Safety Database

Activity Report 2012

Significant Accidents 2011

Department of
fundamental values

Safety Unit

September 2012

INTERNATIONAL UNION
OF RAILWAYS

Safety Database

Activity Report 2012

Significant Accidents 2011

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Foreword

In an overall sense, the accident statistics from the UIC Safety Database for 2011 confirm the long-term positive trend towards improvement in railway safety. For several years the number of accidents has declined steadily, and the numbers for 2011 continued in that direction.

For the first year since 2006, significant accidents got under the threshold of 2 000 events.

In the longer-term historical context, it is also clear that railway safety has steadily improved for a number of reasons, including better technology, a better safety culture, international efforts to coordinate safety strategies, and the advent of high speed rail.

Comparing 2011 figures to the average annual figures 2006-2010, we may observe improvements for almost all indicators.

Electrocutions and fires in rolling stock are drastically reduced. But indicators of derailments or individuals hit by a train do not show strong downward trends.

Fatalities and serious injuries of passengers and third parties decreased but the situation of staff is still worrying.

Clearly, European railways must not become complacent. They must continue their efforts to improve safety in the most fundamental areas: track, structures, rolling stock and employee preparedness.

2011 figures compared to the average annual figures on the 2006-2010 period	
SIGNIFICANT ACCIDENTS	**-11%**
Collisions with obstacles	-18%
Collisions between trains	-10%
Derailments	18%
Individuals hit by a train	-7%
Individuals falling from a train	-21%
Electrocutions	-87%
Fires in RS	-50%
Accidents at level crossings	-21%
FATALITIES	**-14%**
LC fatalities	-21%
Passenger fatalities	-29%
Staff fatalities	-4%
SERIOUS INJURIES	**-18%**
Serious passenger injuries	-26%
Serious staff injuries	19%

Despite the continuing challenges faced by railways in a time of economic stringency and high demand in an increasingly mobile society, it is undeniable that railways remain among the safest modes of transport.

The future of European economic development and mobility lies with the smooth, safe operation of its state of the art, ever-expanding railway network.

Jean-Michel RICHARD

Chairman of the Safety Platform

Section 1

General report on significant accidents

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1.1 Summary of accidents and their human consequences

This table includes all significant accidents registered in the UIC Safety Database since 2006. NRIC (Bulgaria) ended its contribution in the year 2010, MAV (Hungary) didn't provide UIC with data for the year 2008 and HZ (Croatia) started its input in 2010. For a comparison with the same perimeter, please refer to table 1.4.

Positive trends may be observed. The number of significant accidents declared decreased from 2 371 to 1 992 (-16%) over the six-years period.

The ratios of significant accidents and fatalities per train-km decreased -8% in 2011 compared to the previous year.

Years	Significant accidents	Number of fatalities per 100 significant accidents			All victims per 100 significant accidents	Significant accidents per million train-km	Fatalities per million train-km
		Passengers	Staff	3rd parties			
2011	1 992	1,8	1,7	51,4	99,4	0,49	0,27
2010	2 119	2,8	1,8	49,8	107,6	0,53	0,29
2009	2 185	1,3	1,6	58,4	103,9	0,55	0,34
2008	2 178	2,5	1,7	50,6	103,9	0,53	0,29
2007	2 291	2,9	1,5	55,1	109,6	0,57	0,34
2006	2 371	1,8	1,4	50,9	102,4	0,59	0,32

- The definition of significant accident is available in appendix.
- In this report, we call "victims" the sum of fatalities and serious injuries.

1.2 Types of accidents according to UIC-SDB and EU definitions

<table>
<tr><th>2011</th><th colspan="2">Types of accidents as defined in UIC – SDB</th><th colspan="2">Additional information from UIC -SDB</th><th colspan="2">Types of accidents as defined in Safety Directive</th></tr>
<tr><td rowspan="4">Collective accidents

27,7%</td><td>6,1%</td><td colspan="3">Derailments of trains</td><td>6,1%</td><td></td></tr>
<tr><td>1,5%</td><td colspan="3">Train collision with another train</td><td rowspan="2">6,1%</td><td rowspan="2">Collisions including collisions with obstacles within the clearance gauge</td></tr>
<tr><td rowspan="2">20,1%</td><td rowspan="2">Train collision with an obstacle</td><td>4,6%</td><td>Train collision with an obstacle not at LC</td></tr>
<tr><td>15,5%</td><td>Train collision with an obstacle at LC</td><td rowspan="2">22,4%</td><td rowspan="2">LC accidents, including accidents involving pedestrians at LC</td></tr>
<tr><td rowspan="3">Individual accidents

71,5%</td><td rowspan="2">65,1%</td><td rowspan="2">Individual hit by a train</td><td>6,9%</td><td>Individual hit by a train at LC</td></tr>
<tr><td>58,2%</td><td>Individual hit by a train not at LC</td><td rowspan="2">64,7%</td><td rowspan="2">Accidents to persons caused by rolling stock in motion, with the exception of suicides.</td></tr>
<tr><td>6,5%</td><td colspan="3">Individual falling from a train</td></tr>
<tr><td rowspan="3">Other types of accidents

0,7%</td><td>0,2%</td><td colspan="3">Fire in rolling stock</td><td>0,2%</td><td></td></tr>
<tr><td>0,6%</td><td colspan="3">Electrocution by overhead line or third rail</td><td rowspan="2">0,6%</td><td rowspan="2">Other types of accidents</td></tr>
<tr><td>0,05%</td><td colspan="3">Accident involving dangerous goods</td></tr>
</table>

- Individuals hit by a train (mostly trespasses) represent almost two thirds of all accidents.
- Collision with an obstacle is the second major risk (one fifth of all accidents).
- Individuals falling from a train and derailments each correspond to 6% of accidents.
- Accidents at level crossings (LC) account for 22% of all significant accidents.
- Fires in rolling stock and electrocutions sharply decreased from previous years.
- 1 accident involves dangerous goods.

1.3 Main causes of accidents

2011	Causes at first level	Causes at second level	
EXTERNAL CAUSES 78,2%	THIRD PARTIES 76,8%	Trespass (intrusion)	45,8%
		Vehicle (case of LC accident)	14,4%
		Pedestrian (case of LC accident)	8,4%
		Objects on the gauge	0,3%
		Vandalism	0,3%
		Other or not specified	7,6%
	WEATHER & ENVIRONMENT 1,4%	Environment	0,9%
		Weather	0,5%
		Not specified	0,0%
INTERNAL CAUSES 20,9%	RAILWAY SUB-SYSTEMS 5,9%	Rolling stock	3,2%
		Infrastructure (track & structures)	2,0%
		Energy system	0,4%
		Control-command signalling	0,2%
		Operations & traffic management	0,2%
	HUMAN FACTORS 15,0%	Passengers and freight company customers	8,3%
		Control-command, energy, traffic operating and switching staff	1,7%
		Traindriver and train crew	2,3%
		Track and track contractors staff	1,5%
		Other human factor in RUs	0,2%
		Other users	0,5%
		Not specified	0,6%
CAUSES NOT IDENTIFIED			0,9%

- Almost four out of five accidents have external causes.
- Human factors caused 15% of all accidents but only 6% involve railway staff.

1.4 Trend of accidents and rates on the last five years (19 railways)

- This table allows for a comparison of the 19 railways that provided data every year since 2006.
- The same decreasing trends are observed for absolute numbers and ratios.

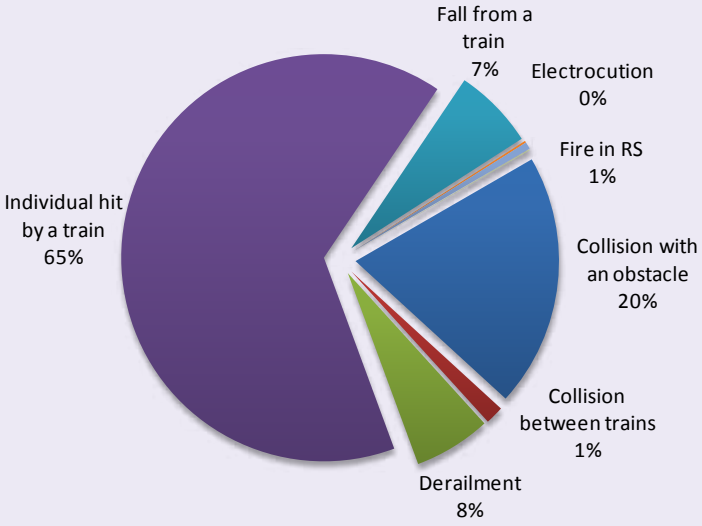
ALL RAILWAYS except MAV, HZ, NRIC	2006	2007	2008	2009	2010	2011
Number of serious injury accidents	2 031	2 074	1 977	1 815	1 662	1 574
Serious injury accidents per million train-km	0,52	0,53	0,48	0,47	0,49	0,40
Number of fatalities	1 230	1 320	1 194	1 244	1 049	985
Fatalities per million train-km	0,32	0,33	0,29	0,32	0,31	0,25
Number of significant accidents	2 256	2 215	2 178	2 016	1 935	1 812
Significant accidents per million train-km	0,58	0,56	0,53	0,52	0,57	0,46
Number of victims	2 302	2 421	2 263	2 096	2 083	1 775
Victims per million train-km	0,59	0,61	0,55	0,54	0,61	0,45
Number of million train-kilometres	3 881,1	3 948,4	4 078,8	3 855,4	3 392,6	3 980,0

1.5 Number of accidents and victims per type of accident

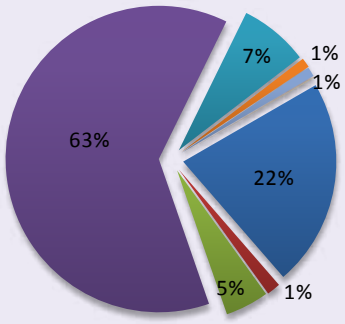
- 60% of all accidents occur on open lines, whilst 35% happen at station.
- 68% of all fatalities occur on open lines, whilst 28% happen at station.
- Persons hit by a train and LC accidents represent 97% of open line fatalities and 94% of station fatalities.
- Persons hit by a train (not at LC) count for 67% of victims at station and 57% of victims on open line.

