

2009/10 Annual Safety Performance Report Overview



Introduction

This overview summarises the rail industry's safety performance over the financial year 2009/10. Recent reports have been on a calendar year basis, but RSSB has returned to financial years for consistency with Control Period 4, its associated High Level Output Specification (HLOS), and the Railway Strategic Safety Plan (SSP), all of which cover the period April 2009 to March 2014.

Headlines

- There were no passenger or workforce fatalities in train accidents in 2009/10. This is the fourth year in the last five with no such fatalities.
- There were 42 potentially higher-risk train accidents (PHRTAs); this is six lower than for 2008/09, and the lowest number recorded. At the end of 2009/10, train accident risk as measured by the Precursor Indicator Model (PIM) stood at 39% of its March 2002 baseline level, compared with 46% at the end of 2008/09. At 277, the number of category A signals passed at danger (SPADs) was a reduction of 15 on the number recorded for 2008/09, and represents the lowest financial year total since SPAD records began.
- There were 70 accidental fatalities, 395 major injuries, 10,753 minor injuries and 1,343 cases of shock/trauma. The total level of harm was 129.7 FWI, compared with 129.7 FWI recorded for 2008/09.
- Five passengers died in separate incidents, all at stations. This is equal to the figure for 2008/09; five is the lowest passenger fatality total recorded for single years. When non-fatal injuries are also taken into account, the total level of passenger harm was 38.9 fatalities and weighted injuries (FWI). While this is essentially unchanged from the previous year's total of 38.6, the rate of harm normalised by passenger journeys rose by 5% compared with 2008/09; a fall in passenger journeys has occurred during the current economic climate.
- Three members of the workforce were fatally injured in accidents during 2009/10; all were track workers. Including non-fatal injuries, the total level of workforce harm was 24.5 FWI. This is a reduction of 6% compared with the 25.9 FWI recorded for 2008/09. The rate of harm normalised by workforce hours reduced by 4% compared with 2008/09.
- There were 62 fatalities to members of the public, excluding those due to suicide or suspected suicide. Of the total, 49 were trespassers, 12 were level crossing users, and one was a member of the public who fell accidentally onto a rail line. Including non-fatal injuries, the total level of public harm was 66.3 FWI, which is 2% higher than the 65.2 FWI recorded for 2008/09. At 236, the number of suicides was above average.

Summary of injuries by person type

	2009/10						2008/09
	Fatal	Major	RIDDOR-reportable minor	Non-RIDDOR reportable minor	Shock & trauma	FWI	FWI
Passenger	5	238	1162	4104	197	38.9	38.6
Workforce	3	118	529	4776	1143	24.5	25.9
Public	62	39	52	130	3	66.3	65.2
Total	70	395	1743	9010	1343	129.7	129.7

Risk from train accidents

The past three years have seen no fatalities to passengers or workforce from train accidents. The last such event occurred in the derailment at Grayrigg, in February 2007, which resulted in the death of a passenger. Over time, there has been a falling trend in the rate of fatal train accidents involving train occupants; the current level, based on a ten-year moving average, remains below one per year.

The types of train accident with the greatest potential to cause harm are termed as 'potentially higher-risk train accidents', or PHRTAs. These account for around 6% of the total number of events that are classed under RIDDOR¹ as train accidents, but contribute around 93% of the train accident risk. Over time, the number of PHRTAs has also shown a decreasing trend; in 2009/10 there were 42 events, compared with 48 for 2008/09.

As serious train accidents are rare, RSSB also analyses trends in accident precursors, using the PIM. The PIM measure indicates that train accident risk has reduced significantly over the past decade. The most rapid improvement occurred over the period 2001/02 to the end of 2005/06, and was mostly due to the large reduction in SPAD risk brought about by the implementation of the Train Protection and Warning System (TPWS). The PIM now stands at 39% of its March 2002 baseline level, compared with 46% at the end of 2008/09.

Risk to passengers

Five passengers died in separate incidents, all at stations. Of the five, four occurred at the platform-train interface. Two were falls from the platform – in one event the person was electrocuted and in the other event the person was struck by a train – and two occurred as a result of being too close to the platform edge and coming in contact with a moving train. None of the passengers was boarding or alighting a train at the time of the accident. Based on RSSB's Safety Risk Model version 6 (SRMv6), the platform-train interface is the greatest source of passenger fatality risk. Most of the risk does not occur during boarding or alighting, but is due to the types of incident seen in 2009/10.

The fifth passenger fatality resulted from a fall on an escalator. In each of the past three years, an escalator fall has resulted in a passenger fatality, and in all three cases the person was elderly. Analysis shows that elderly people are over-represented in some types of accident on the railway, such as slips, trips and falls.

The total number of major injuries in 2009/10 was 238, compared with 236 recorded for 2008/09. The greatest cause of major injury is slips, trips and falls; just over 60% of passenger major injuries during the year were due to this cause. Slips, trips and falls also dominate the minor injury and FWI profiles.

The overall level of passenger harm in 2009/10 was 38.9 FWI, which is almost unchanged from the 38.6 FWI recorded for the previous year. However, after a period of consistent growth in passenger usage, the recent economic downturn has seen a 4% fall in passenger journeys. The normalised rate of passenger harm has risen, by 5%.

