



## Road-Rail Interface Safety Performance Report Overview

This paper provides an overview of the Road-Rail Interface safety performance report, which investigates the full extent of the risk that arises where roads and railways meet. In previous reports, we have focused on level crossings alone; however, this time, we have also presented data on bridge strikes and incursion incidents involving bridges, boundary fences and access points. The full report is available on the Rail Safety and Standards Board (RSSB) website [www.rssb.co.uk](http://www.rssb.co.uk).

Some of the main facts arising from our analysis are:

- There were 10 accidental fatalities at level crossings between January and September 2007. Three road vehicle occupants were killed in accidents (two in the same incident). The remaining seven fatalities were pedestrians struck by trains.
- There were nine collisions between trains and road vehicles over the same period. This continues the improved performance seen in 2006.
- Fewer near misses with road vehicles were recorded in the first nine months of 2007, compared with Jan-Sept 2006. However, more near misses with pedestrians were reported than earlier in the decade.
- There was a 6% increase in the number of bridges struck between January and September 2007, compared to the same period in 2006.
- The serious bridge strike count has risen every year, bar one (2005), since 2002. However, the first nine months of 2007 saw a 53% drop in the number of these incidents, compared to the same period in 2006.
- Incursions via bridges, including those where a vehicle crashes through a fence on the approach to a bridge (resulting in it being struck by a train), occur around twice a year.
- There are typically between 40 and 50 incursions by road vehicles through fences each year. Incursions through fences account for almost 70% of all incursions.
- The numbers of vehicle incursions from access points fell by 52% between 2003 and 2006. Despite this, the first nine months of 2007 have seen the count rise to three more than at the same stage in 2006.
- The number of vandalism incursions (deliberate access to the infrastructure) has fallen over the period 2003-2006 by 58%, although 2007 has seen an increase of 56% over the first nine months.

### Overall risk at the road-rail interface

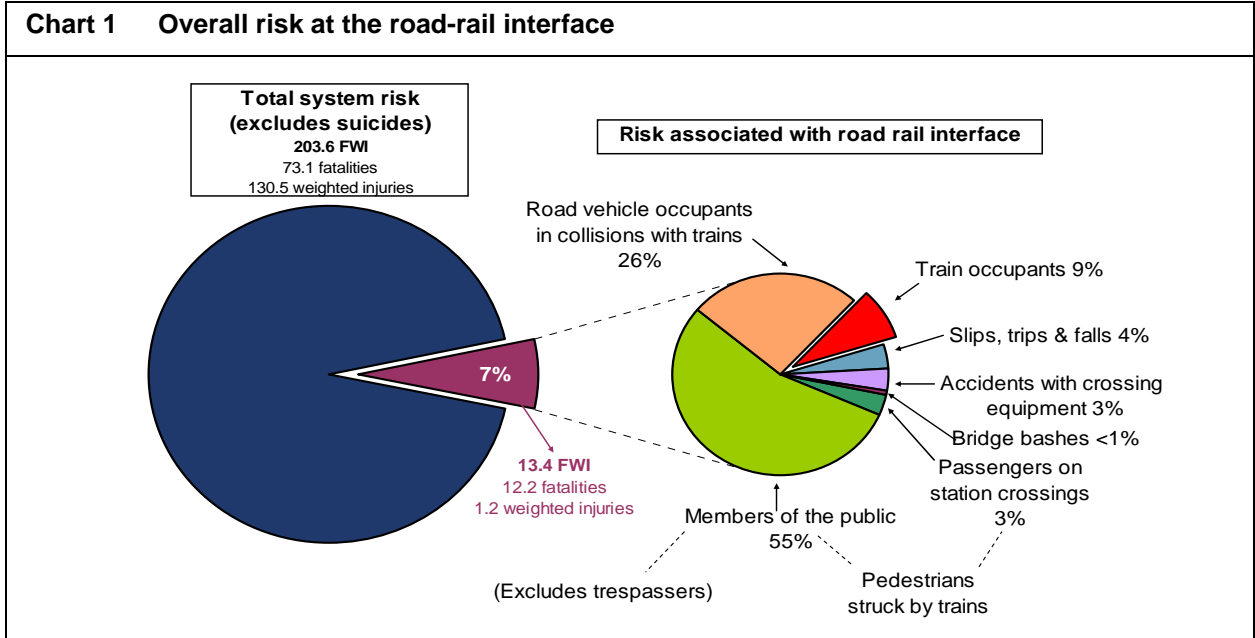
Accidents occurring at the road-rail interface (including level crossings, vehicles and pedestrians, bridges access points and fences) account (on average) for 13.4 fatalities and weighted injuries (FWIs) per year, or approximately 7% of the total system risk. This excludes the risk from suicide.

