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Safety Database Activity Report 2009

- Significant Accidents 2008**
- Benchmarking and Appendix**

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Foreword

This document provides information on significant railway accidents registered in 2008 in the context of the Safety Data Base (SDB) activity. Railway safety experts will find an annual summary of railway accidents in Europe based on individual UIC member companies' results, international benchmarking and trend analysis.

Readers used to accessing the SDB directly are advised to be aware that records in a live database are constantly updated and consequently the results can change slightly over time. The 2008, 2007 and 2006 results presented here reflect the SDB updated as of 9 October 2009.

Section I of the document follows on from the executive summary; it gives a short explanation of the criteria adopted to enable analysis of railway companies' performances and presents global statistics. There are event types, causes, location of accidents, injured parties etc. represented collectively, and displayed in matrix format. The relationship between occurrences in accidents enables attention to be concentrated on specific focus areas. In addition to the 2008 detailed results, cumulative data from a subset of 11 among the main railway companies from Western Europe which were chosen on account of their homogeneous declaration of accidents in the years from 2001 to 2008 shows the trends of accidents and fatalities.

Section II shows indicators values and their probabilistic distribution. The indicators reported are a subset of those introduced by the European Safety Directive. They allow the railway companies in the sample to benchmark and enable other railway companies to evaluate their position in relation to those examined.

UIC recommends that all members supply complete unambiguous declaration of the accidents and critical events to the database, as it will enhance the quality and accuracy of the UIC analysis. Moreover, the use of the SDB as a common source of information to generate international railway analysis would avoid discrepancies between the different publications produced in Europe.

Following the request of the Safety Performance Group, the "Appendix" has been repeated from the 2008 report. It gives the key accident definitions currently in force in Europe.

Executive Summary of significant accidents in 2008

In 2008 the Safety database collected accidents and critical events from the main railway companies in 20 European countries including Norway and Switzerland, plus EUROTUNNEL.

Results from data reported in 2008, indicate a diminution of the total number of significant accidents as well as of the number of accident victims. The main cumulative indicators show for 2008 the best performances in the last 8 years (see table 2). Out of a total of more than 4000 million km of train movements on the network there were 2263 significant accidents and 2365 victims (seriously injured + killed) against 2272 accidents and 2483 victims in 2007.

"Serious accidents" for which Member States shall ensure that an investigation is carried out by the investigating body and make the results of the investigations public were 200.

Years	Significant accidents	Serious accidents	Number of Fatalities / 100 significant accidents			All victims / 100 significant accidents	Significant accidents / Million of train Km movement	Fatalities / Million of train Km movement
			Passengers	Staff	Other			
2008	2263	200	3.0	1.7	51	104.5	0.56	0.31
2007	2272	227	2.8	1.4	55	109.3	0.57	0.34
2006	2327	205	1.8	1.5	50.6	101.7	0.59	0.32

Most of the accidents were individual accidents: 71% against 28% collective accidents (they were 73% against 25% in 2007 and 67% against 30% in 2006). The breakdown of accidents by type is reported in table 1 below.

Although the total number and the rate of victims per significant accident decreased in 2008, the accident data indicates an increase in the number of passenger and staff victims. Unfortunately 64 passenger and 40 staff fatalities were recorded. The number of "other" victims of accidents was about five times greater than the number of passengers plus staff victims.

The total rate of victims was of less than 0.6 persons per million train kilometres. This value decreases to less than 0.02 for passenger fatalities (see Tables 2 and 4 and Chart 2).

The most serious accidents for passengers were: a train collision with a road bridge that collapsed and fell down on the track in front of an approaching train and a fire in a sleeping car due to inflammable substances in baggage carried on board by a passenger and placed close to an electric heater. These accidents resulted in, 8 passengers killed and 28 seriously injured in the first and 9 passengers killed and 5 seriously injured in the second accident.

The number of "accidents at station" increased by 1%; they represent about 39% of the total number of accidents.

Accidents to persons caused by rolling stock in motion, with the exception of suicides, continue to increase, they represent 64.7% of the total of accidents. They were 63.8% in 2007 and 58.7% in 2006.

Level crossing (LC) accidents were 24.2% of the total of accidents.

Collisions between trains (1.3%) and derailments (4.8%) make up 6.1% of the total. They constituted 4.3% in 2007 and 6.2% in 2006.

- Most victims in collisions between trains were staff (20 of a total of 32 victims of collisions between trains). No passengers died as a consequence of this type of accident.

- The total number of derailments in 2008 increased. Results of 11 among the main railway companies from Western Europe also show an increasing trend in the number of derailments in the last 8 years (see chart 10).

Train collisions with an obstacle other than at level crossings represent 3.4% of the total of accidents.

The remaining 1.5% of accidents were of other types: fires in rolling stock, electrocutions and dangerous goods accidents.

Table 1 Breakdown and rate of types of significant accidents in 2008 according to different definitions.			
Accidents	Types of accidents as defined in UIC – SDB	Additional information from UIC -SDB	Types of accidents as defined in Safety Directive
Collective accidents 27,88%	4,8% Derailments of trains		4,8% Derailments of trains
	1,3% Train collision with another train		4,7% Collisions of trains, including collisions with obstacles within the clearance gauge
	21,7% Train collision with an obstacle	3,4% Train collision with an obstacle not at level crossings	
		18,3% Train collision with an obstacle at level crossings	
Individual accidents 70,61%	63,5% Individual hit by a train	5,9% Individual hit by a train at level crossings	64,7% Accidents to persons caused by rolling stock in motion, with the exception of suicides.
		57,6% Individual hit by a train not at level crossings	
	7,1% Individual falling from a train		
Other types of accidents 1,50%	0,8% Fire in rolling stock		0,8% Fire in rolling stock
	0,6% Electrocution by overhead line or third rail		0,7% Other types of accidents
	0,1% Accident involving dangerous goods		
100%	100%		100%

Of a total of 2365 victims recorded in 2008, the first level of cause analysis identifies that, the actions of third parties, external to the rail system (see table 6), were implicated in the accidents of 1935 victims and human factors were the cause for 361 victims. Weather and environmental conditions were at cause for 25 victims of accidents. There were accidents attributable to the Rolling Stock (3 victims), Energy System (1 victim), Infrastructure (10 victims) and Control-Command & Signalling (1 victim) sub-systems. Causes of the accidents for the remaining 29 victims have not been identified.