2011		Number of accidents	FATALITIES			SERIOUS INJURIES			ALL VICTIMS
			Passengers	Staff	3rd parties	Passengers	Staff	3rd parties	
At station	Collisions with an obstacle (not at LC)	19	0	1	5	2	2	0	10
	Collisions between trains	19	0	0	0	6	9	0	15
	LC accidents	68	0	0	48	0	1	26	75
	Derailments	55	0	0	0	0	1	0	1
	Hit by a train (not at LC)	422	9	9	220	14	18	159	429
	Falling from a train	109	8	3	3	77	15	5	111
	Other cases	7	0	0	0	0	0	3	3
	Total at station	**699**	**17**	**13**	**276**	**99**	**46**	**193**	**644**
In open line	Collisions with an obstacle (not at LC)	67	0	1	6	3	4	7	21
	Collisions between trains	9	9	2	0	30	0	0	41
	LC accidents	344	4	3	205	17	5	183	417
	Derailments	45	0	2	0	7	40	0	49
	Hit by a train (not at LC)	715	4	10	495	1	6	214	730
	Falling from a train	18	2	2	2	5	6	1	18
	Other cases	7	0	0	0	0	0	0	0
	Total in open line	**1 205**	**19**	**20**	**708**	**63**	**61**	**405**	**1 276**
	In other locations	88	0	1	39	0	6	14	60
GRAND TOTAL		**1 992**	**36**	**34**	**1 023**	**162**	**113**	**612**	**1 980**

1.6 Accidents by type



for comparison: period 2006-2010



	Victims per accident	Fatalities per accident	Serious injuries per accident
Passengers	0,10	0,02	0,08
Staff	0,07	0,02	0,06
Third parties	0,82	0,51	0,31
Total:	0,99	0,55	0,45

- Collisions with an obstacle include collisions at LC.
- Individual hit by a train include pedestrians at LC.
- For LC accidents, refer to previous table.

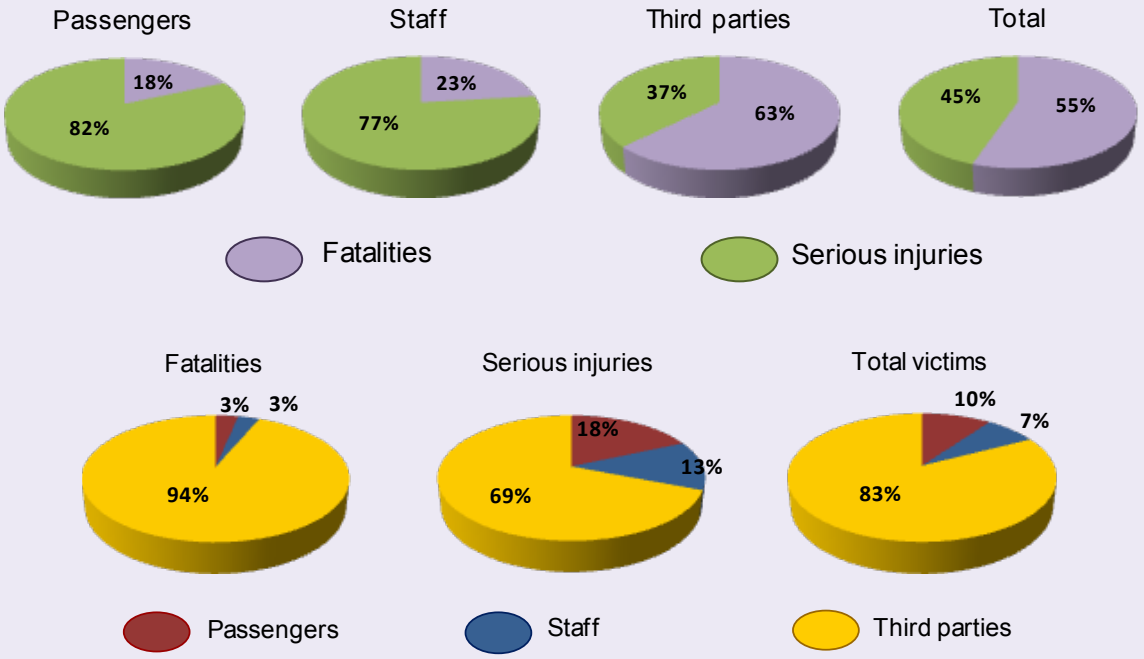
	Accidents		Victims	
Type of accident - year 2011	Number	%	Fatalities	Serious injuries
Collision with an obstacle	401	20,1%	187	230
Collision between trains	29	1,5%	11	45
Derailment	122	6,1%	3	49
Individual hit by a train	1 296	65,1%	872	449
Fall from a train	129	6,5%	20	111
Electrocution	3	0,2%	0	3
Fire in RS	11	0,6%	0	0
Dangerous goods accidents (no release)	0	0,0%	0	0
Dangerous goods accidents (with release)	1	0,1%	0	0
Total	**1 992**		**1 093**	**887**

1.7 Fatalities and serious injuries per type of accident

2011	Fatalities			Serious injuries		
Type of accident	Passengers	Staff	Third parties	Passengers	Staff	Third parties
Collision with an obstacle	4	5	178	22	14	194
Collision between trains	9	2	0	36	9	0
Derailment	0	3	0	7	41	1
Individual hit by a train	13	19	840	15	26	408
Fall from a train	10	5	5	82	23	6
Electrocution	0	0	0	0	0	3
Fire in rolling stock	0	0	0	0	0	0
Dangerous goods accidents (no release)	0	0	0	0	0	0
Dangerous goods accidents (with release)	0	0	0	0	0	0
Total	**36**	**34**	**1 023**	**162**	**113**	**612**

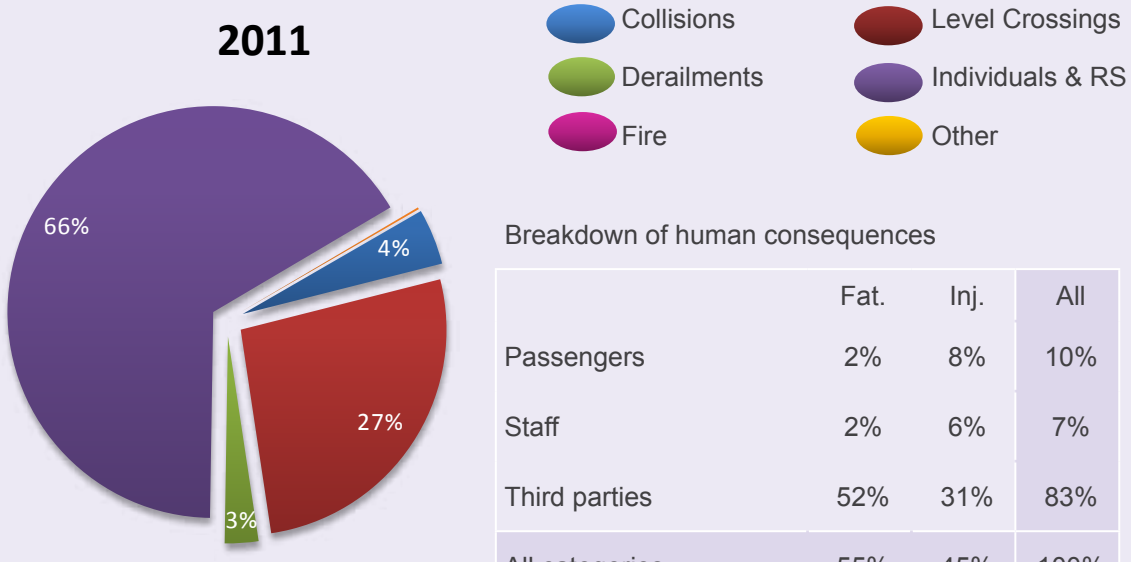
- Third parties represent 83% of all victims
- Passengers account for 18% of serious injuries, but 3% of fatalities
- The major risk for passengers is falling from a train

1.8 Distribution of victims



Reading method: Fatalities account for 18% of passenger victims and passengers represent 3% of all fatalities.

1.9 Victims per type of accident according to Safety Directive definitions

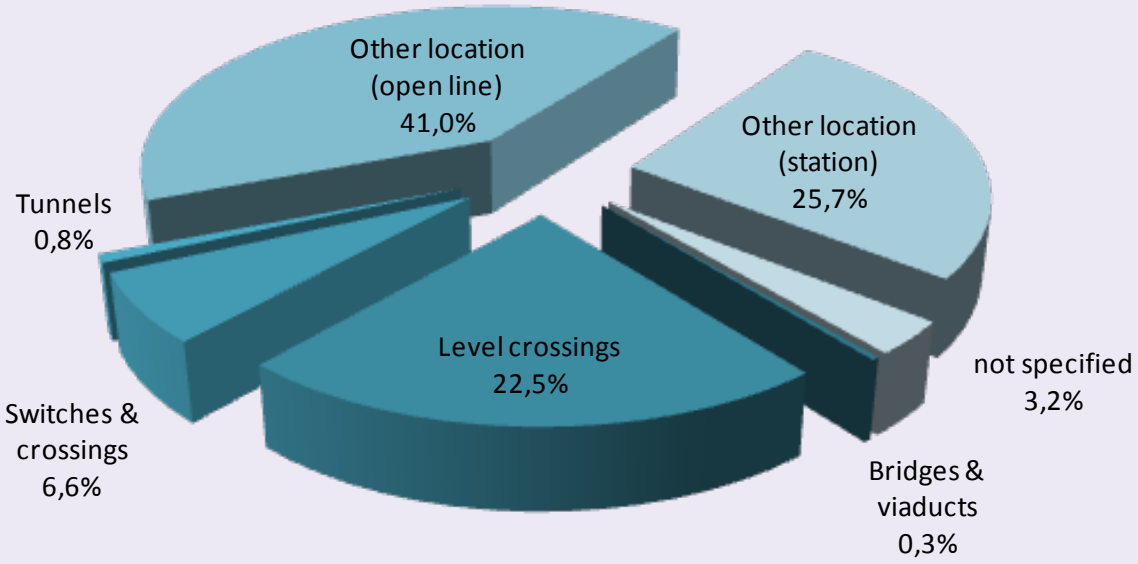


Breakdown of human consequences

	Fat.	Inj.	All
Passengers	2%	8%	10%
Staff	2%	6%	7%
Third parties	52%	31%	83%
All categories	55%	45%	100%

Type of accident	Number	%	Fatalities			Serious injuries			Total victims (%)
			Passengers	Staff	3rd parties	Passengers	Staff	3rd parties	
Collisions (not at LC)	121	6%	9	4	11	41	15	7	4%
Level crossings	446	22%	4	3	278	17	8	216	27%
Derailment	122	6%	0	3	0	7	41	1	3%
Individuals & RS in motion (not at LC)	1 288	65%	23	24	734	97	49	385	66%
Fire	11	1%	0	0	0	0	0	0	0%
Other types	4	0%	0	0	0	0	0	3	0%
Total	**1 992**		**36**	**34**	**1 023**	**162**	**113**	**612**	

1.10 Accidents per location details



- All over the last five years, the distribution of location details has remained similar.
- 41% of accidents occur on open lines without any further precision.

