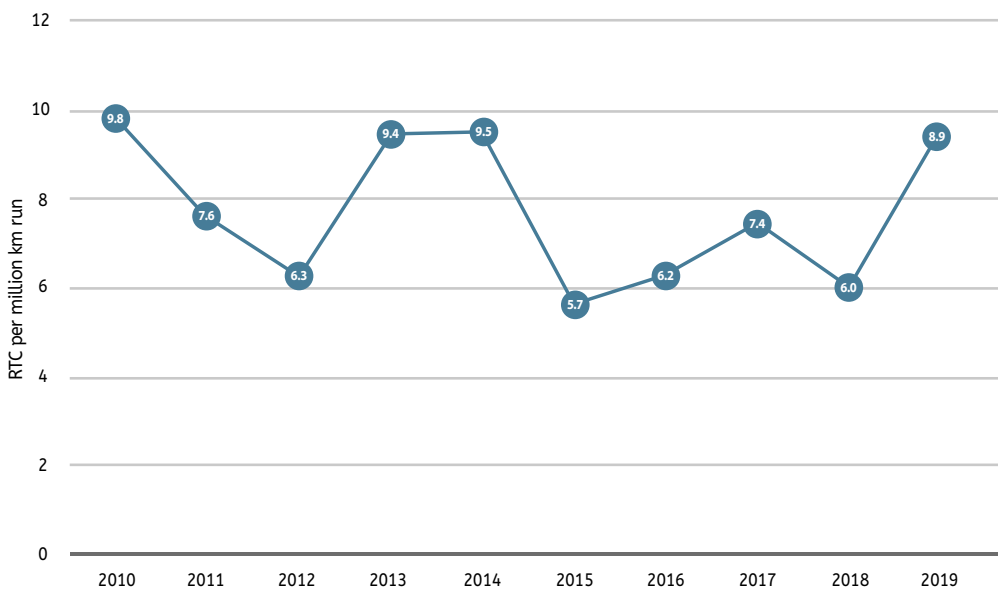


Figure 20: RTC per million km run

2.4.3 Tram / Person Contact

2019 saw a significant increase in the number of tram contact incidents with pedestrians and cyclists. There were 26 reported pedestrian/cyclist contact occurrences in 2019 up from 10 in 2018, which is the highest number of such incidents since the LUAS began operation in 2004.

While there was an increase in the number of trams km owing to the first full year of operation of the Luas Cross City extension, nonetheless the increase of this size is significant. A considerable proportion of both the

Red and Green lines operate in the city centre where there are substantially more pedestrians and cyclists interfacing with Luas. Given this is the case there is an increased likelihood and, by association, risk of collisions with persons/cyclists in Dublin City Centre. Of the 26 reported events, 23 were pedestrians and 3 were cyclists with 15 collisions taking place on the Red Line and the remaining 11 taking place on the Green Line. Of note on the Green Line, 8 collisions occurred on the Cross City extension.

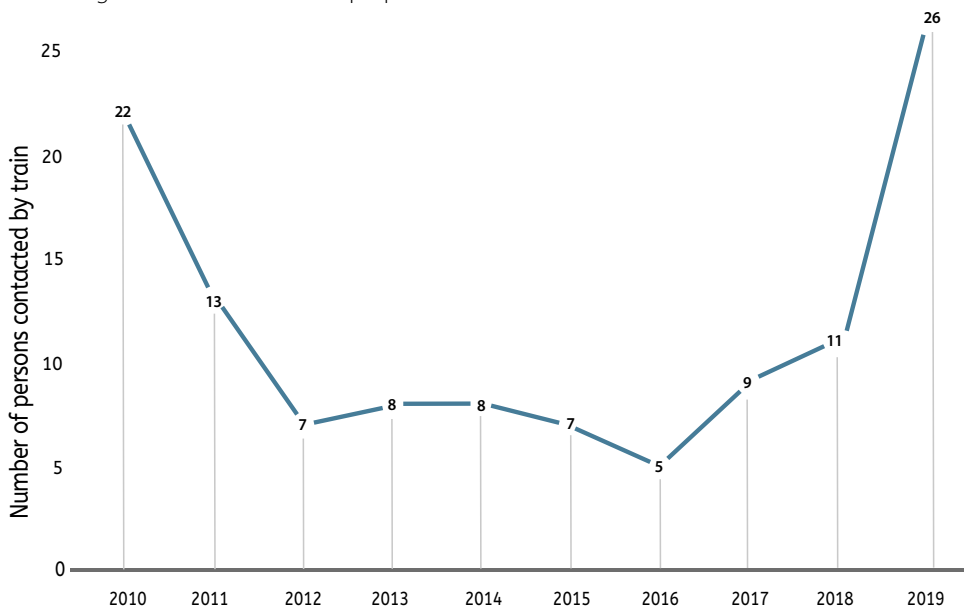


Figure 21: Persons coming into contact with Tram

2.4.4 Tram Derailments

There were 2 derailments in 2019 (Figure 22), one less than in 2018. The first derailment involving an out of service tram travelling at low speed took place in the new Tram Depot in Broombridge, while the second more serious derailment occurred due to a collision with a Dublin Bus on Queen Street. This accident

occurred early on a Saturday morning while the tram was relatively lightly loaded, and the Dublin Bus was out of service at the time of the collision. In this instance the bus collided with the side of the tram which had a proceed aspect. No serious injuries were sustained but significant damage was sustained to both the tram and bus.

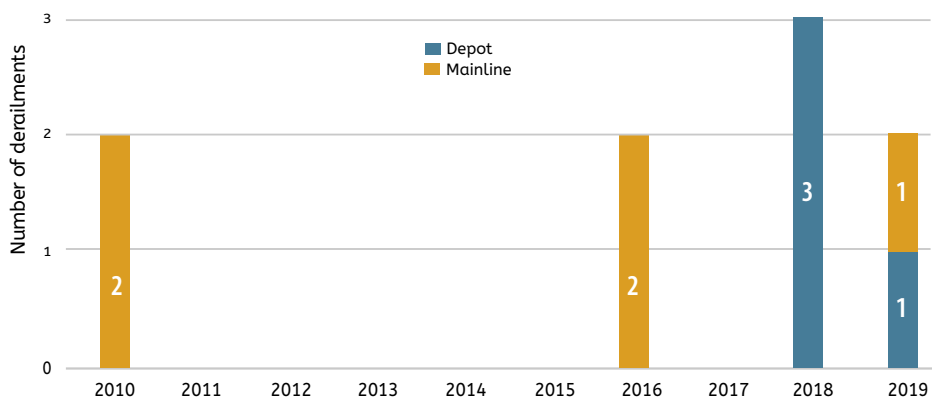


Figure 22: Tram derailments

2.4.5 Signals Passed at Danger (SPAD)

A SPAD on the LUAS network is essentially the same as one on the Iarnród Éireann network, i.e., a tram has passed a stop (horizontal dotted line) signal without authority. SPADs are a particular precursor event that the CRR monitors regularly during its supervisory meetings with Transdev. The trend in recent years has been a modest decline; although data for 2017 and 2018 was higher than the previous year but which saw a sizeable decrease in 2019. (Figure 23).

In terms of risk, of the 15 SPADs in 2019, 10 would be classified as posing a moderate risk in that a tram either;

- past a signal and crossed points on a conflicting route, but no other tram in the area or
- past a signal and entered a traffic junction or pedestrian crossing with no contact and with all traffic at stop.

2.4.6 Tram Emergency Brake Applications

In addition to its standard disc-brakes, a tram is fitted with an electromagnetic track brake. There are occasions when a driver may need to apply this Emergency Brake (EB) to prevent a harmful incident. Therefore, the number of Emergency Brake (EB) applications made by tram drivers is a useful leading safety indicator.

There were 938 EB applications in 2019 which was consistent with the 2018 figure and still significantly higher than in recent years. In 2019 the CRR sought to understand the significant rise from 2016 and concluded that it was due a combination of factors. These included increasing volumes of road vehicle traffic on the capital's road network, more pedestrians and cyclists, often distracted by wearing headphones, newer less experienced tram drivers being recruited and an increase in tram km through Dublin City with the opening of the Luas Cross City extension. Regardless of the cause, it should be noted that every emergency brake application potentially avoids collisions and harmful consequences.