The overall level of passenger harm is based on data from the Safety Management Information System (SMIS), but passenger assaults are more frequently reported to the British Transport Police (BTP). BTP reports are therefore used to supplement analysis of

¹ The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995.

passenger safety in the area of personal security. The reports show reducing trends in both the absolute number and the normalised rate of assaults since 2005/06. The number of assaults recorded for 2009/10 was just over 3000, more than 10% lower than for the previous year. The current likelihood of being assaulted during the average journey is around one in 400,000.

Risk to the workforce

Three members of the workforce were killed in 2009/10. This is same number as in 2008/09. One fatality occurred to a look-out who was struck by a train. The other two fatalities both involved staff employed on bridge maintenance work, one on the Forth Bridge and one on the Tay Bridge.

Most workforce fatalities occur to track workers. Since 2001/02, there have been 36 workforce fatalities, 26 of whom were track workers. Track workers also dominate the major injury figure; since 2001/02 just under 60% of major injuries have occurred to this group of workers. However, track worker major injuries have generally shown an improving trend over time, and the number for 2009/10 (68) is the lowest recorded. This improvement is reflected in the workforce major injury total, which, at 118, is also the lowest recorded.

Workforce minor injuries also show an improving trend. The level of workforce harm from minor injuries is 5% lower than last year. In contrast to fatal and major injuries, minor injuries are not dominated by track workers: non-driving train crew report the most events.

In contrast to passengers, the main reporting mechanism for workforce assault is SMIS. Workforce assault is an important issue for the industry, and one that has been the focus of improved reporting as well as reduction and mitigation strategies. SMIS data shows that the number of assaults leading to physical injury, shock or trauma has been reducing in recent years. This is reflected in the trend in harm from assault, which has also decreased over the same period. In 2009/10, there were 2.3 FWI attributed to assault. Assault is of particular concern for those workforce groups that are outward facing to passengers and public, such as non-driving train crew, station staff and revenue protection officers.

The overall level of workforce harm in 2009/10 was 24.5 FWI, which is a reduction of 6% compared with the 25.9 FWI recorded for the previous year. There has been a recorded drop of 1.5% in workforce hours for the year, but the normalised rate of workforce harm still shows an improvement, of 4%.

Risk to members of the public

Excluding suicides and suspected suicides, there were 62 fatalities to members of the public in 2009/10, of which 49 were the result of trespass. Nearly 80% of trespasser fatalities are the result of being struck by trains. The majority of the remainder are electrocuted. A small proportion (5%) die as a result of train surfing, deliberately exiting trains in running, or falling onto the railway while engaged in prohibited behaviour such as climbing railway structures.

Most trespasser injuries are to pedestrians, but in 2009/10, two trespassers were in the act of riding quad bikes along the railway track. This caused a collision with a train, in which they were both fatally injured. The train was not carrying passengers at the time of the incident.

After two years with no child trespass fatalities, two such events, both boys, occurred in 2009/10. A third event occurred outside of the scope of the ASPR, to a teenage boy in a freight depot. Since 2001/02, three quarters of child trespass fatalities have been male.

There were 12 level crossing user fatalities. Seven were pedestrians, and five were road vehicle occupants, three of whom died in the same vehicle, at an accident at Halkirk.

The remaining accidental fatality to a member of the public occurred when a man walking alongside railway property fell down an embankment and onto the railway track, where he was subsequently hit by a train.

As well as the accidental public fatalities, there were 236 suicides and suspected suicides; this is above average.

Risk at the road-rail interface

The total level of harm at level crossings was 12.9 FWI, of which 12 were the public fatalities mentioned above.

There were 14 collisions between trains and road vehicles at level crossings during the year. This is fewer than the previous year, but broadly in line with the average of around 16 accidents per year since 2001/02. Most accidents are caused primarily by road user behaviour, which includes both errors and wilful misuse. However, a fatal collision at Moreton-on-Lugg in January 2010 occurred when the barriers were raised to road traffic; the incident is under investigation to ascertain the exact cause.

Away from level crossings, the other sources of road-rail interface risk are vehicle incursions and bridge strikes. At 51, the number of vehicle incursions onto the railway was fewer than last year, and continues a decreasing trend. Five of the events resulted in collisions with trains. In one instance this led to the derailment of a freight train, and in one instance this led to the death of the two quad bike riders mentioned above. For those events classed as serious or potentially serious, there was a reduction of three in the number of bridge strikes at rail over road bridges, but an increase of 13 in the number of road over rail bridge strikes.

Industry targets, trajectories and benchmarking

The overarching safety requirement for European railways, as stated in the European Safety Directive, is to maintain safety and, where reasonably practicable, improve it. The trajectories of the SSP are in keeping with this aim and meeting them will additionally ensure that the passenger and workforce safety targets laid out by the DfT in the HLOS are met. With one year of CP4 passed, safety performance satisfies most of the SSP trajectories and both the HLOS targets. In addition, performance satisfies each of the national targets set for the UK by the European Rail Agency, and Britain's railways compare very favourably against the rest of Europe. Rail continues to be one of the safest forms of transport.

Summary

The overriding safety picture at the end of 2009/10 is one of safety being maintained in the areas where the railway has direct responsibility. Improvements in train accident risk and personal injury risk to passengers and workforce occurred during the first half of the past decade and have been sustained in the second half. A similar pattern has not been observed in the areas where the railway does not have direct control: suicide, trespass and level crossings.

More detailed information on safety performance for 2009/10 is published in the 2009/10 Annual Safety Performance Report, which is downloadable from www.rssb.co.uk.