



## Rail safety statistics

QUARTERLY STATISTICS FOR THE PERIOD ENDED 30 SEPTEMBER 2011

Prepared by Financial, Economic and Statistical Analysis, Ministry of Transport

Quarterly Statistical  
Statement of Rail  
Incidents  
**November 2011**

The Quarterly Statistical Statement of Rail Incidents is based on rail incident reports provided by rail operators. These reports cover a wide range of incidents including near misses. Only a relatively small number of reported incidents result in injury. The less serious incidents and near misses are useful for identifying potential safety issues.

### **Key points**

This quarter there have been:

474	reported incidents, resulting in
3	deaths
13	injuries
0	deaths in level crossing incidents
3	injuries in level crossing incidents
3	deaths in person on track incidents
0	injuries in person on track incidents
0	deaths in operating incidents
10	injuries in operating incidents

In the last 12 months there have been:

1554	reported incidents, resulting in
11	deaths
32	injuries
1	death in level crossing incidents
7	injuries in level crossing incidents
10	deaths in person on track incidents
1	injury in person on track incidents
0	deaths in operating incidents
22	injuries in operating incidents

Note that rail incident deaths can include suicides.

### **NOTES:**

- The Rail Incident database was initiated during 1993 to collate information about rail incidents. Previously the only rail incident data collected at a national level was for level crossing motor vehicle crashes attended by the Police.
- These reports are provided to the Ministry of Transport by rail operators, usually within 72 hours of the incident or when enough information has been compiled.
- Caution should be exercised in interpreting the statistics in this report in the light of the size of the numbers and the short time periods involved.

# ***Rail incidents in New Zealand reported by rail operators***

## **Rail incidents**

<b>General category incident type</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Collisions (between rail vehicles)	8	5	24
Derailments (of rail vehicles)	71	94	328
Fires (on trains/by track)	9	9	43
Level crossing incidents	71	48	189
Obstruction incidents	70	65	190
Operating incidents	119	151	533
Person on track incidents	24	49	111
Shunting incidents	6	6	22
Tram	-	-	6
Vandalism incidents	34	47	105
Other incidents	4	-	4
<b>Total number of incidents</b>	<b>416</b>	<b>474</b>	<b>1554</b>

## **Casualties from rail incidents**

<b>General category incident type</b>	<b>Jul to Sep 2010</b>			<b>Jul to Sep 2011</b>			<b>Last 12 months</b>		
	<b>Deaths</b>	<b>Serious injuries</b>	<b>Minor injuries</b>	<b>Deaths</b>	<b>Serious injuries</b>	<b>Minor injuries</b>	<b>Deaths</b>	<b>Serious injuries</b>	<b>Minor injuries</b>
Collisions (between rail vehicles)	.	.	5	.	.	.	.	.	.
Derailments (of rail vehicles)	.	.	.	.	.	.	.	.	.
Fires (on trains/by track)	.	.	.	.	.	.	.	.	.
Level crossing incidents	.	.	2	.	.	3	1	3	4
Obstruction incidents	.	.	.	.	.	.	.	.	.
Operating incidents	.	1	6	.	-	10	.	2	20
Person on track incidents	1	.	.	3	.	.	10	1	.
Shunting incidents	.	.	.	.	.	.	.	.	1
Tram incidents	.	.	.	.	.	.	.	.	.
Vandalism incidents	.	.	.	.	.	.	.	.	1
Other incidents	.	.	.	.	.	.	.	1	.
<b>Total number of casualties</b>	<b>1</b>	<b>1</b>	<b>13</b>	<b>3</b>	<b>-</b>	<b>13</b>	<b>11</b>	<b>6</b>	<b>26</b>

## Rail incidents by local government region

Local govt region	Jul to Sep 2010	Jul to Sep 2011	Last 12 months
Northland	9	3	23
Auckland	94	144	382
Waikato	42	28	123
Bay of Plenty	24	20	69
Gisborne	-	2	4
Hawke's Bay	8	17	46
Taranaki	15	10	34
Manawatu-Wanganui	51	47	152
Wellington	65	101	313
Nelson-Marlborough-Tasman	11	12	40
West Coast	9	17	75
Canterbury	59	55	201
Otago	18	9	63
Southland	11	6	25
<b>Total number of incidents</b>	<b>416</b>	<b>474</b>	<b>1554</b>

**Note:** total includes unknowns so region data may not add to column total.

## Level crossing incidents

**Definition:** incidents that occur at a level crossing (public or private) involving a motor vehicle, a pedestrian or a pedal cyclist. Incident reports can give information about the type of protection present at the level crossing.

