Rail Safety Report 2022–2023



Safe Railways for Australia

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The Regulator's Message



While there are several traits common to the best leaders, coaches, and mentors – be they in sport, business, or life in general - one that really resonates with me is the ability to simply explain the context and purpose of a goal or change – the why – which helps

to galvanise action. Critical for success, is not simply telling someone to do something but in explaining why that something needs to be done and the benefits that will be gained as a result. This is a more effective way of achieving what we set out to do and in securing a more sustainable outcome.

Here at ONRSR we spend a lot of time working with rail transport operators to help them meet their obligations under *Rail Safety National Law* and to understand the reasons why they need to do so. And we use many and varied resources to do that, one of which is the ONRSR Rail Safety Report.

We want to provide the data and insights that help operators to see where they might focus their efforts to deliver safety benefits. It's the why – right here in black, white and colour, for all to see.

Not simply because this report details what has gone right and wrong over the last 12 months, but more importantly because as we access ever more reliable and robust data, we continue to sharpen our focus on the root causes of incidents. This in turn can help safety professionals and the systems they design, to identify what can go wrong and stop it from happening in the first place.

This year's report is the first produced since the advent of the new National Rail Safety Data Strategy – developed as a partnership between ONRSR, the Australasian Railway Association and a range of rail industry representatives – and the introduction of a new data set. Like any new initiative that breaks the mould, its introduction on 1 July 2022, has presented some challenges but, we are well on our way to providing the Australian rail industry with relevant, consistent and quality national data that is readily available to inform rail safety decisions. We recognise that such data is vital to support decisions to improve safety.

For now, I am pleased to note that this year's report tells us that on a national level, rail remains a generally safe and reliable part of the Australian transport sector. Despite this, there is still work to be done around high-profile matters such as level crossing safety and the protection of rail safety workers, as well as in relation to adoption of technology and innovative practices and their effective integration with existing systems.

Whatever your operation, I hope you find this information an important addition to the evidence base on which decisions are made to improve safety and I encourage you to share, discuss and debate it with your colleagues as we strive every day to deliver safe railways for Australia.

18 Elham

Dr. Natalie Pelham Chief Executive / National Rail Safety Regulator

Introduction

Our Vision Safe Railways for Australia

Our Values Integrity Independence Respect Diligence

Objectives

Under Rail Safety National Law (RSNL)1, ONRSR's objectives are to:

- · facilitate the safe operation of rail transport in Australia;
- exhibit independence, rigour and excellence in carrying out its regulatory functions; and
- promote safety and safety improvement as a fundamental objective in the delivery of rail transport in Australia.

Functions

As defined in ONRSR's Statement of Intent², ONRSR's key functions are to:

- improve rail safety for the Australian community;
- deliver efficient safety regulation for the rail industry.
- provide seamless national safety regulation; and
- enforce regulatory compliance.

Role

ONRSR performs its functions under a coregulatory framework in which responsibility for regulation and safety is shared between industry, governments and ONRSR. The principle of shared responsibility is underpinned by specific duties defined under the RSNL. In particular, section 52 states a rail transport operator must ensure, so far as is reasonably practicable (SFAIRP), the safety of its railway operations. This duty is consistent with the principles of safety risk management generally where those responsible for safety risks must ensure all reasonably practicable measures are in place to protect people from the harm that may arise.

Regulatory Approach

ONRSR is a risk-based regulator overseeing the application of a systematic decision-making framework, which prioritises regulatory activities and informs decision outcomes, based on an assessment of risks to rail safety. It involves:

- developing an understanding of the risks to the safety of railway operations in Australia;
- determining which of these risks ONRSR is able to influence through its regulatory activities; and
- designing and prioritising regulatory activities and outcomes in a way that best maintains and improves rail safety

Applying a risk-based approach to regulation has parallels to the RSNL's requirement for rail transpot operators to apply a risk-based approach to safety management. It also enables ONRSR to focus resources on the basis of risk and to improve the effectiveness of regulatory interactions.

key principles by which ONRSR regulates. This is supported by policies, procedures and guidelines to assist accredited parties to fulfil their obligations.

¹ RSNL refers to the Rail Safety National Law (South Australia) Act 2012 and Rail Safety National Law (WA) Act 20

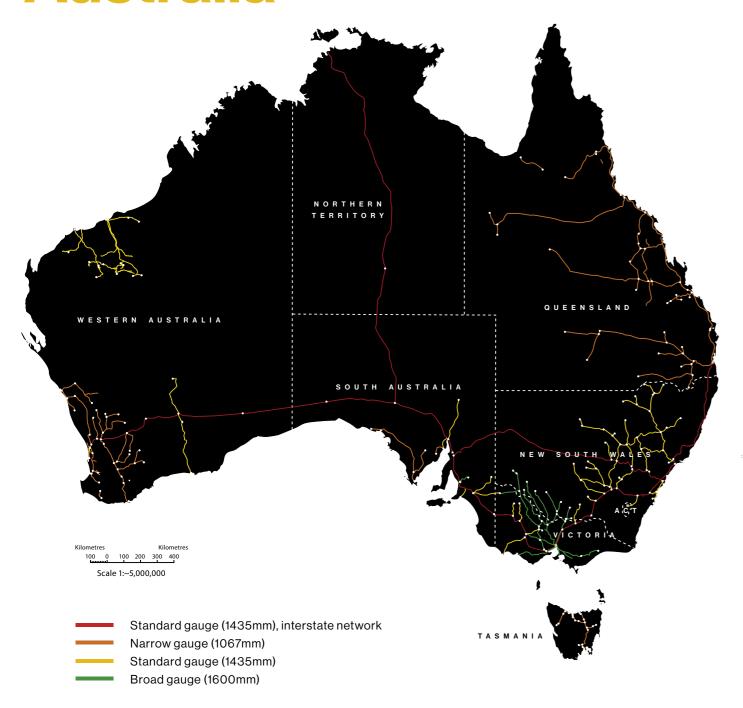
² Office of the National Rail Safety Regulator, Statement of Intent 2021 to 2024, ONRSR, Adelaide, 20

Office of the National Bail Safety Regulator, Statement of Interit 2021 to 2024, ONNON, Adelaide

Rail Networks Operating Across Australia

National Rail Safety Data Strategy / About This Report

Rail Networks Operating Across Australia



National Rail Safety Data Strategy

Between 2018 and 2022 dedicated representatives of ONRSR, the Australasian Railway Association, the Rail Industry Safety and Standards Board, the Australian Transport Safety Bureau and rail transport operators developed an Australian National Rail Safety Data Strategy (NRSDS).

The intent was to deliver a single, relevant, consistent, and quality data set that would be readily available to the industry and other rail safety stakeholders to inform decision making.

The new data set was officially launched on July 1, 2022, and as such is the source for the data provided in the 2022–2023 ONRSR Rail Safety Report.

While the statistics presented in the report focus primarily on the events of the 2022–2023 financial year, the report continues with several charts that have been published in previous years which show the last five years' performance in terms of incident counts and rates, and these should be considered in the context of the new data set. Incident rates provide a more accurate picture of national safety performance than counts alone, by accounting for variations in the scale of railway operations over time.

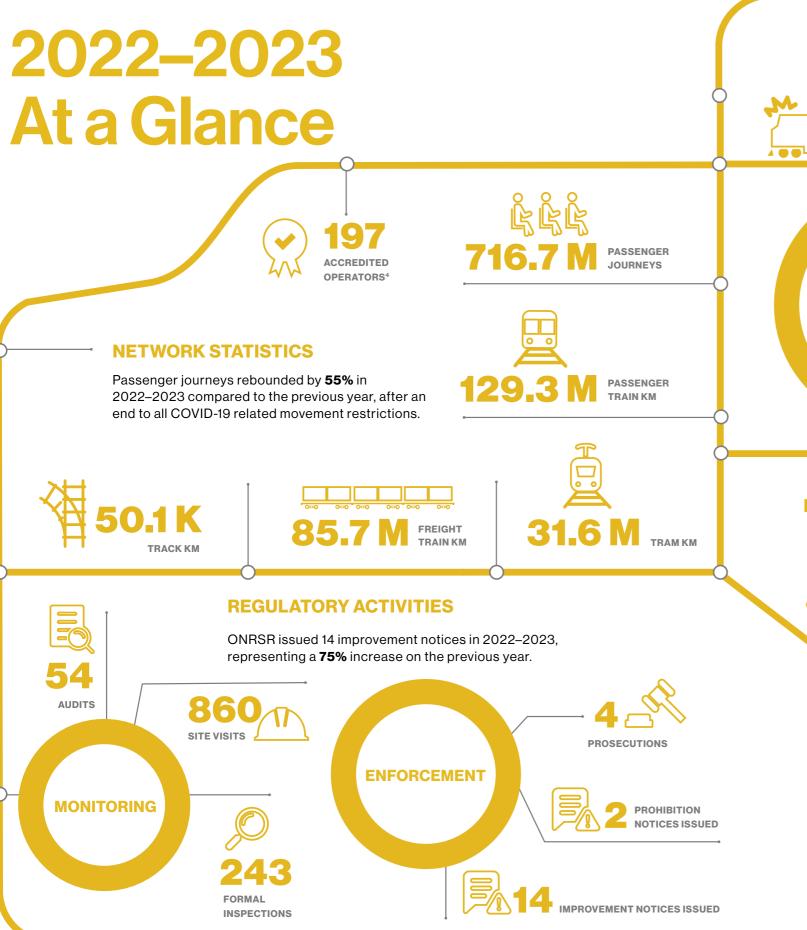
About This Report

ONRSR's Rail Safety Report provides a summary of rail safety performance in the 2022–2023 financial year. This performance is described in terms of safety statistics based on rail safety occurrences notified to ONRSR, and intelligence gathered through regulatory activities.

This report is designed to consider rail safety from a national perspective rather than to single out individual operators or specific incidents. It is an ongoing function of ONRSR to work with individual rail transport operators on issues that pertain specifically to them. ONRSR does, however, highlight specific examples of incidents where they demonstrate issues considered relevant to the wider industry with the aim of improving rail safety.

Sourced from the Australasian Railway Association

2022–2023 – At a Glance 2022–2023 – At a Glance



HARM TO Rail-related fatalities increased by 12% in 2022–2023, driven by a rise in **PEOPLE** trespasser fatalities. Rail-related serious injuries dropped by 8% in 2022–2023. PASSENGER TRESPASSER WORKER PUBLIC **788 KEY OCCURRENCES (TRAINS) NOTIFIABLE OCCURRENCES** 5,815 PASSENGER TRAIN DERAILMENTS (RUNNING LINE) 0.06 PER MILLION PASSENGER CAT B **TOTAL OCCURRENCES** FREIGHT TRAIN DERAILMENTS 0.49 PER MILLION FREIGHT TRAIN KM **KEY OCCURRENCES (TRAMS) COLLISIONS BETWEEN TRAIN OR WITH ROLLING STOCK** (RUNNING LINE). 0.02 PER MILLION TRAIN KM TRAM DERAILMENTS (RUNNING LINE) 0.48 PER MILLION TRAM KM PAEs (PASSENGER TRAIN -DRIVER HUMAN FACTORS) **COLLISIONS BETWEEN TRAMS** 1.57 PER MILLION PASSENGER (RUNNING LINE) TRAIN KM 0.22 PER MILLION TRAM KM PAEs (FREIGHT TRAIN -PAEs (DRIVER HUMAN FACTORS) 1.31 PER MILLION FREIGHT 2.31 PER MILLION TRAM KM TRAIN KM RUNAWAYS **RUNAWAYS**

0.15

TRAIN KM

0.03 PER MILLION TRAM KM

⁴ Number of accredited operators is correct as of 18 September 2023. Refer to the National Rail Safety Register at <u>www.onrsr.com.au</u> for a full and up to date list of accredited operators.

⁵ Note that due to the NRSDS, the definition of a serious injury to members of the public, passengers and trespassers has changed.





A large part of ONRSR's regulatory intelligence is gained from the thousands of rail safety occurrences reported each year. Some of these events lead to an immediate response by ONRSR while others are categorised and analysed over time to build a picture of safety performance in the rail industry. This performance provides insight into which safety areas require focus by ONRSR and which sectors and individual operators should be the subject of this focus.

Notifiable occurrences are an important input to ONRSR's risk-based regulatory approach. The type of events, their frequency and their actual or potential consequences, assist ONRSR in understanding the rail safety risks that exist in the industry. Some events result in more significant consequences or have the potential for greater risk and these events are the focus for presentation of occurrence statistics in this report.

ONRSR has once again conducted benchmarking against international performance and highlighted selected events it has judged as the more serious of the year.



