Rail Regulator's Report 2014-15

A report on safety performance on the rail network in Queensland

Queensland Government

Contact:

Web www.tmr.qld.gov.au
Phone 07 3066 2919
Email rsr@tmr.qld.gov.au
Post PO Box 673
Fortitude Valley Qld 4006

Rail Regulator's Report 2014-15

A report on safety performance on the rail network in Queensland

Table of contents

Message from the Director - General

I am pleased to present the Queensland Rail Regulator's Report 2014-2015. This report represents Rail Regulation's achievements and activities for the period 1 July 2014 to 30 June 2015.

I recognise the hard work and dedication of our people and their ongoing commitment to regulating for:

- improvement in rail safety
- improvement in the management of rail safety risks
- increased public confidence with the safe transport of passengers and freight by rail.

The Rail Regulator is committed to maintaining and improving safety across Queensland's extensive rail network through communication and collaboration with the rail industry.

I acknowledge the contribution of all rail transport operators and their commitment to safe rail operations throughout Queensland.

Neil Scales OBE

Director-General

The Department of Transport and Main Roads

ONC (Eng), HNC (EEng), BSc (Eng), C.Eng (UK), MSc (ContEng&CompSys), DMS, MBA, FIEAust CPEng, Hon FLJMU, FIMechE, FIET, FICE, FCIT, FRSA, FIRTE, FSOE, RPEQ, MAICD.

Executive summary

Introduction

In a co-regulatory environment, the Rail Regulator works together with rail transport operators to achieve a safe and efficient rail network in Queensland. The implications of serious rail incidents extend beyond the devastating loss of lives. There are also significant socio-economic costs resulting from train passenger delays, road vehicle delays, vehicle inaccessibility and significant infrastructure replacement and repair costs.

This report provides an overview of the Rail Regulator's priorities during 2014-15 and demonstrates its commitment to improving the safety of Queensland railways through its work program and specific rail safety initiatives. It also provides an overview of the safety performance of railways administered under the *Transport (Rail Safety) Act 2010* and analysis and interpretation of the safety occurrence data.

Reporting notifiable occurrences is a requirement of the *Transport (Rail Safety) Act 2010* and assists to identify and manage the risks associated with carrying out railway operations. Rail transport operators are required to have a safety management system to manage its risks and it is important to note that while notifiable occurrences are only one part of that, they provide the opportunity to monitor industry performance and trends.

The report highlights Rail Regulation's 2014-15 work program which included accrediting four new rail operators, undertaking 22 audits and 84 compliance inspections, investigating serious rail incidents and delivering education and awareness programs to rail transport operators. Important rail safety initiatives were significantly progressed during 2014-15. The Mount Isa Line Derailment Analysis Report was progressed and the Level Crossing Innovative Technology Trials were finalised.

Summary

The report features a number of highlights in rail operational safety for the period of 2014-15:

- A reduction in the number of reportable safety occurrences, concurrently, with an increase in the number of rail kilometres travelled and rail passenger journeys.
- A reduction in Category A occurrences with the lowest number of occurrences reported (75) in the last five years and a decrease of 25 percent compared with the previous financial year.
- Five collisions and 95 boom strike incidents at level crossings reported in 2014-15 which indicates a reduction of 55 percent and 35 percent respectively in comparison to 2013-14.
- 17 running line derailments reported which is a 15 percent reduction from 2013-14 and 45 percent lower than the preceding four years average.
- Lowest number of near misses at level crossings notified in five years (328) with a 43 percent reduction compared the figures in 2011-12, and continuing a downward trend.
- 559 slips, trips or falls (the major cause of serious injuries on Queensland railways) reported which is a 16 percent reduction compared to the previous year.
- Lowest number of rolling stock irregularities (284) and load irregularities (144) reported in the last five years, shows a reduction of 56 percent and 55 percent respectively in comparison to 2013-14.
- A new 13km light rail network on the Gold Coast which commenced operations with higher than expected passenger journeys. No fatalities and a small number of serious injuries (3) reported.

Beyond the work summarised in this report, the Rail Regulator engages and collaborates with the rail industry throughout the year to ensure that as Queensland's rail industry continues to grow while remaining safe and efficient.

Part 1: Overview

Queensland Rail Regulator

The Director-General of the Department of Transport and Main Roads (TMR) is the Rail Regulator in Queensland with the regulatory functions managed within TMR by the Rail Regulation Section. The Rail Regulator's principal objective is to facilitate safe railway operations in Queensland.

The role of the Rail Regulator is to enhance rail safety by:

- assessing the competency and capacity of persons when they apply for accreditation as a rail transport operator
- accrediting persons as rail transport operators
- conducting an assessment of the competency and capacity of rail transport operators
- assessing and reviewing documentation from rail transport operators when applying for variations to accreditation and reporting of changes to their operations
- providing education and guidance to rail transport operators
- conducting safety investigations and reviewing rail transport operators' investigation reports
- conducting risk based compliance activities including:
    - audits of rail transport operators' safety management systems
    - inspections of rail transport operators' procedures and practices
    - implementing agreed national rail safety legislation reforms
    - collecting and analysing rail safety notifiable occurrence statistics.

The Land Transport Safety Branch is delegated to carry out the functions of the Rail Regulator. The branch administers the *Transport (Rail Safety) Act 2010* and the *Transport (Rail Safety) Regulation 2010*, which also generally aligns with the Rail Safety National Law, and other legislation and policies that relate to the delivery of transport safety outcomes in the state.

The objectives of the T*ransport (Rail Safety) Act 2010* are to provide for improvement of the safe carrying out of railway operations:

- to provide for the management of risks associated with railway operations
- to make special provision for the control of particular risks arising from railway operations
- to promote public confidence in the safety of transport of passengers or freight by rail.

Rail regulation in Queensland is conducted in a co-regulatory environment. The rail industry is responsible for determining and maintaining safety standards and the Rail Regulator is responsible for reviewing and checking safety standards to ensure rail operations do not affect rail safety so far as is reasonably practicable.

The functions of the Rail Regulator are managed by two business sections of the Land Transport Safety Branch: Rail Regulation, and Road and Rail Safety.

Rail Regulation Section

The Rail Regulation Section is an operational team with high-level skills in accreditation, auditing, risk management and rail investigation. All members of the Rail Regulation Section are appointed as Rail Safety Officers pursuant to the *Transport (Rail Safety) Act 2010*. The Rail Regulation Section also acts as the competent authority for the regulation of transport of dangerous goods by rail and comprises of four teams:

- Directorate – manages the work program for the section and all the corporate actions and communications.
- Accreditation and Education – manages new accreditation applications, variations to accreditation and notification of changes, and is responsible for providing education and information to accredited rail transport operators.
- Risk and Audit – develops and conducts the compliance activity program comprising of audits and compliance inspections.
- Operations and Investigations – responsible for collecting and analysing rail safety notifiable occurrence data and undertaking no-blame and compliance investigations.

Road and Rail Safety Section

The Road and Rail Safety Section (Safer Rail) leads rail safety legislation and policy development to support effective regulation. Safer Rail is also responsible for:

- maintenance of Queensland's rail safety laws (including dangerous goods by rail laws)
- coordination of level crossing safety activities by collaborating with rail and road stakeholders on research, technology trials and projects to maintain and improve safety outcomes at level crossings
- coordination, review and development of reports on rail research related activities which plays an important role in formulating plans, policies and strategies relating to rail safety matters.

Aurizon Freight Terminal Acacia Ridge, photo courtesy of Aurizon.

Queensland's rail system

The rail network in Queensland provides the basis for a vital transport system delivering connectivity to strategic areas in regional Queensland, supporting agricultural, mining, manufacturing, retail, tourism industries and mass commuter transport services in south east Queensland.

It is recognised as an efficient mode of transport for moving bulk commodities, coal, minerals, agricultural products, livestock and large volumes of passengers across a geographically vast state.

In 2015, Queensland celebrated the 150th anniversary of the first heavy rail service between Ipswich and Grandchester (approximately 40km of track). 150 years later, there is over 9000km of operational railway managed and regulated under the *Transport (Rail Safety) Act 2010* in Queensland (Figure 1).

The heavy rail system runs from the border of New South Wales in the south, through the south east corner urban passenger network, up the coastline to the tropical tourist centre of Cairns. The western lines reach out to the agricultural centres in south west Queensland, the coal network in central Queensland and the mineral base of Mount Isa to the north-west.

In July 2014, a 13km light rail system on the Gold Coast began passenger operations. This new public transport system connects Gold Coast University Hospital to Broadbeach, with 16 stations along the rail corridor.

Figure 1: Rail Network in Queensland, map courtesy of Queensland Rail Limited.

Line/System	Length	Main activities
South East Queensland	689km	Passenger trains
Gold Coast Light Rail	13km	Passenger light rail
North Coast Line	1600km	Containerised freight, general freight, agriculture, cattle, coal, passengers
Mt Isa	1000km	Containerised freight, general freight, agriculture, cattle, minerals, passengers
Tablelands	460km	Passenger trains
Central West	780km	General freight, agriculture, cattle, coal, mineral trains, passenger trains
Western	1100km	General freight, agriculture, cattle, coal & mineral trains, passenger trains
West Moreton	314km	Grain, coal
South Western	610km	Agriculture, passenger trains (Tourist and heritage).
Moura	228km	Coal trains
Blackwater	985km	Containerised freight, general freight, agriculture, cattle, minerals
Newlands	220km	Coal trains
Goonyella	924km	Coal trains
Interstate Line	100km	Containerised freight & general freight trains, passenger trains

Table 1: Core Rail Lines of the Queensland Network

Accredited Rail Transport Operators in Queensland

There are two distinct types of operations for which rail transport operators are accredited:

- Rail infrastructure manager – a person who has control over a railway track or a section of railway track over which rolling stock operates.
- Rolling stock operator – a person who owns or has the right to operate or move rolling stock such as locomotives, wagons, passenger carriages or other on-track vehicles on railway tracks.

Rail transport operators may be accredited for one or both types of operations. At 30 June 2015, there were 66 accredited rail transport operators in Queensland (**Appendix 1**). This is four more rail transport operators compared to the same time in 2014. Of the 66 accredited rail transport operators, 47 are commercial railways (one of which is a light rail transport operator) and the other 19 are tourist and heritage railways. Tourist and heritage railways are generally volunteer based organisations focused on the preservation and operation of historic rolling stock or rail infrastructure.

In addition to the 66 rail transport operators, seven small, low risk and isolated railways have been given an exemption from accreditation under the legislation. A list of registered exempted railways is in **Appendix 2**.

	Commercial	Tourist and Heritage	Total
Rolling Stock Operator only	25	5	30
Rail Infrastructure Manager only	4	0	4
Both	18	14	32
Total	47	19	66

Table 2: Accredited railways as at 30 June 2015. Full list is at Appendix 1.

Private sidings

As at 30 June 2015, there were 31 private sidings registered in Queensland. The sidings are owned by companies whose primary business interest is not railway operations. Rail Regulation continues to invest resources to ensure the companies clearly understand their obligations and responsibilities under rail safety legislation. A list of registered private sidings is in **Appendix 2**.

Rail kilometres travelled

Total rail kilometres travelled throughout Queensland increased by 5 percent in 2014-15, from 42.23 million kilometres to 44.35 million kilometres, continuing a steady upward trend in rail kilometres each year for the last five years (see Figure 2).

In 2014-15 this growth can be attributed to an increase in the number of passenger services in south east Queensland including the commencement of light rail services on the Gold Coast.

Freight rail kilometres have remained relatively steady over the last four years. The majority of rail travel in Queensland was undertaken for freight carrying purposes in 2014-15, 24.96 million kilometres (56.3 percent).