Breakdowns of victims (fatalities and serious injuries) by type of accidents are shown in Charts 1 to 4.

Details on causes of accidents are illustrated in Tables 5 and 6.

Most positive note: CFL has reported no significant accidents in Luxemburg in 2008, as in 2007.

Years:	11 railway companies				20 railway companies		
	Average from 2001 to 2005	2006	2007	2008	2006	2007	2008
Number of serious injury accidents	861	871	831	760	2093	2130	2061
Serious injury accidents per million km of train movements	0,30	0,29	0,27	0,25	0,53	0,53	0,51
Number of fatalities	500	524	528	490	1254	1347	1256
Fatalities per million km of train movements	0,17	0,17	0,17	0,16	0,32	0,34	0,31
Number of significant accidents	970	1080	948	934	2327	2272	2263
Significant accidents per million km of train movements	0,34	0,36	0,31	0,30	0,59	0,57	0,56
Number of victims	1112	985	936	852	2367	2483	2356
Victims per million km of train movements	0,39	0,33	0,30	0,28	0,60	0,62	0,58
Number km of million train movements:	2874,273	3021,46	3072,11	3094,03	3950,19	3997,36	4048,34

Please, refer to table 4 for the list of the considered 11 and 20 railway companies. Data 2001-2003 has been collected manually

	N° of accidents	Fatalities			Serious injuries			Victims	
		Passengers	Staff	Other	Passengers	Staff	Other	All	
At station	Collisions with an obstacle	22	8	1	6	28	2	13	58
	Collisions between trains	22	0	1	0	6	14	0	21
	LC accidents	77	0	0	43	1	0	41	85
	Derailments	56	1	0	0	6	2	0	9
	Hit by a train	565	12	17	282	20	28	219	578
	Falling from a train	118	18	0	2	75	8	17	120
	Other cases	15	0	3	3	1	3	3	13
TOTAL at station:	875	39	22	336	137	57	293	884	
In open line	Collisions with an obstacle	55	0	1	9	24	4	15	53
	Collisions between trains	6	0	1	0	6	4	0	11
	LC accidents	470	0	3	286	2	12	298	601
	Derailments	51	1	1	0	4	1	0	7
	Hit by a train	729	1	9	515	2	10	203	740
	Falling from a train	42	11	1	4	25	2	0	43
	Other cases	18	9	0	0	5	0	0	14
TOTAL in open line:	1371	22	16	814	68	33	516	1469	
In other locations:	17	3	2	2	0	4	1	12	
TOTAL:	2263	64	40	1152	205	94	810	2356	

SECTION I

DISCUSSION POINTS: TRESPASSING, LC ACCIDENTS AND ACCIDENTS AT STATION

The accidents recorded in 2008 confirm the evidence from previous years that the interaction of the rail system with its external environment results in more victims than the failure of the internal safety management of the rail system itself. Members of the public: road vehicle users, pedestrian at level crossing and trespassers who, irrespective of national laws and rail regulations, interact with the railways still constitute a very large proportion of fatalities than for passengers and staff members. The proportion is 93% others, 5% passengers and 3% employees (see Chart 2.1).

Analysis based on significant accidents reported by 20 railway companies in 2008 indicates that 82% of total accidents are represented by level crossing accidents plus individuals hit by a train not at level crossings. Individual hit by train, including pedestrian at level crossing represent about 64% of the total of accidents. Trespassing was at cause of almost 50% of the total number of accidents.

Level crossings and persons being hit by trains resulted in 85% of the total number of victims. For these two types of accidents third parties victims were 1890 out of 2014 which represented 94% of all victims. In this respect there is a need for wider community responsibility to be taken in the development of solutions to combat such types of accidents.

Breakdown of accidents by location shows a diminution in the number of accidents at level crossing and a slight decrease of accidents at switch and crossings (S&C). There were 147 accidents at S&C that resulted in a total of 114 victims (61 killed and 53 serious injured persons). Figures for level crossing accidents in the last 3 years are reported in the table below.

Years	Level Crossings Significant accidents	Rate of total accidents	Number of Fatalities / 100 significant level crossing accidents			LC victims / 100 significant accidents	LC Significant accidents / Million of train Km movement	LC Fatalities / Million of train Km movement
			Passengers	Staff	Other			
2008	548	24,2	0,5	0,4	60	125,2	0.14	0.08
2007	621	27,3	0,3	0,3	67	141,7	0.15	0.10
2006	638	27,4	0,2	0,5	52	121,3	0.16	0.08