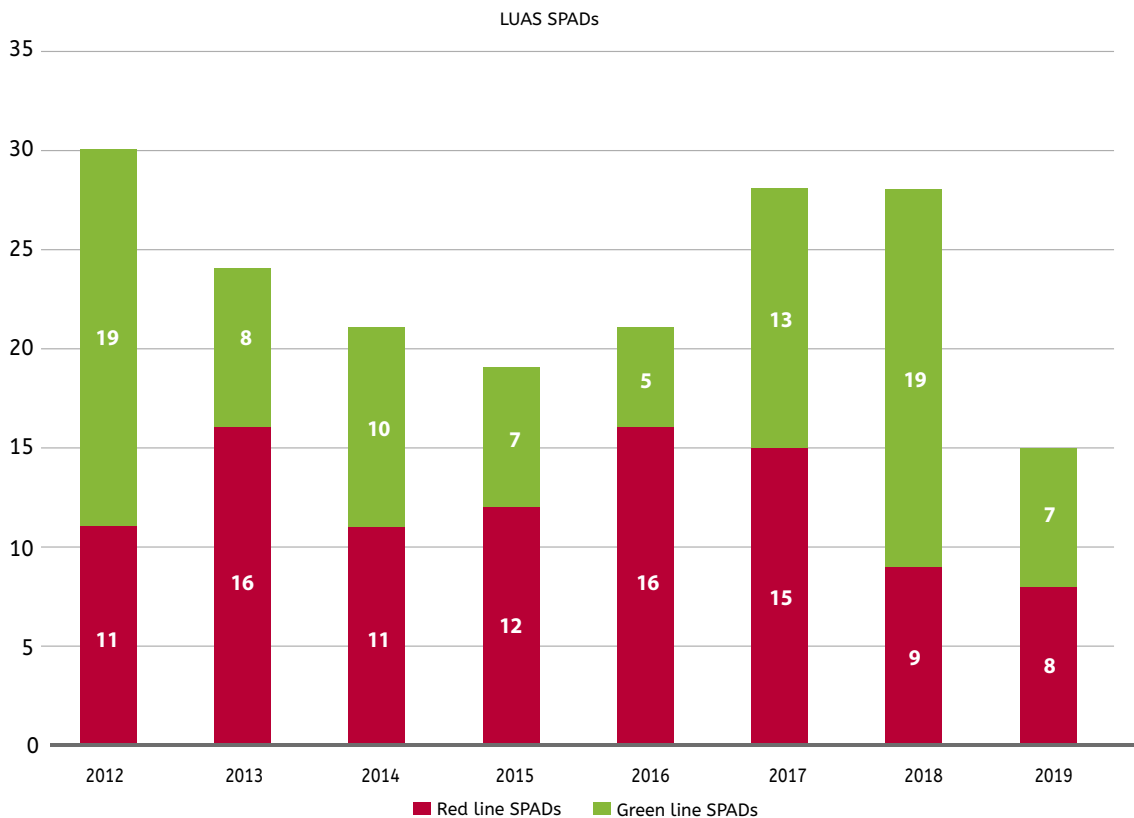


Figure 23: Tram SPADs

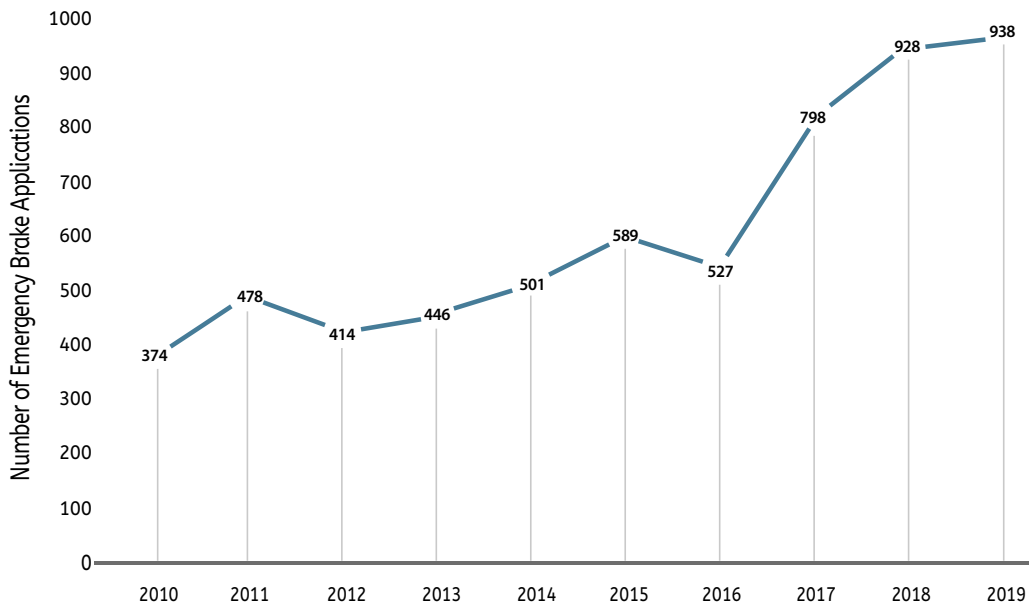


Figure 24: Emergency Brake Applications

2.5 Bord Na Móna Industrial Railway Statistics

The CRR's remit in terms of its oversight of Bord Na Móna's (BNM) industrial railway is limited to where it interfaces with public roads. While it has 570 km of permanent track it is only at its interfaces, i.e., level crossings and where there are road bridges over the industrial railway that the CRR is involved. In terms of key infrastructure statistics there are 99 level crossings of which 90 are operational and 52 underbridges. These figures represent no change from 2018.

Bord Na Móna reported no derailments in 2019 but did report one level crossing accident (Figure 25). The incident involved a car crashing through level crossing gates that had just been closed across the public road by a BNM employee who was then about to traverse the crossing with their train.

It was believed that the cause of the accident was the car driver was momentarily blinded by a low sun resulting in them not seeing the flashing warning lights or gates. Other than damage to the gates and car no injuries were sustained.

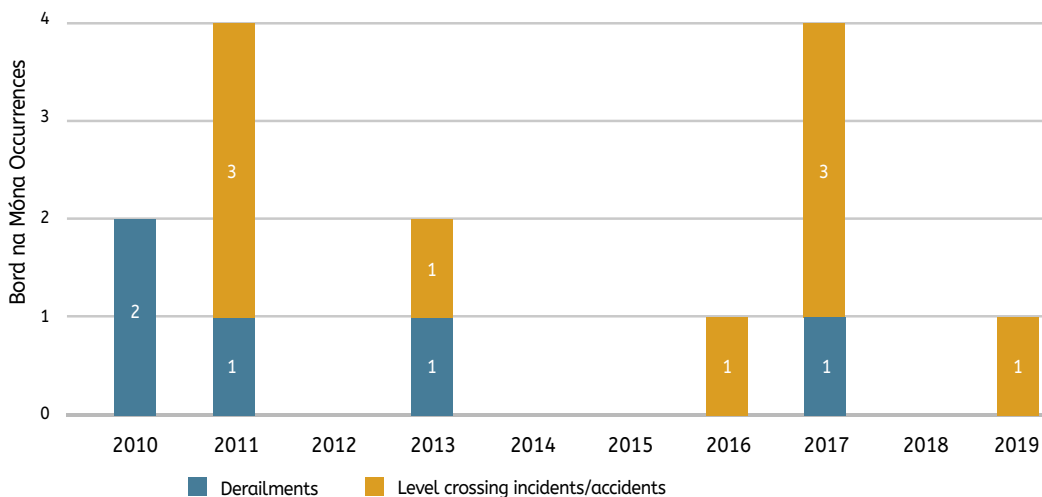


Figure 25: Bord na Móna derailments and level crossing incidents/accidents

2.6 Heritage Railways

A heritage railway is defined in Irish Legislation as *'a person who only operates train services or railway infrastructure of historical or touristic interest.'* The CRR monitor the operations of nine self-contained heritage railways. They are:

- Cavan and Leitrim Railway
- Tralee & Dingle Railway³
- Diffin Lake Railway, Oakfield Park, Raphoe
- West Clare Railway³
- Finntown & Glenties Railway
- Waterford & Suir Valley Railway (W&SVR)
- Irish Steam Preservation Society Stradbally
- Lullymore Heritage Railway
- Listowel Lartigue Monorail

While these railways operate at slower speeds, tens of thousands of passengers are carried by them every year, so the potential for harm remains. There were no accidents or incidents reported to the CRR in 2019 on any of the heritage railways.