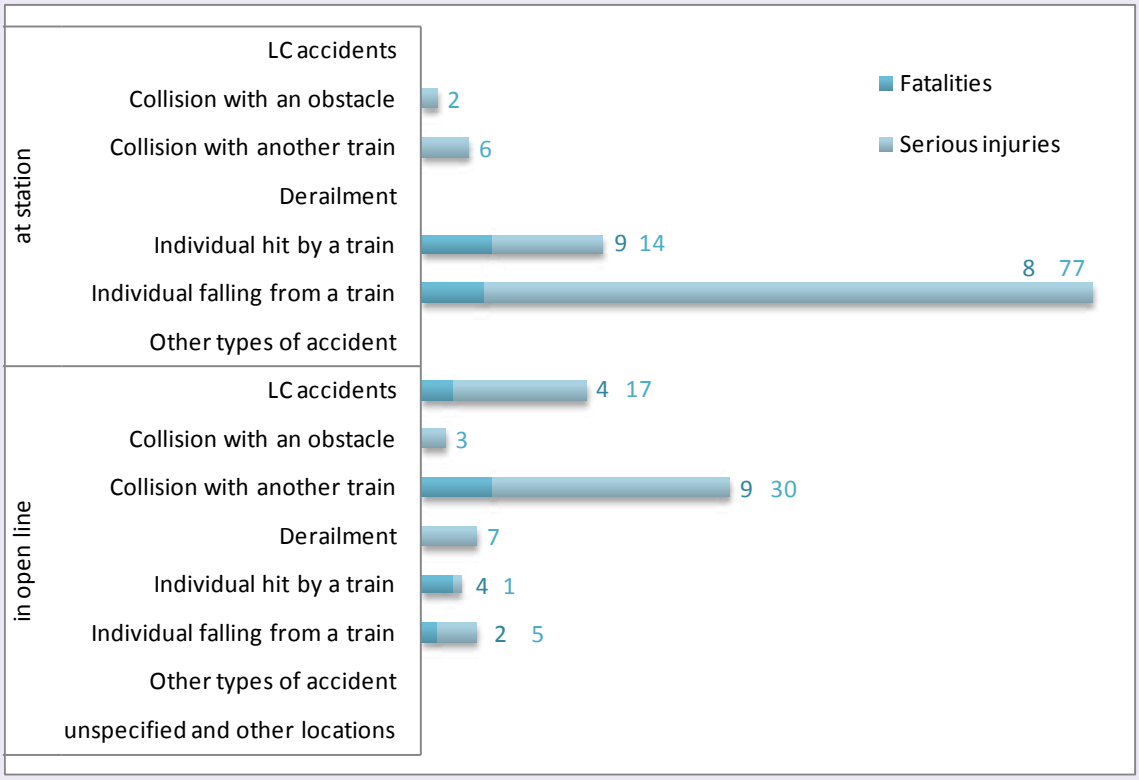
1.11 Accidents at level crossings

	Accidents at LC	Number of fatalities			*% of all accidents*	*% of all fatalities*	LC accidents per million train-km	LC fatalities per million train-km
		Passen-gers	Staff	Third parties				
2011	446	4	3	278	*22%*	*26%*	0,11	0,07
2010	494	2	2	315	*23%*	*28%*	0,12	0,08
2009	492	0	3	374	*23%*	*28%*	0,12	0,10
2008	539	1	3	324	*25%*	*27%*	0,13	0,08
2007	634	2	2	427	*28%*	*32%*	0,16	0,11
2006	664	1	3	349	*28%*	*27%*	0,17	0,09

- Accidents at LC: decrease of -10% in comparison with 2010 and -33% with 2006.
- Fatalities at LC: decrease of -10% in comparison with 2010 and -20% with 2006.

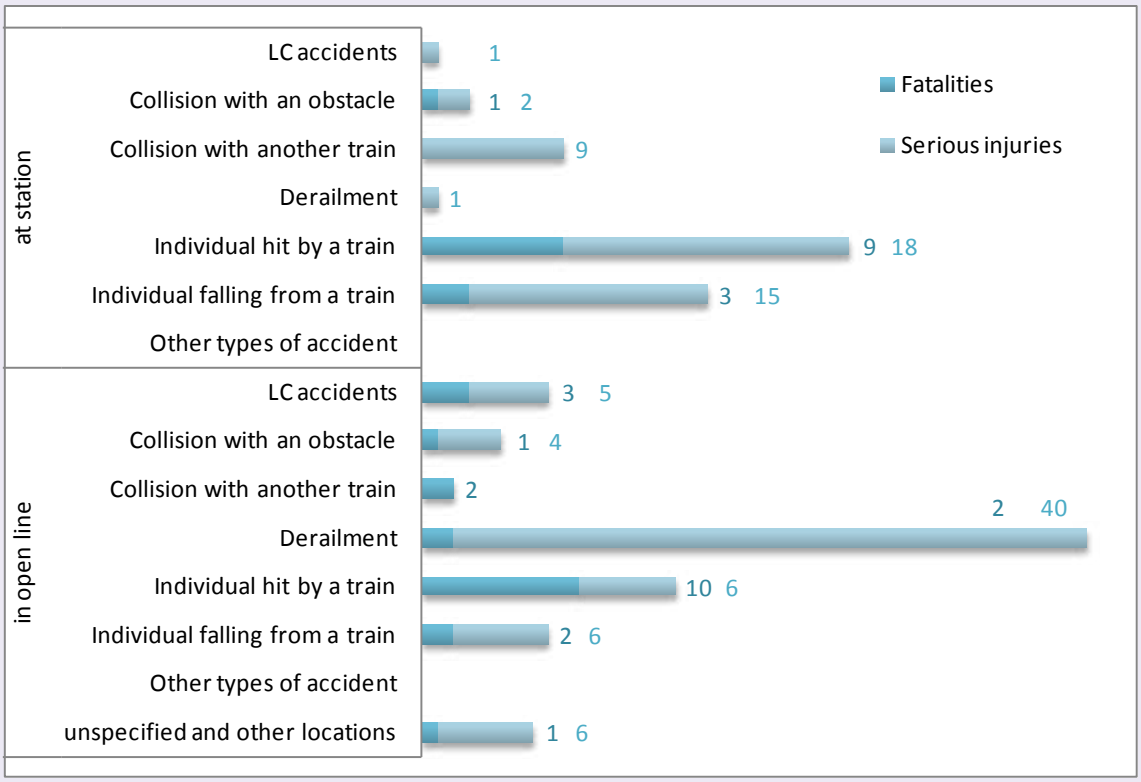
1.12 Passenger victims per type of accident and location

- Individual falling from a train at stations accounts for 43% of the 198 passenger victims.
- Collisions between trains on open lines represent 20% of passenger victims.
- 82% of passenger victims have serious injuries.



1.13 Staff victims per type of accident and location

- Derailments are responsible for 36% of the 113 serious staff injuries.
- Railway staff hit by a train accounts for 56% of the 34 staff fatalities, almost equally distributed between open line and station accidents.



1.14 Accidents and victims per type of accident, causes and location

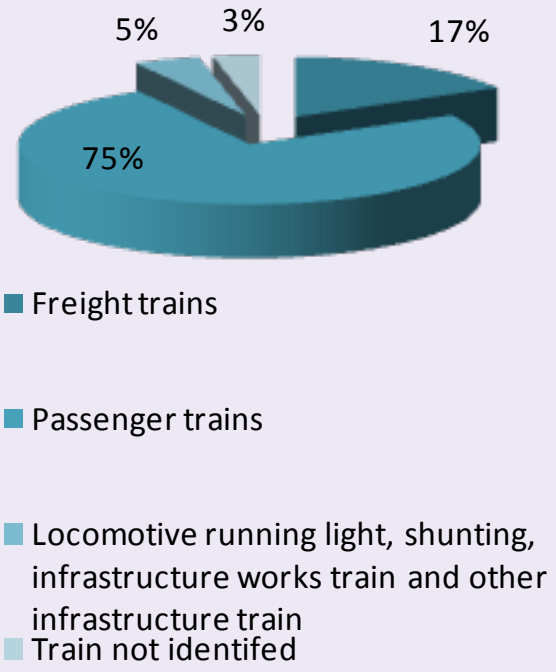
Type of accidents	Causes			Location						Victims		
				Type of location			Location details				Fatal.	S. Inj.
Individual hit by a train	T P	1186	1207	OL	806	822	LC	137	140	P	13	15
	H F	95	99				SC	58	59			
	R S	6	6	S	455	464	BV	4	4	S	19	26
1296	W E	0	0	Ot	35	35	T	12	12	T	840	408
1321	u	9	9				O	1085	1106			
Train collision with an obstacle	T P	330	402	OL	320	346	LC	309	386	P	4	22
	H F	22	10				SC	4	1			
	R S	23	2	S	54	50	BV	2	1	S	5	14
401	W E	25	2	Ot	27	21	T	3	2	T	178	194
417	u	1	1				O	83	27			
Individual falling from a train	T P	9	10	OL	18	18	LC	0	0	P	10	82
	H F	115	116				SC	2	2			
	R S	5	5	S	109	111	BV	0	0	S	5	23
129	W E	0	0	Ot	2	2	T	0	0	T	5	6
131	u	0	0				O	127	129			
Train collision with another train	T P	1	0	OL	9	41	LC	0	0	P	9	36
	H F	27	54				SC	11	3			
	R S	1	2	S	19	15	BV	0	0	S	2	9
29	W E	0	0	Ot	1	0	T	0	0	T	0	0
56	u	0	0				O	18	53			
Derailment	T P	2	0	OL	45	49	LC	2	0	P	0	7
	H F	37	46				SC	56	41			
	R S	73	3	S	55	1	BV	0	0	S	3	41
122	W E	2	3	Ot	22	2	T	0	0	T	0	1
52	u	8	0				O	64	11			
Electrocution	T P	2	2	OL	0	0	LC	0	0	P	0	0
	H F	1	1				SC	0	0			
	R S	0	0	S	3	3	BV	0	0	S	0	0
3	W E	0	0	Ot	0	0	T	0	0	T	0	3
3	u	0	0				O	3	3			
Fires	T P	0	0	OL	7	0	LC	0	0	P	0	0
	H F	1	0				SC	0	0			
	R S	10	0	S	4	0	BV	0	0	S	0	0