Railway-Related Fatalities

There were 83 fatalities reported in the 2022–2023 financial year on railways across Australia. These consisted of:

- · a passenger struck by a train after falling from a station platform;
- · a passenger in a wheelchair falling onto the track from a station platform;
- two passengers suffering injuries from falls inside trams (later passing away);
- a pedestrian struck by a tram;
- · a person on a motorised mobility scooter struck by a tram;
- a person on a motorised mobility scooter struck by a train at a pedestrian crossing;
- a pedestrian struck by a train at a pedestrian crossing;
- · a cyclist struck by a train at a level crossing;
- · a motorcyclist involved in a collision with a train at a level crossing;
- an occupant of a heavy road vehicle involved in a collision with a train at a level crossing;
- · a train driver struck by an object after stepping out onto the locomotive gangway;
- a worker crushed while operating a road rail vehicle;
- · a worker struck by locomotives being moved in a yard;
- a trespasser passed away after an incident involving overhead line equipment;
- six fatalities involving railway trespassers struck by trains, not at level crossings; and
- 62 fatalities involving suspected suicide.

Figure 1:

Railway-related fatalities, July 2018 to June 2023

Non-passenger fatalities at level crossings are classified as Public if neither trespass nor suicide is suspected. Suspected suicides at level crossings are coded as Trespasser.

PASSENGER

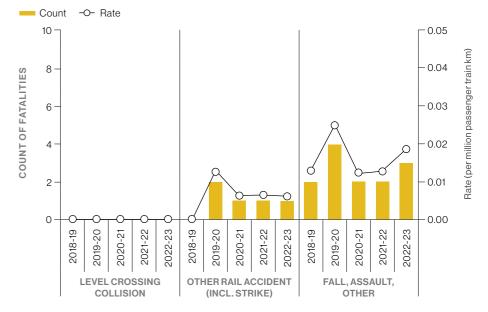
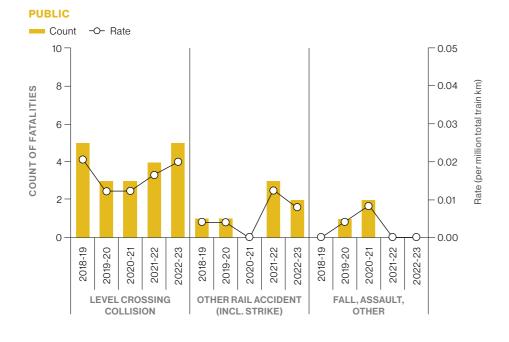
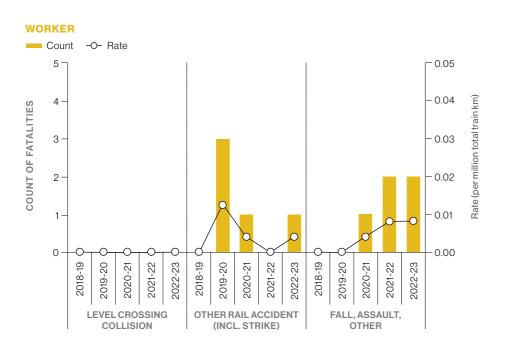
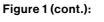
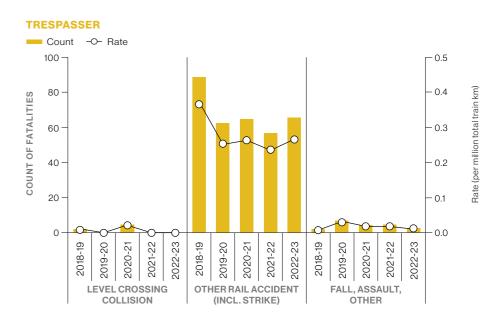


Figure 1 (cont.):









A comparison of the rate of fatalities between Australian railways and selected overseas railways is summarised in Table 1. The Australian data in this table is a subset of the fatalities summarised in Figure 1 to align with the overseas data definitions. For example, local data excludes suspected suicides, as these are also excluded from overseas data.

The fatality rates for Australia and Great Britain remain relatively stable in 2022–2023 and over the five-year period. While the fatality rate in Australia is marginally higher than Great Britain, it is well below the United States which saw a spike in 2021–2022 and remained at this level in this reporting period.

Table 1:

Railway fatalities - Australia, Great Britain and United States

Fatalities involving passengers, workers, public and trespass (excluding suspected suicide). The annual reporting period for Great Britain is from April to March. Statistics for Great Britain are for mainline operations only and exclude the London Underground network, trams, metros and non-mainline networks. Statistics for the United States exclude fatalities on isolated networks, such as metropolitan transit systems that are not connected to the wider network.

		2018–19	2019–20	2020–21	2021–22	2022–23	5-YEAR
Australia	Fatalities	20	17	22	21	21	101
	Train Km (million)	242.3	248.3	246.6	241.7	249.2	1228.1
	Rate	0.083	0.068	0.089	0.087	0.084	0.082
Great Britain ¹	Fatalities ¹	44	31	21	23	22	141
	Train Km (million) ²	573.4	591.7	454.3	507.5	492.8	2619.7
	Rate	0.077	0.052	0.046	0.045	0.045	0.054
United States	Fatalities ³	882	868	791	975	965	4481
	Train Km (million) ³	1,130.3	996.7	913.1	815.3	830.6	4686.0
	Rate	0.780	0.871	0.866	1.196	1.162	0.956

Sources:

Table 2:
Railway-related fatalities, excluding trespass or suspected suicide, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
20/07/2022	A road rail vehicle excavator overturned with the operator sustaining fatal injuries.	Evandale, Tas.
21/07/2022	A passenger train collided with a person and their motorised mobility scooter at a pedestrian crossing with active protection.	Dallas, Vic.
25/08/2022	A crew member who stepped out of the driver's cabin while a freight train was moving was found on the locomotive gangway, having sustained fatal injuries.	Near Cullerin, NSW
10/09/2022	A tram turned and collided with a pedestrian.	South Melbourne, Vic.
13/09/2022	A passenger train and pedestrian collided at a pedestrian crossing.	Clarence Park, SA
9/10/2022	A motorcyclist was involved in a collision with a train at a level crossing protected by a stop sign. A member of the public reported the collision, the train crew was unaware of the collision, however, noticed the locomotive lose air and stopped the train. Train control received notification of the incident and informed the train crew.	Germain Bay, SA
7/02/2023	A tram collided with a person on a motorised mobility device.	Essendon, Vic.
7/02/2023	A rail safety worker walking across the track was struck by rolling stock during a shunting movement.	Boodarie Yard, WA
16/02/2023	A passenger on board a tram fell and was taken to hospital where they later passed away.	Melbourne, Vic.
3/04/2023	A heavy road vehicle proceeded onto an active level crossing bypassing the boom barriers and stop lines located on either side of the crossing and was struck by an out of service passenger train. The driver of the heavy road vehicle was fatally injured.	South Geelong, Vic.
18/04/2023	A passenger train collided with a cyclist at a level crossing with active protection.	Ascot Park, SA
11/05/2023	A passenger using a handheld mobility device fell inside a tram. They were taken to hospital and later passed away.	Melbourne, Vic.
21/05/2023	A person fell off a station platform and was struck by a passing freight train.	Cardiff Station, NSW
21/06/2023	A person in a wheelchair fell from a station platform onto the track and sustained fatal injuries.	Central Station, NSW

¹Office of Rail and Road, Rail Safety Statistics, Tables 5200 (accessed 13 October 2023)

² Office of Rail and Road, Passenger and Freight Rail Usage, Tables 1243 and 1333 (accessed 13 October 2023)

 $^{{}^{3}} Federal\,Railroad\,Administration\,Office\,of\,Safety\,Analysis, 4.08-Casualty\,Summary\,Table\,(accessed\,8\,September\,2023)$

 $^{{}^{**} \}textit{Includes rail accidents such as collisions between trains and passengers being struck by trains.}$

Rail Safety Statistical Summary

Rail Safety Statistical Summary



Railway-Related Serious Injuries

There were 77 serious injuries reported in the 2022–2023 financial year on railways across Australia. This presents a slight reduction compared to 2021–2022. However, many serious injuries historically were attributed to slips, trips or falls, while under the NRSDS this occurrence type has seen significant changes, with such occurrences that are not directly associated with railway operations no longer reportable. Furthermore, there are changes to the definition of a serious injury to members of the public, passengers and trespassers under the NRSDS.

Figure 2 presents the number of railway-related serious injuries by person type over the past five years.

Figure 2:

Railway-related serious injuries, July 2018 to June 2023

Non-passenger serious injuries at level crossings are classified as Public if neither trespass nor attempted suicide is suspected. Level crossing collision excludes attempted suicides at level crossings, which are classified as Trespasser.

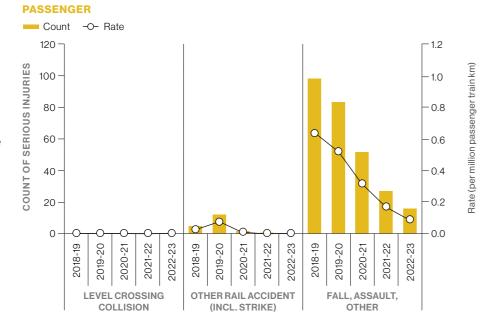
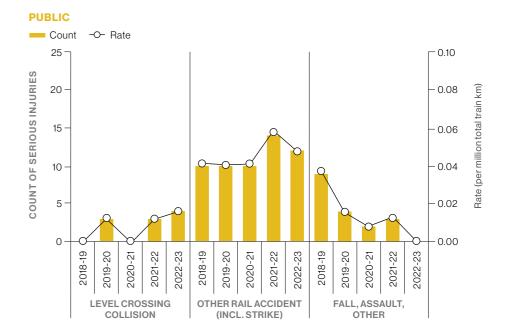
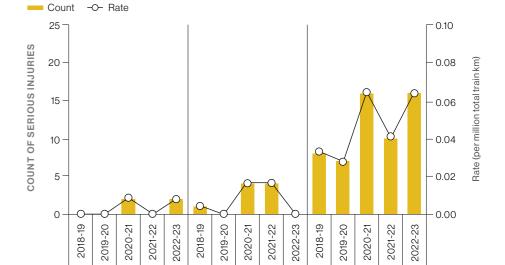


Figure 2 (cont.):

WORKER

LEVEL CROSSING





OTHER RAIL ACCIDENT

(INCL. STRIKE)

FALL, ASSAULT,

Figure 2 (cont.):

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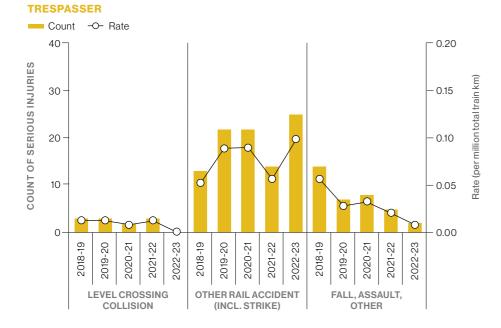


Table 3: Selected railway-related serious injuries, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
10/07/2022	A passenger train collided with a pedestrian at an uncommissioned active pedestrian crossing, operating as a passive crossing, at the end of a train station. The pedestrian sustained serious injuries.	Ovingham Station, SA
17/09/2022	During work replacing rail, a length of rail moved unexpectedly onto the foot of a worker resulting in a serious injury.	Mainline at approximately 115km mark, WA
29/10/2022	A passenger with luggage fell onto the station platform while disembarking a train.	International Airport Station, Qld.
21/11/2022	A person fell between a station platform and a stationary passenger train.	Central Station, NSW
24/11/2022	While performing rail welding, a worker sustained a serious crush injury to their foot.	Werris Creek, NSW
8/12/2022	A passenger in a wheelchair on board a tram fell as the tram applied brakes.	Melbourne, Vic.
9/01/2023	A rail safety worker sustained a serious finger injury while undertaking track maintenance using a hand tool.	Railton to Devonport, Tas.
15/02/2023	A passenger on board fell and sustained serious injuries as a result of a tram driver applying the emergency brakes to avoid a collision with a road vehicle making a U-turn.	Melbourne, Vic.
19/02/2023	A rail safety worker on a rail worksite slipped and fell onto rail resulting in a serious head injury.	Werribee to Warrnambool, Vic.
27/02/2023	A rail safety worker sustained a serious crush injury to their fingers while undertaking rail replacement work.	Rocklands, Qld.
28/02/2023	A passenger train collided with a pedestrian at the pedestrian maze of a level crossing adjacent to a train station.	Evanston Gardens, SA
5/03/2023	Two rail safety workers working at height under a bridge fell when supporting infrastructure collapsed. One worker sustained a serious injury.	Near Yeppoon, Qld.
10/03/2023	A worker was assisting passengers disembarking the train when a passenger fell making contact with the worker, causing them to also fall and sustain a serious injury.	Midland Station, WA
7/04/2023	A volunteer interacted with a component of rolling stock which moved, resulting in a serious crush injury to a finger.	Daylesford, Vic.
23/04/2023	An injured person was found on the tracks at a station by a member of the public. CCTV footage confirmed a person on a motorised mobility device had fallen from the platform onto the track. No train was involved.	Milton Station, Qld.
3/05/2023	The train crew of a regional passenger train noticed fumes from a diesel engine and later in the journey, two members of the train crew reported becoming unwell due to exposure to fumes.	Yerrinbool, NSW



Passenger Train Derailments

Passenger train derailment risk is characterised by rare events that have the potential to result in catastrophic outcomes, owing to the potentially large numbers of passengers exposed to harm.