2.6.1 Railway Preservation Society of Ireland (RPSI)

The RPSI is a special case of heritage railway given they are not a self-contained heritage railway. Rather they operate steam and diesel hauled heritage trains on the Iarnród Éireann rail network and therefore hold a Safety Certificate allowing them to operate as a Railway Undertaking (RU). As an RU under the European Railway Safety Directive they are subject to a different supervision regime that is commensurate with the risks they import 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 RPSI ran approximately 5675 miles (9133km) in 2019, up slightly on the 2018 figure (5412 miles), with no accidents or injuries to passengers or staff reported.

³ These railways were not in possession of a Safety Management Certificate from the CRR and were reported as being non-operational in 2019



3 | Public Representations

3.1 Introduction

The CRR uses many inputs to target future supervision activity and one such source is that from representations (complaints) the CRR receive from the public, be they passengers or otherwise, railway staff or other entities. Representation can be made to the CRR, with details on how to make a representation being available on our website (www.crr.ie). The contribution from the various stakeholders, including employees, passengers, and the general public is a valuable source of information and all contact is screened and responded to in line with our charter. Where issues relate to occupational health and safety the CRR liaises with colleagues in the Health & Safety Authority (HSA) with whom we have a memorandum of understanding (MoU). Should issues raised relate to service rather than safety, then the CRR directs the representation to the appropriate railway organisation. If after the screening

process the issues raised involves railway safety the CRR endeavours, wherever possible, to deal with the matter directly. If necessary, the CRR will undertake inspections and/or seek information from the appropriate railway organisation for further clarification seeking resolution before responding back to the complainant.

3.2 2019 Data and Commentary

In 2019, the CRR received 51 direct or indirect representations relating to a range of heavy and light rail infrastructural and operational matters, a significant increase on the low of 2018 (31), but more in line with previous years. (Figure 26). Of these, 41 are related to Iarnród Éireann, with 27 relating to IÉ-RU, and 14 relating to IÉ-IM. Three representations were received relating to the LUAS system four relating to heritage railways, and three relating to the Irish rail network in general.

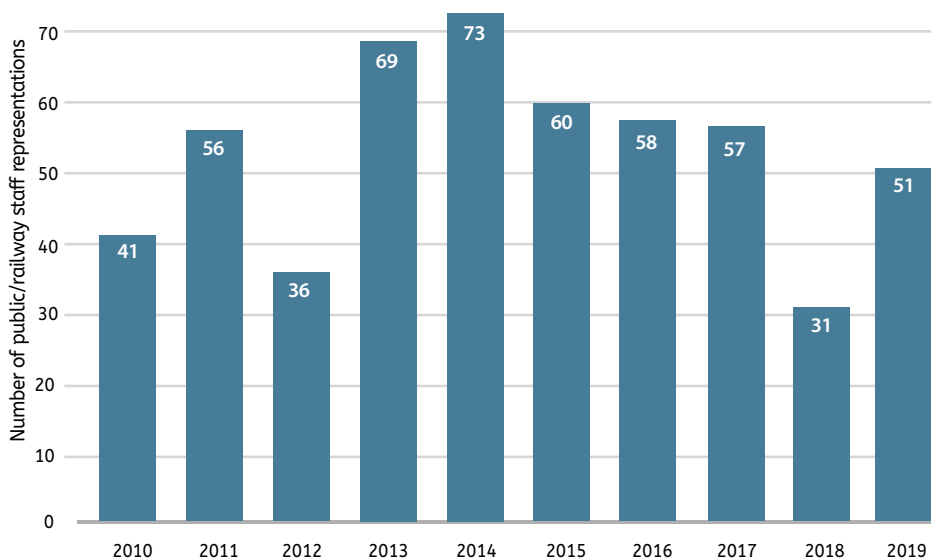


Figure 26: Public Representations to the CRR by year

All representations were investigated by the CRR and where necessary, the CRR acted to ensure that corrective action was taken by the relevant Railway Organisation. It is CRR policy that all safety related concerns are investigated. Representations are continually tracked for re-occurrence and detection of trends. If either are observed, monitoring activities are increased to determine and address underlying causes.

Representations from 2019 were further analysed and broken down into the following categories:

- Safety at Stations: Queries relating to incidents or concerns at stations
- Safety of Infrastructure: Queries relating to Railway Infrastructure such as bridges, track, level crossings or fencing
- Safety of Rolling Stock: Queries relating to Vehicles such as train performance, grab rail security or door operation
- Safety of Train Operation: Queries relating to operations such as train loading, excess train speed or shared running of trams

- Safety of Railway Working: Queries relating to operational activities on the railway such as network regulation or management control
- Request for information: A request to the CRR for information not specifically related to railway safety (note these are distinct from formal Freedom of Information requests)

The numbers of representations/complaints by category is shown in Figure 27. The distribution is not significantly different compared to 2018 in terms of category but there was an increase in representations related to safety of infrastructure and rolling stock and in more general request for information.

It is not possible to ascribe these minor changes in representations to particular reasons, and the CRR will continue to monitor the trends going forward for any major changes.

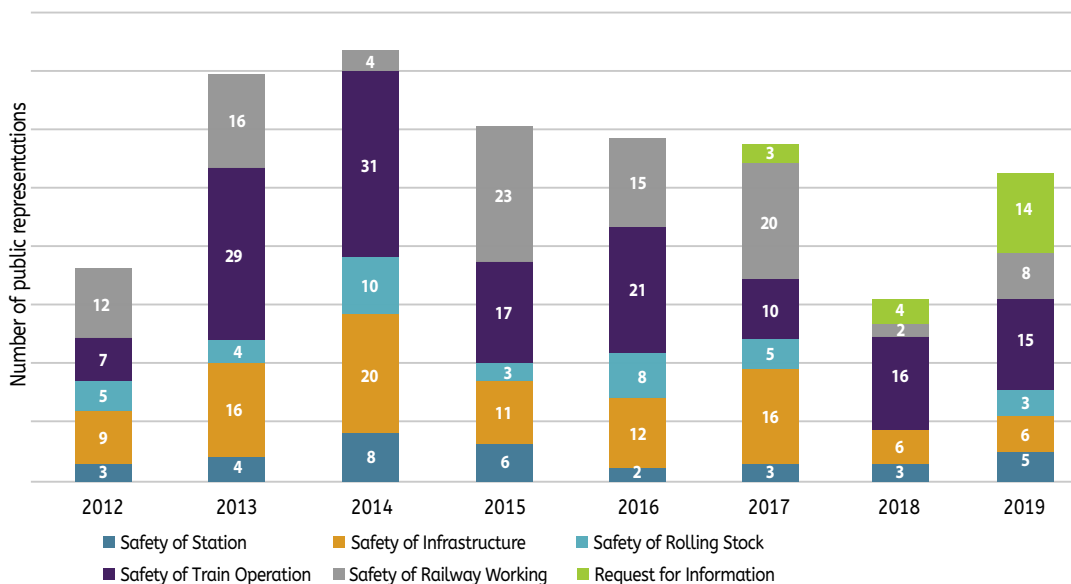


Figure 27: CRR Public Representation by category



4 | Railway Safety Trends in Europe

4.1 Introduction

In European terms, the CRR is defined as the National Safety Authority (NSA) for the railway network in Ireland. Each European member state has an NSA which, in accordance with the Railway Safety Directive (2004/49/EC), must submit its annual report on 'Common Safety Indicators' of railway safety to the European Union Agency for Railways (ERA). ERA in turn analyses railway safety on a European scale and publishes its report. ERA reports do not take into account light rail (Luas) or metro systems, or self-contained heritage railway

systems. As the NSAs report a year in arrears, and the ERA must validate a considerable amount of data, only data up to 2018 was available for this report. Data was extracted from the publicly available ERA IRL Database that ERA maintain. This is a repository for European railway safety data, as input by National Safety Authorities. Some noteworthy statistics are presented from this database. Definitions for data categories used, where not stated, can be found in the document 'Implementation Guidance for use of Common Safety Indicators', which is produced by EUAR and is available at <http://www.era.europa.eu/>.