Rail type		Kilometres travelled (millions)				
		2010-11	2011-12	2012-13	2013-14	2014-15
Heavy Rail	Passenger	14.42	15.77	15.67	17.10	18.34
	Freight	20.14	24.22	25.28	25.13	24.96
Light Rail	-	-	-	-	-	1.05
Total Rail kilometres (millions)		34.56	39.99	40.95	42.23	44.35

Table 3: Rail kilometres travelled 2010-11 to 2014-15 in Queensland

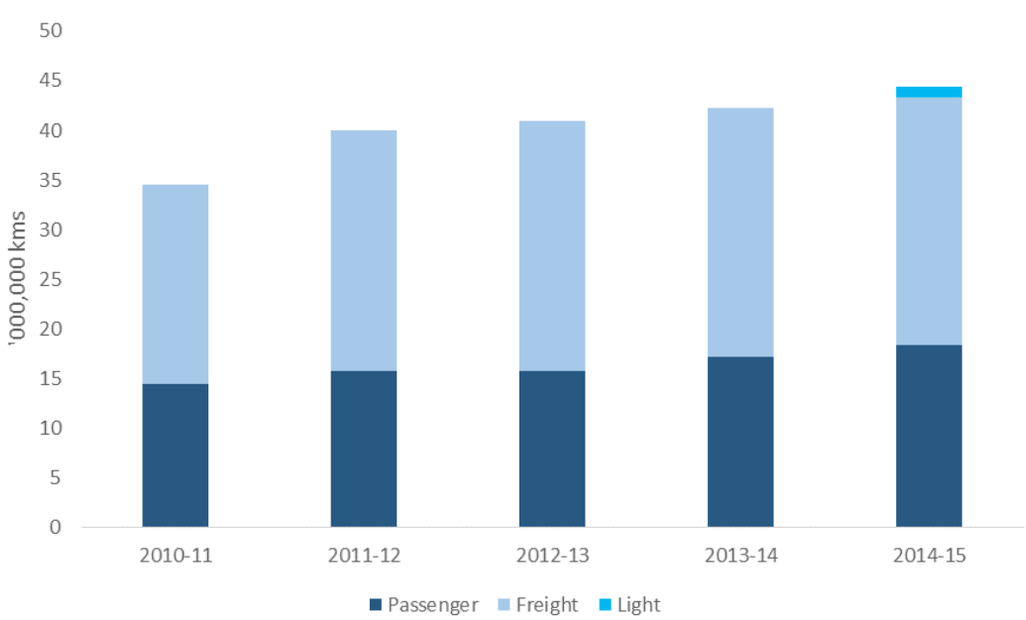


Figure 2: Passenger and freight kilometres travelled 2010-11 to 2014-15 in Queensland

Passenger Journeys

In 2014-15, 59.18 million passenger journeys were reported on Queensland railways, an increase of 8.7 million journeys in comparison to 2013-14. This increase was primarily due to the new light rail system on the Gold Coast which had more than 7.7 million journeys taken on its 13km network. The number of passenger journeys on the heavy rail network increased by 2.0 percent (approximately one million journeys) in 2014-15.

There was an 18 percent increase (approximately 8000 journeys) on the tourist and heritage networks in 2014-15.

Rail type	Passenger journeys (millions)				
	2010-11	2011-12	2012-13	2013-14	2014-15
Heavy Rail	57.69	55.45	52.78	50.39	51.42
Tourist and Heritage	0.07	0.06	0.04	0.04	0.05
Light Rail	-	-	-	-	7.71
Total Rail kilometres (millions)	57.76	55.51	52.82	50.43	59.18

Table 4: Passenger journeys on Queensland railways 2010-11 to 2014-15

GoldLinQ Light Rail Gold Coast, photo courtesy of GoldLinQ Pty Ltd.

Part 2: Rail Regulator Activities

Resource allocation

In 2014-15 the Rail Regulation Section maintained an average of 21 staff in teams consisting of Accreditation and Education, Risk and Audit, Operations and Investigations, and the Directorate. The Safer Rail team within the Roads and Rail Safety Section has five staff members.

Rail Regulation Section

Work Program 2014-15

The work program for 2014-15 provides the Rail Regulation Section (Rail Regulation) with a clear strategic direction for the year.

Core to the plan is the activities such as:

- monitoring the performance of rail transport operators through a program of audits and compliance inspections that are undertaken with a consistent risk-based approach
- collecting and analysing rail safety notifiable occurrence data to target resourcing towards areas aimed at improving safety within the rail industry. Where required no blame investigations are undertaken to gather information and provide safety recommendations
- engaging with stakeholders, building strong relationships to maintain and improve rail safety in a co-regulatory environment
- Rail Regulation provides support to the rail industry, in complying with the legislation, by sharing information and education on appropriate industry standards of safety
- technical assistance is provided during all accreditation activities through regular meetings, workshops, site visits and targeted education programs.

Accreditation and Education Team

During 2014-15 Rail Regulation undertook 86 assessments or reviews of accreditation activities which included four applications for new accreditation, 15 variations to existing accreditations and 67 notifications of change to railway operations.

New Applications for Rail Safety Accreditation

Four new applications were received for rail safety accreditation. Two commercial and two tourist and heritage operators were granted accreditation. Three of those were for passenger operations and one a contractor for maintenance and repairs to railway infrastructure. Details of the four are:

Friends of Archer Park Station and Steam Tram Museum Incorporated

In 2014, Rail Regulation received an application for accreditation from Friends of Archer Park Station and Steam Tram Museum Inc. as a rolling stock operator.

Accreditation was granted, allowing Friends of Archer Park Station and Steam Tram Museum Incorporated to conduct tourist and heritage rail operations over a stretch of 1.1km narrow gauge track at Rockhampton.

Kuranda Scenic Travel

In August 2014, Kuranda Scenic Travel was granted accreditation as a rolling stock operator for the operation of tourist passenger services between Portsmith and Kuranda and west of Cairns to Crooked Creek using a diesel rail motor.

Kuranda Scenic Travel has a number of conditions that have to be satisfied prior to undertaking railway operations.

Rattler Railway Company Limited

In 2015, the Rattler Railway Company Limited was granted accreditation as a rail infrastructure manager and a rolling stock operator for maintenance and vegetation management along the Mary Valley Railway Line between Gympie Station Yard and Imbil Station, and for shunting rolling stock within the Gympie Yard.

Rattler Railway Company Limited has a number of conditions that have to be satisfied prior to undertaking railway operations.

Taylor Rail Australia Pty Ltd.

Taylor Rail Australia Pty Ltd was granted accreditation as a rolling stock operator in 2014, to undertake repair and maintenance work on behalf of rail infrastructure managers.

Variations to Rail Safety Accreditation

The Accreditation and Education Team assessed 15 applications for variation to accreditation. Variations to accreditation are required to be submitted by a rail transport operator when it intends to undertake railway operations that are outside the scope and nature of its current accreditation.

Variation	Number
Change of company name	2
Inclusion, removal, or change to specific condition	3
Introduction of new rolling stock	5
Change of geographical boundary	2
Construction of rail infrastructure	1
Driver only operations	1
Remove rail infrastructure manager status	1

Table 5: Variation to accreditation 2014-15

Bundaberg Steam Tramway Preservation Society Incorporated's pride and joy Bundy, photo courtesy of Bundaberg Steam Tramway Preservation Society Incorporated

Notifications of Change

An accredited railway is required to notify the Rail Regulator if it proposes to make a change to its rail operations. The notification must be provided at least 28 days prior to the proposed change and allows Rail Regulation to review the change and assess any rail safety risks.

During this period, 69 notifications of change were received.

Decision, event or change	Number
Decision to design or construct, or to commission the design or construction of, rolling stock or new railway tracks for the railway operations	4
Introduction into service of rolling stock of a type not previously operated, or re-introduction into service of rolling stock not currently operated, for the railway operations	9
Change to a safety critical element of existing rolling stock used in the railway operations	6
Change to 1 or more classes of rail infrastructure used in the railway operations	4
Change to a safety standard for the design of rail infrastructure or rolling stock used in the railway operations	6
Decision to adopt a new safety standard for the design of rail infrastructure or rolling stock used in the railway operations	nil
Change to the frequency of, or procedures for, inspections or routine maintenance of rail infrastructure or rolling stock used in the railway operations	7
Change to a rule or procedure, of a safe working system, relating to the carrying out of the railway operations	12
Decision to introduce a new rule or procedure, for a safe working system, relating to the carrying out of the railway operations	1
Replacement of the person identified in the safety management system for the railway operations as the contact person for dealing with queries about the system with another person	20

Table 6: Notification of Change 2014-15

Exemptions to Rail Safety Accreditation

The Rail Regulator may exempt a person from requiring rail safety accreditation for the railway operations where it is assessed as a 'low risk' railway. Seven small, low risk and isolated railways are exempted from accreditation under the legislation. These exempt railways are assessed as being a low risk to both passengers and the people who operate them. Most of these railways operate at very low speeds over short distances and carry small numbers of people at any one time.

A list of exempted railways is in **Appendix 2.**

Major Accreditation Assessments

Adani Mining

Adani Mining is developing a mine in the western area of Queensland and has proposed to build a railway between the mine site and Abbott Point. Rail Regulation had been working with Adani Mining to progress the proposed construction of the rail infrastructure.

A significant commitment of Rail Regulation resourcing was allocated for assessment and review of documentation associated with the proposed rail infrastructure. This process will continue to be resourced throughout the next reporting period.

Moreton Bay Rail Link

The Moreton Bay Rail Link project consists of 12.6km of dual-track heavy gauge passenger rail line between Petrie and Kippa-Ring, including six new stations, associated infrastructure and a stabling facility at Kippa-Ring. The construction of this project was awarded to Thiess Pty Ltd in 2013. Works commenced in early 2014 and the line is expected to be completed and operational by mid-2016.

Rail Regulation accredited Thiess Pty Ltd for the construction of the rail infrastructure and continues a program of targeted compliance activities that provides assurance that the design, construction, testing, commissioning and operations meet the regulatory requirements.

Moreton Bay Rail Link Kippa-Ring Station, photo courtesy of TMR.

New Generation Rolling Stock

The New Generation Rolling Stock project involves the delivery of 75 six-car sets of trains for the Brisbane suburban passenger system, and the construction of a specialised maintenance facility and outlying stabling yards. These passenger units are to replace the ageing fleet of Electrical Motive Units that have been the back-bone of the passenger fleet in Brisbane for over 30 years. The new trains are being delivered through a partnership between the State Government and Bombardier Transportation Australia Pty Ltd (BTA).

Rail Regulation has varied BTAs existing accreditation to permit the construction, operation and maintenance of a new depot at Wulkuraka near Ipswich, and for construction of the new trains. BTA will be responsible for the movement of the rolling stock within the Wulkuraka Depot.

Rail Regulation continues to work collaboratively through any rail safety issues during the construction phase. The depot is scheduled for completion by the end of 2015 with the staged arrival of the new trains commencing in early 2016.

Education and Awareness program

Rail Regulation developed and delivered an education program targeted at key areas identified from compliance activities and safety performance reporting throughout the period. The education programs are designed for tourist and heritage railways and smaller commercial railways in Queensland. The education program resources add value to the tourist and heritage railway sector and is consistent with the Rail Regulator's objective to facilitate safe railway operations in Queensland.

The program focussed on providing information and guidance on:

- risk management
- safety audit arrangements
- corrective actions.

Introduction of new accreditation smart forms

Rail Regulation developed a set of smart forms to provide stakeholders with easy to use automated forms to assist in the timely assessment and review of accreditation documentation.

The automated forms are designed to assist the user by prompts to enter accurate information. This assists the Rail Regulation decision process by gathering accurate information, minimising double handling and reducing error from illegible handwriting.

The smart forms that were developed included:

- application for accreditation
- application for variation to rail safety accreditation
- application for registration of private siding
- notification of change.

These forms were also shared with the Office of the National Rail Safety Regulator.

The forms can be accessed on TMR's website.

Risk and Audit Team

The Risk and Audit team is responsible for the development and delivery of a risk based compliance activities plan that includes audits, compliance inspections and site visits.

Rail Regulation's compliance activities plan includes pre-planned and reactive activities. Pre-planned activities target areas of safety management systems that are considered important for operating and maintaining a safe railway system. Reactive activities are scheduled in response to safety issues identified through data collection, confidential reporting and trend analysis.

Rail Regulation's compliance activities take into account:

- rail safety occurrence trends
- type of infrastructure and operation of each railway
- physical condition/age of assets
- competency and capacity
- certifications, for example, boiler certificates
- media reports
- recent issues
- reports received through the confidential reporting scheme
- special conditions of accreditation
- recommendations from various investigation reports
- critical safety management system elements of each railway
- previous non-conformances.

Rail Regulation implements a risk profiling model to identify accurate numbers of compliance activities for each railway to maintain and improve rail safety. Within this model, higher risk railways receive more compliance activities compared to those evaluated to be of a lower risk. In 2014-15, Rail Regulation had a target of 100 compliance activities to be undertaken and delivered 106 activities (compared to 137 in 2013-14).

The significant decrease in the overall compliance activities was in line with the government's initiative to reduce the regulatory burden on industry. This strategy, in a co-regulatory system has proven effective for large commercial railways with a mature safety management system, while maintaining a high level of assurance to the Rail Regulator. The reduction in compliance activities was supported by increased education and awareness programs targeted at the small commercial and the tourist and heritage rail sectors.

Audit and compliance activities

Audits

Throughout the 2014-15 audit program, Rail Regulation conducted 22 audits, the majority of which were targeted at large commercial rail transport operators.

There were 54 non-conformances resulting from the audits of which 42 have been closed. The outstanding non-conformances will be closed following verification by Rail Regulation.

During the successful commencement of the GoldLinQ light rail on Queensland's Gold Coast, Rail Regulation reviewed the entire safety management system encompassing 27 elements and its implementation.

Compliance inspections

In 2014-15, Rail Regulation conducted 84 compliance inspections targeting numerous aspects of safety management systems. Some of the key focus areas were:

- interface agreements
- rolling stock maintenance
- track maintenance
- light rail vehicle operation.