Type of accidents	Causes			Location				Victims		
				Type of location		Location details				
11	W E	0	0	Ot	0	0	T	1	0	T	0	0
0	u	0	0				O	10	0			
Accident involving dangerous goods without release	T P	0	0	OL	0	0	LC	0	0	P	0	0
	H F	0	0				SC	0	0			
	R S	0	0	S	0	0	BV	0	0	S	0	0
0	W E	0	0	Ot	0	0	T	0	0	T	0	0
0	u	0	0				O	0	0			
Accident involving dangerous goods with release	T P	0	0	OL	0	0	LC	0	0	P	0	0
	H F	1	0				SC	0	0			
	R S	0	0	S	0	0	BV	0	0	S	0	0
1	W E	0	0	Ot	1	0	T	0	0	T	0	0
0	u	0	0				O	1	0			
TOTAL	T P	1530	1621	OL	1205	1276	LC	448	526	P	36	162
	H F	299	326				SC	131	106			
	R S	118	18	S	699	644	BV	6	5	S	34	113
1992	W E	27	5	Ot	88	60	T	16	14	T	1023	612
1980	u	18	10				O	1391	1329			
											1093	887

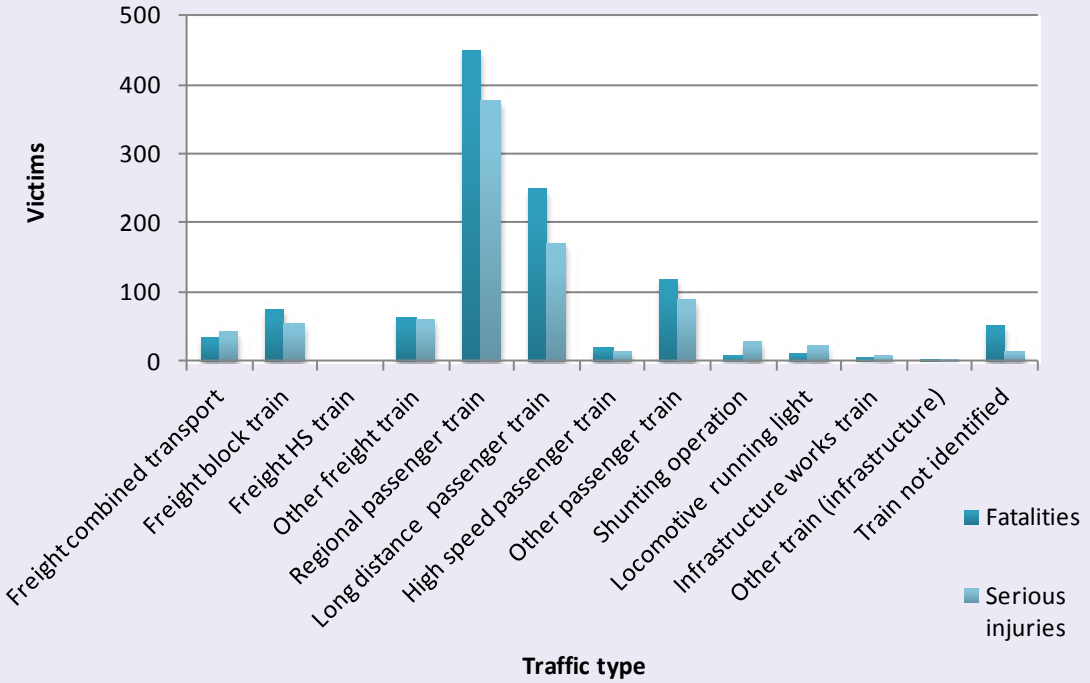
number of accidents	T P: Third Parties	OL: Open line	LC: Level crossings	P: Passengers
	H F: Human Factors	S: At station	SC: Switches & Crossings	S: Staff
	R S: Railway Subsystems	Ot: Other locations	BV: Bridges & Viaducts	T: Third parties
number of victims	W E: Weather, Environment		T: Tunnels	
	u: Unidentified causes		O: Other type or unidentified	

1.15 Victims per type of traffic

- The type of train involved remains stable from one year to another. Passenger trains are responsible for 75% of victims.
- Regional trains are largely more involved in accidents than long distance trains.
- High Speed trains caused 20 fatalities and 13 serious injuries, less than 2% of total victims.

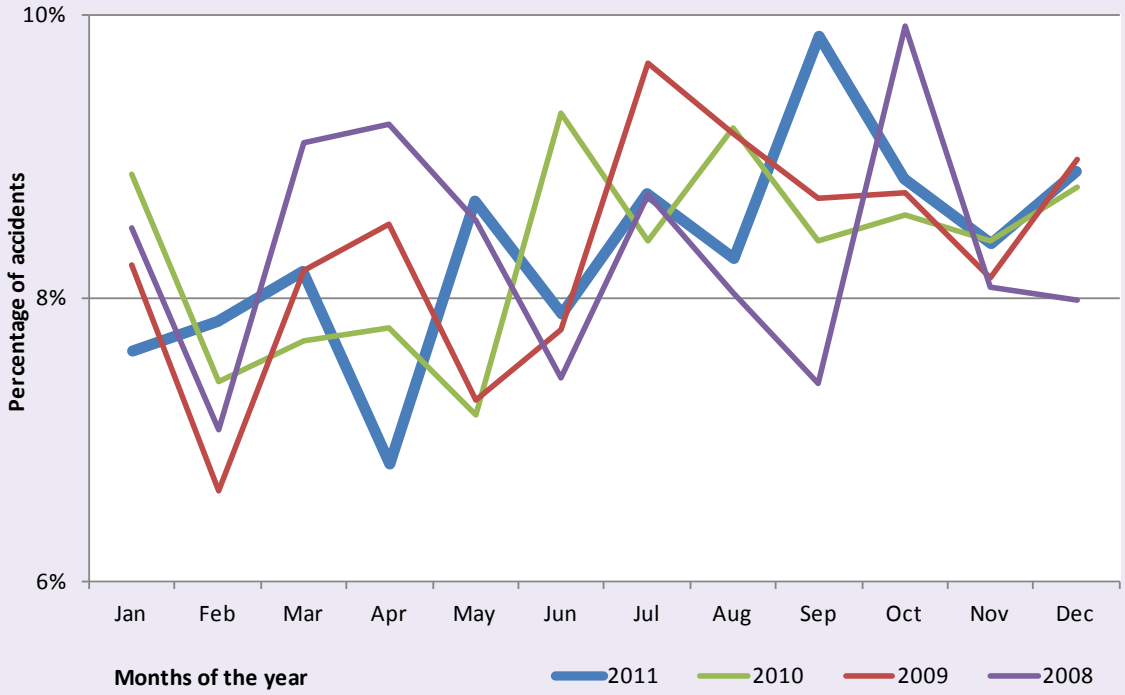


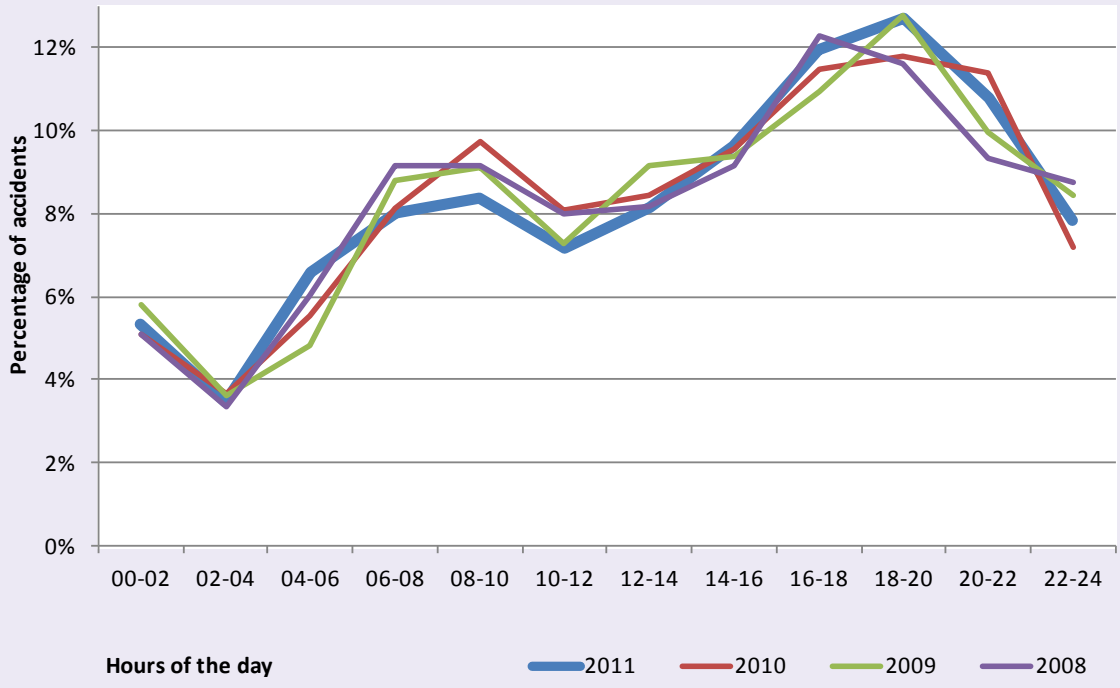
Type of accident	Freight trains	Passenger trains	Locomotive running light, shunting, infra-structure works train and other infrastructure train	Train not identifed
Collision	51	22	13	1
Derailment	0	49	3	0
Level-crossing accidents	82	432	12	0
Accidents to persons caused by rolling stock in motion	199	986	63	64
Other accidents	3	0	0	0
TOTAL victims	**335**	**1 489**	**91**	**65**



1.16 Monthly and daily accident distribution

- There is no evidence showing any specific seasonality of accidents. Months with more accidents differ from one year to another.
- In contrast, there is an evident correlation between the number of accidents and the time the accidents occur, which is respected every year.
- The evening time slot (16:00 to 22:00) concentrates 35% of accidents. It corresponds to the peak of trains movements that coincides with the nightfall.