4.2 Network Comparisons

The Irish Network is one of the smallest in Europe with circa 1680 route km. Similarly, our train kilometres (i.e. the number of kilometres covered by trains each year) is, as one might expect, also very small when compared to the majority of European countries. For the period 2012-2016 only six countries operated less

train-km. Equally given Ireland’s size and population density passenger train km is also low when compared to European countries. That said Ireland’s train-km has shown a steady increase since 2013. Figure 28 shows the total passenger kilometres travelled on each country’s network between 2017-2018 in millions.

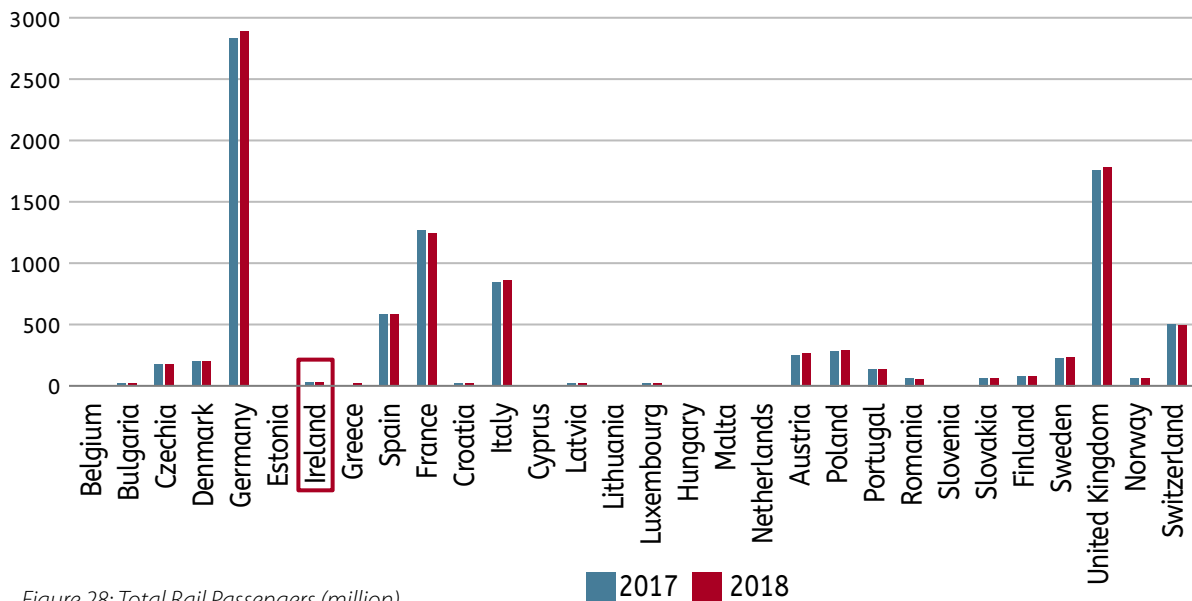


Figure 28: Total Rail Passengers (million)

As seen from the graph Germany (DE), France (FR) and the UK show the heaviest use of their rail network overall, with between 1.25 billion (FR) and 2.8 billion

(Germany) passengers carried in 2018. By contrast, Ireland had 48 million passengers in 2018. (with 50 million passengers reported in 2019).

4.3 Fatalities relative to train-km

Figure 29 shows significant variation across European countries in terms of all fatalities per million train kilometres 2016-2018.

The small size of the Irish network means that this statistic must be viewed with caution as even a small number of accidents would have a strong effect.

Nevertheless, Ireland has consistently been among the Member States that have the lowest fatality rates over the period 2012-2018. It should also be noted that there have been no passenger fatalities in Ireland during this period and the fatalities reported have been as a result of trespass / misadventure by persons.

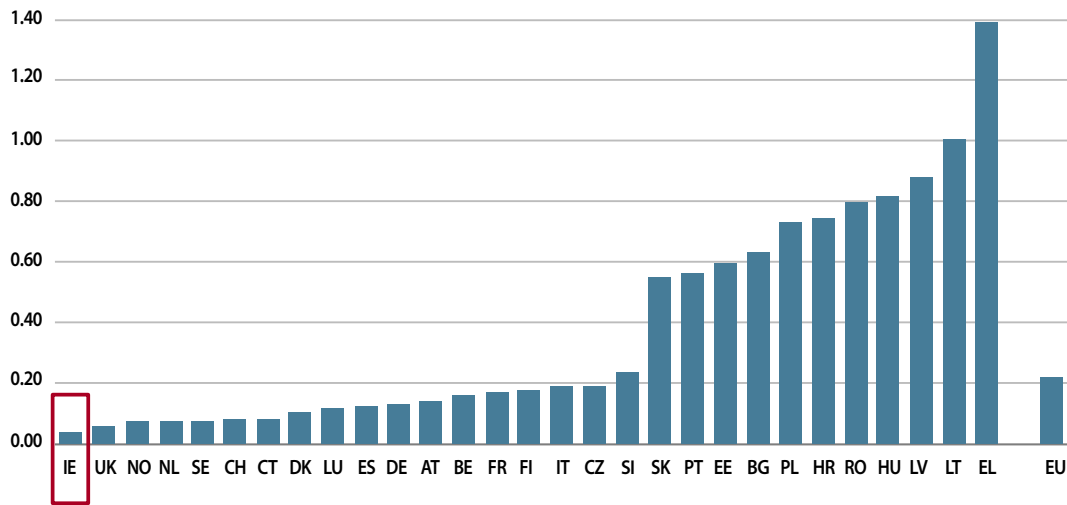


Figure 29: All fatalities per million train-km

4.4 Precursor to accidents

Accidents on railways are rare events and to keep such occurrences as low as possible railway organisations and safety authorities monitor events (precursors) that have no harmful consequences but under slightly different circumstances, could have led to an accident. The following precursors are those reported to the ERA;

- Broken wheels and axles (on trains or wagons)
- Wrong-side signalling failures
- Signal passed at Danger (SPAD)

- Track Buckles (track is out of alignment)
- Broken rails

Nationally the number of precursor events are low (see section 2.2) yet at an EU level there were more than 12,500 precursor events reported for the period 2014-2018. As seen in Figure 30 Ireland reported the 4th highest number of precursor events which given the size of the Irish network and operation would appear somewhat disproportionate. This may raise questions around variations in the consistency of reporting between Member States.

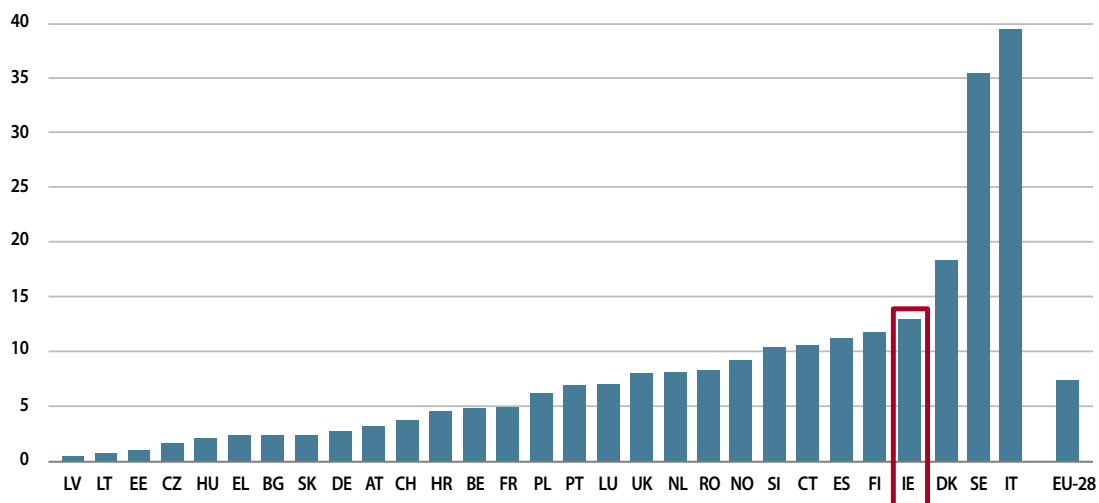


Figure 30: Total precursor events by country, 2014-2018

4.5 Level-crossing accidents relative to train km

Level Crossings are a significant risk to railway safety and the density of level crossing on the Irish network is above the EU average. The data, level crossing accident rates per country (2016-2018) per million train-km, presented in Figure 31 shows that Ireland, in comparison to other European countries, has a positive safety record in terms of level crossing accidents relative to train kilometres.