There were eight issues requiring longer term resolution of which six have been closed. The outstanding non-conformances will be closed following verification by Rail Regulation.

In 2014-15, Rail Regulation issued one improvement notice and one prohibition notice. These notices were issued following compliance activities which found serious breaches of the Act in the areas of competence and capacity to maintain and operate a railway in a safe manner.

Interface agreements between road and rail managers

During 2014-15 Rail Regulation worked closely with local councils and rail transport operators to encourage them to negotiate and resolve any issues preventing their interface agreement being finalised. The results were positive and a significant number of interface agreements have been signed and are now in place. Rail Regulation will continue to work with the relevant parties during 2015-16 to progress finalisation of the outstanding agreements.

BM Alliance Coal Operations Pty Ltd Coal Train, photo courtesy of TMR.

Investigations

Rail Regulation conducts investigations in relation to rail safety issues or occurrences and the type of investigation is dependent on the consequences or potential consequences of the incident. Rail Regulation may conduct either a compliance investigation to determine if a breach of the legislation has occurred, or a no-blame investigation. No-blame investigations are conducted where systemic issues appear to have contributed to an occurrence that requires a detailed investigation.

During 2014-15 the following compliance investigations were undertaken:

- Fatality at Woodridge train station on 26 March 2015: A person, on the phone, was standing in a danger zone on the edge of the platform and was struck by a passing express train. The injuries sustained resulted in death at a later time and investigations are continuing.
- Fatality at Townsville on 16 May 2015: A worker at a resource unloading facility was fatally injured by an indexer during unloading operations. Investigations are being undertaken by the rail transport operator and Workplace Health and Safety Queensland.
- Fatality at Altandi on 25 September 2014: An individual, 'out-riding' on a coupling mechanism, fell from a moving train while graffitiing. Rail Regulation is working with the rail transport operator to review this fatality and will continue to work together to mitigate the occurrence of this dangerous activity in the future.

There was one no-blame investigation undertaken:

- Level crossing collision between a bus and a train at Draper Street, Cairns on 15 June 2015: A train and bus collided at an active level crossing resulting in two bus passengers receiving serious injuries. The investigation will consider if appropriate controls were in place. An interim report of this investigation is available on the TMR website. A full investigation report is due to be released in 2015-16.

Rail Safety Initiatives

Along with day to day regulatory business, a range of rail safety initiatives were also undertaken during 2014-15. The key initiatives are detailed below.

Mount Isa Line derailment analysis project

Rail Regulation progressed the Mount Isa Line derailment analysis project report which examined the number of derailments which had occurred on the Mount Isa Line between 2008 and 2013.

The project examined the cause of 41 main line derailments on the Mount Isa Line and focused on the operating practices of the rail infrastructure manager and rolling stock operators who use this line. The objective was to improve rail safety on the Mount Isa Line by reducing the number of derailments and subsequently increasing the availability and capacity of the rail corridor.

The report will identify the risks to rail operations and make recommendations.

The report will be available in 2015-16.

Signal Passed at Danger (SPAD) prevention conference

In February 2015, Rail Regulation participated in the SPAD prevention conference hosted by Queensland Rail, with key stakeholders attending from Australia and New Zealand. The theme of the conference was 'Industry Partnering in SPAD Prevention' which provided an opportunity to discuss the many factors involved in SPAD management and to share experiences and learnings in managing and preventing SPADs.

During the conference, Rail Regulation was represented on the panel. The unified message of the conference was that all stakeholders play a role in the prevention and management of SPADs.

Monitoring of signals passed at danger (SPAD) on Brisbane metropolitan network

Rail Regulation continues to monitor the number and locations of SPADs on the Brisbane metropolitan network. With over 50 million passenger journeys each year across South East Queensland the monitoring of such safe working incidents by rail transport operators and the Rail Regulator is essential to maintain safety on the rail network.

Network communications project

Rail Regulation completed a project to identify the types and limitations of radio equipment installed on rail traffic (trains and track vehicles travelling on the rail network) ensuring that the use and monitoring of communications during the safe operations of rail traffic complies with the rail transport operator's safety management system.

Level crossing safety initiatives

Minimising level crossing misuse is an ongoing goal for the government and rail authorities to prevent risk to life, major delays for passengers and motorists and the high cost to industry and the public through damage and disruption. Below is a summary of level crossing safety initiatives that were undertaken during 2014-15.

Photo courtesy of TMR.

Pedestrian crossing review at suburban level crossing

Rail Regulation identified that there were increases in the number of pedestrians pushing through the pedestrian gates at particular suburban level crossings.

After identifying the trend and reviewing the notifiable occurrences, this matter was raised with the rail transport operator who in turn implemented a number of controls to reduce pedestrians crossing when pedestrian gates were active. This included a trial of lockable gates, enhanced pedestrian pavement markings and enforcement action by TMR Transport Inspectors and the rail transport operator to reduce pedestrians engaging in this dangerous activity. Rail Regulation will continue to monitor trends in this area.

Level crossing congestion project

TMR, in conjunction with Queensland Rail, initiated this project to look at ways to reduce worsening road traffic congestion (due to increases in both the number of road users and train frequency) and related driver misbehaviour around level crossings. There are 47 public level crossings in the greater Brisbane area that are being reviewed as part of this project.

As it would not be feasible to grade separate every urban level crossing, this project aimed to identify and implement other innovative and cost effective treatments that may reduce road congestion and provide widespread benefits across the whole Brisbane network. Treatments that may improve road congestion being considered include upgrading technology, changing road geometry and/or signage, signalling upgrades, improved integration of traffic and rail signals and addressing human factors issues.

At 30 June 2015, the project had completed research, data analysis, modelling and technical simulations to identify innovative ways to reduce road congestion at seven priority level crossings.

This work will inform further planning, cost-benefit analysis and a live trial planned to be undertaken during 2015-16. If the trial is successful, the project could be expanded to include other level crossings.

Level crossing innovative technology trials

TMR, in collaboration with Queensland Rail, completed a $2.1 million trial of three innovative level crossing safety technologies across five sites around Queensland. The trial aimed to evaluate whether these technologies had a positive effect on driver behaviour at level crossings.

The technologies trialled were:

- La Trobe University's Dedicated Short Range Communication Based Intelligent Transport System (a radio break-in technology) - *trialled between Townsville and Charters Towers*
- NFA Innovation's Emergency Signal Intercepting Unit (radio break-in Pixie system) - *trialled near Dalby*
- Railnet's Active and Passive Rail Sign System (solar powered lighting and signage) - *trialled at Thallon and Lanefield*.

Independent evaluation of the technologies was conducted by the Cooperative Research Centre for Rail Innovation. The independent evaluation indicated that the two trialled radio break-in technologies, in their current state, did not improve driver behaviour and would not improve safety at passive level crossings. Railnet's solar-powered signage technology was found to improve driver behaviour by increasing their alertness and awareness of the level crossing.

The performance of Railnet's solar powered signage system is continuing to be monitored to determine if the technology meets all of the required standards, reliability and approval processes to be used more widely on Queensland's rail network.

Part 3: Rail Safety Performance

In Queensland, rail transport operators are required to report notifiable occurrences to the Rail Regulator. The Rail Regulator uses this data to determine emerging risks within the rail industry and to measure rail safety performance.

For the purposes of analysis and reporting, each notifiable occurrence report received is classified according to the national Occurrence Classification – Guideline One (OC-G1). The unit of classification is the top event of an occurrence, which is defined as the event with the greatest adverse outcome, expressed in terms of injury, property damage or accident. A list of incident types is included in **Appendix 4**.

An occurrence is also classified by seriousness into either a Category A (major) or Category B (minor) occurrence. Sections 31 and 32 of the *Transport (Rail Safety) Regulation 2010* provide guidance on whether a notifiable occurrence is classified as Category A or Category B.

Category A notifiable occurrences are an event which is one or more of the following:

- an accident or incident that has caused significant property damage, serious injury or death
- a running line derailment
- a running line collision between rolling stock
- a collision at a railway crossing between rolling stock and either a road vehicle or a person
- a fire or explosion on or in rail infrastructure or rolling stock that affects the safe carrying out of the railway operations or has endangered one or more persons
- a terrorist attack or an act or event suspected to be a terrorist attack
- an accident or incident involving an inadequacy in the safety management system for the railway operations that could have caused significant property damage, serious injury or death.

In the 2014-15 financial year there were 75 Category A occurrences reported. This represents a decrease of 27 percent compared with the previous financial year and a decrease of 33 percent compared with the Category A average of 112.5 over the preceding four years.

There were 11,977 Category B occurrences reported in 2014-15, a 14 percent decrease from the previous financial year.

Category type	2010-11	2011-12	2012-13	2013-14	2014-15
Category A	121	133	94	102	75
Category B	8,218	10,720	12,469	13,903	11,977
Total notifiable occurrences	8,339	10,853	12,563	14,005	12,052

Table 7: Notifiable occurrences (excluding suicides, assaults and natural causes) by category type

Figure 4 shows the number of notifiable occurrences reported by quarter since 2010-11. The large dips in Category A reporting in the third quarters of the 2010-11 and the 2012-13 financial years can be attributed to widespread flooding that inundated Queensland in January 2011 and January 2013, causing closures to the rail network.

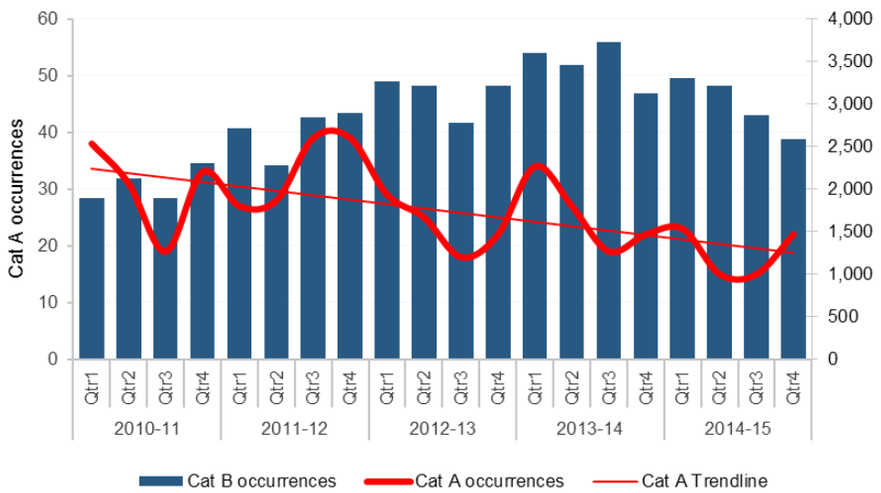


Figure 4: Notifiable occurrences by category level

Category A notifiable occurrences

Fatalities (excluding suicides and assaults and natural causes)

In the 2014-15 financial year there were five fatalities reported:

- a collision between a train and a person at a station
- a collision between a train and a person who was within the rail corridor
- an outrider falling from the back of a moving train
- a trespasser coming into contact with the overhead line equipment
- an employee getting caught between an indexing arm and a wagon.

The number of fatalities in 2014-15 is higher than the two fatalities reported in the previous financial year, and also higher than the yearly average of four fatalities over the preceding four years. There were no fatalities at level crossings in 2014-15.

Type		2010-11	2011-12	2012-13	2013-14	2014-15	Total Fatalities	%
Direct result of railway operations	Running line collisions	2	1	1	1	2	7	33%
	Level crossing collisions	1	3	0	1	0	5	24%
	Safeworking breach	0	0	0	0	1	1	5%
Fatalities as a direct result of railway operations		3	4	1	2	3	13	62%
Incidental to railway operations	Slips, trips or falls	0	2	0	0	1	3	14%
	Railway trespass	1	2	0	0	1	4	19%
	Other	0	1	0	0	0	1	5%
Fatalities incidental to railway operations		1	5	0	0	2	8	38%
Total Fatalities (excl. suicides and assaults)		4	9	1	2	5	21	100%

Table 8: Fatalities (excluding suicides and assaults and natural causes)

Over the past five years, the majority (62 percent) of fatalities are considered to have occurred as a direct result of railway operations. The remainder of fatalities (38 percent) are considered incidental to railway operations. These include slips, trips or falls and railway trespass incidents.

Of the 21 fatalities reported since 2010-11, ten were people trespassing within the rail corridor, seven were members of the general public and three were passengers. There was one employee fatally injured.

Serious Injuries (excluding attempted suicides, assaults and pre-existing medical conditions)

In 2014-15 there were 20 people admitted to hospital as the result of a notifiable occurrence in Queensland. Of these, 14 (70 percent) were the result of a slip, trip or fall. This figure is consistent with the average reported over the preceding four years of 19 serious injuries per year with 70 percent being the result of a slip, trip or fall. The number of serious injuries reported in 2014-15 was 5 percent higher than that for the previous year.