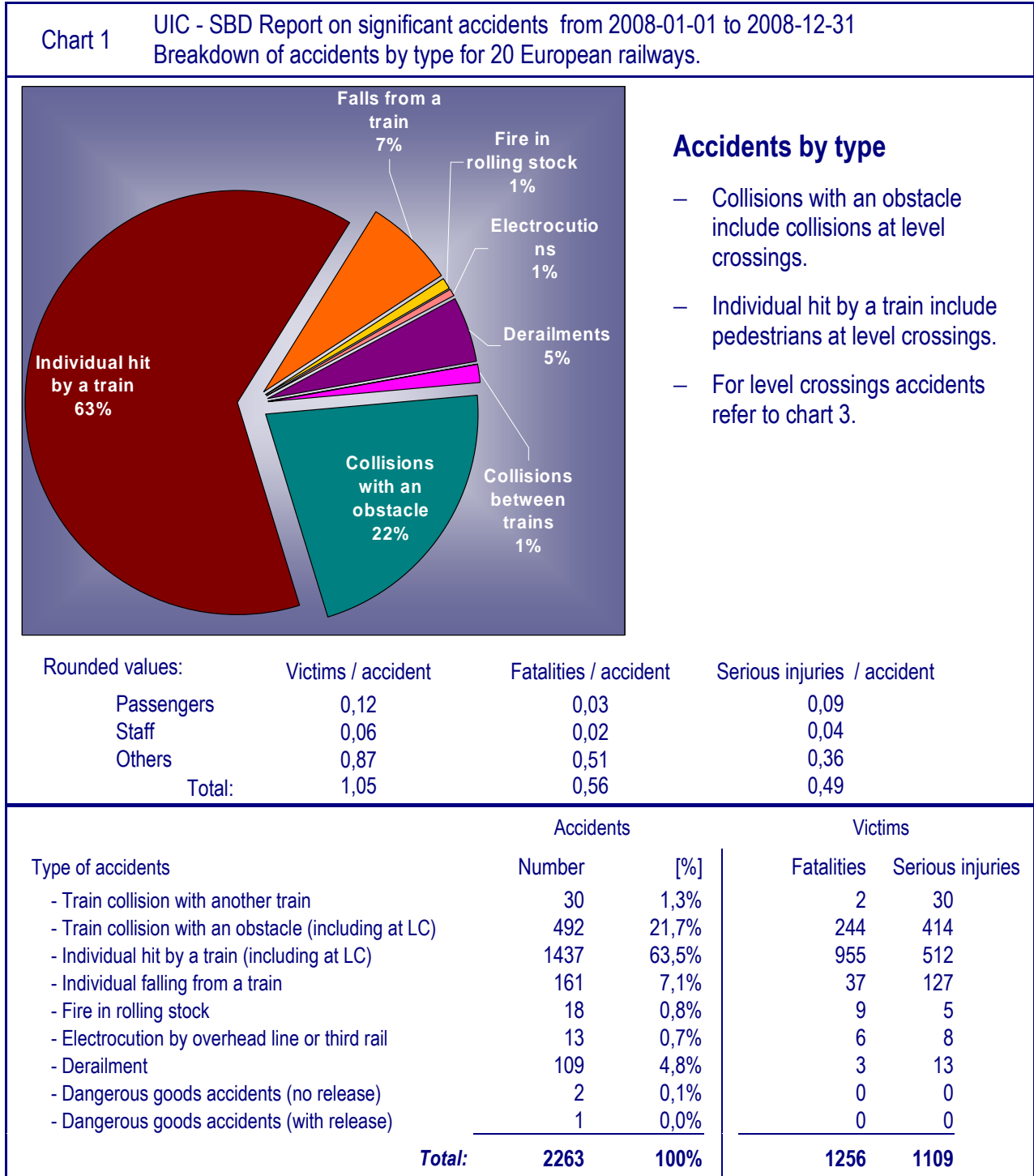
Despite the last 8 years trend of level crossing accidents shows increasing values for number of accidents and number of victims, results from data collection in the last 3 years demonstrate a decreasing number of occurrences and number of victims of level crossings accidents. In 2008 for the same set of 20 European networks there were 548 level crossing accidents against 621 in 2007. The total number of victims was 686 compared to 880 in 2007. In 2008 level crossing accidents represented 24.2% of the total of accidents and 29% of the total number of victims (see the table above).

Of a total of 332 persons killed in level crossings accidents 43 third persons died as a consequence of accidents at station; 3 staff members and 286 third persons died as a consequence of accidents in open line (see Table 2.1, Chart 3 and Chart 4).

The number and the percentage of accidents which occurred at station on 2008 are still increased. Accidents at station resulted in a total of 884 victims (there were 863 in 2007). Passenger victims of accidents in stations represent the majority of all passenger victims, 39 of a total of 64 passenger fatalities and 137 of a total of 205 passengers seriously injured.

GENERAL REPORT ON SIGNIFICANT ACCIDENTS 2008

The total number of significant accidents registered in 2008 for 20 European UIC member railway companies is 2263. See Table 4 for the names' list of the 20 companies.



Summary results

- Comparison with 2007 results shows that the number of significant accidents is decreasing. The rate of victims for passengers has increased due to a serious fire in Bulgaria and a road bridge collapsed in Czech Republic.

- No passengers died as a consequence of collisions between trains (see Chart 2).
- 9 passengers were killed and 5 seriously injured as a result of a fire in Bulgaria (see Chart 2).
- The number of electrocutions is decreasing (14 victims in 2008 against 20 victims in 2007).
- All the accidents involving the transport of dangerous goods (3 dangerous goods accidents + 3 derailments + 4 other non significant accidents) had no human consequences.

Chart 2 UIC - SBD Report on significant accidents from 2008-01-01 to 2008-12-31 Fatalities and serious injuries						
Type of accidents	Fatalities			Serious injuries		
	P	S	O	P	S	O
- Train collision with another train	0	2	0	12	18	0
- Train collision with an obstacle (including at LC)	8	3	233	55	18	341
- Individual hit by a train (including at LC)	16	29	910	22	41	449
- Individual falling from a train	29	2	6	100	10	17
- Fire in rolling stock	9	0	0	5	0	0
- Electrocution by overhead line or third rail	0	3	3	1	4	3
- Derailment	2	1	0	10	3	0
- Accident involving dangerous goods	0	0	0	0	0	0
Total:	64	40	1 152	205	94	810