Most of the risk at the road-rail interface occurs at level crossings (6%). Indeed, less than 10% arises from bridge strikes, incursions at fences, bridges and access points. Such incursions often result from road traffic accidents (for example where a vehicle crashes through a boundary fence). Note that road vehicle occupants who are killed in road traffic accidents are excluded from our data, as they are not under the direct control of the railway.

The residual risk (1%), which excludes level crossings, involves two main groups: road vehicle occupants in collisions with trains and train occupants (including workforce).



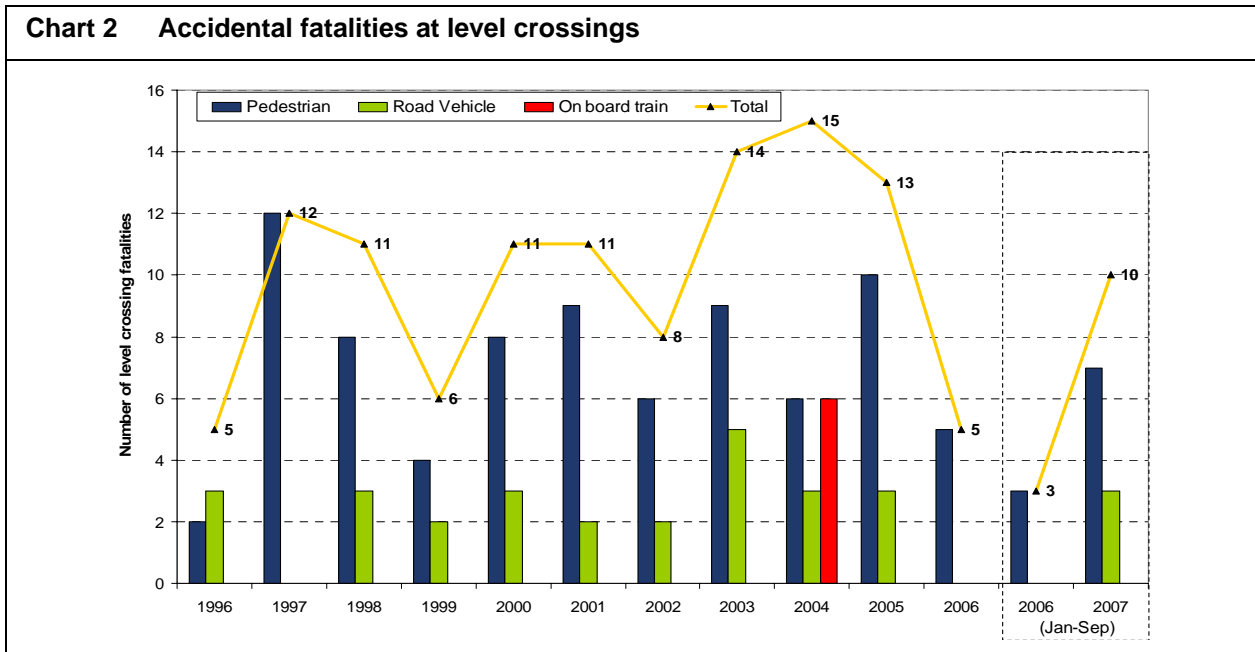
Chart 1 indicates that most of the risk involves members of the public (predominately pedestrians) being struck by trains. The second largest grouping involves collisions between trains and road vehicles. Both types of accident are most likely to occur at level crossings. Crossing users can also be harmed if they are hit by, or collide with, barriers or other equipment – or if they slip, trip or fall while traversing the crossing. Note that train occupants are exposed to less than 10% of the risk.



**Risk at level crossings**

For a fatality to be classed as occurring on a level crossing, the deceased must have been on board a train, in a road vehicle, or have been a pedestrian on the interface at the time of the incident. Fatalities to trespassers who gained access to the running line are thus not included.

Chart 2 shows the accidental fatalities that have occurred at level crossings since 1996. The data has been broken down by pedestrians, road vehicle occupants and train occupants. Most of the fatalities over the last 10 years (80%) have involved pedestrians. (Note that suicides and suspected suicides are not included.)