There were eight running line passenger train derailments reported in the 2022–2023 financial year on railways across Australia, of which five involved tourist and heritage trains. Common causes included derailing due to track irregularities and following a collision with rail infrastructure, objects on the track or road vehicles. Minor injuries were reported for one incident, involving a collision between a commercial passenger train and heavy road vehicle at a level crossing. The collision caused the train to derail, with the drivers of both the train and heavy road vehicle sustaining injuries.

While the number of tourist and heritage train derailments has remained steady in 2022–2023 compared to 2021–2022, the rate of occurrence has decreased by 20% due to the increase in tourist and heritage passenger train kilometres.

Figure 3:

Passenger train running line derailments, July 2018 to June 2023

Derailment rates are expressed using the respective train km for each sector. Includes derailments of passenger trains on non-running lines affecting the safety of running lines.

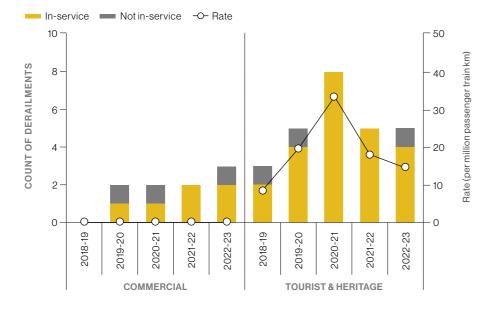


Table 4:

Passenger train running line derailments, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
4/07/2022	A bogie on a passenger car derailed whilst traversing a set of points at low speed, due to wheel slip caused by wet weather. There were no passengers on board at the time and track infrastructure sustained minor damage.	Granville to Bowenfels, NSW
13/07/2022	A regional passenger train and a heavy road vehicle collided at a passive level crossing, resulting in the derailment of the train. Both the train driver and the driver of the heavy road vehicle were treated for minor injuries. The lead rail car and the track infrastructure were extensively damaged.	Goornong, Vic.
5/11/2022	A tourist and heritage steam train operator reported a bogie of a carriage derailed while travelling over a set of points. There were no reports of injuries. Passengers safely alighted the train and the carriage was placed back on the track.	Sheffield, Tas.
22/11/2022	On approach to an end of line station, a passenger train encountered uncontrollable wheel slip and collided with the end of station infrastructure, resulting in a derailment.	Grange Station, SA
20/12/2022	Two carriages of a tourist and heritage passenger train derailed while traversing a set of points. There were no passengers on board at the time and the carriage sustained minor damage.	Belgrave Station, Vic.
28/02/2023	A locomotive of a tourist and heritage train struck loose rail that was in the rail corridor for rail replacement works causing one of the locomotive wheels to derail. The driver applied emergency brakes and stopped the train. Two wheelsets of the locomotive had derailed.	Dubbil Barril to Lower Landing, Tas.
5/03/2023	A wheel of a tourist and heritage train locomotive derailed due to a track irregularity. There were no reports of injuries and track infrastructure sustained minor damage.	Pinjarra to Etmilyn, WA
21/05/2023	Two passenger carriages of a tourist and heritage train derailed causing significant damage to track infrastructure. The train consist was separated and passengers were transported to their destination.	Port Elliot - Victor Harbor, SA

A comparison of the rate of mainline passenger train derailments between Australian railways and the mainline railways of Great Britain and the United States is summarised in Table 5. The Australian data in this table are a subset of the derailments summarised in Figure 3 to more closely align with overseas data definitions. They include derailments involving all in-service heavy rail passenger trains, excluding those involving tourist and heritage passenger trains on isolated lines.

Table 5:

Passenger train running line derailments - Australia, Great Britain and United States

Heavy rail in-service passenger trains only, excluding tourist and heritage operations on isolated lines. The annual reporting period for Great Britain runs from April to March. Statistics for Great Britain are for mainline operations only and exclude the London Underground network, trams, metros and non-mainline networks. Statistics for the United States exclude derailments on isolated networks, such as metropolitan transit systems that are not connected to the wider network.

		2018–19	2019–20	2020-21	2021–22	2022–23	5-YEAR
Australia	Derailments	0	1	2	2	2	7
	Train Km (millions)	124.4	128.0	127.8	121.4	129.1	630.7
	Rate	0.000	0.008	0.016	0.016	0.015	0.011
Great Britain	Derailments ¹	1	0	2	2	1	6
	Train Km (millions) ²	539.7	558.4	424.3	473.7	460.9	2457.0
	Rate	0.002	0.000	0.005	0.004	0.002	0.002
United States	Derailments ³	2	5	2	6	4	19
	Train Km (millions)4	183.7	165.2	131.5	159.6	172.2	812.2
	Rate	0.011	0.030	0.015	0.038	0.023	0.023

Sources:

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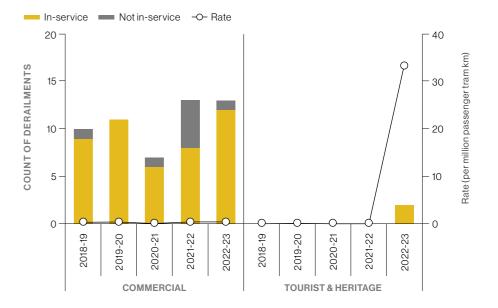
Tram Derailments

Tram derailments are generally less severe than passenger train derailments on the heavy rail network due to typically lower operating speeds. However, catastrophic tram derailments can still happen as evidenced by the derailment of a tram in Croydon, London in the UK in November 2016, which killed seven people and left many more injured.

There were 15 running line derailments involving passenger trams in the 2022–2023 financial year in Australia. Common causes involved derailing due to track irregularities, while traversing over points and crossovers, following collisions between trams and road vehicles, and after hitting debris or objects on the track. Two serious and six minor injuries were reported as a result of these derailments, all of which involved preceding collisions between trams and road vehicles.

Figure 4:
Tram running line





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¹Office of Rail and Road, Train Accidents by Severity, Table 5260 (accessed 13 October 2023)

² Office of Rail and Road, Passenger Rail Usage, Table 1243 (accessed 13 October 2023)

 $^{^{3}}$ U.S. Department of Transportation, DOT Open Data Catalog (accessed 8 September 2023)

⁴Federal Railroad Administration Office of Safety Analysis, 1.13 – Freight / Passenger Operations Ten Year Overview Table (accessed 10 August 2023)

Rail Safety Statistical Summary

Rail Safety Statistical Summary

Table 6:
Tram running line derailments, July 2022 to June 2023

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DATE	DESCRIPTION	LOCATION
25/07/2022	A track irregularity caused a tram to derail as it traversed a tram square. There was minor damage to the tram pantograph and the occurrence resulted in operational delays including to the heavy rail passenger network.	Glenhuntly Tram Square, Vic.
2/09/2022	A heavy road vehicle turned and collided with the side of a tram resulting in a derailment and the driver of the road vehicle sustaining a serious leg injury. A passenger on board the tram fell and sustained a minor head injury.	Melbourne, Vic.
3/09/2022	A tourist and heritage tram derailed at low speed due to rail debris, resulting in minor damage.	Bendigo, Vic.
5/09/2022	A fire service vehicle with activated lights and sirens collided with a tram resulting in a derailment. A passenger on board the tram and the driver of the fire service vehicle were taken to hospital with minor injuries.	Haymarket, NSW
6/09/2022	The rear bogie of a tram derailed a short distance while shunting.	Camberwell, Vic.
17/09/2022	A tram derailed at low speed entering a road section.	Malvern East, Vic.
27/10/2022	A tram derailed at low speed while traversing points which were incorrectly set. There were no passengers on board at the time.	Melbourne, Vic.
19/11/2022	A tram derailed during shunting preparations for passenger service. The tram was rerailed and then derailed again. Track debris was found to be blocking the points blade.	Carlton, Vic.
13/12/2022	A tram derailed at low speed while travelling over a set of points resulting in minor damage.	Central Chalmers Street, NSW
3/01/2023	A tourist and heritage tram derailed while reversing over points. There was no damage to the tram.	Portland, Vic.
17/01/2023	A tram derailed following a collision with a road vehicle performing an illegal U-turn at an intersection. The driver of the road vehicle sustained a serious injury and significant damage to the tram was also reported.	Gungahlin, ACT
21/01/2023	A road vehicle collided with the front of a tram at an intersection resulting in a derailment. There was one minor injury reported and the tram sustained significant damage.	Kew, Vic.
16/04/2023	A points cover plate was found under the wheels of a tram that had derailed by a short distance. There was no damage to the tram and no injuries.	Glen Huntly, Vic.
7/05/2023	A road vehicle and a tram collided at a level crossing resulting in a derailment. Emergency services attended and treated the driver of the road vehicle for a minor injury while both the road vehicle and the tram sustained minor damage.	Port Melbourne, Vic.
4/06/2023	A tram derailed while exiting a terminus.	Melbourne, Vic.



Freight Train Derailments

Freight train derailment risk is generally observed to have a higher frequency of occurrence but a lower consequence of event when compared to passenger train derailment. However, derailments of freight trains still expose train crews, recovery teams and, depending on the location of the derailment, members of the public to potential harm.

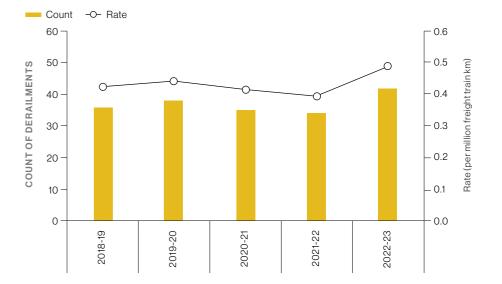
There were 42 running line derailments involving freight trains in the 2022–2023 financial year, presenting a 25% increase compared to the number reported during the previous year. Two serious and five minor injuries were reported as a result of two derailments, all of which involved preceding collisions between trains and heavy road vehicles at level crossings.

Figure 5:

Freight train running line derailments, July 2018 to June 2023

Includes derailments of freight trains on non-running lines affecting the safety of running lines.

Excludes uncoupled rolling stock derailments such as those involving only light locomotives and wagons.



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Table 7:
Selected freight train running line derailments, July 2022 to June 2023

28

DATE	DESCRIPTION	LOCATION
9/07/2022	A bogie on the second locomotive of a grain train derailed as it travelled over a section of track that had been previously repaired. The train crew was not aware of the derailment and continued for approximately 8km before identifying the derailment and bringing the train to a stop. There was significant damage to the track and minor damage to the locomotive.	Near Gunning, NSW
9/08/2022	A heavy road vehicle and a freight train collided at an occupational level crossing on a private property. As a result, two locomotives and eight wagons of the freight train derailed. The driver of the heavy road vehicle and the train crew sustained minor injuries. Both the heavy road vehicle and the train were significantly damaged.	Near Goondiwindi, Qld.
17/08/2022	A loaded freight train entered a loop line without ensuring its rear wagons were clear of the main line. An approaching freight train, performing a cross, collided with the wagons resulting in the locomotive derailing and coming to a rest on its side. One of the train crew sustained a minor injury and there was significant damage to the rolling stock.	Oonoomurra, Qld.
3/09/2022	Several wagons of a fully loaded autonomous iron ore train derailed resulting in significant damage to rolling stock and track infrastructure.	Koodaideri Line, WA
14/11/2022	As a freight train travelled over a culvert, several wagons derailed resulting in significant damage to the rolling stock and track infrastructure.	Inverleigh, Vic.
13/01/2023	During a propelling movement a freight train passed a signal at danger and collided with wagons of another freight train causing several wagons to derail. While there were no injuries, both trains and rail infrastructure were significantly damaged.	Port Botany, NSW
29/01/2023	The driver of a freight train applied emergency brakes, stopped the train and made an emergency radio broadcast reporting a derailment. Several wagons had derailed causing significant damage to rolling stock and track infrastructure. A freight container from one of the derailed wagons fouled the adjacent track. The driver of an oncoming freight train observed dust and applied emergency braking but the oncoming train collided with the rolling stock fouling the track.	Near Marmor, Qld.
15/02/2023	Three wagons on a freight train derailed resulting in substantial damage to the derailed wagons and a small line side fire.	Two Wells, SA
23/02/2023	A mechanical fault on a freight train caused a bogie to derail resulting in extensive damage to several kilometres of track.	Alice Springs to Tennant Creek, NT
8/03/2023	A freight train and a heavy road vehicle collided at a passive level crossing protected by stop signs. Four locomotives and six wagons of the freight train derailed and tipped over. The train crew and driver of the heavy road vehicle were taken to hospital with minor injuries and there was significant damage to the rolling stock and track infrastructure.	Old Junee, NSW

Table 7 (cont.):

DATE	DESCRIPTION	LOCATION
14/06/2023	A freight train and a heavy road vehicle collided at a level crossing protected by boom gates, causing two locomotives and several trailing wagons to derail and a fire in a locomotive. Two crew members sustained serious injuries, while two others received minor injuries. The driver of the road vehicle was not injured. There was extensive damage to the rolling stock and the heavy road vehicle.	Near Katherine, NT
17/06/2023	The rear 30 wagons of an autonomous iron ore train derailed resulting in significant damage to track infrastructure and rolling stock.	Tom Price Line, WA

Table 8:

Freight train running line derailments - Australia, Great Britain and United States

Includes derailments of freight trains on non-running lines affecting the safety of running lines. Excludes uncoupled rolling stock derailments such as those involving only light locomotives and wagons. The annual reporting period for Great Britain runs from April to March. Statistics for Great Britain are for potentially higher-risk train accidents (PHRTAs) occurring on or affecting the running line only, and with the most potential to result in serious consequences. They exclude the London Underground network, trams, metros and non-mainline networks. Statistics for the United States exclude derailments on isolated networks, such as metropolitan transit systems that are not connected to the wider network.