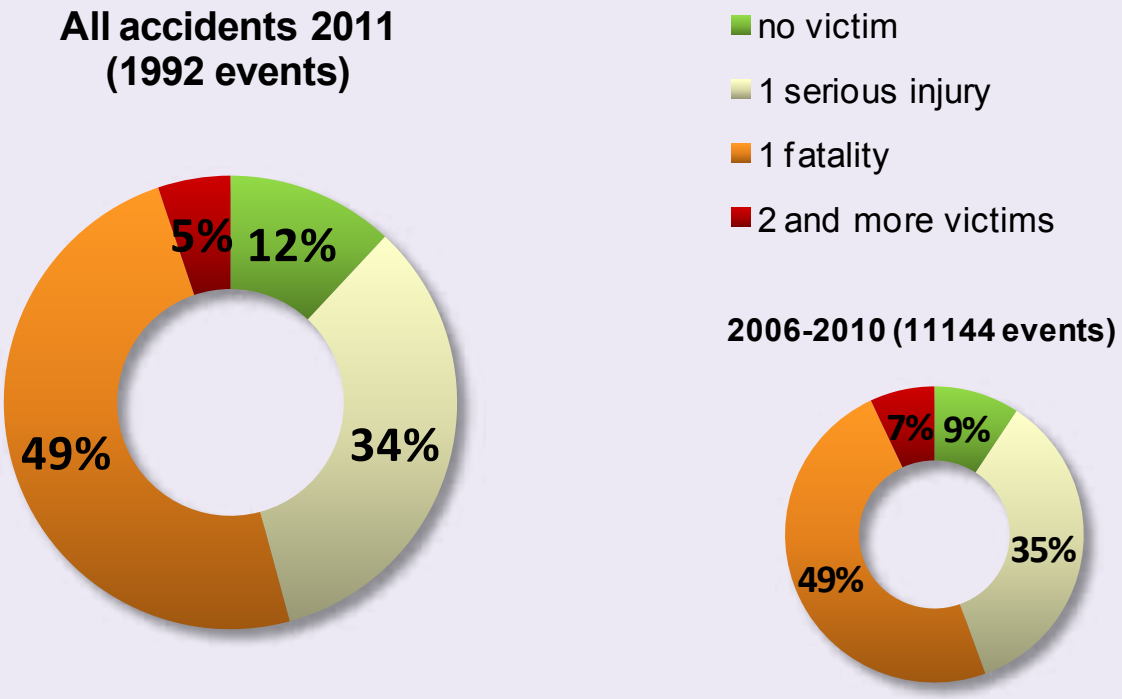




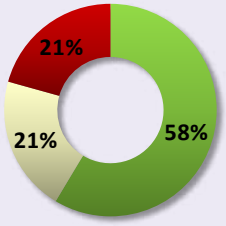
1.17 Accidents per type and number of victims

2011 marks a decrease of heavy accidents (2 or more victims) in relationship with the average during the five-year period 2006-2010. They now represent 5% of all accidents (against 7% from 2006-2010). Meanwhile accidents without victims have increased from 9% to 12%

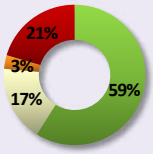
The distribution of accidents per number of victims completely depends on the type of accident. “Individual hit by a train” and “Individual falling from a train” are never minor accidents. On the contrary, 94% of all derailments are victimless.



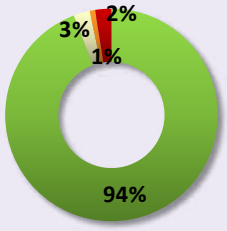
Collision between trains 2011 (29 events)



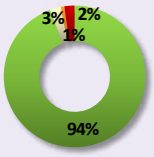
2006-2010 (161 events)



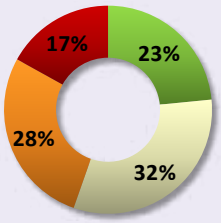
Derailment 2011 (122 events)



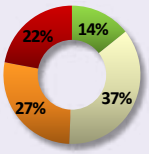
2006-2010 (515 events)



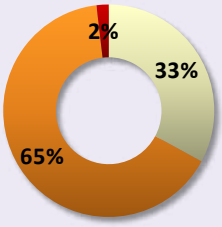
Collision with an obstacle 2011 (106 events)



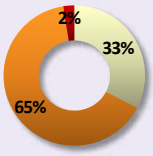
2006-2010 (2446 events)



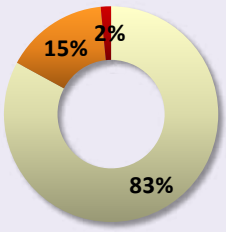
Individual hit by a train 2011 (1296 events)



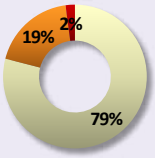
2006-2010 (6975 events)



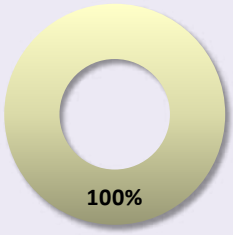
Fall from a train 2011 (129 events)



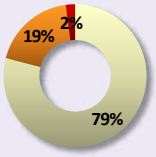
2006-2010 (814 events)



Electrocution 2011 (3 events)

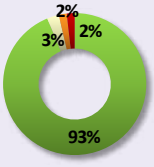


2006-2010 (114 events)



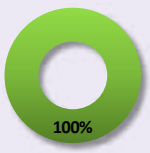
Fire in RS 2011 (11 events)

2006-2010 (111 events)



Dangerous goods accidents (with release) 2011 (1 events)

2006-2010 (4 events)



Section 2

Analysis of derailments

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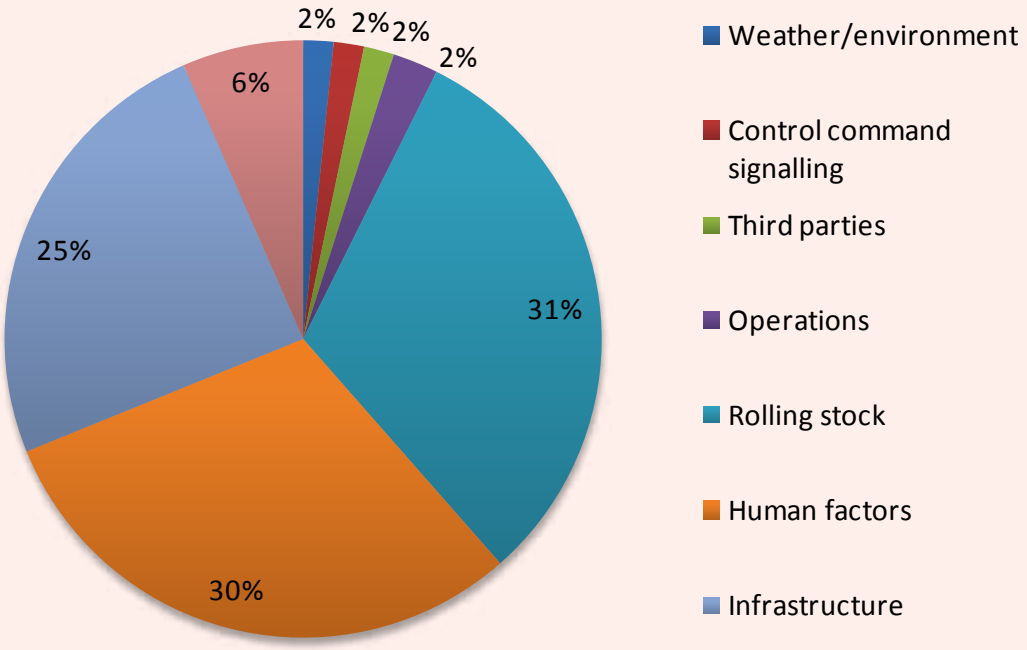
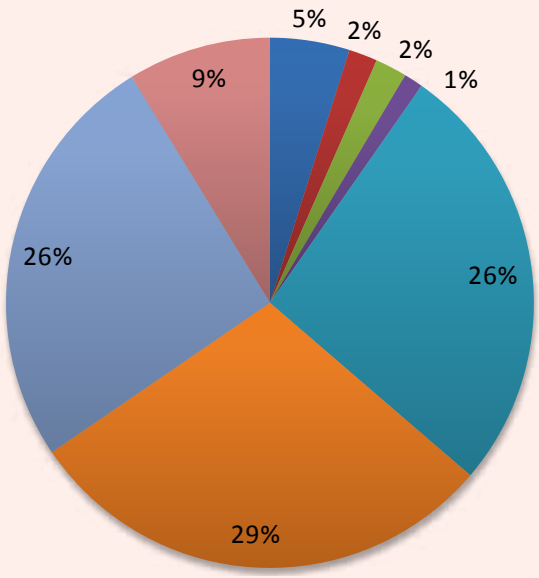
2.1 First level causes of derailments

2011



2006 -2010



122 derailments were registered in the Safety Database for the year 2011, a number higher than the average of the 2006-2010 period (103 events a year).

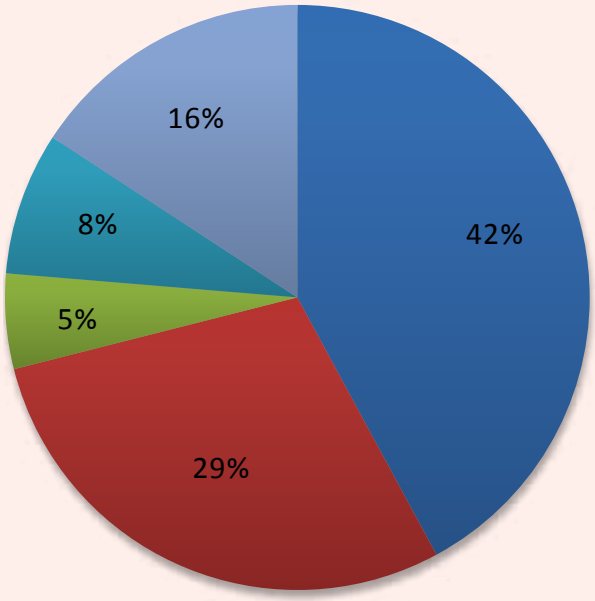
Derailments due to rolling stock failures represent 31% of all events, against 26% for the last 5-year period.