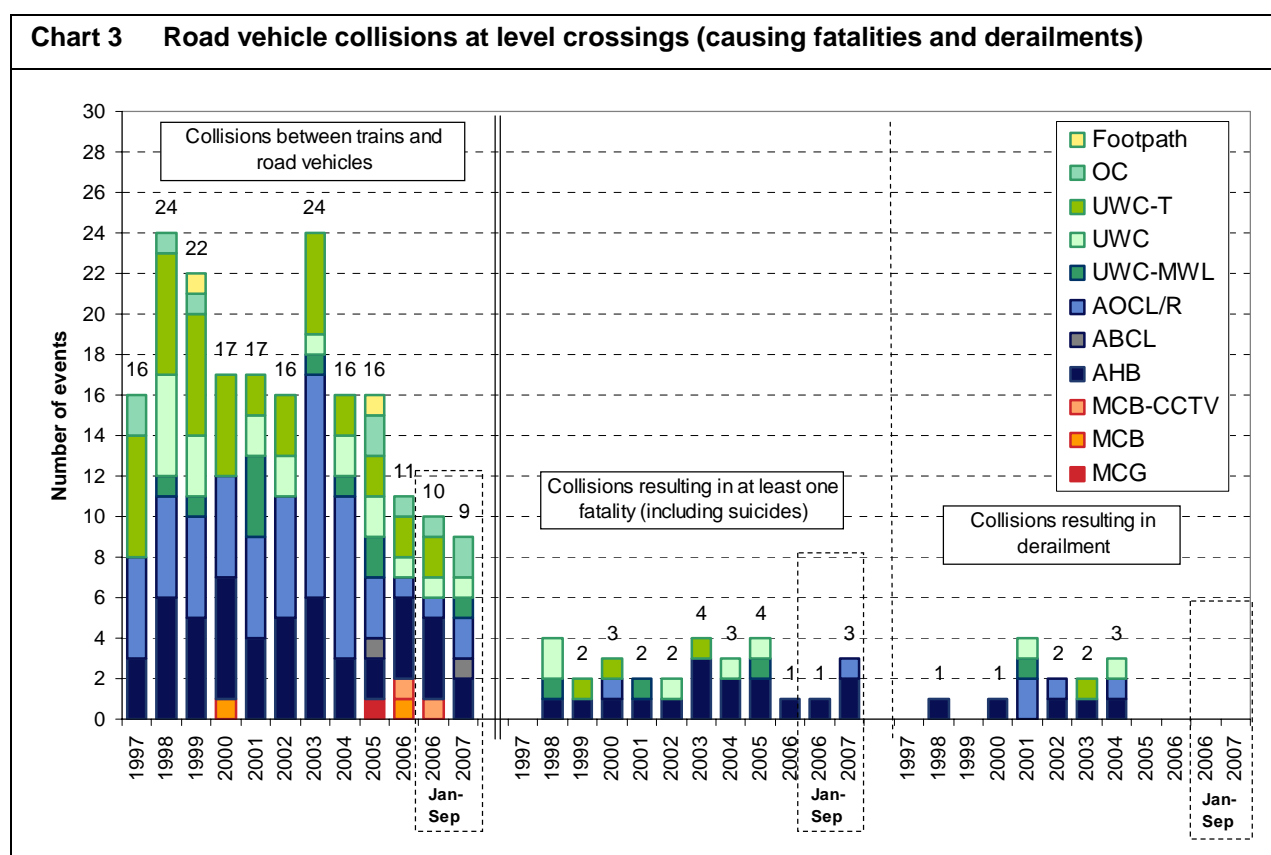
## Pedestrian risk at level crossings

There has been a steady increase in the number of pedestrian near misses since 2002 (although, the number fell slightly in 2006, compared with 2005). The period January 2002 – September 2007 has seen a potential increase. Misuse has also increased over the years, with 1,715 incidents recorded in 2006.

## Road vehicle collisions at level crossings

The number of collisions between road vehicles and trains decreased in 2006. There were nine such collisions during quarter 3 2007. This continues the improved performance seen last year. Three of these collisions resulted in at least one fatality (one is a suspected suicide).

Chart 3 shows that most incidents occur at automatic half barrier (AHB), automatic open level crossings (AOCL) and user-worked crossings (UWC). User-worked crossings (ie, UWCs, UWC-T (telephones) and UWC-MWL (miniature warning lights)) accounted for 37% of collisions over the last ten years. For the second year running there were no derailments as a result of trains striking rail vehicles.



Road vehicle near miss incidents fell in 2006, compared with 2005. There were 176 road user near misses in 2005, against 158 in 2006. However, road user misuse incident levels rose by nine to 824 in 2006.