### Number of level crossing incidents

Incident type	Jul to Sep 2010	Jul to Sep 2011	Last 12 months
Level crossing incidents – collision with motor vehicle	9	6	24
Level crossing incidents – NEAR collision with motor vehicle	56	28	131
Level crossing incidents – collision involving a pedestrian or pedal cyclist	-	-	1
Level crossing incidents – NEAR collision involving a pedestrian or pedal cyclist	5	7	19
Level crossing incidents – other	1	7	14
<b>TOTAL</b>	<b>71</b>	<b>48</b>	<b>189</b>

### Type of protection present and working for level crossing incidents

Protection type	Jul to Sep 2010		Jul to Sep 2011		Last 12 months	
	Present	Working	Present	Working	Present	Working
Flashing lights & bells (FLB)	20	20	4	4	24	24
Half arm barriers with lights and bells (HAB)	11	11	13	13	31	31
Stop signs/St Andrews signs	9	9	3	3	10	10
<b>TOTAL</b>	<b>40</b>	<b>40</b>	<b>20</b>	<b>20</b>	<b>65</b>	<b>65</b>

None/not known	31	-	28	-	124	-
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### Type of protection present and working for level crossing collision with motor vehicle incidents

Protection type	Jul to Sep 2010		Jul to Sep 2011		Last 12 months	
	Present	Working	Present	Working	Present	Working
Flashing lights & bells (FLB)	-	-	-	-	2	2
Half arm barriers with lights and bells (HAB)	2	2	-	-	-	-
Stop signs/St Andrews signs	3	3	2	2	5	5
<b>TOTAL</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>7</b>

None/not known	4	-	4	-	17	-
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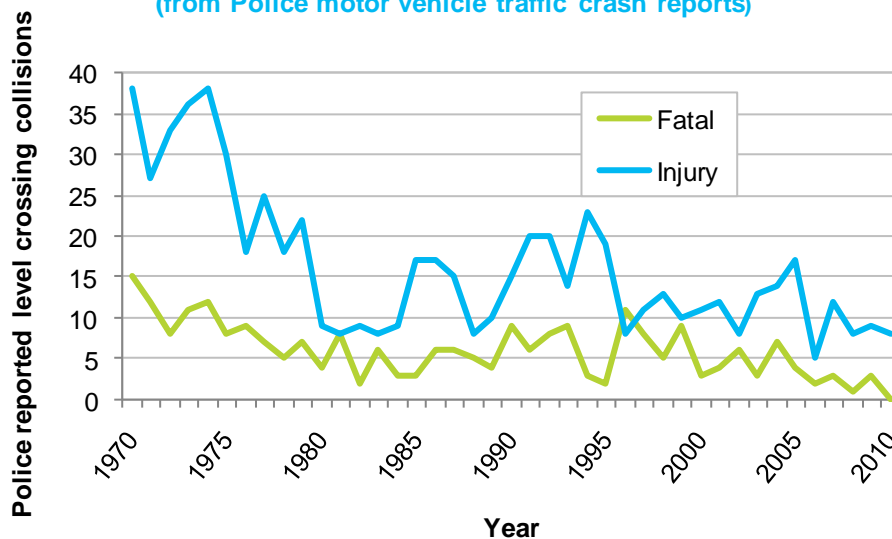
## Crashes and casualties for level crossing collisions with motor vehicles (Crash Analysis System) <sup>(1)</sup>

Data derived from Police traffic crash reports of collisions with motor vehicles at level crossings.

Year	Crashes		Casualties		
	Total	Fatal	Deaths	Serious injuries	Minor injuries
2000	14	3	4	7	8
2001	16	4	4	-	18
2002	14	6	6	4	7
2003	16	3	3	10	7
2004	21	7	8	7	11
2005	21	4	4	8	14
2006	7	2	2	6	1
2007	15	3	5	6	13
2008	10	1	1	5	8
2009	12	3	4	8	6
2010	8	-	-	4	7

### Level crossing collisions by crash severity (1970–2010)

(from Police motor vehicle traffic crash reports)



**Note:** pre-1980 data are derived from historical records.

(1) the Crash Analysis System (CAS) is a tool available to registered users that manages, analyses and maps traffic crash and related data, based on Police traffic crash reports (TCR) forwarded to the NZ Transport Agency (NZTA).

## Obstruction incidents

**Definition:** incidents where an object obstructing the rail corridor has been struck by a train or nearly been struck by a train. This excludes level crossing collisions.