		2018–19	2019–20	2020–21	2021–22	2022–23	5-YEAR
Australia	Derailments	36	38	35	34	42	185
	Train Km (millions)	85.12	85.54	83.96	85.84	84.84	425.3
	Rate	0.423	0.444	0.417	0.396	0.495	0.435
Great Britain	Derailments ¹	9	9	9	1	2	30
	Train Km (millions) ²	33.7	33.3	30.0	33.8	31.9	162.7
	Rate	0.267	0.270	0.300	0.030	0.063	0.184
United States	Derailments ³	303	270	266	274	303	1416
	Train Km (millions) ⁴	807.5	705.9	665.3	655.7	658.4	3492.8
	Rate	0.375	0.383	0.400	0.418	0.460	0.405

Sources:

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¹Rail Safety and Standards Board, Annual Health and Safety Report (accessed 13 October 2023)

² Office of Rail and Road, Freight Rail Usage, Table 1333 (accessed 13 October 2023)

³ U.S. Department of Transportation, DOT Open Data Catalog (accessed 8 September 2023)

⁴ Federal Railroad Administration Office of Safety Analysis, 1.13 – Freight / Passenger Operations Ten Year Overview Table (accessed 10 August 2023)



Train Collisions

Collisions involving trains have the potential to be catastrophic rail safety events. The likelihood and consequences of collisions vary according to factors such as the systems used to manage train movement, the types of trains involved and the speed the trains were travelling at the time of the collision. A major determinant of risk is the involvement of a passenger train because of the potential exposure of large numbers of passengers to harm.

There were five running line collisions between trains and with rolling stock in the 2022–2023 financial year. None of these collisions involved passenger trains. No fatalities or serious injuries were reported as a result of these train collisions.

Figure 6:

Running line collisions between trains and with rolling stock, July 2018 to June 2023

Includes collisions on non-running lines affecting the safety of running lines. Excludes commercial light rail operations. Excludes trains striking or being struck by out of gauge equipment on trains on adjacent lines. Rates are expressed using total km for the sectors represented in each reporting category.

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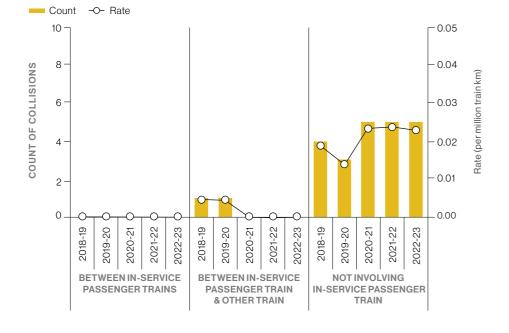


Table 9: Selected collisions involving trains, July 2022 to June 2023

Excludes collisions at level crossings.

DATE	DESCRIPTION	LOCATION
6/07/2022	Due to a technical issue, a three-locomotive consist conducted a turnaround manoeuvre and on approach to the wagons was not able to stop resulting in a collision. Six wagons derailed as a result.	Marandoo, WA
10/07/2022	A passenger train collided with a pedestrian at an uncommissioned active pedestrian crossing, operating as a passive crossing, at the end of a train station. The pedestrian sustained serious injuries.	Ovingham Station, SA
19/07/2022	An electric passenger train was incorrectly pathed onto a platform without overhead electrical infrastructure. On approach to Adelaide Station, the train pantograph collided with overhead infrastructure resulting in significant damage and a loss of power to another passenger train. Approximately 300 passengers from the stranded train were evacuated.	Adelaide Station, SA
25/07/2022	A passenger train rolled back at a train station colliding with the buffer stop resulting in minor damage to infrastructure. The passenger doors were open at the time.	Lidcombe Station, NSW
17/08/2022	A loaded freight train entered a loop line without ensuring its rear wagons were clear of the main line. An approaching freight train, performing a cross, collided with the wagons resulting in the locomotive derailing and coming to a rest on its side. One of the train crew sustained a minor injury and there was significant damage to the rolling stock.	Oonoomurra, Qld.
22/11/2022	On approach to an end of line station, a passenger train encountered uncontrollable wheel slip and collided with the end of station infrastructure, resulting in a derailment. The derailed railcar came to a stop near a road.	Grange Station, SA
13/01/2023	During a propelling movement a freight train passed a signal at danger and collided with wagons of another freight train causing several wagons to derail. While there were no injuries, both trains and rail infrastructure were significantly damaged.	Port Botany, NSW
29/01/2023	The driver of a freight train applied emergency brakes, stopped the train and made an emergency radio broadcast reporting a derailment. Several wagons had derailed causing significant damage to rolling stock and track infrastructure. A freight container from one of the derailed wagons fouled the adjacent track. The driver of an oncoming freight train observed dust and applied emergency braking but the oncoming train collided with the rolling stock fouling the track.	Near Marmor, Qld.
25/02/2023	Two locomotives collided during a shunting movement resulting in minor damage to both locomotives.	Maroona, Vic.



Tram Collisions

Collisions involving trams, particularly with road vehicles and pedestrians are more common than in the heavy rail sector due to the sharing of public roadways in light rail operations. As a result of the typically lower operating speeds and lighter rail vehicles involved however, such collisions tend to be less severe in consequence.

Excluding out of gauge mirror strikes, there were seven running line collisions between trams reported in the 2022–2023 financial year. Three passengers sustained minor injuries as a result of one of these collisions.

There were 17 collisions reported between a tram and a vehicle and 63 between a tram and person in the 2022–2023 financial year. The substantial decrease in the number of collisions between a tram and vehicle in 2022–2023 depicted in Figure 8 is due to significant reporting requirement changes to this occurrence type. With the introduction of the new data set under the NRSDS, only collisions with vehicles which either resulted in a serious injury or fatality, or where a collision occurred as part of the chain of events of another occurrence that is reportable are shown. There were two fatalities reported as a result of these collisions, one to a person on a motorised mobility scooter and one to a pedestrian. A further 16 serious injuries were reported due to these collisions, including 12 to road vehicle occupants and four to pedestrians.

Figure 7:
Running line collisions
between trams, July 2018
to June 2023

Includes collisions on non-running lines affecting the safety of running lines. Excludes trams striking or being struck by out of gauge equipment on trams on adjacent lines.

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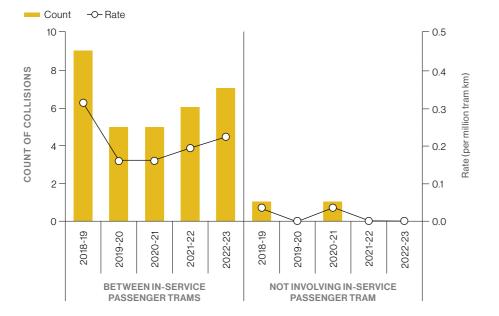


Figure 8:
Running line collisions
between tram and vehicle

between tram and vehicle or person, July 2018 to June 2023

Excludes collisions at level crossings.

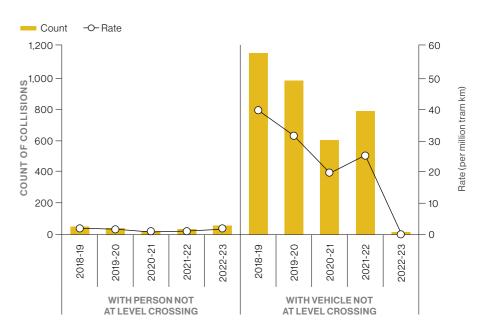


Table 10:

Selected collisions involving trams, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
27/07/2022	A tram travelling at low speed collided with a stationary tram resulting in minor damage.	Melbourne, Vic.
2/09/2022	A heavy road vehicle turned and collided with the side of a tram resulting in a derailment and the driver of the road vehicle sustaining a serious leg injury. A passenger on board the tram fell and sustained a minor head injury.	Melbourne, Vic.
5/09/2022	A fire service vehicle with activated lights and sirens collided with a tram resulting in a derailment. A passenger on board the tram and the driver of the fire service vehicle were taken to hospital with minor injuries.	Haymarket, NSW
2/10/2022	A tram returning to a depot made a turn rather than proceeding straight and collided with the rear of another tram resulting in minor damage.	Ascot Vale, Vic.
4/10/2022	A tram departing a terminus was stationary waiting for a red signal to change when it was struck by a tram travelling in the opposite direction resulting in minor damage.	Moonee Ponds, Vic.
14/11/2022	A tram collided with the rear of a stationary tram during shunting at a terminus.	Glen Iris, Vic.

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Table 10 (cont.):

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DATE	DESCRIPTION	LOCATION
22/11/2022	A tram proceeded into an intersection on a green light and collided with a road vehicle. An occupant of the road vehicle sustained serious injuries. There was minor damage to the tram.	Bundoora, Vic.
12/12/2022	A prison transport vehicle collided with the side of a tram and two occupants of the road vehicle were transported to hospital with serious injuries. There was minor damage to the tram.	East Melbourne, Vic.
17/01/2023	A tram derailed following a collision with a road vehicle performing an illegal U-turn at an intersection. Significant damage to the tram was reported while the driver of the road vehicle sustained a serious injury.	Gungahlin, ACT
27/01/2023	A tram collided with the rear of another tram resulting in minor damage. There were three reports of minor injuries.	St Kilda Junction, Vic.
17/02/2023	A cyclist collided with the side of a tram while avoiding a motorist opening a car door and sustained serious injuries.	Richmond, Vic.
11/03/2023	A tram heading to Toorak collided with a tram travelling to West Coburg resulting in minor damage to both trams.	South Melbourne, Vic.
15/04/2023	A road vehicle collided with a tram causing it to collide with overhead wire infrastructure. Two occupants of the road vehicle sustained serious injuries and another two sustained minor injuries. There was minor damage to the tram.	Thornbury, Vic.
26/04/2023	A tram travelling at low speed collided with the rear of a stationary tram.	Melbourne, Vic.
27/06/2023	A tram collided with a rail safety worker who was working around the tram. The worker sustained a minor injury.	Hawthorn East, Vic.



Proceed Authorities Exceeded

Instances of trains exceeding the limit of their authorised movement are considered important precursors to collisions and derailments. Prior to the NRSDS, on heavy rail signalled systems these occurrences were notified as a Signal Passed At Danger (SPAD) and on light rail networks, they were notified as a Light Rail or Tram Authority Exceeded event (LRTAE). These have now both been consolidated under the Proceed Authority Exceeded (PAE) occurrence type, which captures instances where a train exceeds the limit of authority, a train proceeds without a proceed authority or proceeds whilst a restraint authority is in place.

While the number of PAEs has remained similar to the previous year, Figure 9 depicts a 6% reduction in the rate of PAEs involving commercial passenger trains where the cause of the PAE was driver related.

PAEs involving freight trains have significantly decreased in 2022–2023, likely due to changes to reporting requirements introduced by the NRSDS. For the 2022–2023 financial year, PAEs that occurred within a yard are not included.

The sharp decrease in light rail authority exceedances depicted in Figure 9 is largely explained by the changes to reporting requirements introduced by the NRSDS. For the 2022–2023 financial year, only light rail proceed authority exceedances where the tram entered a worksite or level crossing, where the exceedance resulted in a near hit, where the tram proceeded whilst a restraint authority was in place, or as required by the Regulator under s121(3) are reportable as Category A or B.