## Risk from bridge strikes

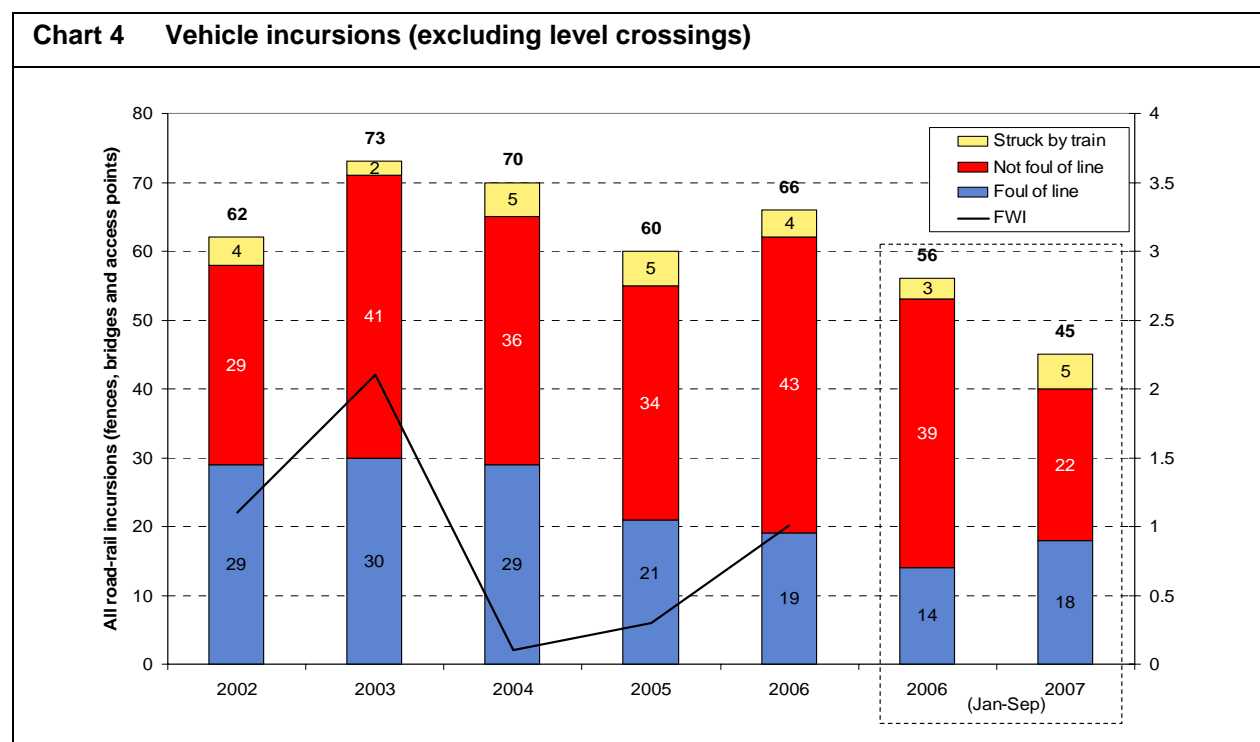
Bridge strikes have the potential to cause risk to passengers and railway workers via train derailments. Damage to bridges can also cause major disruption to train services. They often result in the death or serious injury of the driver or passengers in the road vehicle involved, as well as other road users.

There was a 6% increase in the total number of bridges struck between January and September 2007, compared to the same period in 2006.

The serious bridge strike count has risen every year, bar one (2005), since 2002. However, from January to September 2007, there was a 53% drop in the number of these incidents, compared to the same period in 2006. This fact brings hope that the upward trend will be reversed by the end of 2007.

### Risk from road vehicle incursions

Chart 4 shows the total number of vehicle incursions and those that ended up foul of the line, along with the associated FWIs. It does not include vehicles incursions at level crossings (these are described earlier in this summary). However, it does include incursions onto the railway after road traffic accidents, road vehicles abandoned or driven onto the railway and railway/contractor owned road vehicles via access points. The chart also shows the number of incidents where an incursion has led to a road vehicle being struck by a train (shown in yellow). On average, there are around 66 road rail incursions each year; of these, almost half end up foul of the line. This is a high proportion of incursions that have the potential to cause serious train accidents. However, the chart also indicates that, of the 66 vehicles which break through the railway's boundary year-on-year, only 6% are actually struck by a train. Most incidents involving trains striking road vehicles stem from fence incursions.



Incursions from bridges can lead to serious train accidents, as at Great Heck on 28 February 2001. This incident occurred when a vehicle left a motorway and fouled the track. It was subsequently struck by a passenger train, which derailed and collided with an oncoming freight train. Ten fatalities (including four members of staff), 38 major injuries and 36 minor injuries resulted.

There were no derailments from incursions between January and September 2007. The most recent event was at Copmanthorpe on 25 September 2006, when a vehicle crashed through a boundary fence onto the line. It was struck by a passenger train, which managed to remain upright. There were no reported injuries.

#### Further information:

The road-rail interface SPR can be downloaded from our website: [www.rssb.co.uk](http://www.rssb.co.uk).

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***There is a feedback form on the Rail Safety and Standards Board website; we would appreciate your comments on all our outputs.***