In contrast to fatalities, a greater proportion of serious injuries are considered incidental to railway operations (80 percent of serious injuries since 2010-11). These are primarily the slip, trip or fall occurrences (87 percent of hospitalisations incidental to railway operations). Of the slips, trips or falls, the majority (75 percent since 2010-11) occur on stairs, ramps and escalators at stations or on station concourses rather than occur while on a train or while entraining or detraining. Table 9 shows the number of serious injuries reported by financial year by type of occurrence.

Type		2010-11	2011-12	2012-13	2013-14	2014-15	Total	%
Direct result of railway operations	Running line collisions	1	1	5	0	1	8	8%
	Level crossing collisions	1	3	1	3	2	10	10%
	Yard collisions	0	1	0	0	0	1	1%
Serious injuries as a direct result of railway operations		2	5	6	3	3	19	20%
Incidental to railway operations	Slips, trips or falls	9	16	15	13	14	67	70%
	Railway trespass	1	0	1	1	2	5	5%
	Other	1	1	0	2	1	5	5%
Serious injuries incidental to railway operations		11	17	16	16	17	77	80%
Serious injuries		13	22	22	19	20	96	100%

Table 9: Serious injuries (excluding attempted suicides, assaults and pre-existing medical conditions)

Of the 96 serious injuries reported since 2010-11, 50 were passengers, 30 were members of the public, 12 were trespassers and four were employees.

Details of serious incidents reported in 2014-15 are in **Appendix 3**.

Derailments

There were 17 running line derailments reported in 2014-15. This is a decrease of 17.6 percent from 2013-14 and a decrease of 45 percent on the yearly average reported between 2010-11 and 2013-14 (average 31 derailments per year).

Of the 17 running line derailments in 2014-15, 13 were freight trains and four were track machines. There were no passenger train derailments. The trendline shows a significant descending pattern over the five year period.

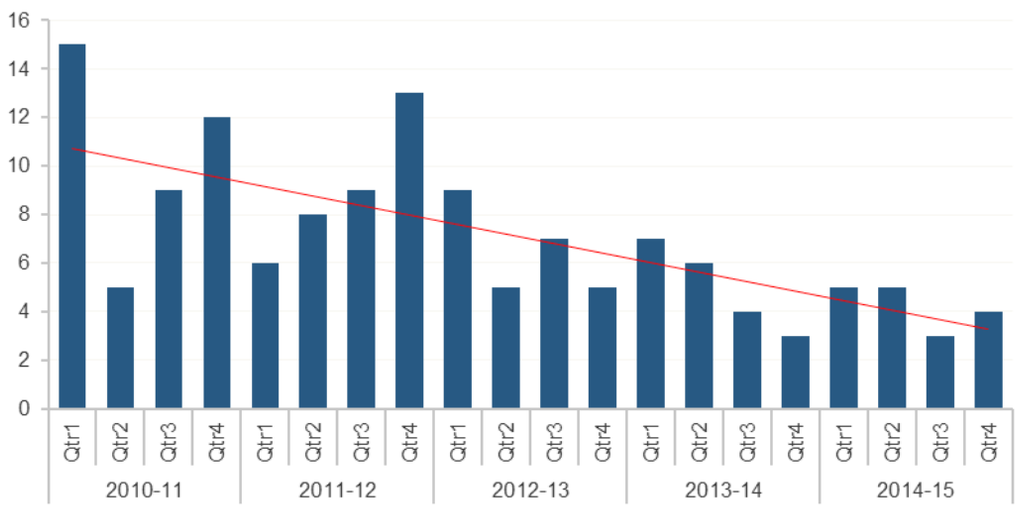


Figure 5: Category A running line derailments, Queensland, 2010-11 to 2014-15 by quarter

Collisions

There were five running line collisions classified as Category A incidents in 2014-15. This was the same number of running line collisions reported in 2013-14 but a decrease of 13.8 percent on the yearly average reported between 2010-11 and 2013-14.

Two of the running line collisions were between rolling stock, two involved persons who were not at level crossings and one was a collision with a road vehicle. The trendline has remained constant over the five year period.

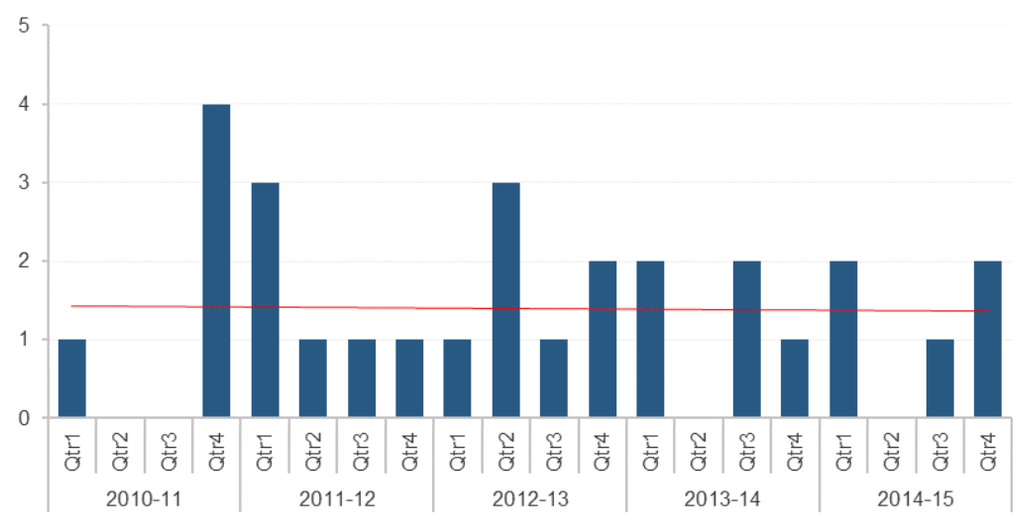


Figure 6: Category A running line collisions, Queensland, 2010-11 to 2014-15 by quarter

Level Crossing Collisions

In 2014-15 there were five level crossing collisions in Queensland; all five were with road vehicles. This is well below the annual average of 11 collisions over the preceding four years. Of the 52 collisions at level crossings since 2010-11, five involved pedestrians. The trendline shows a slight descending pattern over the five year period.

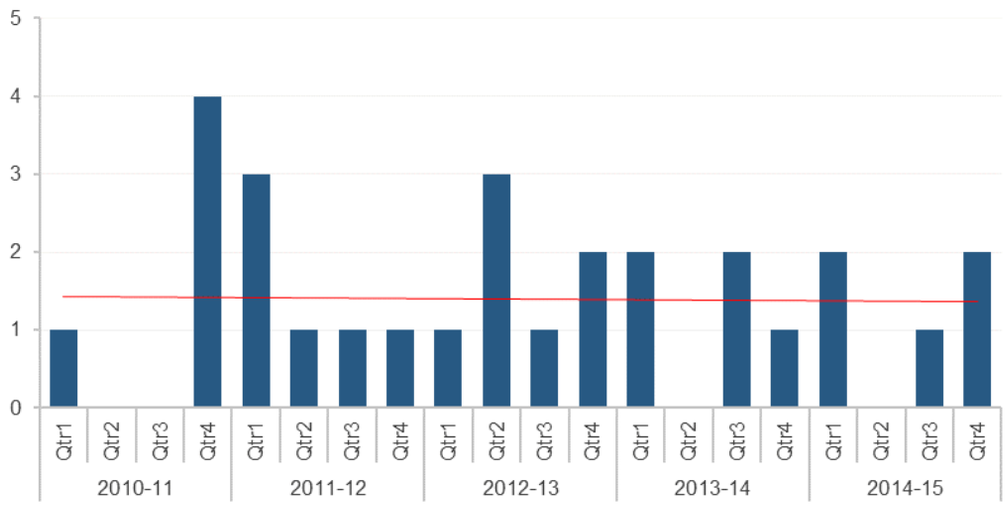


Figure 7: Level crossing collisions with persons and road vehicles, Queensland, 2010-11 to 2014-15 by quarter

Of the level crossing collisions with road vehicles in 2014-15, all five occurred at crossings protected by active protection (boom gates or flashing lights). In all of the circumstances, the road user disobeyed the road rules and the rail operation did not contribute to the incident. Since 2010-11 there have been five fatalities as a result of level crossing collisions in Queensland. In 2014-15, there were no fatalities and two hospitalisations reported as a result of level crossing collisions.

Signal Passed at Danger (SPAD)

A SPAD is an occurrence where a train is not authorised to pass a signal. A SPAD is a precursor safety occurrence – that is, an event which could, under specific circumstances where other defence mechanisms fail, lead to a serious rail safety incident.

There are five subcategories of SPAD. Three subcategories in terms of train crew error risk are 'driver misjudged', 'completely missed while running' and 'starting against signal'. Technical SPADs are those where a proceed signal changes to stop in the face of the driver giving insufficient time for the train to brake to a stop prior to passing the signal at danger. The other subcategory covers those not classified under train crew error or technical SPADs.

There were 15 Category A train crew error SPADs reported in the 2014-15 financial year which is 18 percent below the average of the previous four years (18.3). A train crew error SPAD is considered a Category A occurrence when a train passes a signal displaying a stop signal or aspect while there is another train currently occupying the track section. The proportion of Category A train crew error SPADs was 17.2 percent in 2014-15 compared with 21.1 percent over the previous four financial years.

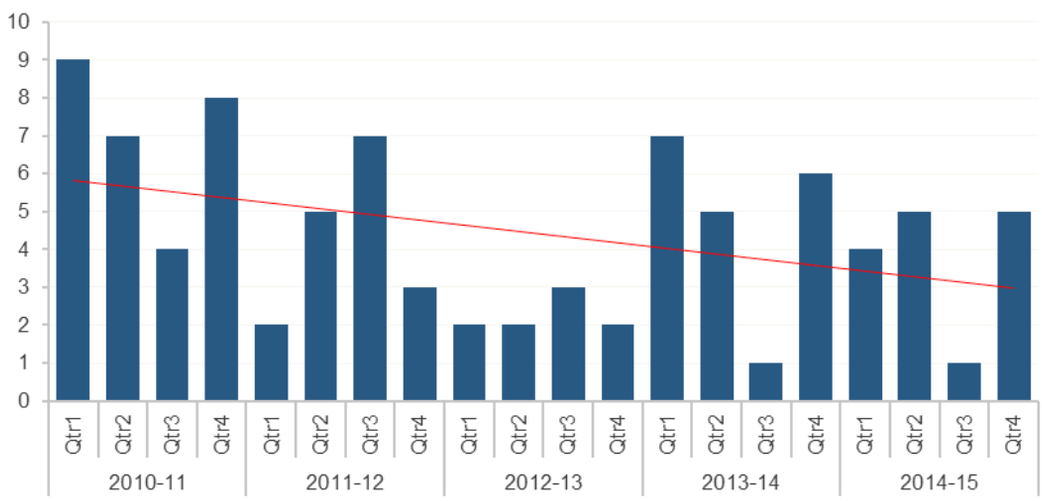


Figure 8: Category A SPADs, Queensland, 2010-11 to 2014-15 by quarter

Category B notifiable occurrences

Derailments

There were 85 yard derailments reported in 2014-15, which was a decrease of 15 (down 15 percent) from the 100 reported in the previous financial year and a decrease of 61 (42 percent) on the average of 146 over the previous four years.

Despite the comparatively high frequency of yard derailments, they are generally low risk incidents involving low-speed movements of freight rolling stock and empty passenger sets. Running line derailments are of primary concern because of the potentially severe consequences associated with higher track speeds and multi-fatality potential in regards to passenger trains.

Collisions

There were 428 running line collisions classified as Category B incidents in 2014-15, involving 210 running line collisions with animals or livestock, 199 running line collisions with obstructions, 13 running line collisions with infrastructure and six minor collisions with persons or vehicles. Collisions with obstructions includes collisions with natural objects such as tree branches that fall on the track, mud slides and objects intentionally placed on the track by vandals.

There were 54 yard collisions reported in 2014-15 which is slightly above the annual average of 47 over the preceding four years. Of these 54 collisions, 31 were collisions with infrastructure, 16 were collisions with obstructions, five were collisions with rolling stock and there was one collision each with an animal and road vehicle.

Level Crossing Near Misses

In the 2014-15 financial year there were 218 near misses with road vehicles and 110 near misses with persons reported.

A near miss is defined as any occurrence where the driver of a moving train takes emergency action or has insufficient time to take emergency action to avoid impact with a road vehicle or person at a level crossing and no collision occurred. Emergency action includes continuous audible warning and/or brake application. Incidents where the driver did not take emergency action but road vehicles or persons crossed when lights were flashing or gates were closed are not reported as near misses.

Boom Strikes

A boom strike is when a road vehicle collides with the level crossing equipment at crossings protected by boom gates. In 2014-15 there were 95 reported boom strikes. This is well below the annual average of 173 reported between 2010-11 and 2013-14.

Signal Passed at Danger

There were 87 train crew error SPADs reported in the 2014-15 financial year. This is slightly above the annual average of 86 SPADs over the preceding four years. Of the 87 SPADs, 15 (17.2 percent) were classified as Category A occurrences.