Figure 9:

Proceed authorities exceeded, July 2018 to June 2023

Data shown is for occurrences where the cause of the PAE was driver related. Rates are expressed using the respective train km for each sector.

COMMERCIAL PASSENGER TRAIN

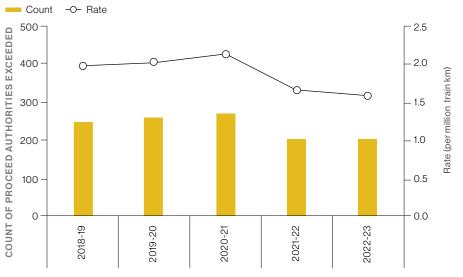
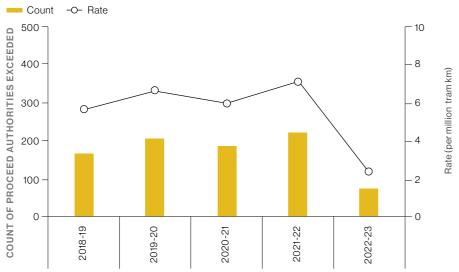


Figure 9 (cont.):

36

COMMERCIAL PASSENGER - LIGHT RAIL



TOURIST & HERITAGE PASSENGER TRAIN

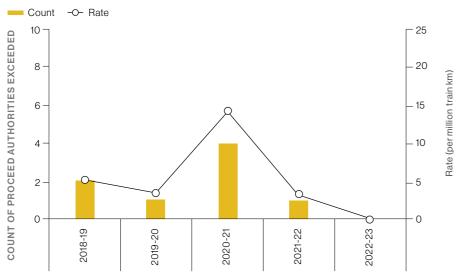
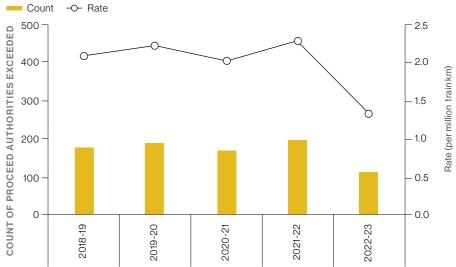


Figure 9 (cont.):

FREIGHT TRAIN



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Rail Safety Statistical Summary

Rail Safety Statistical Summary

Table 11:
Selected proceed authority exceeded occurrences, July 2022 to June 2023

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DATE	DESCRIPTION	LOCATION
9/08/2022	A freight train passed a signal at stop and through points set for the previous movement. A network controller made an emergency broadcast to the train crew who were able to stop the train approximately 150 metres from the rear of a stationary freight train.	
4/09/2022	A passenger train passed a signal at stop and travelled through a level crossing as the boom gates were still lowering. The train came to a stop approximately three railcar lengths past the signal. There was no near hit with road traffic.	
9/09/2022	A freight train passed a signal at stop and travelled through an active level crossing as the boom gates were still lowering. The train driver applied the emergency brakes passing a second signal displaying a red stop aspect before coming to a stand. The train crew had reported a failure of the train's Automatic Train Protection (ATP) system approximately one hour prior. Road vehicles at the level crossing were able to stop prior to the train crossing.	Bowen, Qld.
10/09/2022	A passenger train passed a signal displaying a red aspect. The driver observed that the section ahead was occupied by another passenger train stopped at a station platform. The driver was able to stop the train and avoid any conflict.	Northgate Station, Qld.
19/10/2022	A passenger train passed a signal at stop and was not aware of the occurrence until stopped at the next station approximately 1.1km away. There was no conflict with other trains.	Seaford Line, SA
16/12/2022	A regional passenger train passed a signal at stop by approximately 60 metres. A coal train on an adjacent line had previously crossed the section approximately 300 metres ahead.	Gracemere, Qld.
18/12/2022	A passenger train passed a signal displaying a red aspect by approximately six railcar lengths. An alarm sounded at train control and the network controller made an emergency call to the train driver to stop the train. An empty passenger train was stopped at a station approximately 200 metres ahead.	Northgate Station, Qld.
24/05/2023	A regional passenger train passed a signal displaying a red aspect and proceeded through a level crossing while boom gates were not activated. The train stopped approximately 650 metres past the signal. There was no near hit with road traffic.	Marshall, Vic.
14/06/2023	A freight train passed a signal at danger. Another freight train occupied the crossover ahead. Network control contacted the driver and the train stopped approximately 110 metres past the signal.	Broadlea, Qld.



An uncontrolled movement of a train or rolling stock has the potential to result in a serious rail safety event with severe consequences, particularly if it leads to a collision with another train on the running line or occurs in the vicinity of people, thus placing them at risk of being struck.

There were 33 runaways of a train or rolling stock (including trams) reported in 2022–2023, of which 11 were higher risk occurrences which accounted for 33% of all runaways. There were no fatalities or serious injuries reported as a result of these runaways.

Figure 10: Train runaways, July 2018 to June 2023

A higher risk occurrence includes a runaway of a train or rolling stock on or onto the running line. Also includes a runaway in a yard that occurred in proximity to people and the nature of the runaway placed them at risk of injury from the train or rolling stock. Rate is expressed using total train km.



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Rail Safety Statistical Summary

Rail Safety Statistical Summary

Table 12:
Selected occurrences involving runaways, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
02/07/2022	In adverse weather conditions, a road rail vehicle lost traction when the brakes were applied and moved in an uncontrolled state for about 50 metres before colliding with another road rail vehicle resulting in minor damage.	Marrickville, NSW
16/07/2022	A 30-tonne infrastructure trailer moved unbraked and uncontrolled for 1.5km from the entrance of a tunnel. Design flaws with the coupling and braking system contributed to an unintended separation of the trailer from the road rail vehicle hauling it and a subsequent failure of the brakes. There were no workers in the tunnel at the time.	Sydenham, NSW
08/08/2022	A freight train experienced a locomotive failure with smoke emitting from the lead locomotive. While attempting to restart the locomotive, the train rolled back approximately 15 metres and activated a level crossing at the rear of the train.	Cockburn, WA
10/10/2022	A grain train travelled in an uncontrolled manner down a steep section of track within the Dombarton to Unanderra section on the Illawarra Mountain. The train crew were able to regain control of the train and stop the train at Unanderra.	Dombarton to Unanderra, NSW
2/01/2023	A trainset undergoing maintenance ran away and collided with another stationary trainset in a yard resulting in significant damage.	Mount Victoria Yard, NSW
09/02/2023	At a worksite, a tamper machine ran away a distance of approximately 300 metres and collided with a ballast regulator resulting in minor damage. The two occupants of the ballast regulator sustained minor injuries.	Hunter Valley, NSW
10/02/2023	A ballast regulator had been stabled overnight on a section of track under construction. When workers arrived the following morning, the machine had moved approximately 150 metres and stopped at a private level crossing on a rural property.	Crooble, NSW



Other Noteworthy Occurrences

Table 13:
Other noteworthy occurrences, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
16/07/2022	A lookout protecting a worksite sounded a warning advising of an approaching train and requested workers move to a position of safety. The train was given clearance to approach and sounded the train horn. The protection officer then noticed a worker in the danger zone. The worker was able to clear the track.	Melbourne, Vic.
31/08/2022	An operator reported a wrong side failure involving a track circuit and identification of a passenger train. An alarm did not sound. Further investigation by signal technicians confirmed a wrong side failure.	Armadale, WA
9/09/2022	An identified track defect resulted in a temporary speed restriction from track speed of 140km/h to 25km/h. A track worker observed a passenger train travelling through the section of track at excessive speed.	Helensvale to Robina, Qld.
2/01/2023	An operator reported a wrong side failure at a level crossing where activated boom gates dropped and then raised as the train approached. A road vehicle travelled through the crossing. The train crew applied emergency brakes and came to a stop.	Mount St John, Qld.
4/01/2023	While a passenger train was stopped at a station, overhead power lines fell onto the rear carriage. The overhead power system tripped and several trains in the affected section were held while emergency services assisted with safe evacuation of passengers.	Eagle Junction Station, Qld.
8/01/2023	A worker in an elevated platform made contact with a live cable resulting in an arc. Work was immediately stopped with electricians called to isolate the worksite and assist with safely removing the worker from the elevated work platform. There were no injuries.	City Loop, Vic.
18/01/2023	At a worksite, a road rail vehicle was placed on the incorrect line which was not covered by track protection. The driver of an approaching train observed the situation and commenced braking while workers also flagged the train to stop. The train was able to stop and prevent a collision and the road rail vehicle was taken off track and work ceased.	Richmond, Vic.
27/01/2023	A driver of a train reported a near hit with a volunteer firefighter who was responding to a fire on railway sleepers. A miscommunication between emergency services and train control resulted in trains not being stopped in the area.	Stonyford, Vic.
3/02/2023	An operator reported a wrong side failure involving a rail test vehicle not being detected by the signalling system on approach to a level crossing. The boom gates rose, and a road vehicle crossed resulting in a near hit with the rail test vehicle.	West Gladstone, Qld.

Table 13 (cont.):

DATE	DESCRIPTION	LOCATION
9/03/2023	A regional passenger train travelled through a body of water covering about 50 to 60 metres of the track at a speed of approximately 40km/h. Visibility was reported as poor and the train driver restricted the train speed to 25km/h and proceeded to the next location with extreme caution. There were no injuries or damage to the train.	Emerald to Longreach, Qld.
10/03/2023	The driver of a train reported that overhead wires were down on both tracks near a train station. Recovery operations commenced and passengers on board affected trains were evacuated.	Near Panania Station, NSW
10/05/2023	A person attempted to climb across the coupling of light rail vehicles that were stationary at a traffic intersection. The person fell when the light rail vehicle commenced travelling. While emergency services were notified and attempted a rescue, the person sustained fatal injuries.	Haymarket, NSW
1/06/2023	An operator reported a safeworking breach following the issue of a conflicting train authority. A freight train en route to Melbourne had authority to enter a crossing loop but the crew of a freight train travelling in the opposite direction observed a yellow signal and stopped their train to contact train control and clarify their authority. It was identified the train was incorrectly issued an authority. The trains were three kilometres apart.	Near Ooldea, SA





National Priorities

National Priorities National Priorities

National Priorities 2022-2023 At a Glance

RAIL SAFETY WORKER COMPETENCY

PRIORITY SINCE



ONRSR has committed to assist in the development of a Rail Action Plan that addresses skills deficiencies, with the plan seeking to establish core competencies for rail safety worker qualifications and prioritise skill sets that are compatible across the rail industry.



RAIL SAFETY WORKERS

Number of workers deemed rail safety workers across all rail transport operators in June 2023 (source: ONRSR Monthly Returns data June 2023)

REGULATORY INTERACTIONS

Conducted during

2022-2023

LEVEL CROSSING SAFETY



PRIORITY SINCE

LEVEL CROSSING EQUIPMENT FAILURES / DEFECTS

The number of wrong-side level crossing equipment failures / defects reported reduced by 53% compared to 2021-2022 and reached a five-year low.



LEVEL CROSSINGS

LEVEL CROSSING NEAR HITS WITH PERSON OR **VEHICLE (PASSENGER / FREIGHT TRAIN)**

523 near hits occurred at level crossings with active protection (65%), 253 near hits at level crossings with passive protection (31%) and 34 near hits at unprotected level crossings (4%).



LEVEL CROSSING COLLISIONS WITH PERSON OR **VEHICLE (PASSENGER / FREIGHT TRAIN)**

16 collisions occurred at level crossings with active protection (43%), 19 collisions at level crossings with passive protection (51%) and two collisions at unprotected level crossings (6%).

FOCUS AREAS

As part of a continuing focus on safety at regional level crossings, ONRSR has facilitated the delivery of world-first research into train conspicuity. The success of this has resulted in revisions to the Australian Standard on Train Visibility and preliminary work to develop a Code of Practice.

CONTRACTOR MANAGEMENT



RAILWAY CONTRACTOR ENTITIES

FOCUS AREAS

ONRSR's work in 2022-2023 to address this national priority involved completing a series of education sessions with operators as well as regulatory activities focusing on compliance with the RSNL and SMS requirements.

PRIORITY SINCE



OPERATOR **EDUCATION SESSIONS**

Conducted during 2022-2023



REGULATORY INTERACTIONS

Conducted during 2022-2023

ALTERED WORKING ARRANGEMENTS

PRIORITY SINCE

INVESTIGATION

REPORTS ANALYSED

During 2022-2023

SAFETY

CRITICAL

COMMUNICATIONS

PRIORITY SINCE

FOCUS AREAS

Work involved detailed analyses of industry investigation reports arising from incidents across the country as well as a comprehensive review of all relevant industry literature. This has culminated in a set of key messages covering altered working arrangements that will now be communicated to industry.