As was illustrated in Table 2 the number of collisions at level crossings in Ireland remain in the low single digits and normalised to train-km and benchmarked against European railways Ireland’s safety performance is positive, having the 4th lowest number of level crossing accidents relative to train-km.

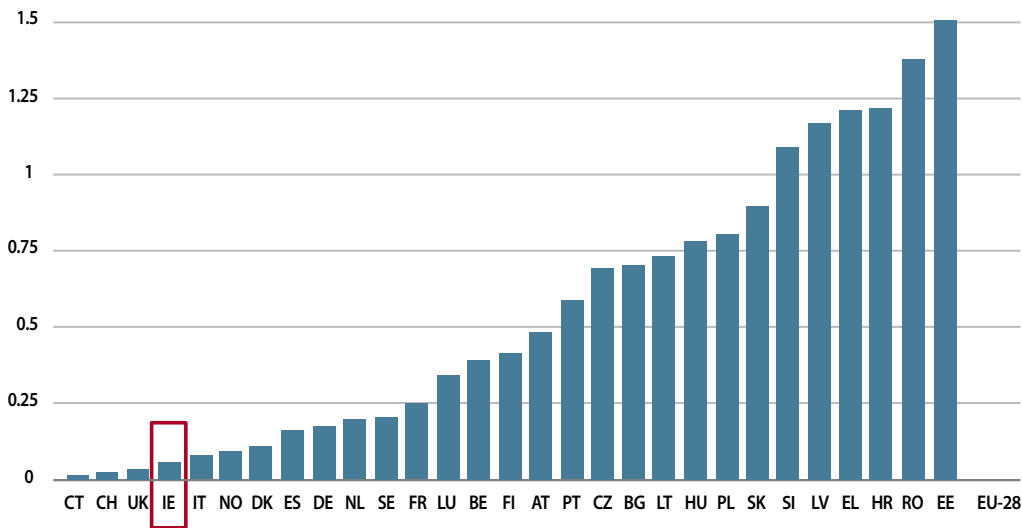


Figure 31: Level crossing accidents relative to train km

4.6 Significant Accidents

A ‘significant accident’ means any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic, excluding accidents in workshops, warehouses and depots. (Directive (EU) 2016/798, Article 3(12).)

Altogether 1721 significant accidents were reported by EU Member States (inc UK, Norway and Switzerland) for 2018 alone, which equates to almost five per day on average. While this might appear high, this is the lowest number recorded since 2010. However, the

decrease has been mainly driven by “external” accidents, in which third party (trespasser and level crossing users) participate. Collisions and derailments account for about 200 accidents each year, with no decrease observed in recent years.

In an Irish context two ‘significant accidents’ (as defined by the Directive) were reported, which is lower than the trend in recent years. These were two fatal accidents to persons that involved entry to the railway without permission. Two other fatalities appear to have been due to acts of self-harm and have been classified as self-harm fatalities.

4.7 Major Accidents Worldwide

A number of major incidents on railways in other countries during 2019 reminds us that despite many indicators showing improvement in overall safety performance, potential still exists for serious accidents with catastrophic outcomes. The CRR is an active participant in a small number of fora with other National Safety Authorities in Europe and similar agencies worldwide regarding such incidents and endeavour to share learning points derived from investigations. What follows is a brief overview of recent accidents in other jurisdictions which the CRR considered noteworthy for the Irish rail industry. They highlight the importance of freight wagon maintenance and inspection processes, measure to deter trespass and vandalism and the importance of railway workers setting up safe systems of work if they are to go on or near the railway line.

Denmark

On the 2nd January 2019 a passenger train collided with a semi-trailer that was fouling the opposite line from a passing freight train. The accident occurred on the Great Belt Bridge which is an 18 km long bridge-tunnel connection between the Danish islands of Zealand and Funen. Eight passengers were killed and 16 were injured.

The investigation found that in some cases, wagons similar to the one involved in the accident failed to lock the semi-trailers in place resulting in them being able to move.

South Africa

The Mountain View train collision occurred on 8th January 2019 when two passenger trains collided at Mountain View station, Pretoria, South Africa. There were over 800 passengers on-board the two trains. Four people were killed and more than 620 were injured. It was believed that the accident was caused by a failure of the signalling system as a result of cable theft and vandalism to the infrastructure.

United Kingdom

On the 3rd of July 2019, two track workers were struck and fatally injured by a passenger train at Margam East Junction in South Wales, UK. The workers, who were part of a group of six staff, were carrying out a maintenance task on a set of points. They had become engrossed in the activity and were likely to have been using power tools making hearing approaching trains more difficult. The investigation found that the work group had failed to set up an adequate safe system of work which ultimately resulting in 2 track workers being fatally injured.

Pakistan

On 31 October 2019, Pakistan Railways' Tezgam passenger train caught fire while traveling from Karachi to Rawalpindi, which resulting in 75 passenger deaths. The fire was caused when a gas cylinder that was being carried onboard (by a passenger) exploded. It is understood at least half of the fatalities were as a result of people jumping from the moving train to try and escape the fire.

5 Accident Investigations

5.1 Introduction

The Railway Accident Investigation Unit (RAIU) is a functionally independent organisation within what is now the Department of Transport, (Previously the Department of Transport Tourism & Sport (DTTAS)). The RAIU undertakes ‘for cause’ investigations into accidents and incidents that either meet specific criteria in terms of severity or could have, in slightly different circumstances, resulted in a more serious accident or incident.

The purpose of an investigation by the RAIU is to identify improvements in railway safety by establishing, in so far as possible, the cause or causes of an accident or incident with a view to making recommendations for the avoidance of similar accidents in the future, or otherwise for the improvement of railway safety. It is not the purpose of an investigation to attribute blame or liability. The RAIU’s investigations are carried out in accordance

with the European Railway Safety Directive 2004/49/EC and recast Directive (EC) 2016/798 and the Railway Safety Act 2005 as amended by S.I. No.258 of 2014 and S.I. No. 430/2020⁴.

5.2 RAIU Active Investigations

The RAIU conducted 43 Preliminary Examination Reports (PER) and initiated two full investigations into railway accidents and incidents in 2019 (Table 4).

5.3 RAIU Investigation Reports 2019

In accordance with the Railway Safety Act 2005, the RAIU endeavours to publish an investigation report not later than 12 months after the date of the incident. In 2019, the RAIU published four investigation reports which are listed in Table 5. As a result of their investigations the RAIU made a total of 34 safety recommendations which are discussed in section 5.4.

Date of Incident	Details	Railway Org.
26th March 2019	A passenger getting a hand entrapped in a Luas Tram door at Heuston Station	Transdev
20th June 2019	Near miss with an Iarnród Éireann SET Worker at Rush and Lusk Station	IÉ-IM

Table 4: RAIU investigations initiated in 2019

Date Report Published	Date of Incident	Title of Report	No. of recommendations made	Railway Org.
25/06/2019	12/08/2018	Wrongside Door Failure at Ashtown Station,	4	IÉ-RU
25/06/2019	17/07/2018	Collision with a buffer stop at Laois Train Care Depot	7	IÉ-RU
03/09/2019	17/08/2018	Vehicle struck by train at Cartron level crossing, XM220, Co. Mayo,	3	IÉ-IM
08/10/2019	N/A	Trend Investigation: Road Rail Vehicle occurrences on Iarnród Éireann Network from 2015 to 2018	20	IÉ-IM

Table 5: RAIU investigation reports published in 2019

⁴ Railway Safety Directive and the Railway Safety Act are supplemented by S.I. No. 430/2020 - European Union (Railway Safety) (Reporting and Investigation of Serious Accidents, Accidents and Incidents) Regulations 2020

5.4 RAIU Safety Recommendations 2019

The RAIU, through their accident investigations, identify whenever possible the immediate cause, contributory factors and any underlying factors. Having established these, the RAIU may make recommendations and as previously stated, 34 were made in 2019. In accordance with the Railway Safety Directive the RAIU address recommendations to the safety authority (the CRR) and where needed by reason of the character of the recommendation, to other bodies or authorities in the Member State or to other Member States. Member States and their safety authorities take the necessary measures to ensure that the safety recommendations issued by the investigating bodies are duly taken into consideration, and where appropriate acted upon.