Other Category B occurrences

Details on other Category B occurrences can be found in **Appendix 4**.

Wulkuraka Maintenance facility and outlying stabling yards, photo courtesy of TMR.

Part 4: Rail Regulation Priorities for 2015-16

Programs

Compliance activities program

Rail Regulation will continue to deliver its program of risk based compliance activities and verify outstanding non-compliances from the 2014-15 year. Focus areas for the compliance activities program will include:

- rail safety worker competency
- tourist and heritage boiler certification, and
- emergency management.

Accreditation program's major projects

Rail Regulation continues its rail safety oversight on major construction projects through various compliance and accreditation activities. Major projects that will progress during the 2015-16 period include the Moreton Bay Rail Link and New Generation Rolling Stock projects. These projects are expected to transition from design and construction phase to testing and commissioning phase.

Rail Regulation will schedule several inspections and audits to ascertain that these projects, when completed, are fit for purpose and have had followed appropriate assurance and certification processes before entering into the operation and maintenance phase.

Education and awareness program

Rail Regulation will identify, develop and deliver education and awareness sessions to the tourist and heritage and small commercial railway sectors. After the success of the 2014-15 program, Rail Regulation will introduce group workshop sessions that will focus on:

- asset management
- management of change
- notification of change.

Each workshops will include participants from various rail transport operators and will be delivered in a participative forum.

Safety Improvement projects

Interface agreements between road and rail managers

Rail Regulation will focus its attention on working with the relevant road and rail managers during 2015-16 to progress finalisation of outstanding interface agreements.

Transportation of dangerous goods by rail

On 6 July 2013, a catastrophic rail accident occurred in Lac-Megantic, Quebec, Canada when an unattended freight train, containing hazardous materials rolled down a descending grade, derailed and exploded, causing extensive property damage and the loss of 47 lives. Following this incident, Rail Regulation decided to conduct an audit into risk management practices of accredited railways which are engaged in the transportation of dangerous goods by rail, in Queensland.

The audit is anticipated to be delivered in 2015-16. Any learnings from the audit will be shared with the rail transport operators and recommendations will be considered for implementation.

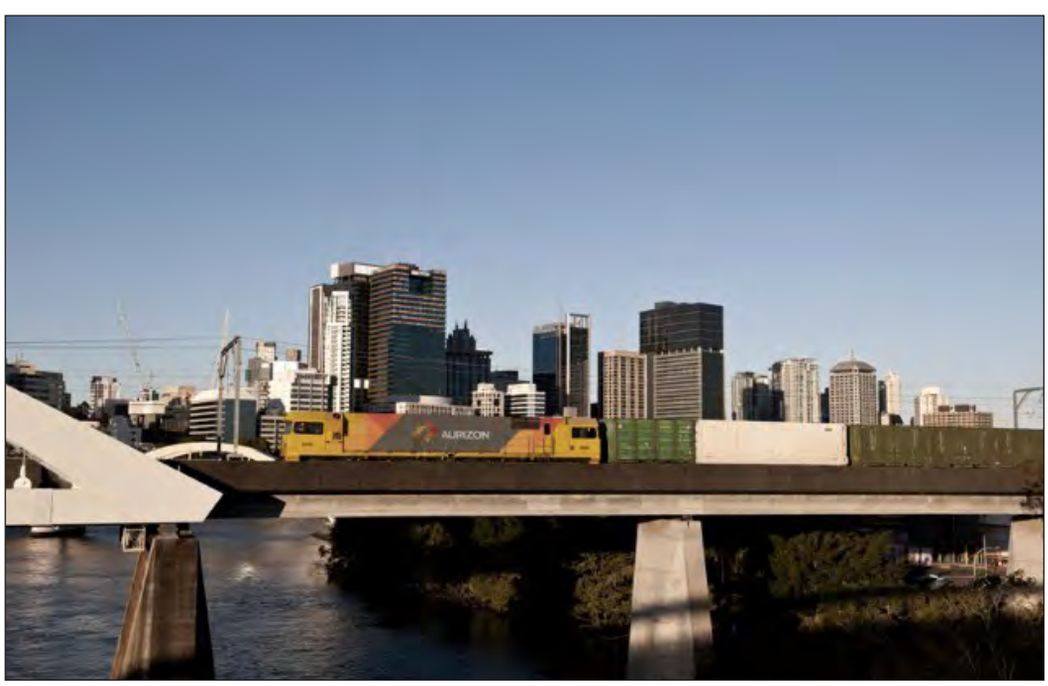
Review of tourist and heritage steam locomotive boiler management systems

Steam locomotives are operated by a number of tourist and heritage rail transport operators in Queensland. Steam locomotive boiler operations pose a high risk to the safety of rail safety workers and community, as the boilers operate under high pressure.

The project scope is expected to include a review of current practices and procedures, legal framework, Codes of Practice, Australian Standards and competency frameworks, with the aim of developing tools to assess and evaluate current industry practice.

Mount Isa Line derailment analysis project

Rail Regulation will prepare a report outlining the causal analysis of 41 main line derailments on the Mount Isa Line and will provide recommendations relating to rail safety improvements on the Mount Isa Line. The analysis is expected to be completed in 2015-16.



Aurizon Freight Train crossing the Brisbane River over the Merivale Bridge, photo courtesy of Aurizon.

Appendix 1: Accredited Rail Transport Operators as at 30 June 2015

Organisation	Rail Infrastructure Manager	Rolling Stock Operator	Commercial	Tourist and Heritage	Date Accredited
3801 Limited		▪	▪		29.09.2005
Adani Mining Pty Ltd	▪	▪	▪		31.07.2012
Airtrain Citylink Ltd	▪	▪	▪		14.10.1998
ATEC Freight Terminals Pty Ltd	▪		▪		18.04.2013
Atherton–Herberton Historic Railway Inc	▪	▪		▪	01.11.2010
Aurizon Network Pty Ltd	▪	▪	▪		01.07.2010
Aurizon Operations Ltd	▪	▪	▪		01.07.2010
Australia Eastern Railroad Pty Ltd	▪	▪	▪		01.09.2008
Australian Narrow Gauge Railway Museum Society	▪	▪		▪	19.06.1997
Australian Rail Track Corporation Ltd	▪	▪	▪		15.01.2010
Australian Railway Historical Society	▪	▪		▪	19.06.1997
Australian Society of Section Car Operators Inc		▪		▪	05.03.2002
Australian Tube Mills Pty Ltd	▪	▪	▪		30.03.2004
BM Alliance Coal Operations Pty Ltd	▪	▪	▪		01.06.2012
Bombardier Transportation Australia Pty Ltd	▪	▪	▪		05.02.2008
BP Australia Pty Ltd		▪	▪		09.9.2013
Brand Productions Corporate	▪		▪		10.12.2010
Bundaberg Steam Tramway Preservation Society Inc	▪	▪		▪	17.11.2011
Cairns Kuranda Steam	▪	▪	▪		14.05.2001
Cement Australia Pty Ltd		▪	▪		09.12.2013
Coleman Rail Pty Ltd		▪	▪		01.05.2013
Copper Refineries Pty Ltd	▪	▪	▪		15.06.2010
Darling Downs Historical Rail Society Ltd	▪	▪		▪	21.10.2008
Downer EDI Rail Pty Ltd	▪	▪	▪		15.10.2009
Downer EDI Works Pty Ltd		▪	▪		01.04.2010
Freightliner Australia Pty Ltd		▪	▪		14.05.2007
Friends of Archer Park Station and Steam Tram Museum		▪		▪	21.7.2014
Genesee and Wyoming Australia Pty Ltd		▪	▪		25.11.2002
Ginger Headquarters Pty Ltd	▪	▪	▪		04.11.2013
GoldLinQ Pty Ltd	▪	▪	▪		03.05.2011
GrainCorp Operations Ltd	▪	▪	▪		19.04.2000
Great Southern Rail Limited		▪	▪		20.05.2003
Hancock Coal Infrastructure Pty Ltd	▪		▪		01.12.2011
Incitec Pivot Limited		▪	▪		15.03.2013
Interail Australia Pty Ltd		▪	▪		26.03.2002
John Holland Pty Ltd		▪	▪		10.08.2009

Kuranda Scenic Travel		▪	▪		01.8.2014
Laing O'Rourke Australia Construction Pty Ltd		▪	▪		05.12.2011
Lend Lease Engineering Pty Ltd		▪	▪		10.8.2012
Mary Valley Heritage Rail Museum	▪	▪		▪	23.04.1998
Maryborough City Whistle Stop Committee		▪		▪	04.11.1999
McConnell Dowell Constructions Australia Pty Ltd		▪	▪		08.11.2010
New South Wales Rail Transport Museum		▪		▪	03.04.1998
Northern Longhaul Railroad Pty Ltd		▪	▪		01.3.2014
NSW Trains		▪	▪		03.09.2004
Pacific National Pty Ltd	▪	▪	▪		28.06.2002
Port Douglas Steam Train Company Pty Ltd	▪	▪		▪	15.04.2003
Port of Brisbane Pty Ltd	▪		▪		11.11.1999
Queensland Nickel Pty Ltd		▪	▪		18.04.2013
Queensland Pioneer Steam Railway Co-Operative Ltd	▪	▪		▪	01.07.1997
Queensland Rail Limited	▪	▪	▪		01.07.2000
Rattler Railway Company Ltd	▪	▪		▪	01.05.2015
Ravenshoe Railway Co Ltd	▪	▪		▪	03.10.2006
Rhomberg Rail Australia Pty Ltd		▪	▪		01.06.2012
Rockhampton Regional Council	▪	▪		▪	13.06.2008
SCT Logistics		▪	▪		01.05.2007
Southern Downs Steam Railway Association	▪	▪		▪	29.05.2002
Taylor Rail Australia Pty Ltd		▪	▪		30.10.2014
The Big Pineapple Corporation Pty Ltd	▪	▪	▪		02.04.2013
The Brisbane Tramway Museum Society	▪	▪		▪	21.11.2013
The Rail Motor Society Incorporated		▪		▪	14.11.2008
Thiess Pty Ltd		▪	▪		30.05.2011
Transfield Services (Australia) Pty Ltd		▪	▪		14.11.2013
UGL Rail Service Pty Ltd		▪	▪		24.9.2013
Viva Energy Australia Ltd		▪		▪	22.10.2014
Wilmar Sugar Australia Limited	▪	▪		▪	22.12.2000

Appendix 2: Private Siding Operators and Exempted Operators as at 30 June 2015

Organisation	Siding	Date Registered
AWB Grainflow Pty Ltd	Jondaryan AWB Siding	07.11.2013
AWB Grainflow Pty Ltd	*Talwood AWB Siding*	*07.11.2013*
AWB Grainflow Pty Ltd	The Gums AWB Siding	07.11.2013
BHP Billiton Minerals Pty Ltd	BHP Billiton Cannington Tippler	11.12.2013
BlueScope Steel (AIS) Pty Ltd	BlueScope Steel	25.11.2013
Board of the Queensland Museum	The Workshops Rail Museum	07.11.2013
Bowen Coke Pty Ltd	Bowen Coke	24.10.2014
Australian Terminal Operations Management Pty Ltd	BP Cloncurry	07.11.2013
Australian Terminal Operations Management Pty Ltd	BP Port of Townsville	07.11.2013
Carrington Ginning Pty Ltd	Carrington	07.11.2013
Cement Australia Pty Ltd	NACL Cairns	07.11.2013
Cement Australia Pty Ltd	QCL Sidings	07.11.2013
Gladstone Ports Corporation Limited	K&S	07.11.2013
Glencore Port Operations	Glencore Port Operations	09.12.2013
Incitec Pivot Limited	Mount Isa Acid Sidings	25.11.2013
Incitec Pivot Limited	Phosphate Hill	11.12.2013
Incitec Pivot Tippler	Incitec Pivot Tippler	07.11.2013
Jaid Pty Ltd & Tremos Pty Ltd	Owanyilla Balloon Loop	07.11.2013
Louis Dreyfus Warehousing	Cotton (Dunavants)	07.11.2013
Mount Isa Mines	MIM Siding	07.11.2013
Namoi Cotton Alliance	Namoi Cotton Alliance	26.06.2014
New Acland Coal Pty Ltd (NAC)	Jondaryan Coal Siding	07.11.2013
Orrcon Manufacturing	Pradella (Orrcon) Siding	23.11.2014
QGC Pty Ltd	QGC Siding Rainby	18.07.2014
Queensland Sugar Limited	Sugar Roads	25.02.2014
Queensland Sugar Limited	Bulk Sugar Terminal Mackay	25.02.2014
Teys Australia Pty Ltd	Siding (cattle siding owned by Teys)	07.11.2013
The Shell Company of Australia Limited	Shell Cloncurry	07.11.2013
The Shell Company of Australia Limited	Shell Mt Isa	07.11.2013
The Shell Company of Australia Limited	Shell Townsville	07.11.2013
UGL Rail (North Queensland) Pty Ltd	Goninans	07.11.2013

Exempted Organisation	Date Exempted
Bell Progress & Heritage Association Inc	02.06.2014
Bundaberg Railway Historical Society Inc	20.01.2014
Hervey Bay Historical Village and Museum	20.12.2013
Nambour and District Historical Museum Association Inc.	19.08.2013
Ram DTC as trustee for R.A. McCosker Family Trust (Quoin Island Retreat Railway)	22.07.2013
Rotary Club of Emerald Inc	16.09.2013
Tinbeerwah Mountain Railway	01.10.2011

Appendix 3: Serious incidents, 2014-15

In the 2014-15 financial year there were 20 serious rail safety incidents. Each of the listed incidents resulted in a serious injury to a person or a fatality.