(1) P = passengers; S = staff; O = others

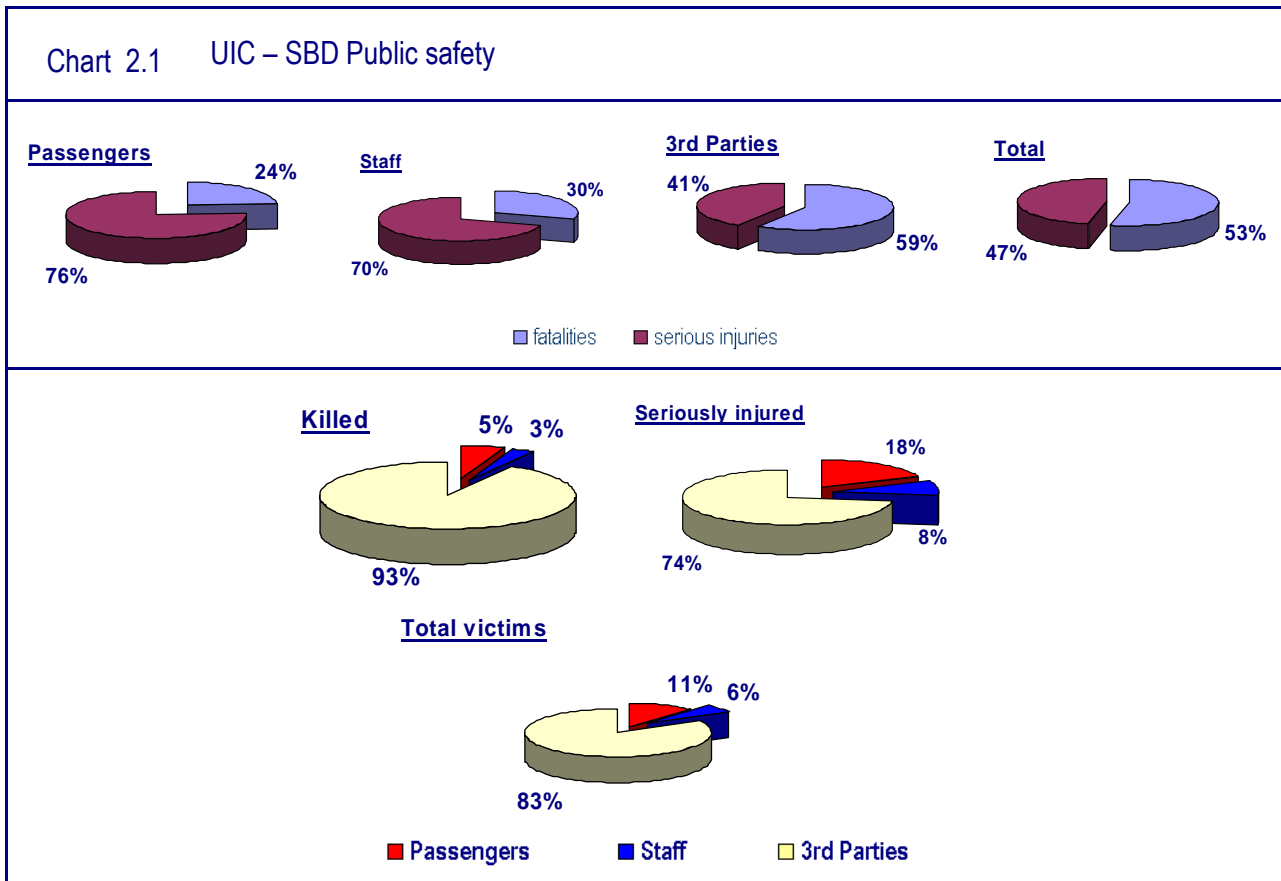
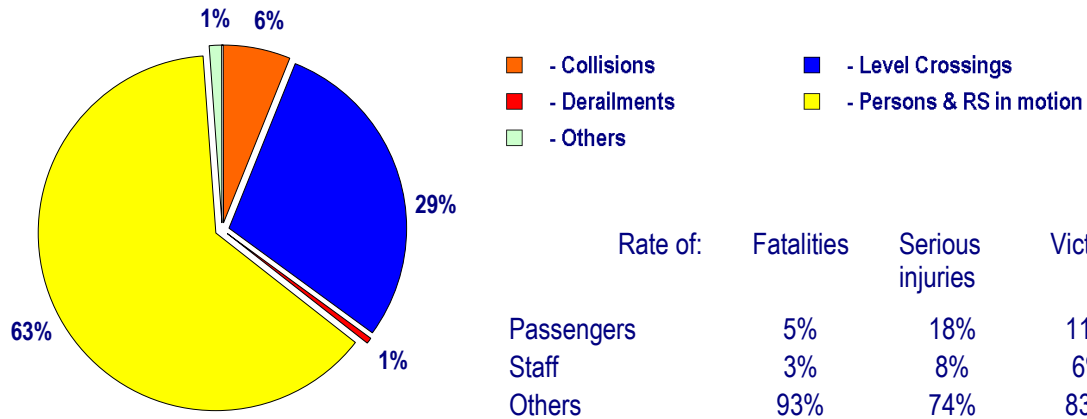


Chart 3

UIC - SDB Report on significant accidents from 2008-01-01 to 2008-12-31
Breakdown of victims by type of accidents for 20 European railways.