REGULATORY INTERACTIONS

Conducted during 2022-2023

FOCUS AREAS -

ONRSR verified the take up of the RISSB's Safety **Critical Communications** Code of Practice, resulting in ONRSR beginning work on a method to incorporate more structured consideration of an operator's safety critical communications protocols into its National Work Program.



A national priority for ONRSR is defined as a rail safety area of regulatory focus that applies to multiple jurisdictions and operators and warrants a sustained period of regulatory attention. ONRSR targets its priority areas using tailored regulatory solutions, typically through operator-centric national compliance projects or industry-wide, education and information sharing programs.

This section of the report covers ONRSR's national priorities current in 2022–2023:

- · Level Crossing Safety Regional
- · Rail Safety Worker Competency
- Safety Critical Communication
- · Altered Working Arrangements
- · Contractor Management



Level Crossing Safety - Regional

There are more than 20,000 level crossings nationally and at all of them there exists a level of risk to safety – indeed, other than suicide and trespass, accidents at level crossings are the primary cause of railway-related fatalities among the general public.

There were 34 level crossing collisions between a passenger or freight train and vehicle reported nationally in the 2022–2023 financial year⁶, resulting in three fatalities and four serious injuries:

- one of the fatalities was a heavy road vehicle driver, one was a motorcyclist and one a cyclist;
- · two of the serious injuries were road vehicle occupants and two were rail safety workers; and
- 47% of the collisions occurred at crossings protected by passive controls, such as give way signs and stop signs, representing an increase of 23% from 2021–2022.

There were four level crossing collisions between a passenger or freight train and person reported nationally in the 2022–2023 financial year, resulting in two fatalities and two serious injuries to pedestrians. Three of the four collisions took place at crossings protected by passive control devices.

All rail safety stakeholders, rail operators, governments and the general public, have a role to play in improving safety at level crossings and ONRSR continues to advocate for improvements to help reduce the rate of fatalities and serious injuries. ONRSR also continues to support the work being done by governments and industry to remove level crossings and their commitment to a policy of no new level crossings wherever possible.

ONRSR's Focus

Throughout 2022–2023, ONRSR has focussed on its efforts to facilitate the delivery of world-first research into train conspicuity as part of a continuing focus on safety at regional level crossings. The success of this work has resulted in a request from Federal and State Ministers for Infrastructure and Transport for ONRSR to lead the development of an industry code of practice for train visibility. Preliminary work has been undertaken in 2023 and a draft code of practice will be presented to Ministers in 2024.

ONRSR supports the development of a complete solution in relation to level crossing safety, envisioned by the National Level Crossing Safety Strategy, that will take shape across the country in the short, medium and longer terms. While train conspicuity is one of a range of factors that must be addressed to optimise safety at level crossings, road condition and alignment, road signage and lighting, corridor vegetation as well as higher level engineering controls and hazard elimination are all part of the solution.

⁶ Level crossing occurrence data for the 2022–2023 financial year makes use of network description (ontology) data provided by rail infrastructure managers to more accurately identify level crossing locations. At the time of publication of this report the location data set was incomplete, resulting in several level crossing occurrences missing from the statistical data presented in this report. ONRSR continues to work with rail infrastructure managers to ensure this location data set is progressively completed and validated.

National Priorities

National Priorities

Level crossing equipment failures and defects

ONRSR was notified of a five-year low 14 wrong-side level crossing equipment failures and defects during 2022–2023. Figure 13 depicts the failures and defects of active level crossing equipment and systems where they failed in an unsafe way and not in accordance with their fail-to-safe design principles. These involve significant equipment failures or defects that resulted in the intended level of protection not being fully provided prior to or during the passage, or potential passage, of a train such as:

- complete failure of active warning devices, including lights and/or booms;
- late activation of warning devices; or
- premature deactivation of warning devices.

Figure 11:

50

Level crossing collisions between train and vehicle, July 2018 to June 2023

Rates are expressed using train km for the sectors represented in each reporting category. Includes collisions reported at both public and private access road crossings.

HEAVY RAIL PASSENGER (COMMERCIAL)

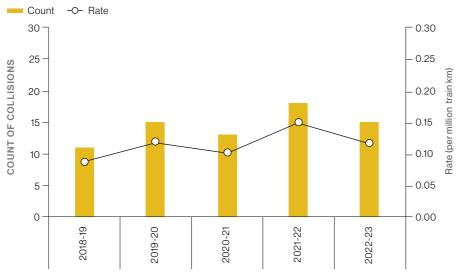
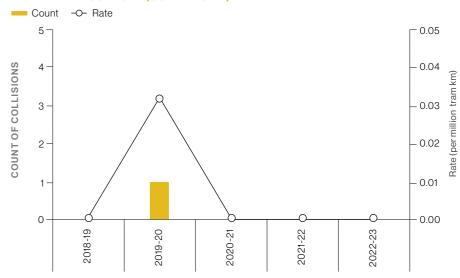
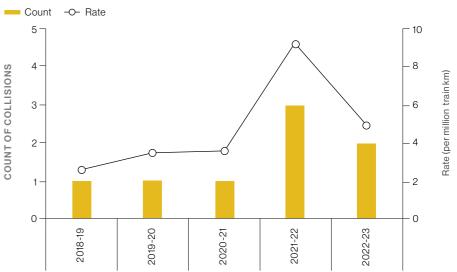


Figure 11 (cont.):

LIGHT RAIL PASSENGER (COMMERCIAL)



TOURIST & HERITAGE



National Priorities National Priorities

Figure 11 (cont.):

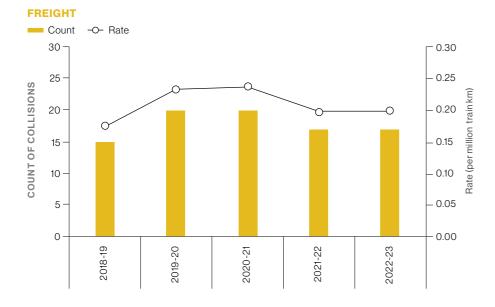


Figure 12:

52

Level crossing collisions between train and person, July 2018 to June 2023

Rates are expressed using train km for the sectors represented in each reporting category. Includes collisions reported at both public and private access crossings.

HEAVY RAIL PASSENGER (COMMERCIAL)

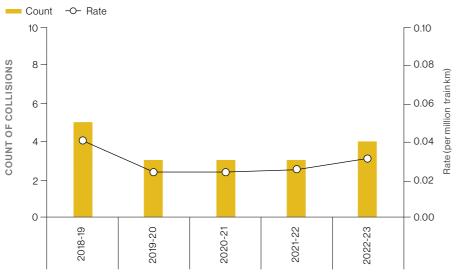
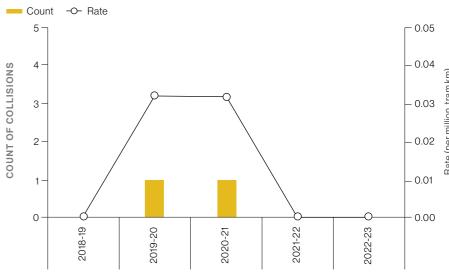
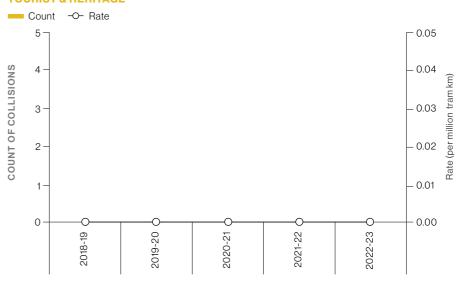


Figure 12 (cont.):

LIGHT RAIL PASSENGER (COMMERCIAL)



TOURIST & HERITAGE



53

National Priorities

National Priorities

Figure 12 (cont.):

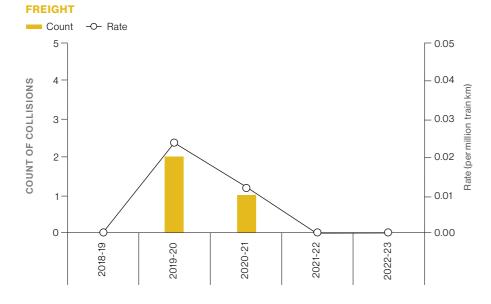


Figure 13:
Wrong-side level crossing equipment failures and defects, July 2018 to June 2023

54

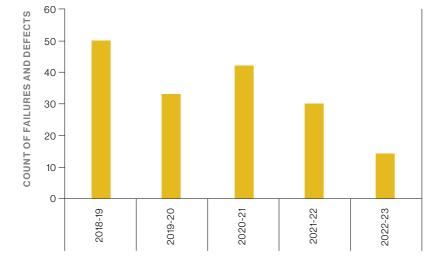


Table 14:
Selected level crossing-related occurrences, July 2022 to June 2023

DATE	DESCRIPTION	LOCATION
12/07/2022	The locomotive of a passenger steam train and a road vehicle collided at a passive level crossing protected by give way signs. Emergency services attended and the driver of the road vehicle was treated for a minor injury. While there were no injuries to passengers on board the train, there was significant damage to the road vehicle and minor damage to the locomotive.	Port Elliot, SA
13/07/2022	A regional passenger train and a heavy road vehicle collided at a passive level crossing, resulting in the derailment of the train. Both the train driver and the driver of the heavy road vehicle were treated for minor injuries. The lead rail car and the track infrastructure were extensively damaged.	Goornong, Vic.
9/08/2022	A heavy road vehicle and a freight train collided at an occupational level crossing on a private property. As a result, two locomotives and eight wagons of the freight train derailed. The driver of the heavy road vehicle and the train crew sustained minor injuries. Both the heavy road vehicle and the train were significantly damaged.	Near Goondiwindi, Qld.
6/09/2022	A freight train and a road vehicle collided at a passive level crossing protected by stop signs. The driver of the road vehicle was then picked up by another member of the public and taken to hospital with a minor injury. There was extensive damage to the road vehicle and minor damage to the rolling stock and track infrastructure.	Nea, NSW
9/10/2022	A motorcyclist was involved in a collision with a train at a level crossing protected by a stop sign. A member of the public reported the collision, the train crew was unaware of the collision, however, noticed the locomotive lose air and stopped the train. Train control received notification of the incident and informed the train crew. The motorcyclist was fatally injured.	Germain Bay, SA
9/11/2022	Boom gates at a level crossing were activated due to a suspected infrastructure failure resulting in traffic delays. A road vehicle entered the level crossing fouling the track and while the driver of an approaching passenger train engaged emergency braking, he was unable to avoid a collision. There was significant damage to the rolling stock.	Mentone, Vic.
13/12/2022	A heavy road vehicle entered a passive level crossing protected by stop signs. A freight train was approaching the crossing and collided with the heavy road vehicle. There was minor damage to the freight train.	Bribbaree, NSW
2/01/2023	An operator reported a wrong side failure at a level crossing where activated boom gates dropped and then raised as the train approached. A road vehicle travelled through the crossing. The train crew applied emergency brakes and came to a stop.	Mount St John, Qld.

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National Priorities National Priorities

Table 14 (cont.):

DATE	DESCRIPTION	LOCATION
3/02/2023	An operator reported a wrong side failure involving a rail test vehicle not being detected by the signalling system on approach to a level crossing. The boom gates rose, and a road vehicle crossed resulting in a near hit with the rail test vehicle.	West Gladstone, Qld.
14/02/2023	A regional passenger train and a road vehicle collided at a level crossing protected by flashing lights. The driver of the road vehicle sustained a minor injury. There were no injuries to passengers onboard the train. The rolling stock sustained minor damage.	Calen, Qld.
8/03/2023	A freight train and a heavy road vehicle collided at a passive level crossing protected by stop signs. Four locomotives and six wagons of the freight train derailed and tipped over. The train crew and driver of the heavy road vehicle were taken to hospital with minor injuries. There was significant damage to the rolling stock and track infrastructure.	Old Junee, NSW
3/04/2023	A heavy road vehicle proceeded onto an active level crossing from a side road, bypassing the boom barriers and stop lines located on either side of the crossing and was struck by an out of service passenger train. The driver of the heavy road vehicle was fatally injured. There were no other reports of injuries.	South Geelong, Vic.
30/04/2023	A freight train and a road vehicle collided at a level crossing protected by lights. Two occupants of the road vehicle sustained serious injuries and there was minor damage to the rolling stock.	Parkhurst, Qld.
10/06/2023	A freight train and a heavy road vehicle collided at a passive level crossing protected by stop signs. While there were no injuries, significant damage was reported.	Tenindewa, WA
14/06/2023	A tourist and heritage passenger train and a heavy road vehicle collided at a passive level crossing protected by give way signs. The train derailed and sustained significant damage. A passenger on board the train and one of the train crew sustained minor injuries.	Middleton, SA
14/06/2023	A freight train and a heavy road vehicle collided at a level crossing protected by boom gates, causing two locomotives and several trailing wagons to derail and a fire in a locomotive. Two crew members sustained serious injuries, while two others received minor injuries. The driver of the road vehicle was not injured. There was extensive damage to the rolling stock and the heavy road vehicle.	Near Katherine, NT



Rail Safety Worker Competency

The purpose of this national priority is to verify that the competence of employees conducting network control tasks continues to be managed and that rail transport operators retain their overall competence and capacity to conduct railway operations safely.