The CRR categorise the status of recommendations as being either 'Open', 'Submitted', 'FER' or 'Closed'. These are defined as follows;

Open Feedback (Evidence) from Railway Organisation (or another party) is awaited or actions have not yet been completed.

Submitted A Railway Organisation (or other party) has made a submission to the CRR, advising that it has taken measures to effect the recommendation and the CRR is considering whether to close the recommendation.

FER Further Evidence Required. The CRR has reviewed a submission (or further submission) but considers that further evidence is necessary to close the safety recommendation.

Closed The CRR has reviewed a submission (or further submission) and is satisfied that the safety recommendation has been addressed.

A summary is presented overleaf of the actions taken (at the time of writing) in relation to the four RAIU Investigation Reports published in 2019 where safety recommendations were made, and the status of each recommendation.

It should be noted that just because a safety recommendation is identified as being 'open' does not mean that no action has been taken, rather the railway organisation responsible has not yet reported that they have concluded the actions they propose to take to address the individual safety recommendation.

'FER' status safety recommendations have been reviewed by the CRR and further evidence in support of the railway organisations claim that the recommendation had been addressed is awaited.

R2019 – 001 Wrongside Door Failure at Ashtown Station, 12th August 2018
(Report Published 25th June 2019)

Summary:

On the 12th August 2018, the 19:43 hrs passenger service from Pearse to Maynooth was being operated by an eight-car 29000 Diesel Multiple Unit (DMU). At approximately 20:04 hrs while preparing to depart Ashtown Station the driver pressed the passenger doors close button on the driver's console when he saw that all passengers had disembarked and boarded the train. The driver noticed that the blue Door Interlock Light (DIL) on the driver's console (light used for confirmation that the passenger doors are closed and locked) illuminated immediately while the platform side passenger door directly behind the driving cab was still in the process of closing; this is classified as a wrongside failure i.e. the blue DILs should only illuminate when the passenger doors have closed and locked. The wrongside door failures re-occurred on the return journey from Maynooth to Pearse, with the train being taken out of service at Connolly Station.

Number of recommendations made	4
Recommendation 1 (2019001-01)	IÉ-RU CME should review VMI Z1C29A0001 'Examination of 29000 class vehicle after an incident / accident' to develop a more thorough and robust VMI that is commensurate with the safety risk of faults occurring after rolling stock has been involved in an incident or accident.
Action/s taken / in progress	26/09/18 IÉ-IM advised the CRR that "A review of IMO-SMS-031 will be conducted" 16/07/19 CRR advised that a review has been undertaken and that falling out from this review Points Operator Assessments have been revised.
Status	Further evidence requested
Recommendation 2 (2019001-02)	IÉ-RU CME should review VMIs associated with the examination of rolling stock after an incident / accident, for all rolling stock fleets, to develop a more thorough and robust VMI that is commensurate with the safety risk of faults occurring after rolling stock has been involved in an incident or accident.
Action/s taken / in progress	24/2/20 - Iarnród Éireann-RU submitted evidence demonstrating that a review had been undertaken and that a no. of new VMIs have been written. 28/8/20 CRR requested further information concerning an Post Incident check VMIs for Locomotive and Mk IV GC.
Status	Further evidence requested
Recommendation 3 (2019001-03)	IÉ-RU CME should review their scheduled maintenance examinations, for multiple-unit fleets, with a view to developing a means to check the connection is correct on the electrical head.
Action/s taken / in progress	8/10/18 IÉ-RU advised the CRR that "A formal review of the full suite of applicable documentation will be conducted. Relevant staff will then be briefed on the documents and any changes implemented post review."
Status	Further evidence requested
Recommendation 4 (2019001-04)	IÉ-IM should re-brief Traffic Regulators on the importance of adhering to the Traffic Regulators' Manual in relation to the recording of all telephone conversations within the controlled environment.
Action/s taken / in progress	CRR advised on the 19th July by IÉ-IM that IMO-SMS-043-Traffic Regulators Manual, has been superseded by IMO-SMS-052 OP3 CTC Operations Control Room Manual
Status	Closed

R2019 – 002 Collision with a buffer stop at LTCD, 17th July 2018 (Report Published 25th June 2019)**Summary:**

An IÉ ICR train was required to be shunted (moved) with the Laois Traincare depot to allow maintenance repairs to be carried out on the set following a collision with cattle at Tullamore on 28th June 2018. The CME Driver and Limited Shunter checked the “Handover Notes” and the “Set Stopped – Reason” on the “Daily Production Board” in the Duty Manager’s office in LTCD; there were no restrictions found against ICR 16. The Limited Shunter approached ICR 16 and removed the “Not To Be Moved” Board as there was no identification tag fitted. Initially the Limited Shunter made arrangement for ICR 16 to be hauled into the depot but when the air pressure built up sufficiently the Limited Shunter informed the CME Driver who agreed to drive the unit into the depot. The CME Driver checked the Man Machine Interface (MMI) screen and could see the brakes were isolated on both B-cars (intermediate cars); there was no indication of brake isolation on the two remaining A-cars (cars with driving cabs), and the CME Driver assumed it was safe to drive the train. The CME Driver carried out a Static Brake Test and a Brake Functionality Test utilising the cab brake gauges, while the Limited Shunter carried out an external inspection of the train set. The Limited Shunter found a wheel chock stuck under a wheel and asked the CME Driver to move ICR 16 to allow the chock to be removed. The CME Driver moved ICR 16 and applied the brake, bringing ICR 16 to a stop. The Limited Shunter entered the cab and advised the CME Driver that he would have to pull Points Number 6 (Points 6) in the yard, enroute to Road 15. The CME Driver applied power to ICR 16 and on approach to Points 6 he applied the brake and could feel no retardation i.e. ICR 16 did not slow down. Both the CME Driver and the Limited Shunter made a number of attempts to slow down ICR 16 without success and ICR 16 struck the buffer stop on Road 14 at approximately 14 kilometres per hour (km/h).

Number of recommendations made	7
Recommendation 1 (2019002-01)	IÉ-RU CME should review their SSOW & OI and associated documents related to the identification, communication and prevention of movement of defective vehicles to ensure relevant staff are made aware of identified defects and that the defective vehicles are adequately labelled and tagged; and these processes and staff responsibilities are fully understood by all CME staff working on trains.
Action/s taken / in progress	21/11/19 IE-RU advise: There is currently an application being made (under RU-SMS-014 Change to Plant Equipment Infrastructure or Operations) to introduce a Not to Go Tag process as an additional control measure to prevent the movement of defective vehicles.
Status	Further evidence requested
Recommendation 2 (2019002-02)	IÉ-RU CME should review the suite of LTCD documents that relate to the management of moving trains within LTCD to ensure they are consistent and adequately reference any existing supporting documentation (e.g. ICR Hauling Assisting Instructions).
Action/s taken / in progress	“21/11/19 IE-RU advise: Train movements Instructions template developed for train movements in all relevant CME locations. Train Movements Instructions for PLTCD being updated. Feb 2020. - New formalised new Train Movements Instructions, CME-FSS-SSW-378. However no evidence provided to demonstrate that the suite of LTCD documents have been reviewed and aligned.
Status	Further evidence requested
Recommendation 3 (2019002-03)	IÉ-RU CME should review its training and competency of CME Drivers and Limited Shunters ensuring the stabling and movement of vehicles (defective or otherwise) are adequately addressed.
Action/s taken in progress	“21/11/19 IE-RU advise: Revision and re-issue of Professional Handbook for CME Persons Authorised to Move and Shunt Traction Units and Competence Standards for CME Persons Authorised to Move and Shunt Traction Units. Both publications reference stabling instructions for traction units. Competence standards form the basis for on-going assessment for CME Drivers and Shunters. Iarnród Éireann-RU Provided evidence of new handbook, competency standard and CME TV Image displaying key safety message.
Status	Further evidence requested