Victims by type of accidents

	Rate of:	Fatalities	Serious injuries	Victims
Passengers		5%	18%	11%
Staff		3%	8%	6%
Others		93%	74%	83%

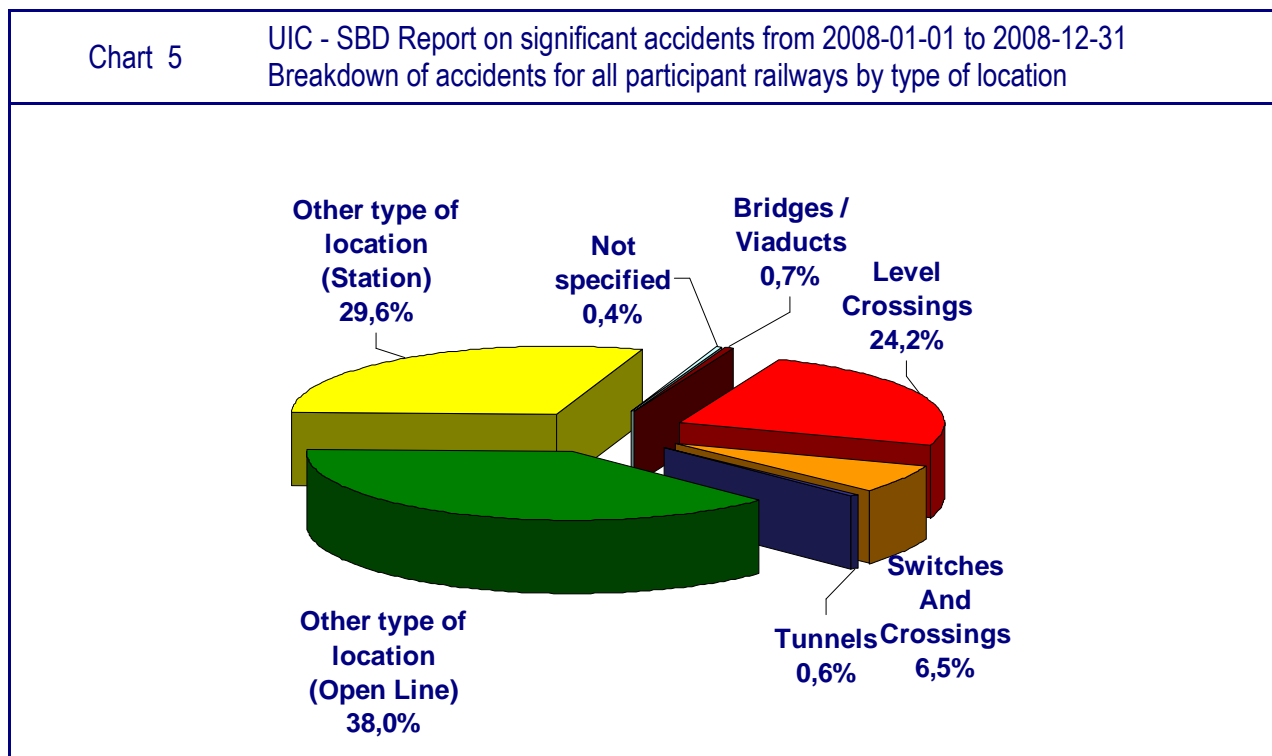
Type of accidents	Accidents		Victims	
	Number	[%]	Fatalities	Serious injuries
- Collisions	107	4,7%	27	116
- Level Crossings	548	24,2%	332	354
- Derailments	109	4,8%	3	13
- Persons & RS in motion (in this hit by train: 1304 or 57.6%)	1465	64,7%	879	613
- Fire	18	0,8%	9	5
- Others	16	0,7%	6	8
Total:	2263	100%	1 256	1109

Summary results

- The most frequent type of accident was that to persons due to rolling stocks in motion. Of a total of 1465 accidents to persons (e.g. persons hit, fallen...) excluding the accidents to pedestrians at level crossings there were 1304 accidents to persons hit by a train, they caused a total of 1328 victims – i.e. more than 56% of the total number of victims in all railway accidents (54% in 2007). This type of accident was already the most frequent and also caused the most victims in previous years.
- In a total of 729 cases of accidents to persons hit by a train in open line (people struck by a train) there were 740 victims (525 persons were killed and 215 were seriously injured – see Table 2.1).
- As was the case in previous years, most passenger fatalities or serious injuries occurred as a result of passengers falling from trains or being hit by trains (see also Chart 6).
- There were 548 level crossing accidents. This figure represents 24.2% of all accidents; it was 27.3% in 2007.
- Of a total of 686 victims involved in level crossing accidents, 139 were pedestrians hit by a train when crossing the track. Pedestrians killed in level crossings accidents represented 33.4% of the total fatalities recorded for this type of accident. They represented 37% in 2007.

Chart 4	UIC - SBD Report on significant accidents from 2008-01-01 to 2008-12-31 Fatalities and serious injuries according to EUROSTAT definitions.					
	Fatalities			Seriously injured		
	P	S	O	P	S	O
- Collisions	8	4	15	64	24	28
- Level Crossings	0	3	329	3	12	339
- Derailments	2	1	0	10	3	0
- Persons & RS in motion	45	29	805	122	51	440
- Dangerous goods Total	0	0	0	0	0	0
- Fire	9	0	0	5	0	0
- Others	0	3	3	1	4	3
Total:	64	40	1 152	205	94	810