ONRSR's Focus

Throughout the year ONRSR held detailed discussions with the Office of Rail Safety in the United Kingdom to compare and contrast with its approach to rail safety worker competence. The results of the collaboration confirmed that the approach taken in Australia is a simple and effective one.

ONRSR has committed to working with the National Transport Commission and advisory bodies to assist governments and industry with the development and delivery of the Rail Action Plan, which addresses skills deficiencies. Specifically, the plan will establish core competencies for rail safety worker qualifications and prioritise the introduction of skill sets that are compatible across the rail industry. In time the intention is to optimise the use of TAFE and private registered training organisations to provide tailored training to the industry.



Safety Critical Communications

The purpose of this national priority is to assess and improve the procedures for critical communications conducted by rail transport operators to reduce the frequency and consequence of rail safety incidents in which miscommunication is a significant contributory factor.

ONRSR's Focus

Assessing the awareness and effectiveness of guidance material is where initial effort in relation to this national priority has been concentrated. A key focus was identifying the take up of the RISSB's Safety Critical Communications Code of Practice. This work revealed good engagement from those rail transport operators involved in the development of the code but limited awareness more generally.

ONRSR has subsequently begun work on a method to incorporate more structured consideration of an operator's safety critical communications protocols into the next iteration of its National Work Program. In doing so ONRSR will also conduct an analysis of occurrence rates to measure the tendency for safety critical communication to be a contributory factor in accidents and how often it has been identified in findings contained within both operator and/or ONRSR-led investigations.



Altered Working Arrangements

The purpose of this national priority is to explore the potential safety issues when a disruption of normal railway operations (how the system is designed to operate) occurs due to planned or unplanned events affecting the systems and procedures for the safe operation of the railway.

ONRSR's Focus

The past financial year has seen a focus on establishing a more definitive scope for this national priority which has involved detailed analysis of industry investigation reports arising from incidents across the country. A comprehensive review of all relevant industry literature has also been completed. The work has culminated in a documented set of industry key messages covering altered working arrangements (AWA) that will now be communicated via ONRSR's industry information channels throughout 2023–2024. The educational materials will be conveyed in such a way as to encourage operators to consider a range of topics including:

- · Identifying the full scope of potential AWA
- · Detection methods
- · Responding to changing situations in operational environments
- Training
- Systems development

While these online resources are in development, further work will be undertaken to ascertain what on the ground regulatory activities might be required in the future.



Contractor Management

ONRSR's project to address this national priority is nearing completion with phase 3 finalised in 2022–2023 and phase 4 coming to a close by the end of 2023. Having spent the first part of the year carefully curating a program of educational material covering the broad safety issues identified via discussions with more than 80 contractors, ONRSR subsequently completed a series of education sessions with operators. These interactive sessions were provided to a combination of rolling stock operators and rail infrastructure managers, responsible for both light and heavy rail operations. To date, the feedback from the participants has been overwhelmingly positive with those who attended particularly appreciative of the decision to hold one-on-one, compliance focussed sessions. Phase 4 has involved a series of regulatory activities focusing on compliance with the RSNL and SMS requirements with the scope of these activities largely driven by the content of the education sessions. The activities have highlighted that significant safety improvements have been achieved as a result of this priority focus. The outcomes of these activities will also help ONRSR understand any remaining industry gaps that will inform future work programs for regulatory staff around the country.

Data-Driven Intelligence

Data-Driven Intelligence Data-Driven Intelligence

The statistics and summaries presented in the previous chapters provide a snapshot of the rail industry's safety performance over the last financial year. This information is important for monitoring and reporting safety performance across the rail industry, acting as a key source of regulatory intelligence used to direct ONRSR's resources and attention. This chapter continues the series of articles presented in previous issues of the ONRSR Rail Safety Report, providing an update on ONRSR's progress to further enhance the data-driven element of its risk-based approach to regulation.



Case Study – Using richer data to analyse safety performance and inform risk

Incidents and accidents are not singular events. Rather they are usually a series of sequential events with an initiating event or events (i.e. a 'precursor event' or 'likely cause') leading to incident or accident realisation and then to a consequence event. To improve rail safety and evaluate the effectiveness of risk controls, the sequence or series of events must be clearly understood.

With the new data set under the NRSDS officially launching on July 1, 2022, rail transport operators are now required to include valuable chain of events information when reporting notifiable occurrences.

These and additional data items will allow deeper analysis of safety performance to help inform risk management decision making.

Using this data effectively can support good decision making and guide actions to improve rail safety by enabling monitoring and understanding of performance and higher risk events – i.e. those that result in more significant consequences or have the potential for greater risk of harm.

The richer data provides the opportunity to:

- strengthen ONRSR's ability to strategically determine the regulatory approach and key safety issues to be addressed under ONRSR's risk-based approach to regulation;
- · allow rail transport operators to better inform risk management decision making; and
- assist rail industry stakeholders, particularly those that can influence or are involved in safety improvement investment decision making, to better inform themselves of rail safety performance.

The charts below use selected additional data items to provide further analysis and breakdowns in relation to some of the occurrence statistics presented in the previous chapters. This will assist in a deeper understanding of the rail safety risks that exist in the industry. The purpose of the charts is to highlight the potential and possibilities of the effective use of this richer data to inform risk management decision making.

Data-Driven Intelligence

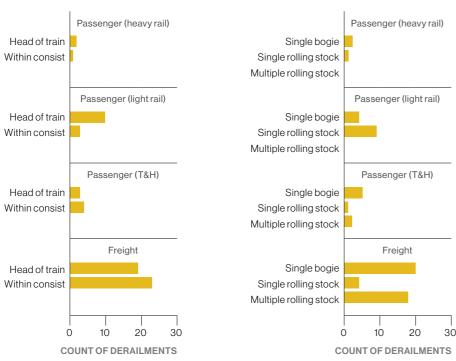
Data-Driven Intelligence

Figure 14:

Running line derailments – Point and extent of derailment, July 2022 to June 2023

Breakdown of running line derailments by the point of derailment and extent of derailment, using new data items under the NRSDS.

POINT OF DERAILMENT



EXTENT OF DERAILMENT

Figure 15:

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Running line derailments – Train speed, July 2022 to June 2023

Breakdown of running line derailments by train speed, using new data items under the NRSDS.

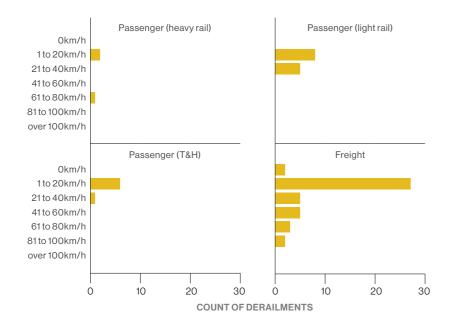
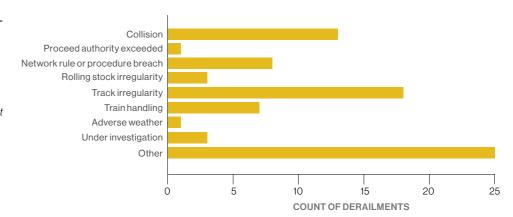


Figure 16:

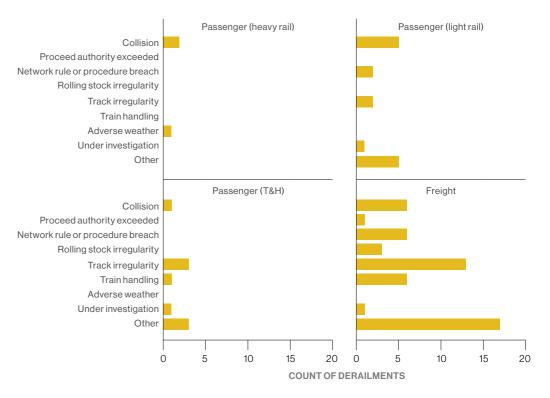
Running line derailments – Precursor event / likely cause, July 2022 to June 2023

Breakdown of running line derailments by precursor event / likely cause, using new data items under the NRSDS where this information was reported by the rail transport operators.

REPORTED PRECURSOR EVENT / LIKELY CAUSE



REPORTED PRECURSOR EVENT / LIKELY CAUSE BY SECTOR



63

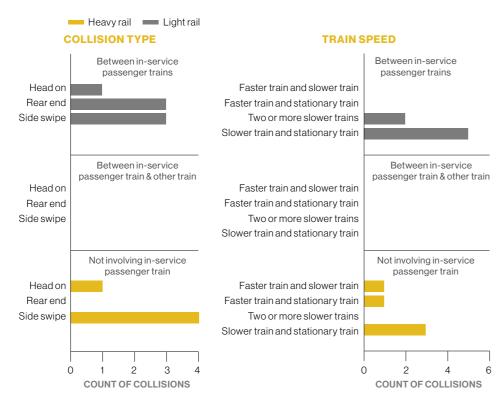
Data-Driven Intelligence

Data-Driven Intelligence

Figure 17:

Running line collisions between trains and with rolling stock – Collision type and train speed, July 2022 to June 2023

Breakdown of running line collisions by collision type and train speed, using new data items under the NRSDS.
A slower train is defined as travelling at a speed between 1 and 40km/h, while a faster train is defined as travelling at a speed of 41km/h and above.





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Running line collisions between trains and with rolling stock – Precursor event / likely cause, July 2022 to June 2023

Breakdown of running line collisions by precursor event / likely cause, using new data items under the NRSDS where this information was reported by the rail transport operators.

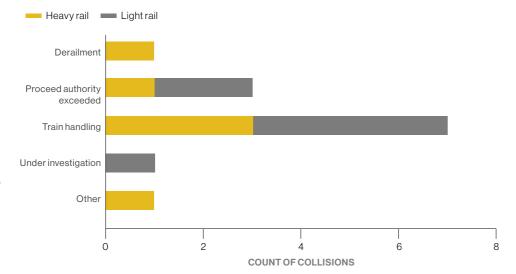
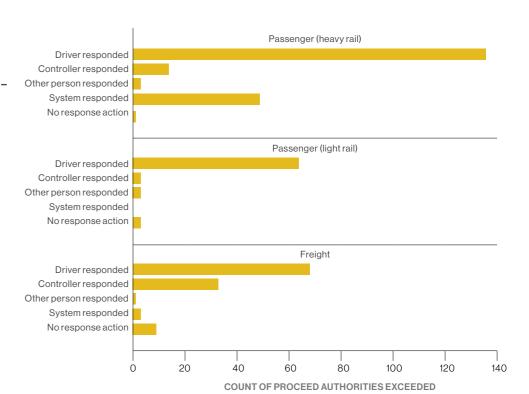


Figure 19:

Proceed authorities exceeded (driver related) – Response action, July 2022 to June 2023

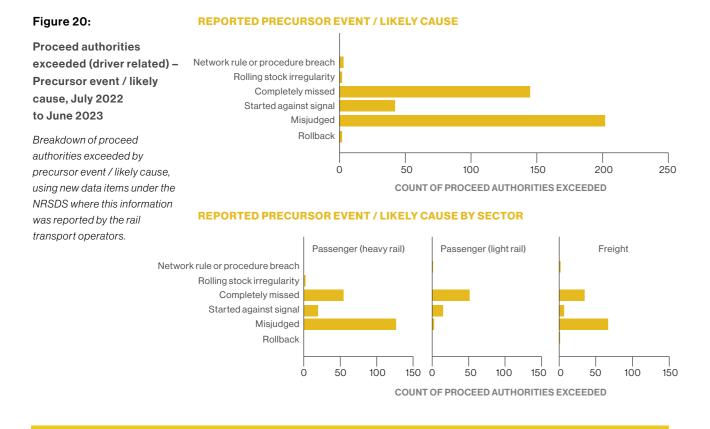
Breakdown of proceed authorities exceeded by response action, using new data items under the NRSDS.