The proportion of derailments due to human factors and infrastructure remains stable at 30% and 25% respectively

Weather and Environment are responsible for only 2% of the derailments (5% during 2006-2010)

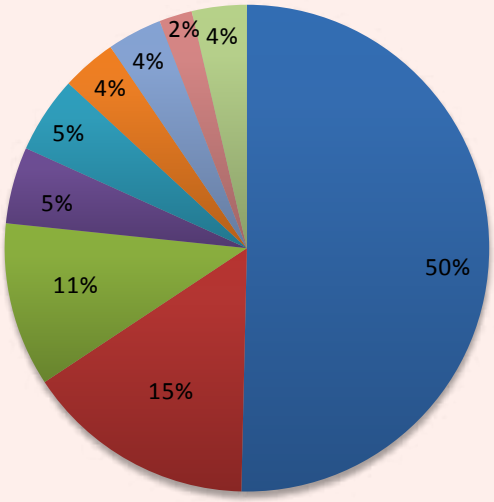
2.2 Second level causes of derailments caused by rolling stock failures

2011 (38 events)



- fault on wheel or axle
- other train faults
- not specified
- gauge, shifted load
- other locomotive faults
- brake failure
- interaction vehicle / track & structure
- hot boxes
- other causes

2006 -2010 (137 events)

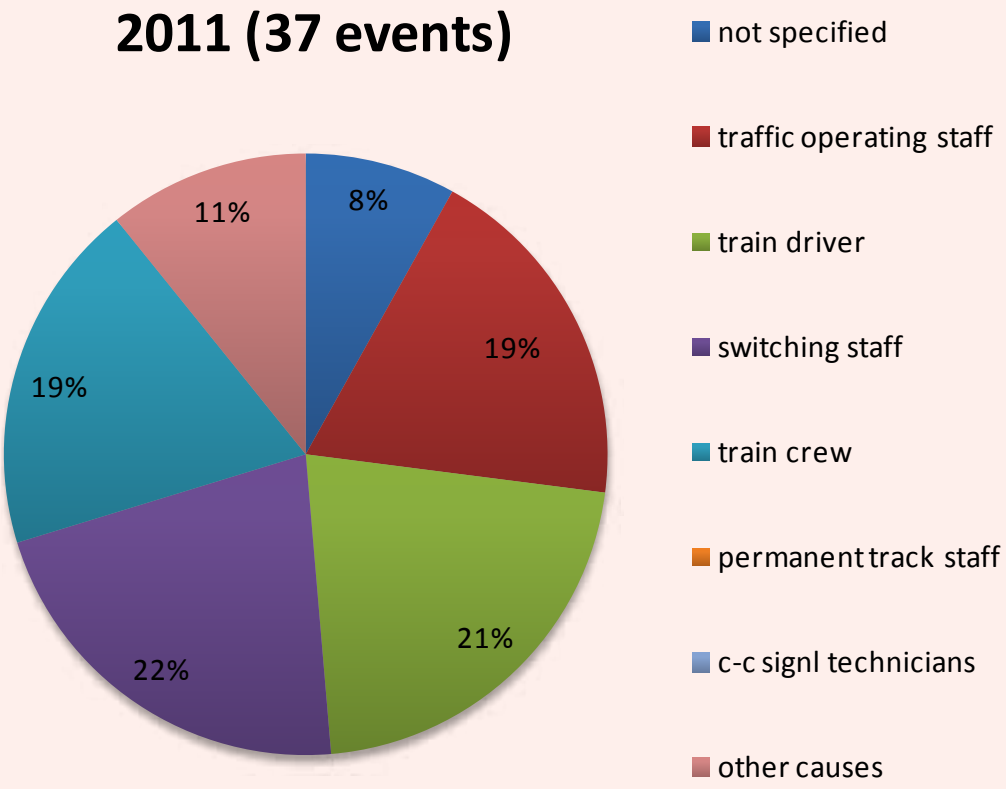


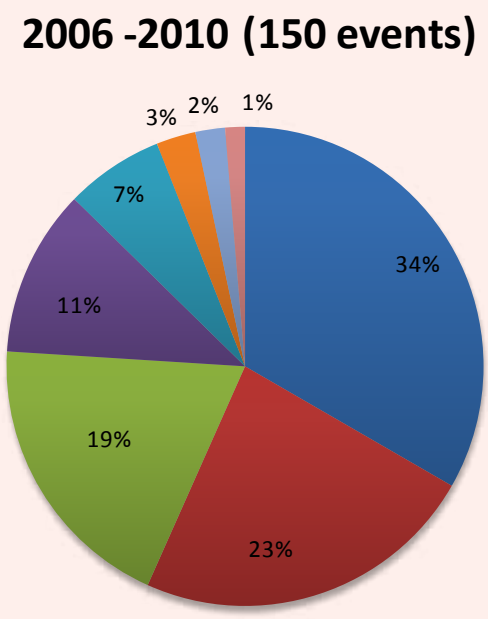
The distribution of second causes of derailments generated by rolling stock failures is atypical if compared to the 2006-2010 period. But the low number of events (38 events) doesn't allow for a real statistical analysis.

Fault in a wheel or an axle remains the first cause of derailment (42% of cases).

Interaction between vehicle and track/ structure is involved in 6 cases in 2011 (5 cases in the whole 2006-2010 period).

2.3 Second level causes of derailments caused by human factors

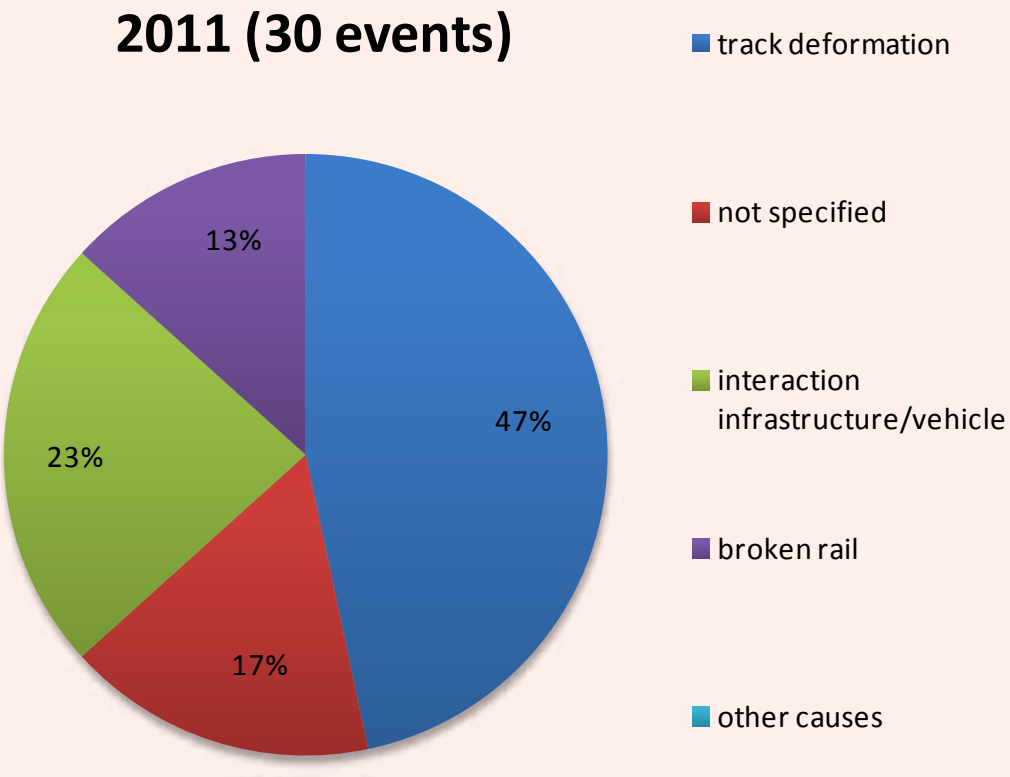


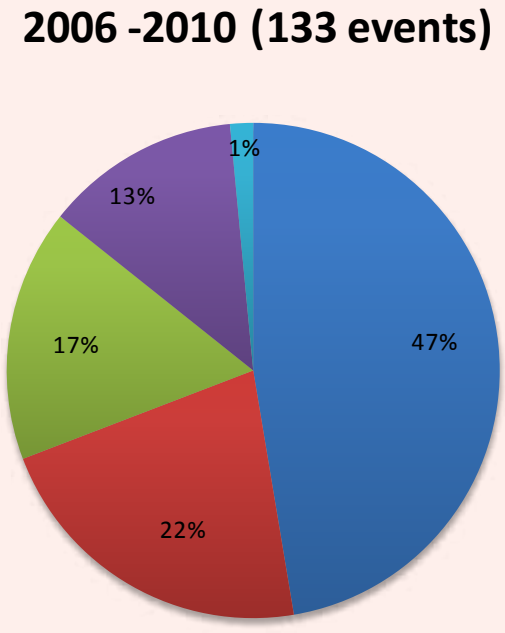


Derailments provoked by human factors have a very regular distribution of second causes. Each category (train drivers, train crew, traffic operating staff and switching staff) is almost equally (around 20%) involved. The last 20% is not specified.

Train crew seem to be the origin of 7 derailments during 2011. This figure is quite unexpected. But note that 6 of these events are declared by one infrastructure manager. This might be the result of a misinterpretation.

2.4 Second level causes of derailments caused by infrastructure

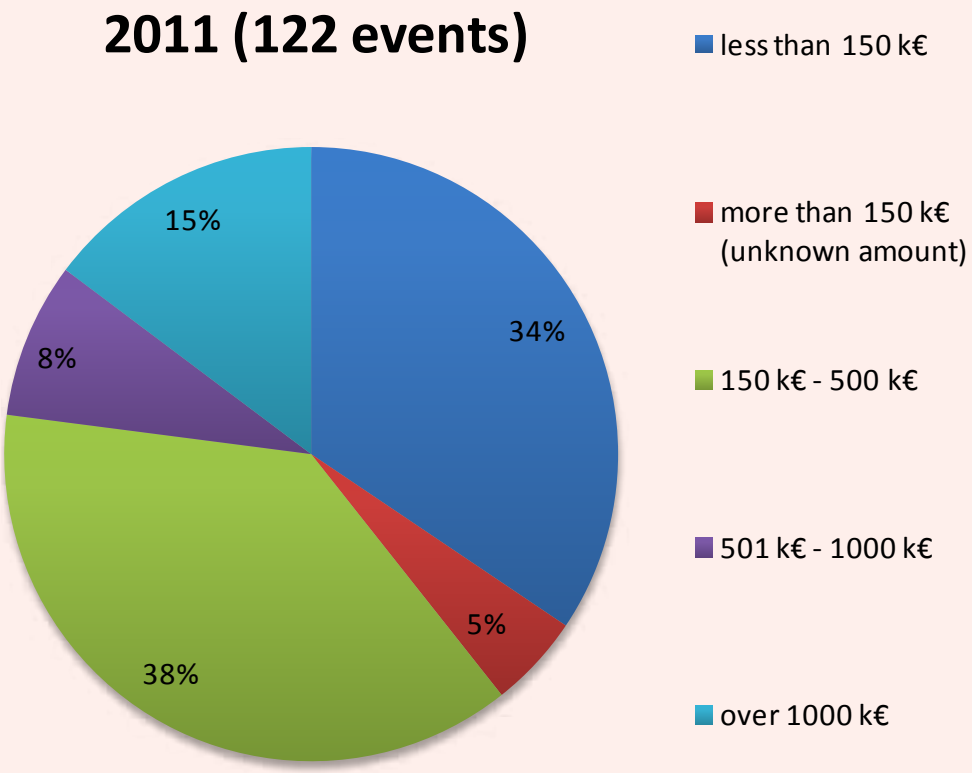


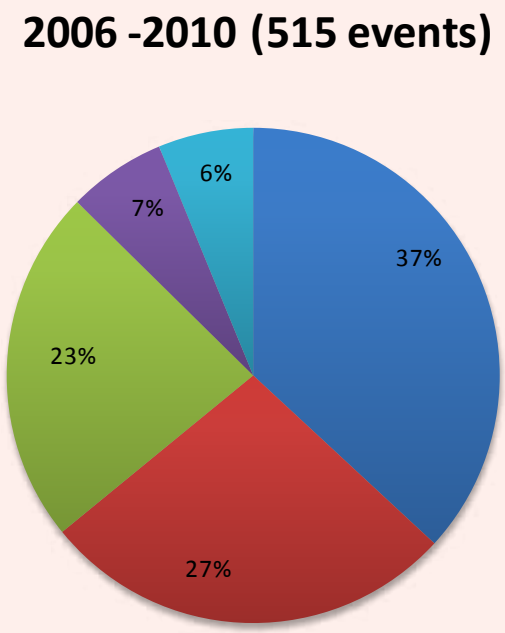


The distribution of second causes for derailments caused by infrastructure is very similar to the past years.