(1) P = passengers; S = staff; O = others

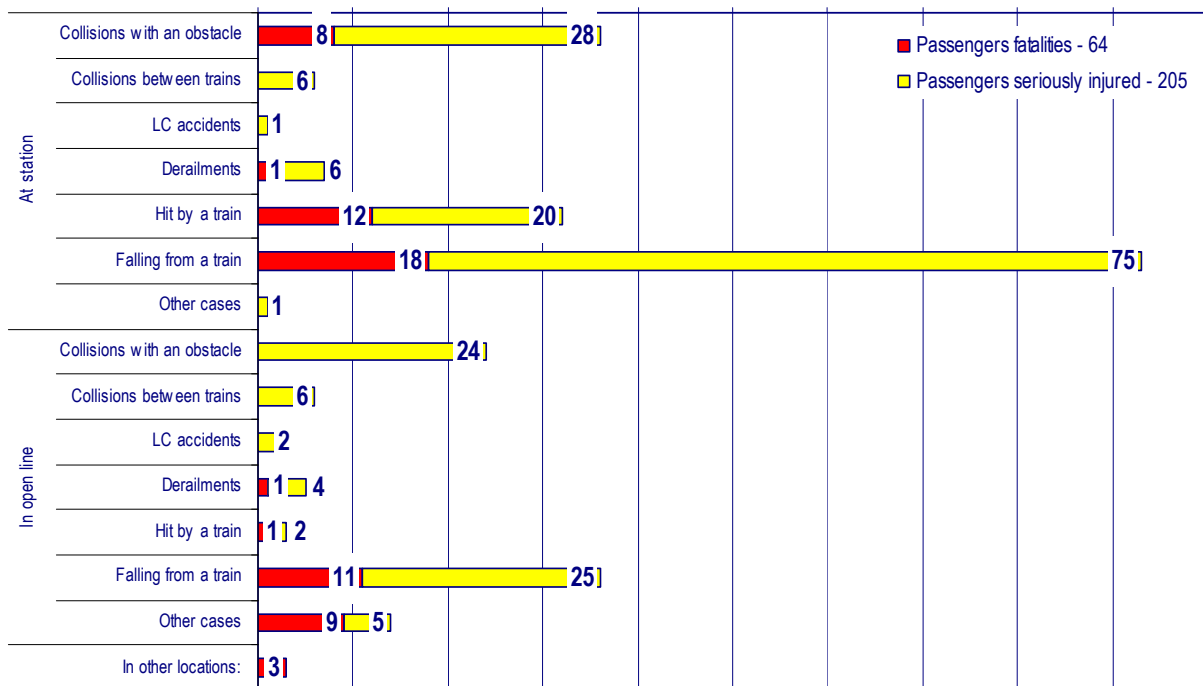


Summary results

- Of a total of 147 accidents which occurred on switches and crossings, 10 were collisions (of which 7 were collisions between trains), 43 were derailments, and 94 were accidents to person. They resulted in 114 victims.
- The most serious accident at station was a collision with an obstacle occurred in Czech Republic in the city of Studenka on 8 August 2008 at 10:30 a.m. A road bridge collapsed and fell down into the rails in front of a running EC train resulting in 8 passenger fatalities and 28 passengers seriously injured. (Details on this accident are recorded in the SDB under the event code 26719).

Chart 6

UIC - SBD Report on significant accidents from 2008-01-01 to 2008-12-31
Total number of passengers who were victims of accidents by type of location.

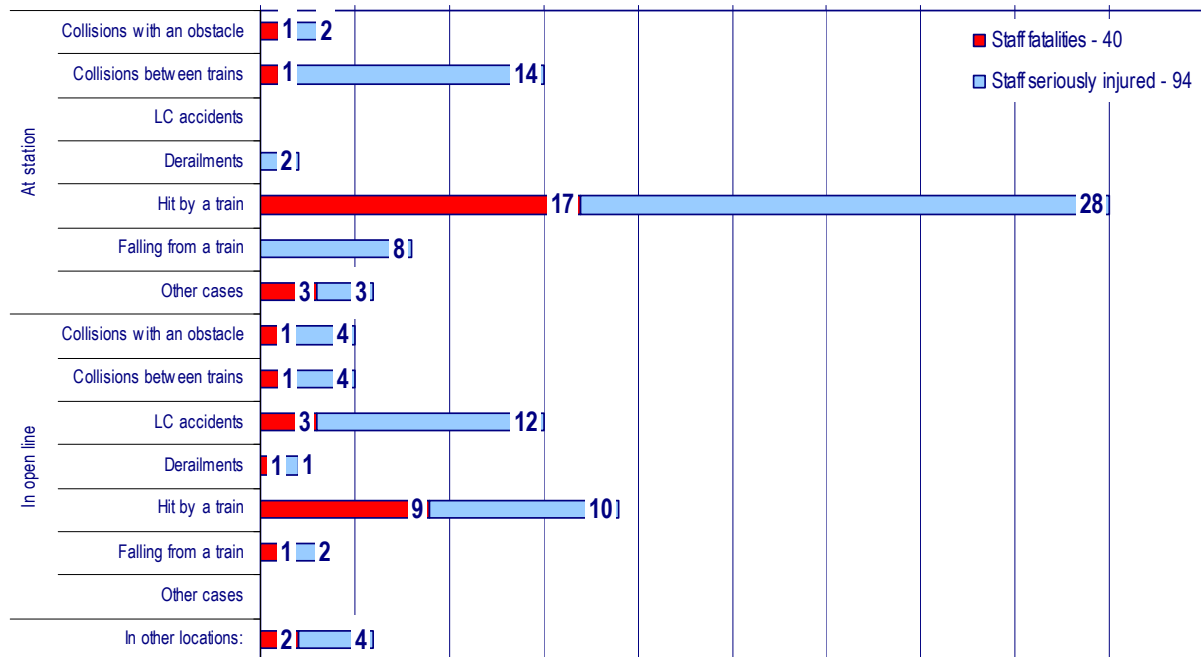


Summary results

- Most of the passenger fatalities (39 out of a total of 64) occurred at stations as a result of individual accidents (12 passengers died being hit by a train and 18 falling from a train in accidents at station).
- Of a total of 64 passengers killed and 205 seriously injured, 29 were killed and 100 seriously injured falling from trains and 13 were killed and 22 seriously injured being hit by trains.
- Accidents to individuals hit by trains and to persons falling from trains are responsible for about 70% of passenger fatalities. These individual accidents are the most severe for passengers and the number of passenger victims of these accidents has increased.
- A fire in a sleeping car caused the most passengers killed in railway accidents in 2008. The fire took place due to inflammable substances in a baggage carried on board by a passenger and placed close to an electric heater resulted in 9 passengers killed and 5 seriously injured.
- No passengers died as consequence of collisions between trains.

Chart 7

UIC - SDB Report on significant accidents from 2008-01-01 to 2008-12-31
Total number of staff who were victims of accidents by type of location.