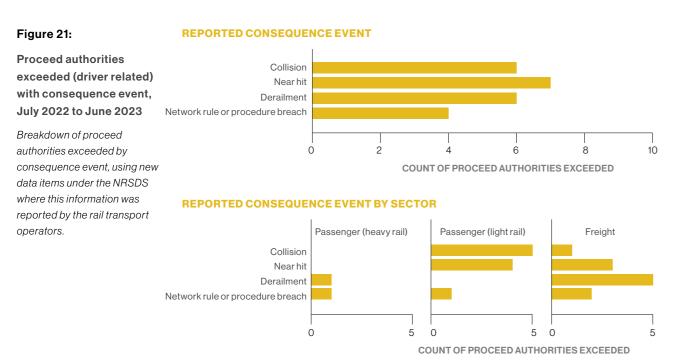


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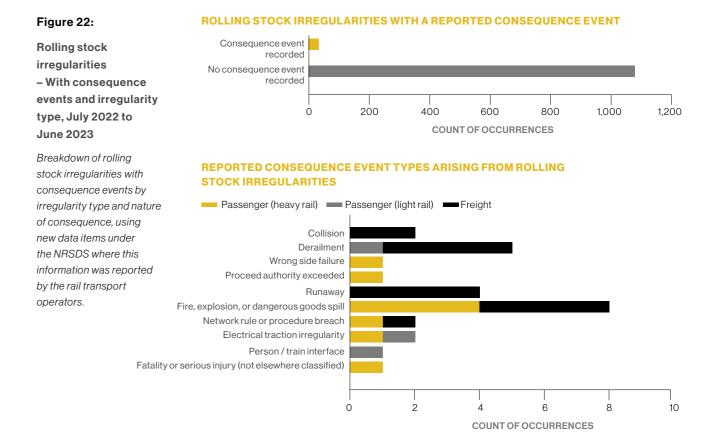
Data-Driven Intelligence

Data-Driven Intelligence





66





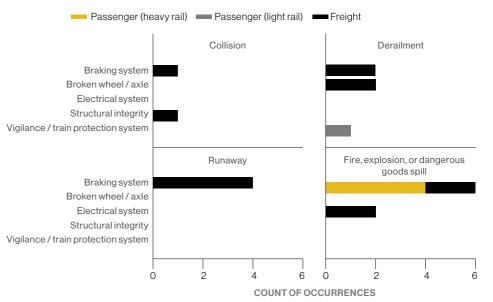
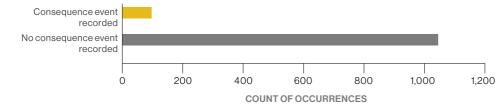


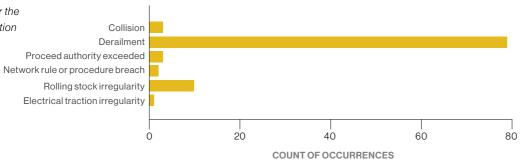
Figure 23: TRACK IRREGULARITIES WITH A REPORTED CONSEQUENCE EVENT

Track irregularities –
With consequence events
and irregularity type,
July 2022 to June 2023

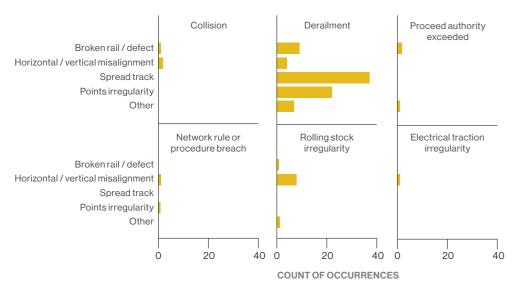
Breakdown of track irregularities with consequence events by irregularity type and nature of consequence, using new data items under the NRSDS where this information was reported by the rail transport operators.



REPORTED CONSEQUENCE EVENT TYPES ARISING FROM TRACK IRREGULARITIES



TRACK IRREGULARITY TYPES FOR EACH CONSEQUENCE EVENT TYPE



Appendix A: Network Statistics

Appendix A: Network Statistics

Appendix A: Network Statistics

Figure 24:

Commercial passenger and freight train kilometres, July 2018 to June 2023

Commercial rail operations encompass all major rail operations in Australia including freight, light and heavy rail passenger operations. The charts below exclude their associated maintenance operations (see Figure 26) and excludes tourist and heritage operations (see Figure 25).

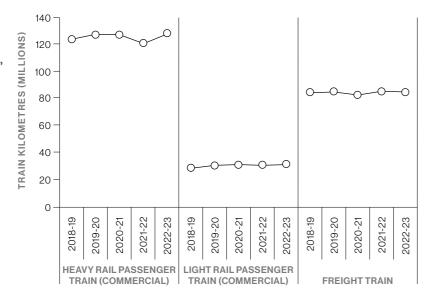


Figure 25:

70

Tourist and heritage passenger train kilometres, July 2018 to June 2023

Passenger train kilometres reported by tourist and heritage operators in Victoria that transitioned under ONRSR's regulatory oversight on 2 December 2019 are included from December 2019 only.

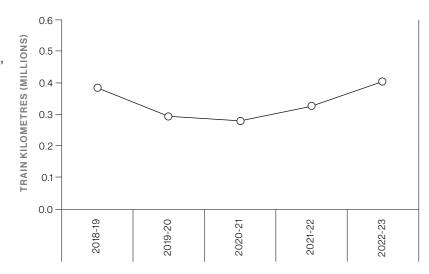


Figure 26:

Maintenance vehicle kilometres, July 2018 to June 2023

Accredited operators are required to provide monthly reports of the total kilometres travelled by any self-propelled infrastructure maintenance vehicles such as a track maintenance train or road rail vehicle. Maintenance vehicle kilometres reported by tourist and heritage operators in Victoria that transitioned under ONRSR's regulatory oversight on 2 December 2019 are included from December 2019 only.

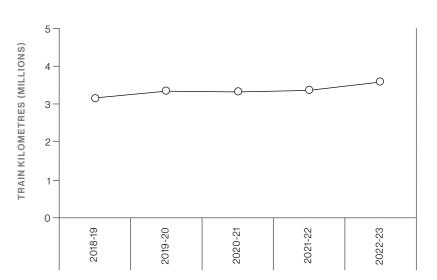
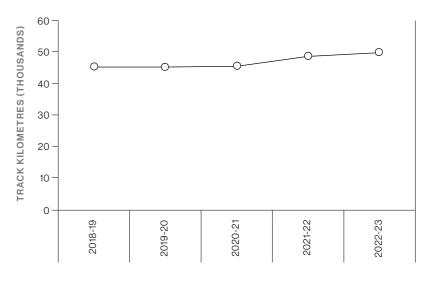


Figure 27:

Track kilometres, July 2018 to June 2023

Accredited operators are required to provide monthly reports on the length of track over which they have effective management and control. This chart depicts the total length of track reported for the month of June in each financial year. Track kilometres reported by tourist and heritage operators in Victoria that transitioned under ONRSR's regulatory oversight on 2 December 2019 are included from the 2019–2020 period only.



Appendix B: Scope and Methods

The scope and methods used for the presentation of data in this report are described below.

Reporting Period

Where available, statistical trends of incident counts and rates are presented over a five-year period, from 1 July 2018 to 30 June 2023. A new data set was officially launched on 1 July 2022 under the NRSDS, and as such is the source for the data provided for the 2022–2023 period. The incident descriptions summarised in this report apply to the period 1 July 2022 to 30 June 2023.

Geographic Coverage

Descriptions and statistics in this report cover all railway operations in Australia.

Data Sources

The information presented in this report is principally based on notifiable occurrences — the initial written advice of a rail safety incident that a rail transport operator submits to ONRSR in accordance with section 121 of the RSNL.

Activity data (for example, train kilometres travelled) is based on monthly returns supplied by rail transport operators in accordance with section 120(3) of the RSNL. The specific information to be provided is defined in clause 56 of the National Regulations.

Consistent activity data for tourist and heritage operators in Victoria (Vic.) that transitioned under ONRSR's regulatory oversight on 2 December 2019 is unavailable prior to this date. Exclusion of this data has no material effect on the statistics presented within this report as it is expected to comprise only three tenths of one percent of total activity data over the missing period.

Data collected by previous state regulators prior to ONRSR and used in this report were collected under different legislative regimes. A review of this data was undertaken to ensure comparability with ONRSR collected data. This applies to the data outlined below:

Vic. – From 1 July 2018 to 1 December 2019, the following data was collected by Transport Safety Victoria:
 Notifiable occurrence and activity data for the Melbourne metropolitan tram network; and notifiable occurrence data for tourist and heritage operators that transitioned under ONRSR's regulatory oversight on 2 December 2019.

Level crossing occurrence data for the 2022–2023 financial year makes use of network description (ontology) data provided by rail infrastructure managers to more accurately identify level crossing locations. At the time of publication of this report the location data set was incomplete, resulting in several level crossing occurrences missing from the statistical data presented in this report. ONRSR continues to work with rail infrastructure managers to ensure this location data set is progressively completed and validated.

Appendix B: Scope and Methods

Appendix B: Scope and Methods

Definitions

Statistics are predominantly based on the incident definitions in the Notifiable Occurrence Reporting Requirements⁷ for incidents from 1 July 2022, and in the Reporting Requirements for Notifiable Occurrences⁸ for incidents prior to 1 July 2022.

Some of the statistics presented are based on definitions specific to this report to support a more meaningful risk-based analysis of critical events. In such cases these definitions are presented in the body of the report.

Disclaimer

ONRSR advises the following:

Internal consistency

Statistics for a given incident category may differ between sections of this report because definitions and topevent conventions vary according to need. For example, international benchmarking statistics have different definitions to ONRSR and hence the scope of ONRSR incidents used in these comparisons have been aligned to the benchmarking definitions.

Data comparability

Issues of consistency are relevant both within the report and between this report and other information products.

The statistics in this report may differ to other sources that utilise the same data and coding specifications. This will be due in part to the data collection and preparation methods used to generate the tables and charts in this report which included identification and correction of errors in historical data.

With the launch of the NRSDS on 1 July 2022, this report combines two data sets, resulting in step changes for many occurrence types. Most notably, Category C notifiable occurrences were introduced, which operators are required to submit annually. Consequently, only Category A or B notifiable occurrences are included in this report.

Step changes relevant to the specific occurrence types and sub-categories presented in this report:

otop changes rolevant to the specific coodination types and sab categories procented in time report.		
OCCURRENCE TYPE	NRSDS REPORTING REQUIREMENT STEP CHANGES	
Railway-related fatalities	From 1 July 2022 onwards, excludes fatalities (to members of the public, passengers and trespassers) as a result of slips, trips or falls on railway premises, not directly associated with railway operation.	
Railway-related serious injuries	 From 1 July 2022 onwards, excludes serious injuries (to members of the public, passengers and trespassers) as a result of slips, trips or falls on railway premises, not directly associated with railway operation. 	
	 From 1 July 2022, there are changes to the definition of a serious injury to members of the public, passengers and trespassers. 	
Passenger train running line derailments	No step change due to NRSDS.	
Tram running line derailments	No step change due to NRSDS.	
Freight train running line derailments	No step change due to NRSDS.	
Running line collisions between trains and with rolling stock	No step change due to NRSDS.	
Running line collisions between trams	No step change due to NRSDS.	
Running line collisions between tram and person	No step change due to NRSDS.	
Running line collisions between tram and vehicle	From 1 July 2022 onwards, only collisions between trams and vehicles resulting in fatality or serious injury are reportable as Category A or B; prior to this all collisions between trams and vehicles were reportable as Category A or B, regardless of casualties.	
Proceed authorities exceeded – heavy rail passenger	From 1 July 2022 onwards, any type of proceed authority exceedance in a yard is not reportable as Category A or B.	
Proceed authorities exceeded – light rail passenger	• From 1 July 2022 onwards, any type of proceed authority exceedance in a yard is not reportable as Category A or B.	
	• From 1 July 2022, only light rail proceed authority exceedances where the tram entered a worksite or level crossing, where the exceedance resulted in a near hit, where the tram proceeded whilst a restraint authority was in place, or as required by the Regulator under s121(3), are reportable as Category A or B.	
Proceed authorities exceeded – freight	From 1 July 2022 onwards, any type of proceed authority exceedance in a yard is not reportable as Category A or B.	

⁷ Office of the National Rail Safety Regulator, Notifiable Occurrence Reporting Requirements, Version 2, ONRSR Adelaide, 2022

⁸ Office of the National Rail Safety Regulator, Reporting Requirements for Notifiable Occurrences, Version 3, ONRSR, Adelaide, 2020.

OCCURRENCE TYPE	NRSDS REPORTING REQUIREMENT STEP CHANGES
Train runaways	• From 1 July 2022, runaways within a yard less than 10 metres that did not occur in proximity to people where the nature of the runaway placed them at risk of injury are not reportable as Category A or B.
	• From 1 July 2022, there are changes to the definition of a "higher risk" runaway, impacting the split between these and other runaways.
Level crossing collisions between train and vehicle	No step change due to NRSDS.
Level crossing collisions between train and person	No step change due to NRSDS.
Wrong-side level crossing equipment failures and defects	No step change due to NRSDS.

Past and future releases

The statistics presented in this report are subject to review and amendment as more information becomes available through investigation or inquiry or as ONRSR refines its systems for data capture, validation and reporting. This may result in variation between historical and future reports.

Safe Railways for Australia



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