Track deformation is the cause of almost 50% of the 30 derailments.

2.5 Financial consequences of derailments



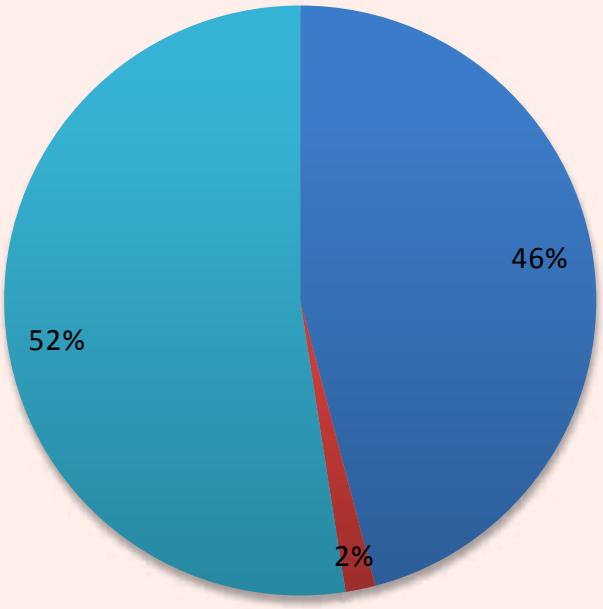


Derailments seem costlier in 2011 than they were in the past years. The proportion of events with financial consequences of more than 1 million € rose from 6% to 15%.

But this might be an optical illusion as financial consequences were better assessed in 2011. Indeed, the proportion of events with financial consequences over 150 000 € but with unspecified amount falls from 27% to 5%.

2.6 Location details of derailments

2011 (122 events)



switches and crossings

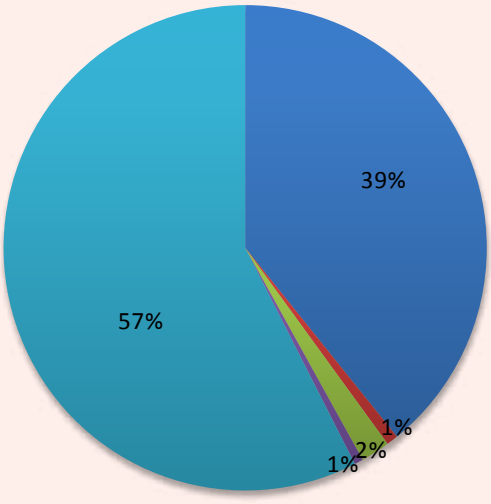
level crossings

bridges / viaducts

tunnels

other types and not specified

2006 -2010 (515 events)

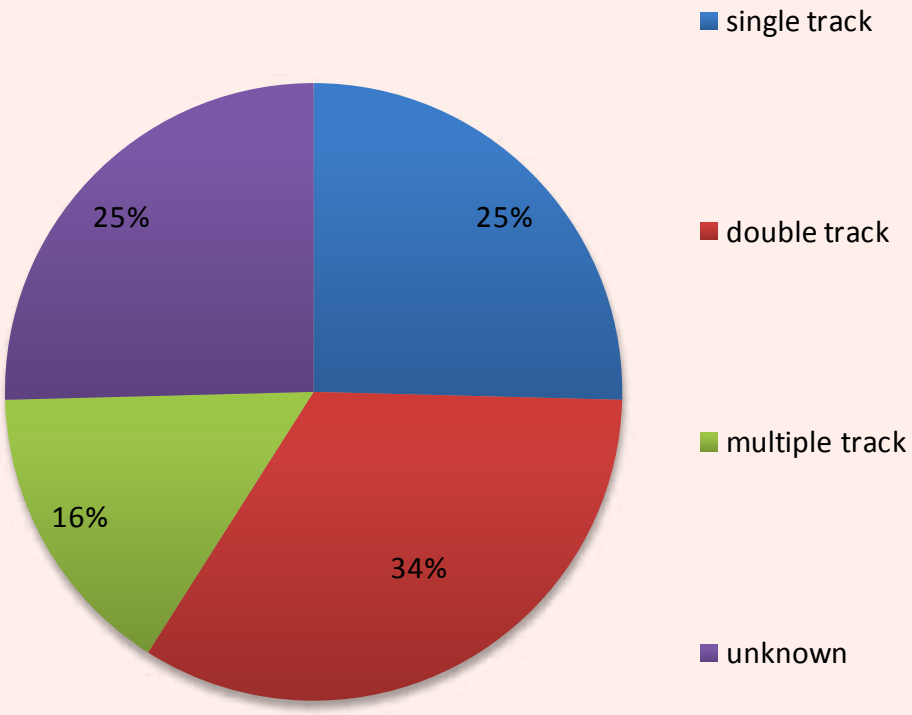


Switches and crossings remain the first location of derailments (56 events in 2011).

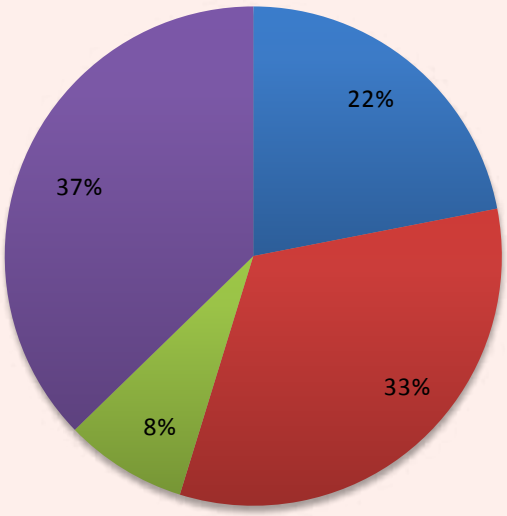
No derailment occurred on bridges or in tunnel during the year 2011.

2.7 Number of tracks at derailment locations

2011 (122 events)

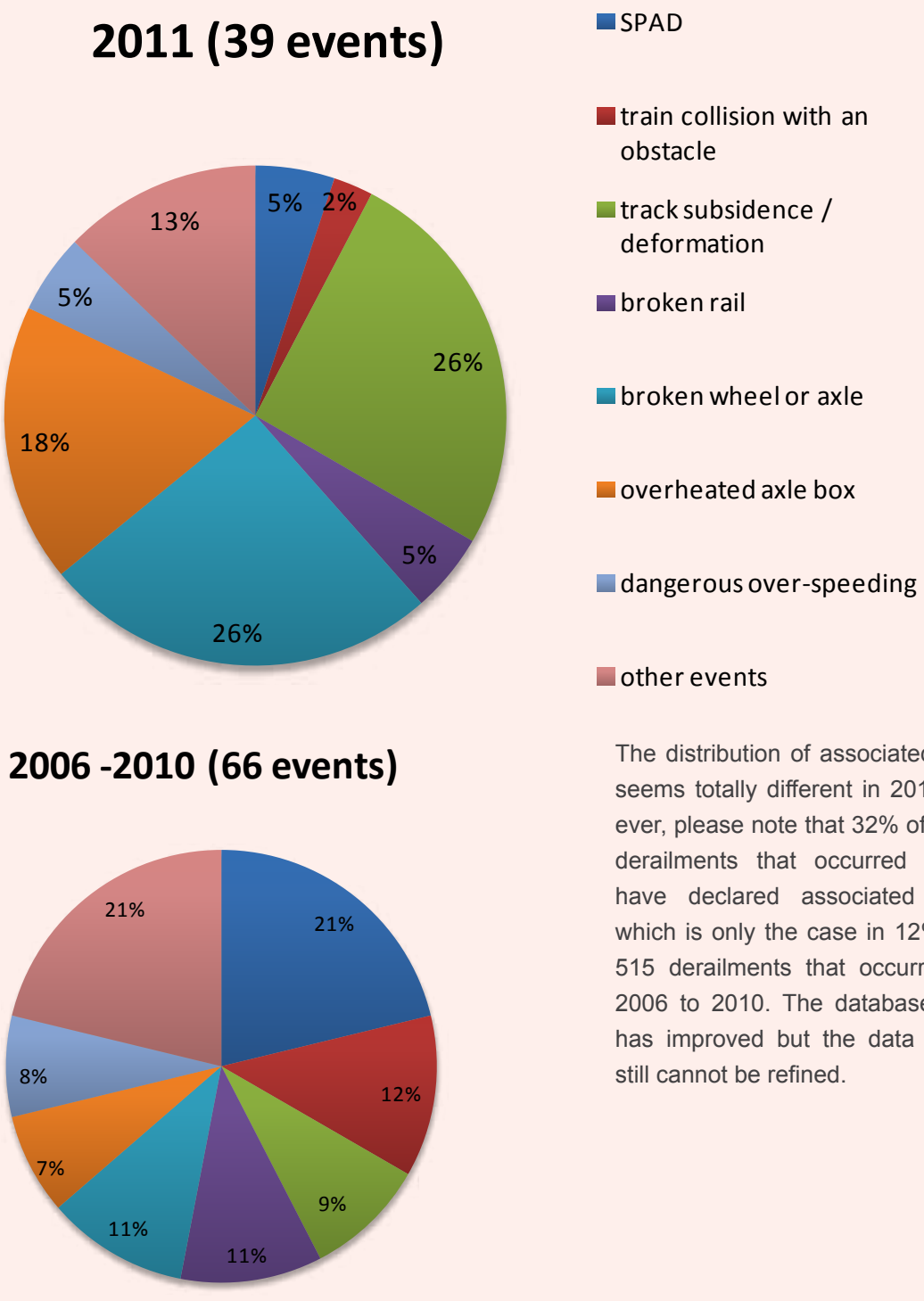


2006 -2010 (515 events)



The number of tracks has no correlation with the risk of derailment.