Fatalities

Date	QT Reference Number	Description	Description
5 July 2014	4971	Collision	At 4.00am a person was struck by a train on approach to Bundamba station. Information suggests that the deceased was trespassing within the rail corridor when struck.
25 September 2014	5012	Slip, Trip or Fall	At approximately 1.40pm a male outrider fell from the rear of a train between Altandi and Woodridge stations. The male was graffitting the rear window of the train when he fell.
1 November 2014	5032	Electrical Infrastructure irregularity	At 8.30pm a male person came in contact with the overhead line equipment within Moolabin Yard. At the time the male and a friend were trespassing within the yard.
26 March 2015	5097	Collision	At 9.59am a male person was struck by a train at Woodridge station. At the time the person was talking on his phone within the danger zone on the platform.
16 May 2015	5112	Safeworking breach	At 9.30am an employee was caught between the arm of an indexing arm and wagon while unloading minerals.

Serious injuries

Date	QT Reference Number	Description	Description
15 August 2014	4985	Collision	A train collided with a road vehicle near Gaul Street level crossing in Gatton. The vehicle appears to have turned onto the tracks at the level crossing and proceeded down the track.
27 September 2014	5013	Track and civil infrastructure irregularity	At truck ran off the Bruce Highway at Alligator Creek and come to rest on the rail line. The driver of the vehicle was trapped and unconscious.
7 December 2014	5056	Slip, Trip or Fall	An elderly passenger was walking down stairs adjacent to Central station, then slipped and fell down approximately five steps. The passenger sustained severe lacerations to their head and legs.
17 January 2015	5070	Railway Trespass	A person received an electric shock while climbing over a fence at Nerang and coming into contact with the overhead line equipment.
18 January 2015	5071	Railway Trespass	A person came into contact with the overhead line equipment near Woodridge. This person was observed, with four others, climbing over a pedestrian bridge barrier.
9 February 2015	5083	Slip, Trip or Fall	An elderly passenger walking away from the ticket vending machine at Yeerongpilly station tripped on a concrete block and sustained a head injury by falling and hitting the seat.
9 February 2015	5084	Slip, Trip or Fall	A female passenger was walking down stairs at Booval station when she fell. The passenger had recently had an eye operation.
14 February 2015	5086	Slip, Trip or Fall	An elderly male passenger was going up an escalator with a walking stick at Roma street when he slipped and fell hitting his head.
17 February 2015	5088	Slip, Trip or Fall	A person trespassing on the back of a locomotive jumped from the train at Duaringa receiving serious injuries.
23 February 2015	5091	Slip, Trip or Fall	A male person was found lying beside the track at North Bundaberg. The person had received an electric shock while climbing a mast and contacting overhead line equipment.
24 February 2015	5093	Slip, Trip or Fall	A female member of the public was riding her bicycle with no helmet when she lost control and rode through the open gate at Wulkuraka yard and hitting concrete sleepers.
11 March 2015	5095	Slip, Trip or Fall	An elderly female passenger was detraining when she fell hitting her head on the platform at Caboolture.
10 April 2015	5104	Slip, Trip or Fall	An intoxicated male passenger fell down an escalator at Central station suffering head injuries.
13 April 2015	5108	Slip, Trip or Fall	A shunter fell over in the Mayne stabling yard suffering a fractured left elbow, requiring surgery.
23 April 2015	5109	Slip, Trip or Fall	An elderly female passenger was walking to the door of the train at Yeerongpilly when she fell, as the train moved, suffering pain to her right hip.
18 May 2015	5114	Slip, Trip or Fall	An elderly male passenger fell from the train onto the platform at Morayfield, sustaining a large laceration to his forehead. Passenger lost consciousness and also suffered bruising /fracture to ribs.
20 May 2015	5118	Slip, Trip or Fall	A child was walking down stairs near Chelmer station and has fallen between the lower rails falling 4 metres to the ground below. The child suffered blood in her urine and a collapsed lung.
15 June 2015	5128	Level crossing collision	A train collided with a charter bus at the Draper Street level crossing in Portsmith. There were 19 passengers on the bus, six required transportation to hospital and two were admitted suffering from serious injuries.
29 June 2015	5133	Slip, Trip or Fall	An elderly female passenger has fallen from the top of escalator at Roma Street while holding a small bag and suitcase on wheels. The passenger has sustained deep lacerations to multiple body locations.

Appendix 4: Notifiable occurrences, 2010-11 to 2014-15

Queensland's rail transport operators are required under the *Transport (Rail Safety) Act 2010* to report on rail safety occurrences.

Number of selected notifiable occurrences, Queensland, 2010-11 to 2014-15

Occurrence Type* / Financial Year	2010-11	2011-12	2012-13	2013-14	2014-15	Ave 2010-11 to 2013-14
Running line derailments	41	36	26	20	17	30.8
Yard line derailments	147	149	187	100	85	145.8
Running line collisions	5	6	7	5	5	5.8
Yard collisions	44	43	52	49	54	47.0
Level crossing collisions - persons	0	2	1	2	0	1.3
Level crossing collisions - road vehicle	10	10	13	9	5	10.5
Level crossing near misses - persons	219	203	126	113	110	165.3
Level crossing near misses - road vehicle	307	372	352	227	218	314.5
SPAD - train crew error	81	76	98	91	87	86.5
SPAD - Technical	252	291	279	293	266	278.8
Proceed Authority Exceeded - train crew error	11	7	6	8	5	8.0
Slip, trip or fall	526	561	572	667	559	581.5
Track and civil infrastructure irregularities	960	811	1089	822	723	920.5
Safeworking rule or procedure breach	174	167	122	110	139	143.3
Load irregularities	281	407	442	317	144	361.8
Electrical infrastructure irregularities	142	161	108	88	114	122.6
Rolling stock irregularities	488	610	449	639	284	494.0

* Not all OC-G1 occurrence types are included in table

The following figures show rail safety occurrences by occurrence type for the five years from 2010-11 to 2014-15 on a quarterly basis.

Derailments

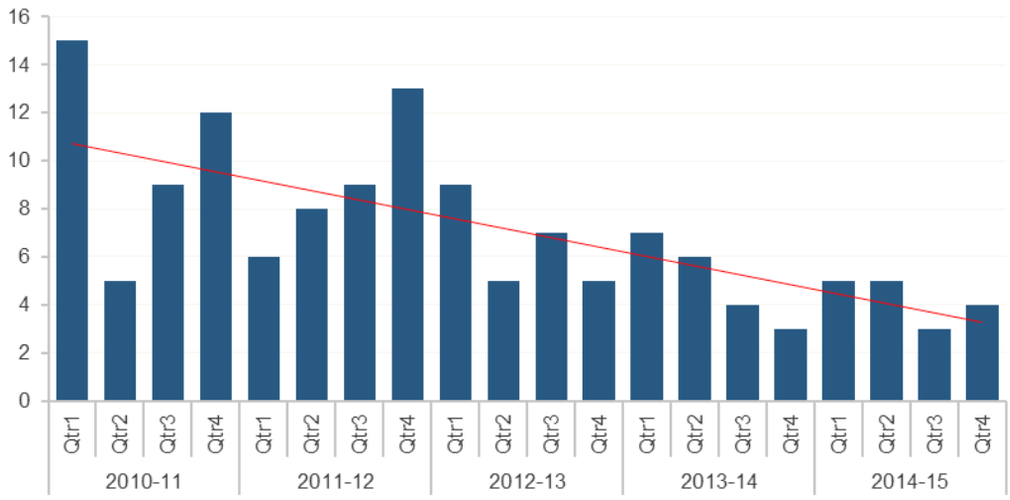


Figure 4-1: Running Line Derailments

A running line derailment is any derailment that affects the safe operations of a running line.

There were 17 running line derailments reported in 2014-15. This is a decrease of 17.6 percent from 2013-14 and a decrease of 45 percent on the yearly average reported between 2010-11 and 2013-14 (average 30.8 derailments per year).

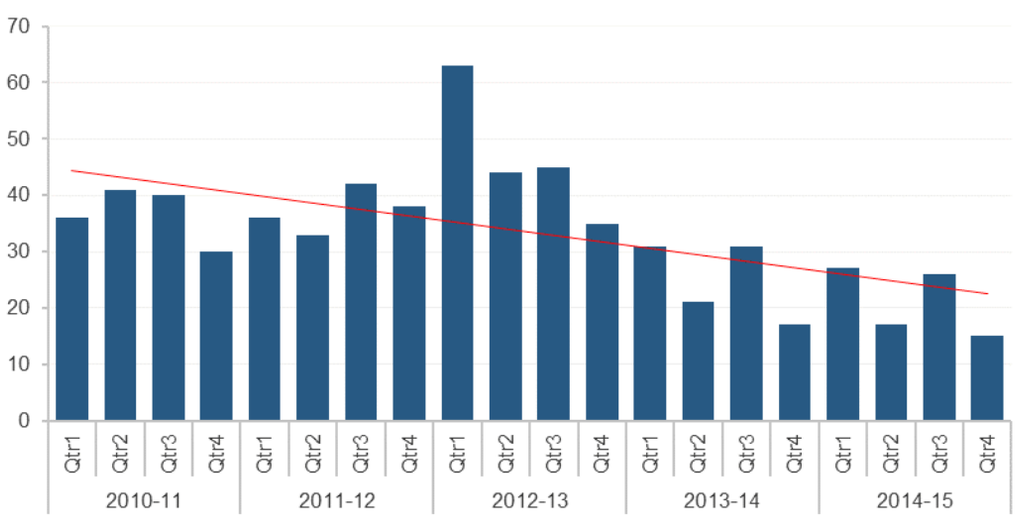


Figure 4-2: Yard Derailments

A yard derailment is any derailment other than a running line derailment.

In 2014-15 there were 85 yard derailments in Queensland. This is 15.0 percent below the 100 reported in 2013-14 and 41.7 percent below the annual average of 145.8 over the preceding four years.

Collisions

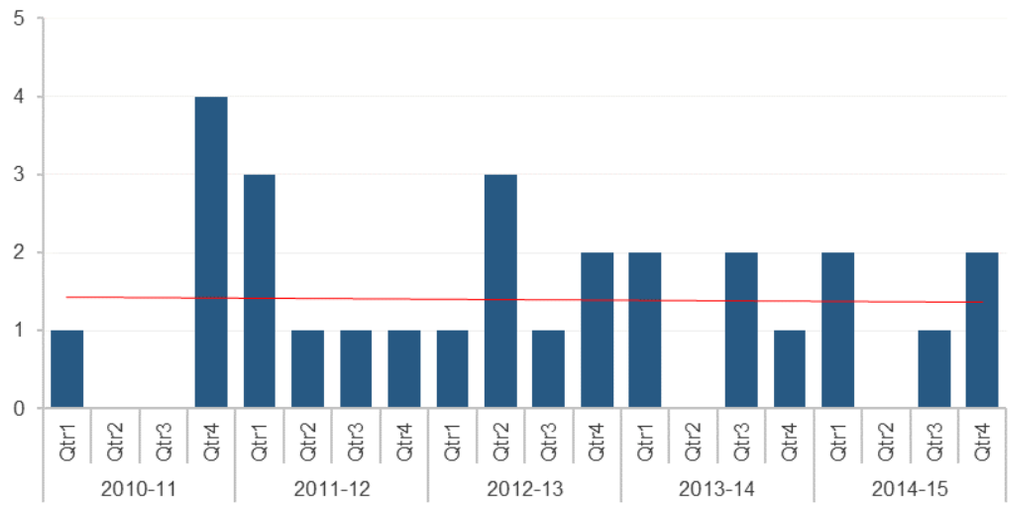


Figure 4-3: Running Line Collisions

Running line collisions include collisions between trains, with rolling stock, with vehicles or persons not at level crossings and with infrastructure.

There were five running line collisions classified as Category A incidents in 2014-15. This was the same number of running line collisions reported in 2013-14 but a decrease of 13.8 percent on the yearly average reported between 2010-11 and 2013-14.