Recommendation 4 (2019002-04)	IÉ-RU CME should expand the requirements of preparation instructions for rail vehicles to ensure that on completion of these tests the brake status of a train can be fully established; this should include checking the status of circuit breakers and brake isolations.
Action/s taken / in progress	21/02/20 - Iarnród Éireann-RU Provided evidence of new instruction, handbook and competency standard.
Status	Closed
Recommendation 5 (2019002-05)	IÉ-RU CME should re-brief staff on the correct procedure for disembarking from a moving train.
Action/s taken / in progress	"21/11/19 IE-RU advise: The briefing of staff has commenced in Laois Train Care Depot. Additionally, the issue will be captured within the Competence Management System for CME Shunters and Drivers. 12/06/20 Iarnród Éireann-RU Provided evidence of new handbook, competency standard and CME TV Image displaying key safety message. Evidence of Briefing requested
Status	Further evidence requested
Recommendation 6 (2019002-06)	IÉ-RU CME should develop a formal procedure for the examination of vehicles prior to moving a train which has been left unattended with no direct handover.
Action/s taken in progress	"21/11/19 IE-RU advise: Revision and re-issue of Professional Handbook for CME Persons Authorised to Move and Shunt Traction Units. 21/02/20 - Iarnród Éireann-RU Provided evidence of new instruction, handbook and competency standard.
Status	Closed
Recommendation 7 (2019002-07)	IÉ-RU CME should determine who has overall responsibilities for the movement of trains within the confines of LTCD, including who is allocated the role of Designated Person Responsible for Protection, and, clearly brief these responsibilities in the CME Training Course and the SSOW & OI.
Action/s taken in progress	"21/11/19 IE-RU advise: The Train Movements Instructions for PLTCD is currently undergoing review before publication. Further evidence of briefing. Moved to FER
Status	Further evidence requested

R2019 – 003 Vehicle struck by train at Cartron level crossing, XM220, Co. Mayo, 17th August 2018
(Report Published 3rd September 2019)

Summary:

At 08:47:03 hrs a Mayo County Council truck (Truck) approached and drove onto Cartron Level Crossing, IÉ-IM asset number XM220 (LC XM220) and drove onto the Level Crossing. At the same time, the 08:15hrs Ballina to North Wall Dublin goods train, Train K801, was approaching and travelled through the level crossing, striking the truck. On impact the truck was thrown clear of the train and into the adjacent ditch before coming to a stop, the truck driver was dazed and subsequently left the scene with two colleagues before emergency services arrived and was later treated at Mayo General Hospital. The driver of train was also conveyed to Mayo General Hospital from the scene by ambulance, he was treated for shock. The immediate cause of the accident was that the Truck Driver did not stop at LC XM220 to look for approaching trains, as required; but instead drove onto LC XM220, into the path of the oncoming train.

Number of recommendations made	3
Recommendation 1 (2019003-01)	IÉ-IM should consider options to upgrade LC XM220 to minimise the requirement of direct action by the users.
Action/s taken / in progress	“9/10/19 - IÉ-IM advised the CRR: IÉ-IM will consider upgrading this crossing using the Decision Support System at User Worked Level Crossings (DSS). These are installed on a risk prioritised basis. 23/01/2020 - Iarnród Éireann-IM advised the CRR: That it had reviewed XM220 and based upon its risk priority it was considered not prudent to include this level crossing in the current programme of upgrades using the DSS. It is noted that Mayo CoCo are making some enhancements to the line markings to improve conspicuity. (See Email from DTTaS dated 24/01/2020 saved in file 2019003-03)”
Status	Closed
Recommendation 2 (2019003-02)	IÉ-IM should carry out a full review of known misused user worked level crossings on public and private roads and should develop a programme to either close or upgrade the level crossings to minimise misuse; where possible, level crossings with the highest risks should be addressed first.
Action/s taken /	“9/10/19 - IÉ-IM advised the CRR: Note provided outlining action already taken. Advised that this will be submitted in an evidence form. 5/12/19 - Iarnród Éireann-IM provide declaration only of work done. No evidence provided to demonstrate that action has been taken. CRR request further evidence on 13/12/19.”
Status	Further evidence requested
Recommendation 3	DTTAS should review, in consultation with the relevant stakeholders, their current advance warning signage (W 121) with a view changing the signage to make it clear to road users that they are approaching a user operated level crossing. They should also consider the introduction of other traffic calming measures in efforts to encourage safe road user behaviour. Care should be taken not to inadvertently introduce new risks as a result of their proposed measures.
Action/s taken in progress	No Action advised
Status	Open / In Progress

R2019 – 004 Road Rail Vehicle occurrences on Iarnród Éireann Network from 2015 to 2018
(Report Published 8th October 2019)

Summary:

In March, April and June 2018 the RAIU received reports, from IÉ-IM, of three collisions between two Road Rail Vehicles (RRVs) operation in convoy; prior to 2018, the RAIU had never received a notification of an RRV incident or accident. After a preliminary examination of the three accidents, the RAIU made the decision to review all reported RRV incidents/ accidents from 2015 to 2018 to establish if there was an apparent trend in the causation of these incidents/accidents. In total sixteen occurrences involving RRVs were included in the trend investigation.

Number of recommendations made	20
Recommendation (2019004-01)	The DTTAS should review the Railway Safety Act 2005 and current amendments to make clear the classification of RRVs; consultation should be sought with the Commission for Railway Regulation (CRR); and, relevant stakeholders where appropriate
Action/s taken / in progress	Meeting held with DTTaS on 13th November 2019 to discuss the outcome and the likely impact any change to current practices would have on the CRR.
Status	Open / In Progress
Recommendation (2019004-02)	The CRR & IÉ-IM should review the requirements prescribed in the Railway Safety Act (and current amendments) to ensure they are satisfied that all the requirements of the Railway Safety Act (and current amendments) are met in terms of RRVs being classified as rolling stock.
Action/s taken / in progress	"20/11/19 - IÉ-IM provided the CRR: With e-mail documents by way of a response to recommendations 2019004-01 and 2019004-02 1. IÉ Response to RAIU Draft Report-RRV not rolling stock 2. Response to RAIU Second Draft Report-Version 03 Both of these documents detail that IÉ-IM strongly reject the assertion that RRVs are rolling stock under the 2005 Railway Safety Act. 1/9/20 - CRR to progress and review related engagement with DTTaS"
Status	Open / In Progress
Recommendation (2019004-03)	"IÉ-IM should review and improve its current CCE Plant and Machinery Standards; attention should be given to best international practice in RRVs; and, as a minimum, the following should be considered for inclusion: - Applying the requirements set out in the EN 15746/ I.S. EN 15746 standards - The installing of an appropriate emergency warning system, - Installing WSP and/or sanders on RRVs; - Installing of ACDs on RRVs for the prevention of collisions with other RRVs - Introducing an appropriate means of communication between work positions - Installing of data recorders on RRVs - The suitability of the current braking system on Type 9B RRVs"
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: Regarding each specific requirement of this recommendation: IÉ-IM will review EN 15746/I.S. EN 15746 standards and apply its requirements as appropriate The installing of an appropriate emergency warning System o IÉ-IM is proposing training the RRVO to use a specific emergency warning using the already fitted audible warning device. (Like train in distress) Installing WSP and/or sanders on RRVs- o IÉ-IM will research Installing of ACDs on RRVs for the prevention of collisions with other RRVs o IÉ-IM will research