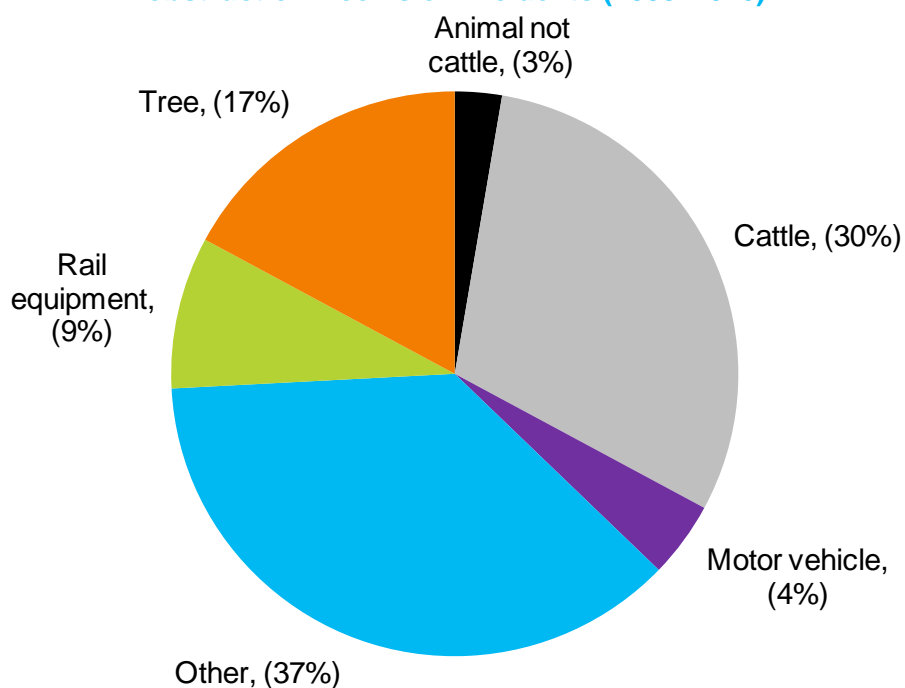
Overall there were 190 obstruction incidents recorded for the last 12 months, with 46 of these being near collisions.

### Obstruction 'collision with object' incidents by type of object struck

Type of object struck	Jul to Sep 2010	Jul to Sep 2011	Last 12 months
Animal not cattle	1	-	2
Cattle	9	15	38
Motor vehicle	-	2	3
Rail equipment	1	2	22
Tree	15	11	23
Other	19	13	56
<b>TOTAL</b>	<b>45</b>	<b>43</b>	<b>144</b>

**Note:** total may include unknown objects

Type of object struck by a train by percentage of reported obstruction – collision incidents (2008–2010)



**Note:** percentages have been rounded and may not add up to 100%

## ***Person on track incidents***

**Definition:** incidents where a person on track (defined as being on or obstructing the rail corridor NOT at a level crossing) has been struck by a train, nearly struck by a train or observed to be present without a train being in the vicinity. These incidents relate to members of the public trespassing in the rail corridor and can include suicides. Rail operator staff or contractors are included in the “Operating incidents” category.

### **Number of incidents**

<b>Incident type</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Person on track – collision incidents	1	3	13
Person on track – near collision incidents	20	32	74
Person on track – other incidents	3	14	24
<b>TOTAL</b>	<b>24</b>	<b>49</b>	<b>111</b>

### **Historical time series of reported casualties by calendar year for person on track collisions**

<b>Year</b>	<b>Deaths</b>	<b>Serious injuries</b>	<b>Minor injuries</b>
2000	17	2	1
2001	11	2	3
2002	10	5	2
2003	14	5	3
2004	5	-	1
2005	9	-	1
2006	14	7	1
2007	3	6	1
2008	7	3	1
2009	7	2	1
2010	9	1	-

## ***Vandalism incidents***

**Definition:** incidents where an object has been thrown at a train, an object has been deliberately placed on the track, or rail property has been altered deliberately or stolen.

### **Number of incidents**

<b>Incident type</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Vandalism – object thrown at train incidents	20	20	56
Vandalism, other incidents	14	27	49
<b>TOTAL</b>	<b>34</b>	<b>47</b>	<b>105</b>

### **Vandalism – object thrown at train incidents**

<b>Object thrown at train</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Bottles	1	1	2
Rocks or stones	17	17	44
Unknown objects	2	1	9
Other	-	1	1
<b>TOTAL</b>	<b>20</b>	<b>20</b>	<b>56</b>

## ***Fire incidents***

**Definition:** incidents where there was a fire either trackside by the rail corridor or on board a rail vehicle.

<b>Fire location</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Trackside fire	2	5	15
Fire on board a rail vehicle	7	4	28
<b>Total</b>	<b>9</b>	<b>9</b>	<b>43</b>



## Derailment incidents

**Definition:** incidents where a train or rail vehicle has derailed while moving along a rail track. The type of rail vehicle that derailed is identified as best as possible from rail incident reports. Note: many of these derailments occur in rail yards during loading and shunting operations.