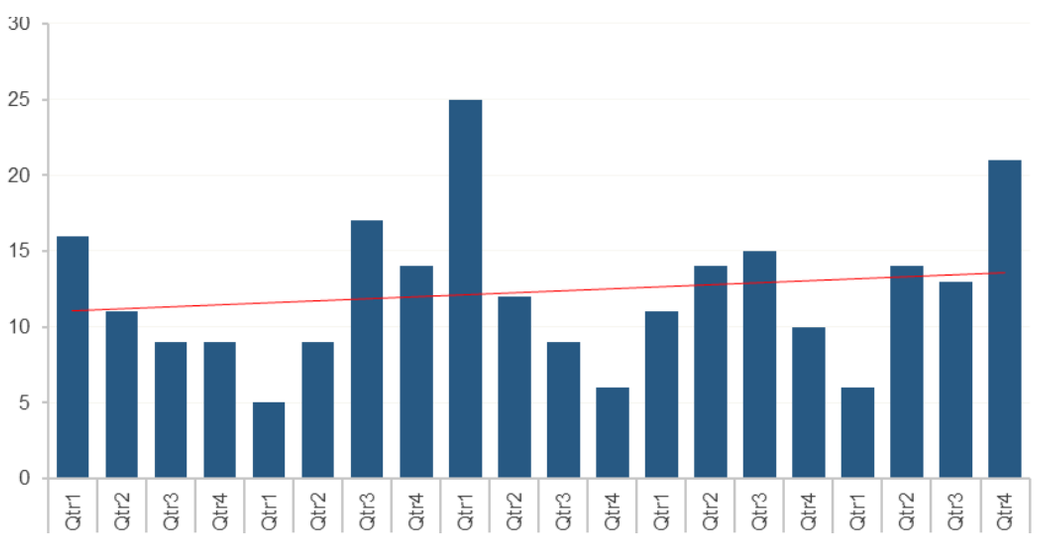


Figure 4-4: Yard Collisions

There were 54 yard collisions reported in 2014-15. This was five more (10.2 percent) than in 2013-14 and seven more (14.9 percent) than the yearly average reported between 2010-11 and 2013-14. The increase in 2014-15 is attributable to a large increase in the number of yard collisions with infrastructure, which increased from 12 in 2013-14 to 31 in 2014-15, 12 of which were collisions with loadout chutes (one in 2013-14).

Level Crossing Occurrences

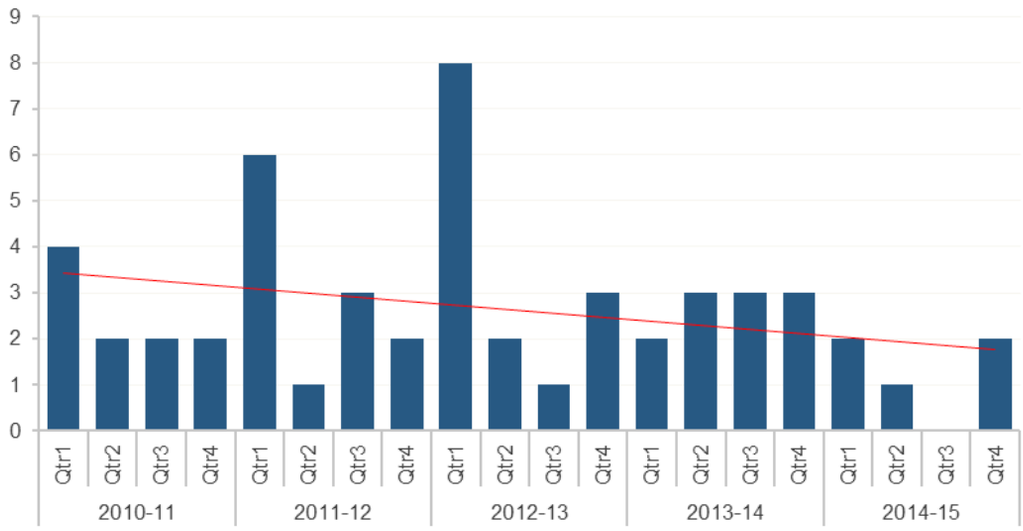


Figure 4-5: Level Crossing Collisions with vehicles or persons

In 2014-15 there were five level crossing collisions in Queensland; all five were with road vehicles. This is well below (57.6 percent) the annual average of 11.8 collisions over the preceding four years.

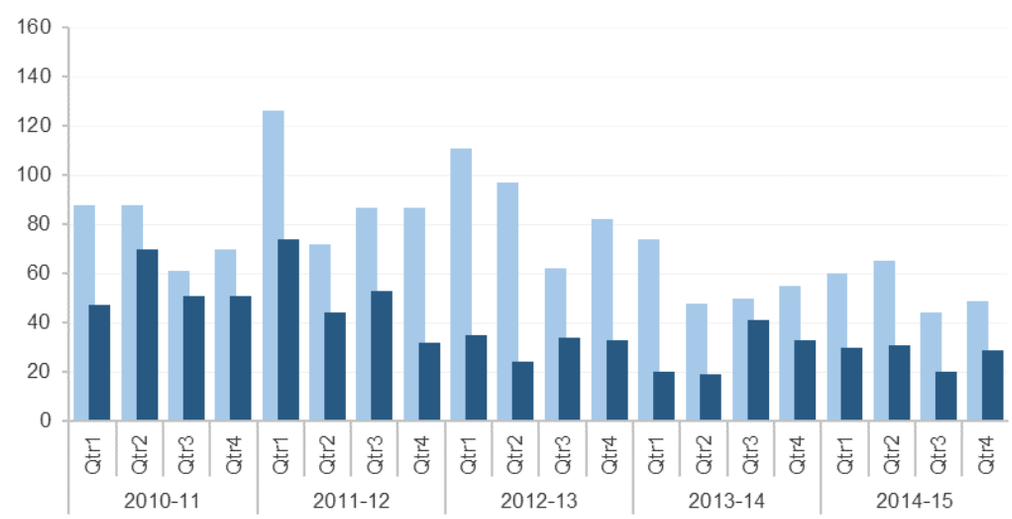


Figure 4-6: Level crossing reported near misses with vehicles and persons

A near miss is defined as any occurrence where the driver of a moving train takes emergency action or has insufficient time to take emergency action to avoid impact with a road vehicle or person at a level crossing and no collision occurred. Emergency action includes continuous audible warning and/or brake application. Incidents where the driver did not take emergency action but road vehicles or persons crossed when lights were flashing or gates were closed are not reported as near misses.

In 2014-15 there were 328 near misses at level crossings in Queensland. Of these 218 were with road vehicles and 110 with pedestrians. This is 3.5 percent below the 340 near misses in 2013-14 and 31.6 percent below the annual average of 479.8 near misses over the preceding four years.

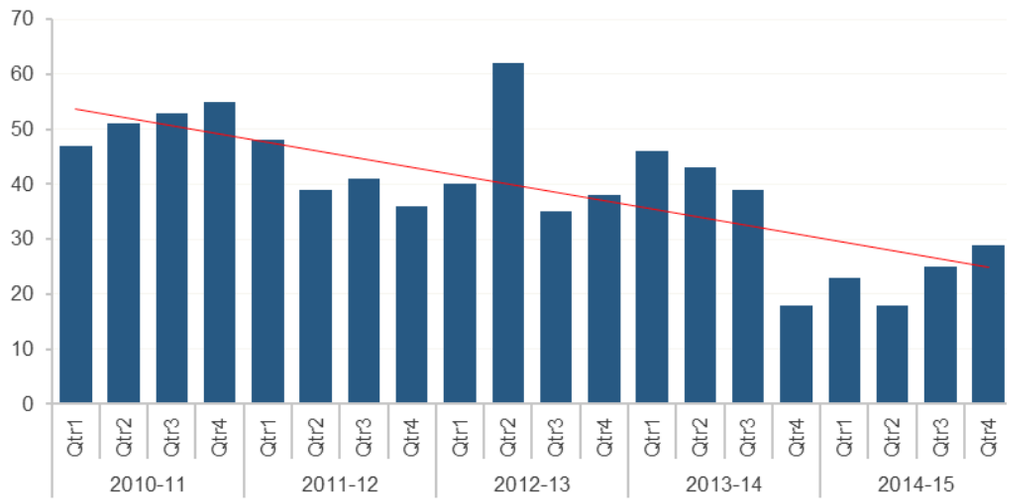


Figure 4-8: Level Crossing Occurrences (Boom Strikes)

In 2014-15 there were 95 boom strikes at level crossings in Queensland. This is 34.9 percent below the 146 boom strikes reported in 2013-14 and 45 percent below the annual average of 172.8 boom strikes over the preceding four years.

Signal Passed at Danger (SPAD)

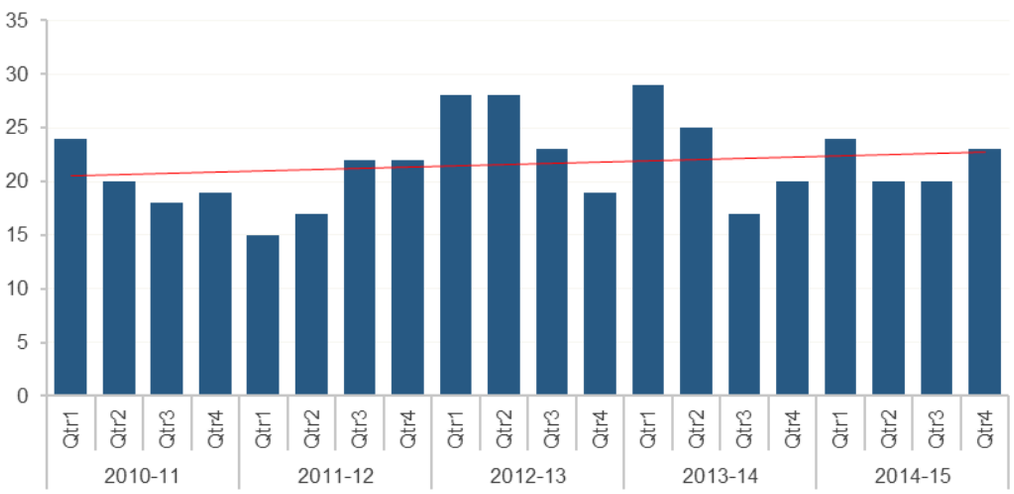


Figure 4-9: Train Crew Error SPADS

The three sub-categories of SPAD in terms of train crew error risk are driver misjudged, completely missed while running and starting against signal.

In 2014-15 there were 87 train crew error SPADs in Queensland. This is 4.4 percent below the 91 reported in 2013-14 but 0.6 percent above the annual average of 86.5 over the preceding four years.

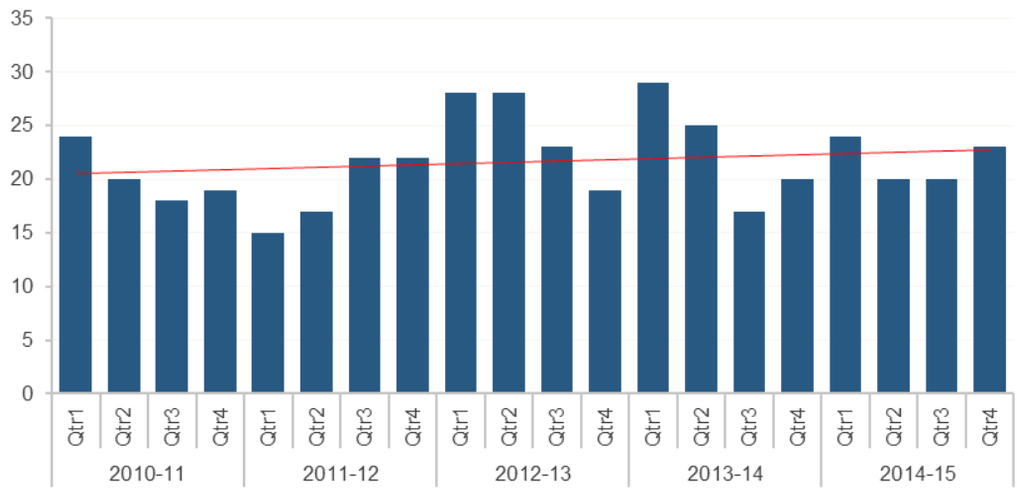


Figure 4-10: Technical Error SPADS

Technical SPADs are those where a proceed signal changes to stop in the face of the driver giving insufficient time for the train to brake to a stop prior to passing the signal at danger.

In 2014-15 there were 266 technical SPADs in Queensland. This is 9.2 percent below the 293 reported in 2013-14 and 4.6 percent below the annual average of 278.8 over the preceding four years.