Summary results

- The number of staff who were the victims of accidents inversed its tendency to decrease in relation to the previous years values. In 2008 there were 131 staff victims against 109 in 2007; the number of staff victims per hundred million of trains Km moves from 2.7 in 2007 to 3.2 in 2008. 1.7 staff member was killed per 100 significant accidents compared to 1.4 and 1.5 staff respectively in 2007 and 2006.
- Of a total of 134 staff members victims of accidents 79 staff members were injured or killed in accidents in stations and 49 in accidents in open lines (see table 2.1).
- As was the case in 2007 and in 2006, most staff member deaths occurred in open line accidents, whereas most serious injuries to staff members were incurred in accidents at stations.
- Most staff victims continue to be as a result of individual accidents (staff being hit by a train).
- 2 staff members died and 18 were seriously injured in collisions between trains.

Total number of “other” people who were victims of accidents by type of location is shown in Table 2.1.

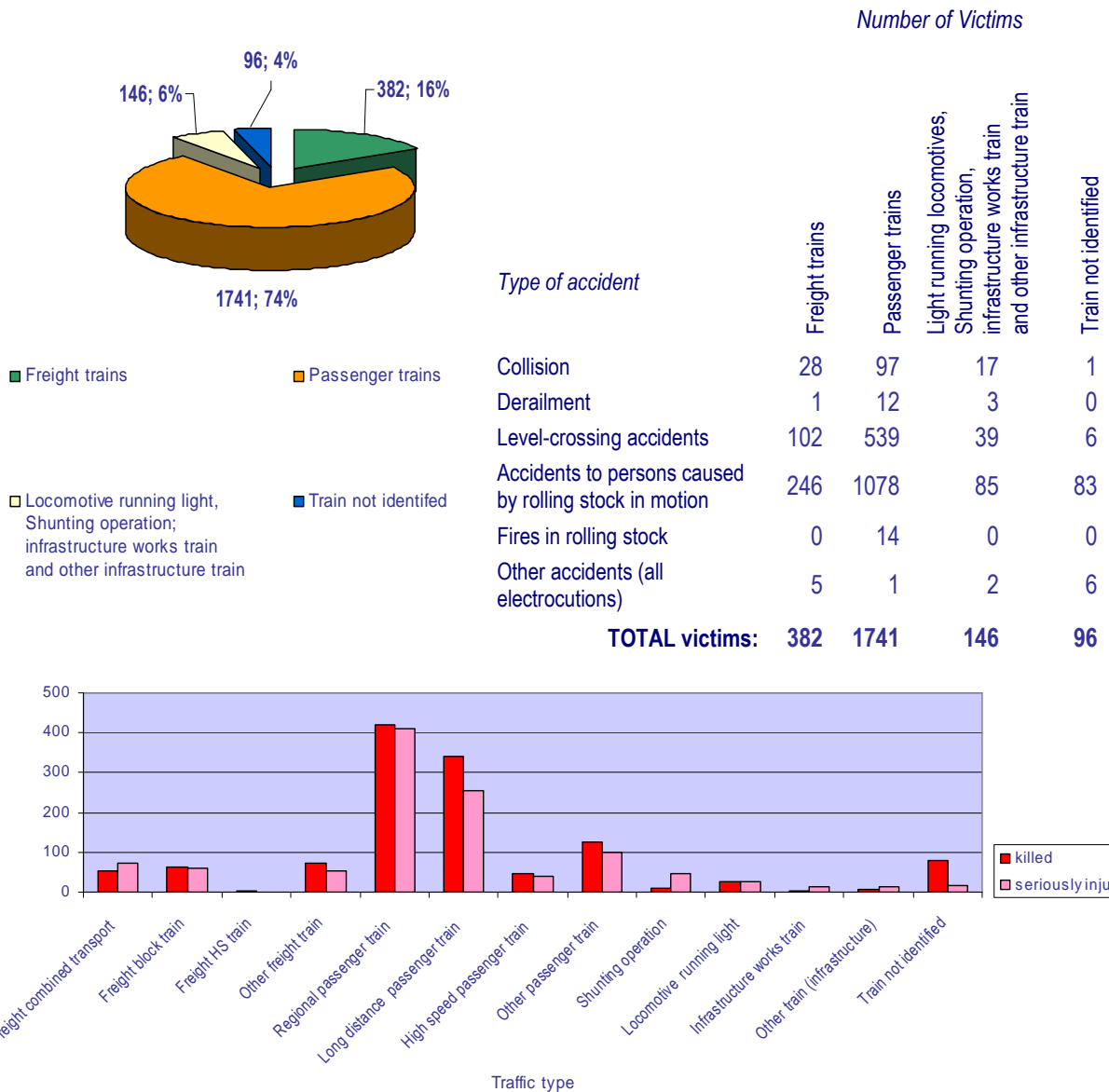
LEVEL 1 - CAUSES OF ACCIDENTS

Table 5		UIC – SDB: First level analysis from UIC Safety Database – 2008 data Causes of accidents.		
Simplest type of cause definition	Basic cause definition from UIC-SDB	More detailed information from UIC-SDB second level causes	Number of significant accidents	
INTERNAL CAUSES 20,77%	RAILWAY SUB-SYSTEMS 4,2%	Infrastructure (track & structures)	1,99%	45
		Energy	0,04%	1
		Control-command signalling	0,09%	2
		Operations & traffic management	0,00%	0
		Rolling stock	2,12%	48
	HUMAN FACTORS 16,5%	Track and track contractors staff	0,71%	16
		Control-command, energy, traffic operating and switching	1,99%	45
		Train driver and train crew	1,06%	24
		Other human factor in RU(s)	0,18%	4
		Passengers and freight company customers	9,28%	210
Other users		0,49%	11	
	Not specified	2,83%	64	
EXTERNAL CAUSES 77,60%	WEATHER & ENVIRONMENT 1,1%	Weather	0,62%	14
		Environment	0,53%	12
		Not specified	0,00%	0
	THIRD PARTIES 76,4%	Non-compliance with national laws & regulations	21,70%	491
		Objects on the gauge	0,53%	12
		Trespass (intrusion)	47,19%	1068
		Other or vandalism	2,61%	59
	Not specified	4,42%	100	
1,63% CAUSES NOT IDENTIFIED				37
100%	100%		Total:	2263