### Derailments by type of rail vehicle (including bogies)

Type of rail vehicle	Jul to Sep 2010		Jul to Sep 2011		Last 12 months	
	On mainline	In yard	On mainline	In yard	On mainline	In yard
Hi rail vehicle	-	-	3	-	3	2
Lead bogie	1	8	3	4	4	16
Locomotive	2	5	5	16	12	62
Shunt	-	10	-	15	-	50
Trailing bogie	1	6	1	5	3	18
Tram	-	-	-	-	2	-
Wagon	1	37	1	41	5	151
Other	-	-	-	-	-	-
<b>TOTAL</b>	<b>5</b>	<b>66</b>	<b>13</b>	<b>81</b>	<b>29</b>	<b>299</b>

**Note:** a Hi rail vehicle is a general purpose rail capable truck, utility, car, bus or van, used to transport people, equipment or materials to a site, or to carry out on-rail tasks such as inspection, grease dispensing, weed spraying, drain cleaning etc. For more detail, please go to [www.ontrack.govt.nz/aboutus/Policy/NetworkAccess/PDF%20Links/Hi-rail\\_booklet\\_A4\\_issue\\_1B.pdf](http://www.ontrack.govt.nz/aboutus/Policy/NetworkAccess/PDF%20Links/Hi-rail_booklet_A4_issue_1B.pdf)

## ***Operating incidents***

**Definition:** incidents that occur during the course of rail operations in motion but excludes those categorised as derailments, collisions or shunting incidents.

### **Operating incident by incident type**

<b>Incident type</b>	<b>Jul to Sep 2010</b>	<b>Jul to Sep 2011</b>	<b>Last 12 months</b>
Collision	-	-	1
Illegal passenger on train incidents	1	9	18
Infrastructure incidents	26	32	160
Insecure load incidents	1	4	21
Level crossing alarm failure incidents	4	2	6
Near collision incidents	1	2	9
Rolling stock incidents	7	4	18
SPAD related incidents	19	14	64
Track warrant irregularity incidents	6	5	19
Track occupancy irregularity incidents	15	15	47
Other incidents	39	64	170
<b>TOTAL</b>	<b>119</b>	<b>151</b>	<b>533</b>

**Note:** SPAD = signals passed at danger.

## Time series casualty data

### Deaths and reported injuries for motor vehicle crashes at a level crossing in the Crash Analysis System (CAS)

		Year										
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle level crossing casualties	Deaths	4	4	6	3	8	4	2	5	1	4	-
	Injuries	15	18	11	17	18	22	7	19	13	14	11

**Note:** The number of level crossing deaths in CAS may be lower than the number in the Rail Incident Database as CAS includes only official road deaths. Deaths determined by the coroner to be a result of medical events or suicide are not included as official road deaths.

Reported injury numbers may differ between the two systems. CAS includes road crashes attended and reported by Police.

### Deaths and reported injuries for grouped rail incident types in the Rail Incident Database

		Year										
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle level crossing casualties	Deaths	6	4	8	4	7	5	2	6	3	4	-
	Injuries	17	39	14	10	16	18	6	14	8	8	9
Pedestrian level crossing casualties	Deaths	1	1	2	2	4	3	2	1	1	-	1
	Injuries	1	-	-	1	-	-	-	-	2	-	-
Pedal cyclist level crossing casualties	Deaths	-	-	-	-	-	-	-	-	-	-	-
	Injuries	-	-	1	1	1	-	-	-	-	-	1
Person on track casualties	Deaths	17	11	10	14	5	9	14	3	7	7	9
	Injuries	3	5	7	8	1	1	8	7	4	3	1
Other casualties - members of the public	Deaths	2	-	-	1	-	-	-	-	2	1	-
	Injuries	20	13	18	24	22	14	22	1	4	13	25
Other casualties - rail employees	Deaths	3	-	2	-	-	-	-	1	-	-	-
	Injuries	11	13	13	31	14	19	17	11	12	10	15
All rail incident deaths and injuries	Deaths	29	16	22	21	16	17	18	11	13	12	10
	Injuries	52	70	53	75	54	52	53	33	30	34	51

Statistics prepared by Financial, Economic and Statistical Analysis, Ministry of Transport. Enquiries regarding these statistics may be directed to Financial, Economic and Statistical Analysis, Ministry of Transport, PO Box 3175, Wellington or by email on [info@transport.govt.nz](mailto:info@transport.govt.nz).

For further information on crash statistics see *Motor Vehicle Crashes in New Zealand*, the annual statistical statement produced by the Ministry of Transport. This publication is available in secondary school libraries and many public libraries and online at [www.transport.govt.nz](http://www.transport.govt.nz)