Other notifiable occurrences

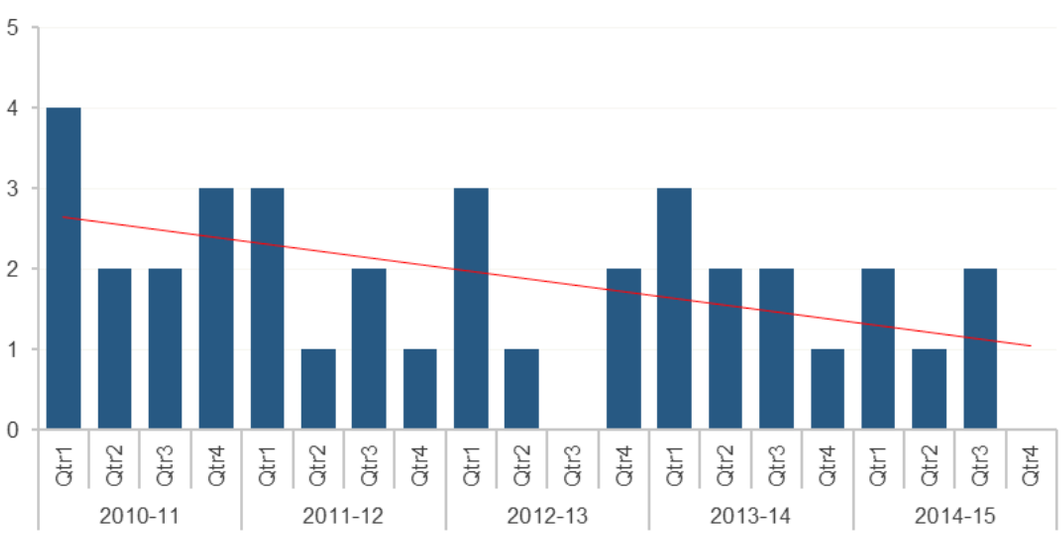


Figure 4-11: Exceed limit of authority occurrences

Exceed limit of authority incidents occur when a train exceeds the limits of authorised movements. It includes authorised movements such as train orders/authority, special authority orders, tokens, warrants and locations such as stop boards, limit boards etc. They do not include SPADs.

In 2014-15 there were five exceed limit of authority incidents in Queensland. This is 37.5 percent below the eight reported in 2013-14 and 37.5 percent below the annual average of eight over the preceding four years.

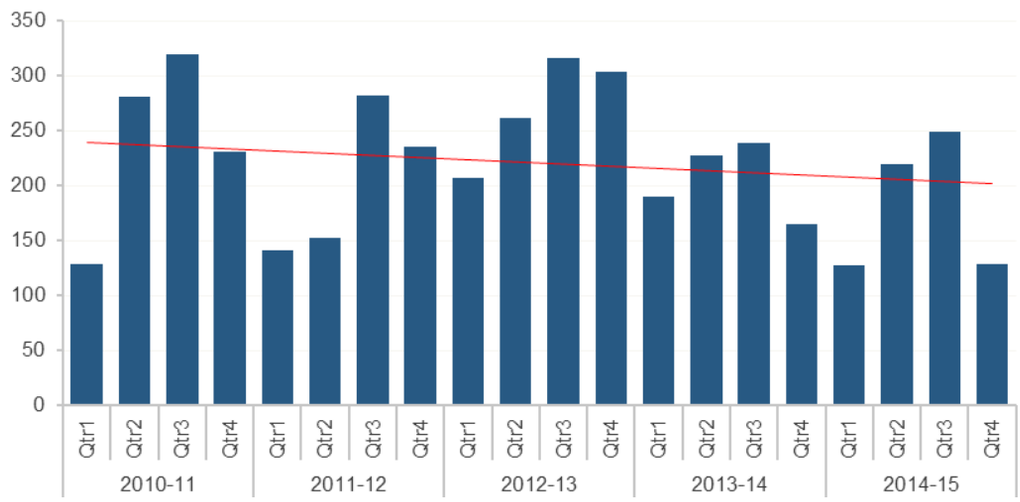


Figure 4-12: Track and Civil Infrastructure Irregularities

Track and civil irregularities are any irregularity in the track or civil infrastructure that endangers or has the potential to endanger the safety of railway operations, persons and/or premises. It includes broken rail, misalignment of track and spread track but excludes any irregularity detected and corrected under normal maintenance.

In 2014-15 there were 723 Track and civil irregularities reported in Queensland. This is 12 percent below the 822 reported in 2013-14 and 21.5 percent below the annual average of 920.5 over the preceding four years.

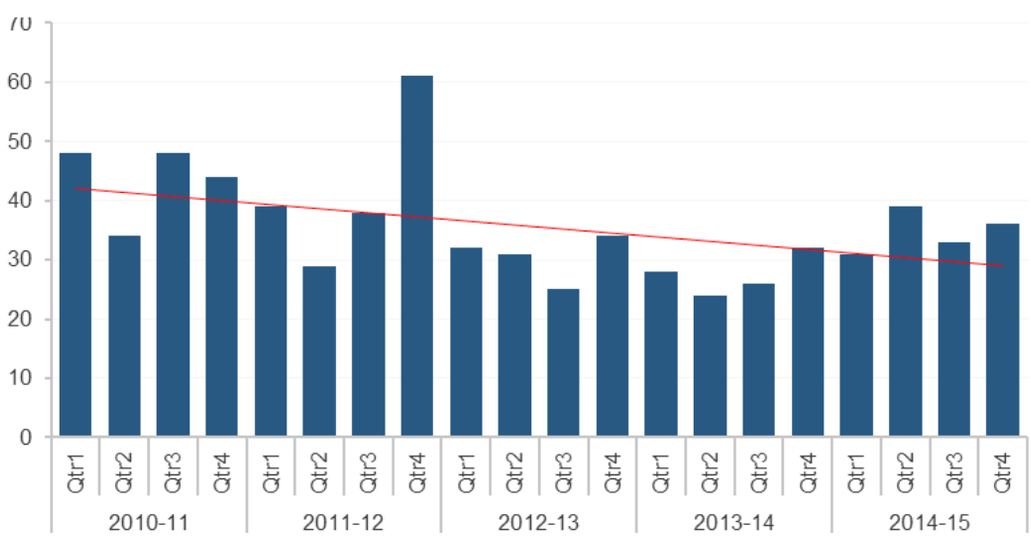


Figure 4-13: Safeworking Rule or Procedure Breach

A safeworking rule or procedure breach is any breach of an operational; safeworking system or procedure that endangers or has the potential to endanger the safety of railway operations or persons. It includes breaches such as human failures (intentional or unintentional), communication failures, and failure to act on information or to comply with directions. It excludes system failures identified as part of standard inspection and maintenance programs.

In 2014-15 there were 139 safeworking rule or procedure breaches reported in Queensland. This is 26.4 percent above the 110 reported in 2013-14 and 3.0 percent below the annual average of 143.3 over the preceding four years.

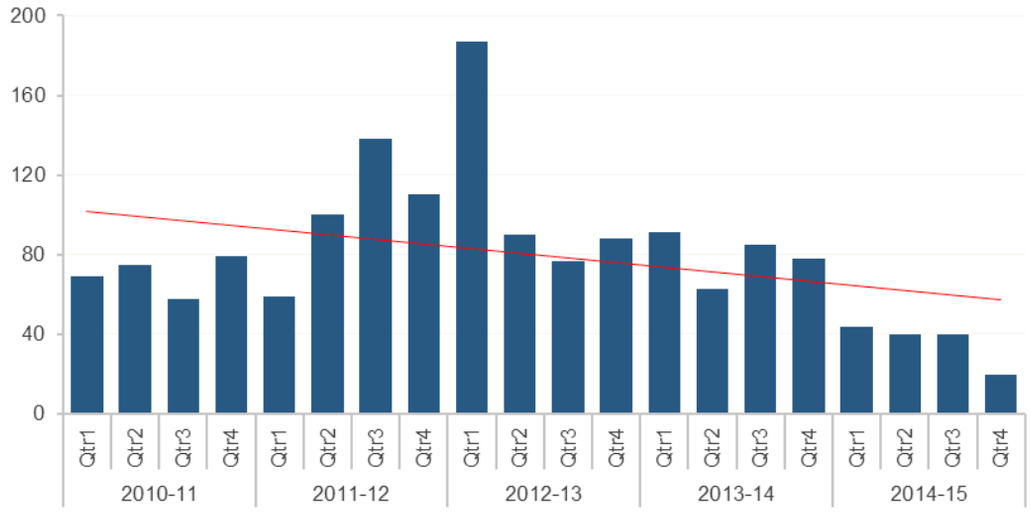


Figure 4-14: Load Irregularities

Load irregularities include situations where the load endangers or has the potential to endanger the safety of railway operations, persons and/or premises or causes damage. It includes open or incorrectly secured doors, loads that are placed or shifted out of gauge, load spills, uneven distribution of loads, loose load fastenings and overloading.

In 2014-15 there were 144 load irregularities reported in Queensland. This is 54.6 percent below the 317 reported in 2013-14 and 60.2 percent below the annual average of 361.8 over the preceding four years.

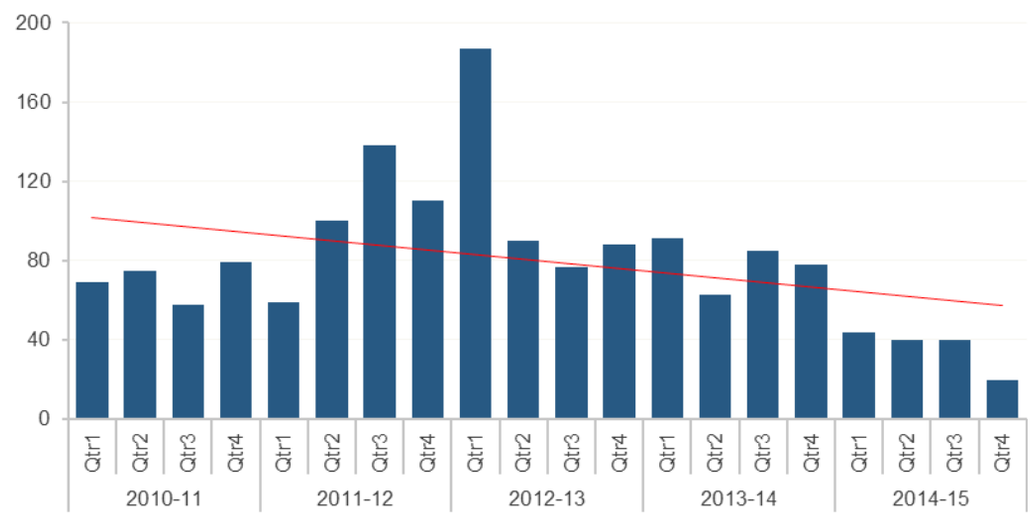


Figure 4-15: Electrical infrastructure irregularities

Electrical infrastructure irregularities are any irregularity in an electrical component that results in an electrical accident or endangers or has the potential to endanger the safety of railway operations, persons and/or premises. It includes fixed electrical equipment, defects in supply, dewirement or entanglements, failure of overhead line equipment and wiring.

In 2014-15 there were 114 electrical infrastructure irregularities reported in Queensland. This is 29.5 percent above the 88 reported in 2013-14 but 29.5 percent below the annual average of 122.6 over the preceding four years.

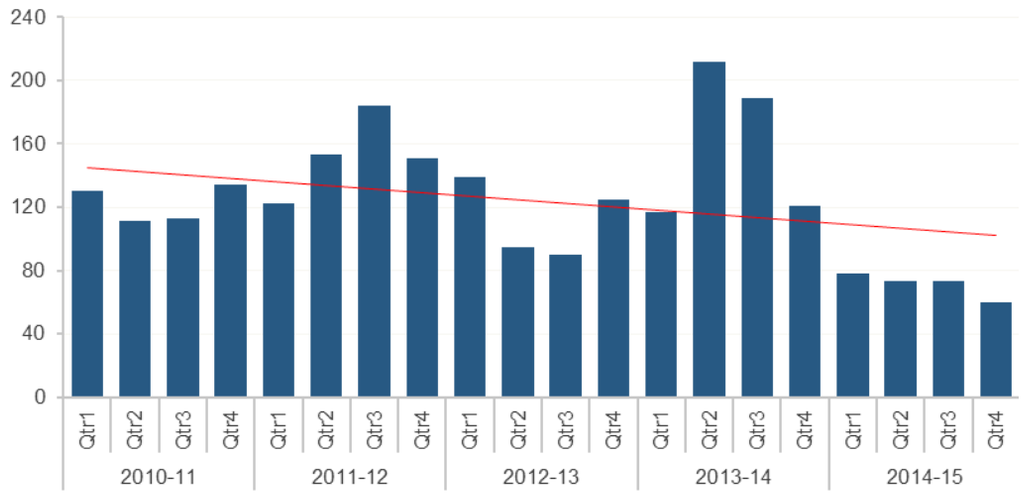


Figure 4-16: Rolling stock irregularities

Rolling stock irregularities include irregularities to rolling stock such as wheel, axle or bearing failures, train parting, braking system failures and faulty passenger doors.

In 2014-15 there were 284 rolling stock irregularities reported in Queensland. This is 55.6 percent below the 639 reported in 2013-14 and 42.5 percent below the annual average of 494 over the preceding four years.

Notes:

Connecting Queensland
www.tmr.qld.gov.au