2.8 Associated events accompanying derailments

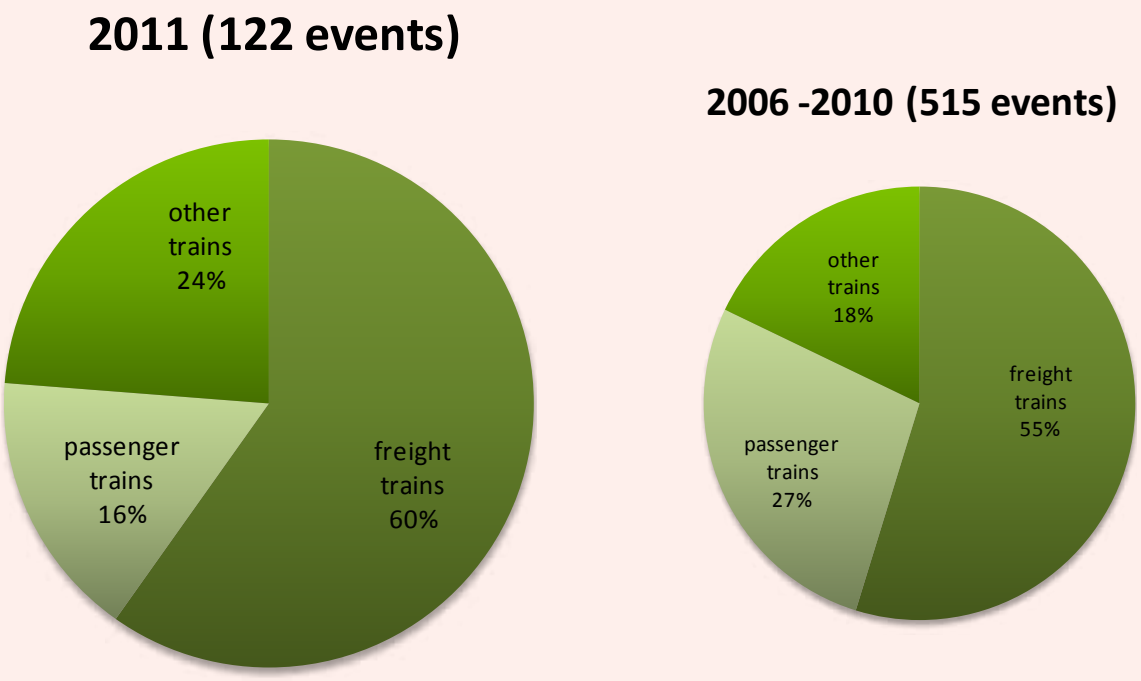


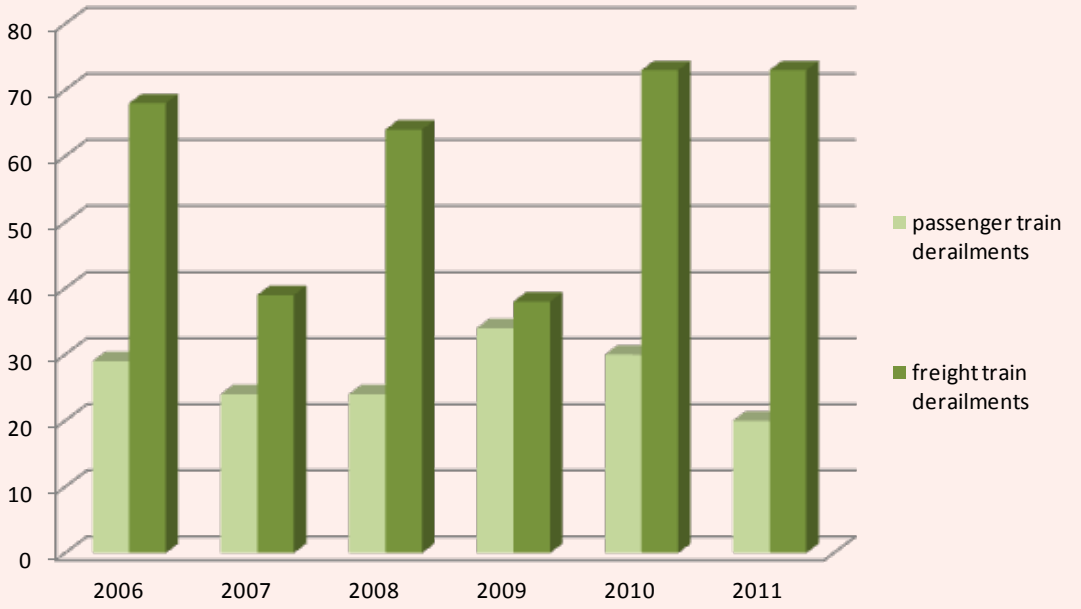
The distribution of associated events seems totally different in 2011. However, please note that 32% of the 122 derailments that occurred in 2011 have declared associated events, which is only the case in 12% of the 515 derailments that occurred from 2006 to 2010. The database quality has improved but the data analysis still cannot be refined.

2.9 Type of trains having derailment

73 derailments involved freight trains and 20 derailments involved passenger trains during the year 2011.

Real trends are not statistically observable.





Appendix

Accident definitions currently in force in europe

Please note that this appendix, following the request of the Safety Performance Group, has been repeated from the 2009 report. It gives the key accident definitions currently in force in Europe.

At present there are at least four definitions of "railway accidents" which have legal force in Europe:

2 definitions from Commission Regulation (EC) N° 1192/2003:

"Significant accident" means any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic. Accidents in workshops, warehouses and depots are excluded. The Safety Directive (49/2004/EC) specifies: significant damage over €150K and extensive disruptions to traffic with tracks blocked for more than 6 hours. Suicides and suicide attempts are excluded.

"Serious injury accident" means any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person. Accidents in workshops, warehouses and depots are excluded.(Where "person killed" means any person killed immediately or dying within 30 days as a result of an accident, excluding suicides; and "person seriously injured" means any person injured who was hospitalised for more than 24 hours as a result of an accident, excluding attempted suicides).

The following diagram shows the field of application of and intersection between the four accident definitions.

The UIC Safety Database collates information on railway accidents, critical events, suicides and attempted suicides. UIC SDB accepts declarations based on all the above accident definitions. However, **declaration of "Significant Accidents"** in accordance with the definition given by the Commission Regulation (EC) N° 1192/2003.

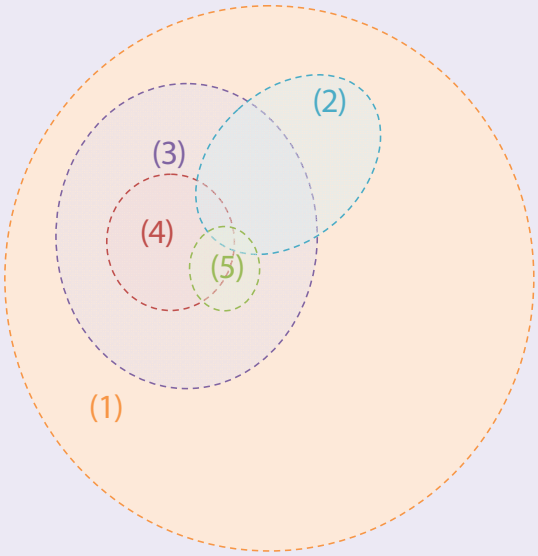
Finally, SDB must contain at least all the significant accidents and all the dangerous goods accidents declared (one by one or automatically transferred) by the SDB Correspondents plus the number of critical events, suicides and attempted suicides in a defined period.

The UIC International Railway Statistic – Table A91 collates the total of Significant Accidents in 5 categories and the number of passenger, staff and third parties victims as a result of the accidents.

Table A91 of the UIC International Railway Statistics must contain, for each UIC member, the total number of accidents by type (5 types) and the number of passenger fatalities and injuries for each type of accident, calculated as a total of all significant accidents experienced by each UIC member.

Every year at the end of September, the values necessary to compile Table A91 are extracted by the SDB and transferred to the UIC Statistics Department. Those responsible for statistics within UIC railway member companies can confirm or correct the totals that will be published thereafter in the official statistics Table A91: “Railway Accidents”.

Domains of the different definitions of accidents



(1) Accidents as defined in the European Railway Safety Directive.
It is not used for any mandatory data collection.

(2) Dangerous goods accidents as in RID/ADR section 1.8.5.
It contains the accidents to take into account to complete EUROSTAT table H2

(3) Significant Accidents as in EC Regulation N° 1192/2003.
It contains the accidents to take into account to complete EUROSTAT table H1 and to calculate the Safety Indicators as defined in the Safety Directive Annex 1.

(4) Serious Injury Accidents in EC Regulation N° 1192/2003
It is used to complete the optional part of EUROSTAT table H1 and tables H2 and H3.

(5) Serious Accidents domain as defined in the European Railway Safety Directive.
It contains those accidents for which Member States shall ensure that an investigation is carried out by the investigating body and the results of the investigations made known to the public.

List of the UIC European Railway Members participating in the Safety Database

Country	Country code	Railway Company	Railway Company name
Austria	AT	ÖBB	Österreichische Bundesbahnen
Belgium	BE	Infrabel	Infrabel
Croatia	HR	HŽ	Hrvatske Željeznice
Czech Republic	CZ	SŽDC	Správa Železniční Dopravní Cesty
France - UK	-	Eurotunnel	Eurotunnel
France	FR	RFF SNCF	Réseau Ferré de France Société Nationale des Chemins de fer Français
Germany	DE	DB	Deutsche Bahn AG
Hungary	HU	MÁV	Magyar Államvasutak Zrt.
Italy	IT	RFI	Rete Ferroviaria Italiana
Luxembourg	LU	CFL	Société Nationale des CF Luxembourgeois
Netherlands	NL	ProRail	ProRail
Norway	NO	JBV	Jernbaneverket
Poland	PL	PKP PLK	PKP Polskie Linie Kolejowe
Portugal	PT	REFER	Rede Ferroviária Nacional
Romania	RO	CFR	Companiă Națională de Cai Ferate CFR SA
Slovak Republic	SK	ŽSR	Železnice Slovenskej Republiky
Slovenia	SI	SŽ	Slovenske Železnice
Spain	ES	ADIF	Administrador de Infraestructuras Ferroviarias
Sweden	SE	Trafikverket	Trafikverket
Switzerland	CH	SBB CFF FFS	Schweizerische Bundesbahnen
United Kingdom	UK	Network Rail	Network Rail Ltd

Safety Database - Activity Report 2012
Significant Accidents 2011

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