Action/s taken in progress <i>Continued</i>	Introducing an appropriate means of communication between work positions <ul style="list-style-type: none"> o IÉ-IM will research Installing of data recorders on RRVs- <ul style="list-style-type: none"> o IÉ-IM will research The suitability of the current braking system on "Type 9B RRVs" <ul style="list-style-type: none"> o IÉ-IM will research"
Status	Open / In Progress
Recommendation (2019004-04)	IÉ-IM are to engage with the RRV contractors in relation to updated CCE Plant and Machinery Standards; and, give clear guidelines on when these new requirements come into full effect.
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: CCE has established an RRV contractor consultation forum. The first meeting was held in July 2019. It is proposed that this forum will convene twice per year Contractors are also included in the CCE Continuous Improvement Day. This is an annual event (held in 2019 on October 02nd.). When IÉ-IM are updating plant and Machinery standards, IÉ-IM will use these forums to consult with the RRV contractors and brief them on any updated requirements."
Status	Open / In Progress
Recommendation (2019004-05)	In relation to existing RRVs, IÉ-IM should assess the operation of existing RRVs to satisfy itself, on the basis of a risk assessment, that there are adequate technical and operational controls to prevent loss of control of RRV occurrences in the future.
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: Assessment to be carried out-this will involve the following steps: 1. Develop tender specification (2 months) 2. Advertise (1 month) 3. Assess tenders (1 month) 4. Award Contract (1 month) 5. Mobilisation (Introduction) (1 month) 6. Research (2 months) 7. Report writing (1 month) 8. Report approval (2 months) 9. Report finalisation (1 month) 10. Report publication (1 month)) 11. Plan for implementation of recs (1 months)"
Status	Open / In Progress
Recommendation (2019004-06)	IÉ-IM should include, in their post-occurrence procedures, a requirement to verify the performance of RRVs (including braking performance) involved in accident, incidents or dangerous occurrences (near misses) to ensure the requirements of the CCE Plant and Machinery Standards are met in full; this should involve the completion of a full post-occurrence examination of the RRV by the contractor. A requirement that RRVs involved in accidents, incidents or dangerous occurrences (near misses) are not permitted back onto the IÉ network until the post-occurrence procedures have been completed and the RRV is confirmed fit and safe for use.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5 03/02/2020 - Iarnród Éireann-IM advise the CRR: An post occurrence procedure will be developed (and provided an updated PCD)"
Status	Open / In Progress
Recommendation (2019004-07)	IÉ-IM should update their Plant and Machinery Standards to include requirements for RRV contractors to provide RRV information: at the acceptance stage; and, at later dates where modifications are made to RRVs. Where this information is not provided, and the requirements of the updated Plant and Machinery are not met, the RRVs involved should not be allowed to operate on the IÉ network.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress

Recommendation (2019004-08)	IÉ-IM must develop a suitable RRVO training course which must incorporate both theory and practical elements for the operation of RRVs; there should be an assessment on completion of this initial training. When a person passes this initial training, they must complete and log supervised hours of RRV operation; and present for a final through assessment. This process should be risk assessed to determine the: number of days training; practical training requirements; number of supervised hours; and, final assessment requirements.
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: IÉ-IM will review its current RRVO course, with a view to including a practical element. It is envisaged that this revised course will be delivered by a pool of approved external providers. The following steps will therefore apply: 1. Review current course and develop practical module for inclusion (12 months) 2. Identify and approve appropriate training providers and suitable facilities (6 months) 3. Educate the training providers on operation of RRVs in a railway environment (4 months) 4. Begin implementation of revised training. With regard to logging of hours, assessment, etc please see response to 2019004-9"
Status	Open / In Progress
Recommendation (2019004-09)	IÉ-IM should develop a competency management system for the management of RRVOs competencies; this system should also include instructions related to re-training and monitoring of RRVOs after they have been involved in an accident.
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: IÉ-IM will develop a competency management system for the management of RRVO competencies. It is envisaged that this will be part of the process described in 2019004-5"
Status	Open / In Progress
Recommendation (2019004-10)	IÉ-IM should conduct a thorough review of their suite of SMS documentation and plant and machinery standards, related to RRVO contractors, to identify deficiencies in terms of the management of contractors and their plant. Where deficiencies are identified, IÉ-IM should develop new systems for the management of plant on site, and, for their safety tour and compliance verification processes to ensure contractors regularly inspect and maintain their plant in good condition; rather than the continued issuance of corrective action notices.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress
Recommendation (2019004-11)	IÉ-IM should review the ways in which it promotes a positive safety culture that encourages contractors to report accidents, incidents and dangerous occurrences (near misses); this can be achieved through RRVO workshops and the absence of disciplinary procedures on the reporting of occurrences.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: Operating Procedure for contractor interface to be developed and briefed to contractors."
Status	Open / In Progress

Recommendation (2019004-12)	IÉ-IM should ensure appropriate procedures are in place for D&A screening for IÉ-IM and contractor staff post RRV occurrence.
Action/s taken /	"20/11/19 - IÉ-IM advised the CRR: IÉ-IM are satisfied that the appropriate procedures are in place. 4/6/20 - CRR respond to Iarnród Éireann-IM requesting further evidence."
Status	Further evidence requested
Recommendation (2019004-13)	"IÉ-IM should update their CCE Plant and Machinery Standards to ensure that RRV contractors are either provided with, or required to identify, the hazards associated with track gradient, rail contamination (or other low adhesion conditions) and RRV orientation and position on track through: <ul style="list-style-type: none"> • Assessing documentation on the site-specific hazards associated with RRV and ensuring these are addressed in contractor's safety documentation; • Setting requirements in relation to the spacing between RRVs when travelling in convoy (e.g. 100 m) and putting in place a regime to ensure these requirements are met; • Training RRVCs/RRVOs on the risks associated with track gradient, rail contamination and RRV orientation and guidance on how to manage these risks in a braking emergency."
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress
Recommendation (2019003-14)	IÉ-IM should conduct an audit on RRV contractor's safety documents with a view to identifying deficiencies in terms of safety and ensuring the appropriate safety documentation is produced for the works; IÉ-IM should support and offer guidance to the RRV contractors in terms of the identification of hazards and methods of working on a railway network.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress
Recommendation (2019003-15)	IÉ-IM should make changes to the IÉ Rule Book to ensure that all relevant requirements set out in their Plant & Machinery Standards related to RRVs are incorporated into the IÉ Rule Book.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: The Rule Book sets out the principles and protection measures for operation of RRVs on or near the line. The specific requirement for RRVs to travel at a maximum speed of 2km/h over check rail will be reviewed and considered for inclusion in the rule book."
Status	Open / In Progress
Recommendation (2019003-16)	IÉ-IM should update their CCE Plant and Machinery Standards to include the requirements set out in Section Q 2018 of the IÉ Rule Book related to the collection of pre-operation checklists by the RRVCs from the RRVOs; and ensure these requirements are enforced through compliance verification activities.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress

Recommendation (2019003-17)	"IÉ-IM should clearly define, document and explain the role and function of the RRVC in the management of RRVs in Section Q of the IÉ Rule Book and/or relevant CCE Plant and Machinery Standards. This should include: <ul style="list-style-type: none"> • Location of RRVC when on-tracking, during work, and off-tracking; • The sighting requirements of RRVCs (i.e. an RRVC should be able to see RRVs in their control at all times); • The allocation of RRVCs per quantity RRVs (i.e. how many RRVs per RRVs)."
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress
Recommendation (2019003-18)	"IÉ-IM should review and update the training requirements of RRVCs with a view to incorporating: <ul style="list-style-type: none"> • Basic infrastructure training (e.g. points); • Training in communications with relevant staff; • Practical RRV training to ensure they have confidence in accepting pre-operations checklists from RRVOs as set out in the IÉ Rule Book"
Action/s taken / in progress	"20/11/19 - IÉ-IM advised the CRR: See response to 2019004-5"
Status	Open / In Progress
Recommendation (2019003-19)	IÉ-IM should brief Signalmen on RRVs operations during possessions (i.e. accessing and egressing worksites and well as travelling to worksites training in terms of RRVs operating in possessions) to ensure points are set correctly for the RRV movements. Training material for Signalmen on the roles of RRVs should be updated to reflect this.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: During the comment phase with the RAIU on this report, IÉ-IM brought to the attention of the RAIU that there was no interaction between the signalman and RRVs 03/09/20 - CRR advise IÉ-IM that further evidence is required in support of IE-IM's point of view (see above)."
Status	Further evidence requested
Recommendation (2019003-20)	The CRR and IÉ-IM should review their processes of closing out findings from CRR audits; with a view to identifying opportunities to close out findings, such as updates to the IÉ Rule Book.
Action/s taken in progress	"20/11/19 - IÉ-IM advised the CRR: IÉ-IM are satisfied the process for closing out findings from CRR audits is fit for purpose. 02/09/20 - CRR are satisfied the process for closing outcomes from supervision activities is robust and fit for purpose."
Status	Closed

5.5 RAIU Recommendations Summary

For further details on the status of RAIU Safety Recommendations please consult the CRR's Annual Report to the Minister for Transport, Tourism & Sport which is available on our website, www.crr.ie.

It should also be noted that many safety recommendations made by the RAIU are not 'quick fixes' and may require strategic planning, engineering design, public consultation, planning permission and/ or government funding and all of which can take many years to actually 'close' a safety recommendation.



6 | References

6.1 Documents Used

CRR (2019) Annual Report 2018. Dublin: CRR

ERA (2020), Report on Railway Safety and Interoperability in the EU 2020

RAIU (2019). Annual Report 2019. Dublin: RAIU



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