Summary results

- Almost 78% of the accidents were caused by external factors and 21% of the accidents were related to internal causes.
- The quality of the cause's declaration from SDB correspondents is improving. Second level causes have been specified in 93% of cases against 89% in 2007.
- Number of accidents with causes related to human factors represents 80% of the total accidents which causes are internal to the railway system itself.
- Accidents caused by trespassers seem to be increasing. They represent 47.2% of all accidents against 42.5% in 2007.
- At least 21% of accidents were due to third parties non respecting the national laws/regulations.
- Almost 10% of accidents were caused by railway customers and other railway users.

Chart 8 UIC - SDB Report on significant accidents from 2008-01-01 to 2008-12-31
Breakdown of victims by type of traffic involved

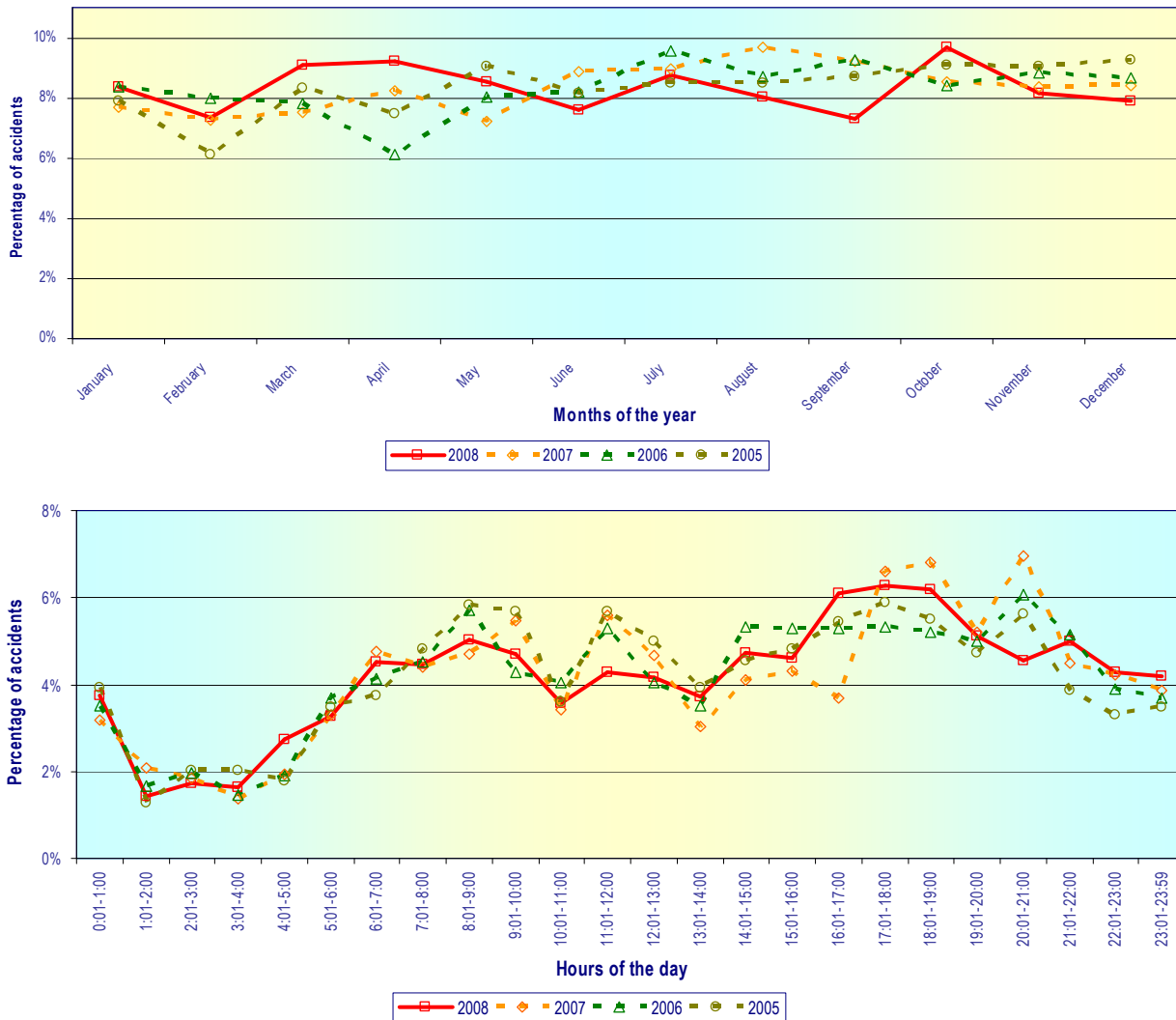


Summary results

- None fire in rolling stock has been registered for freight trains.
- Of a total of 2263 significant accidents in 2008, 426 involved freight trains.
- The previous years results are confirmed: most of the victims were linked to regional passenger traffic. Further work still needs to be carried out to verify if the high number of victims in regional passenger traffic is proportional to the higher percentage of trains or if differences in regulations and or in rolling stock are at cause.
- In 95 cases of accidents the type of train involved were not identified. 85 of these cases were persons struck by a train, 5 were electrocution without victims and 4 collisions with obstacles.

Chart 9

UIC - SBD Report on significant accidents.
Monthly and daily accident distributions for the years 2005 – 2008

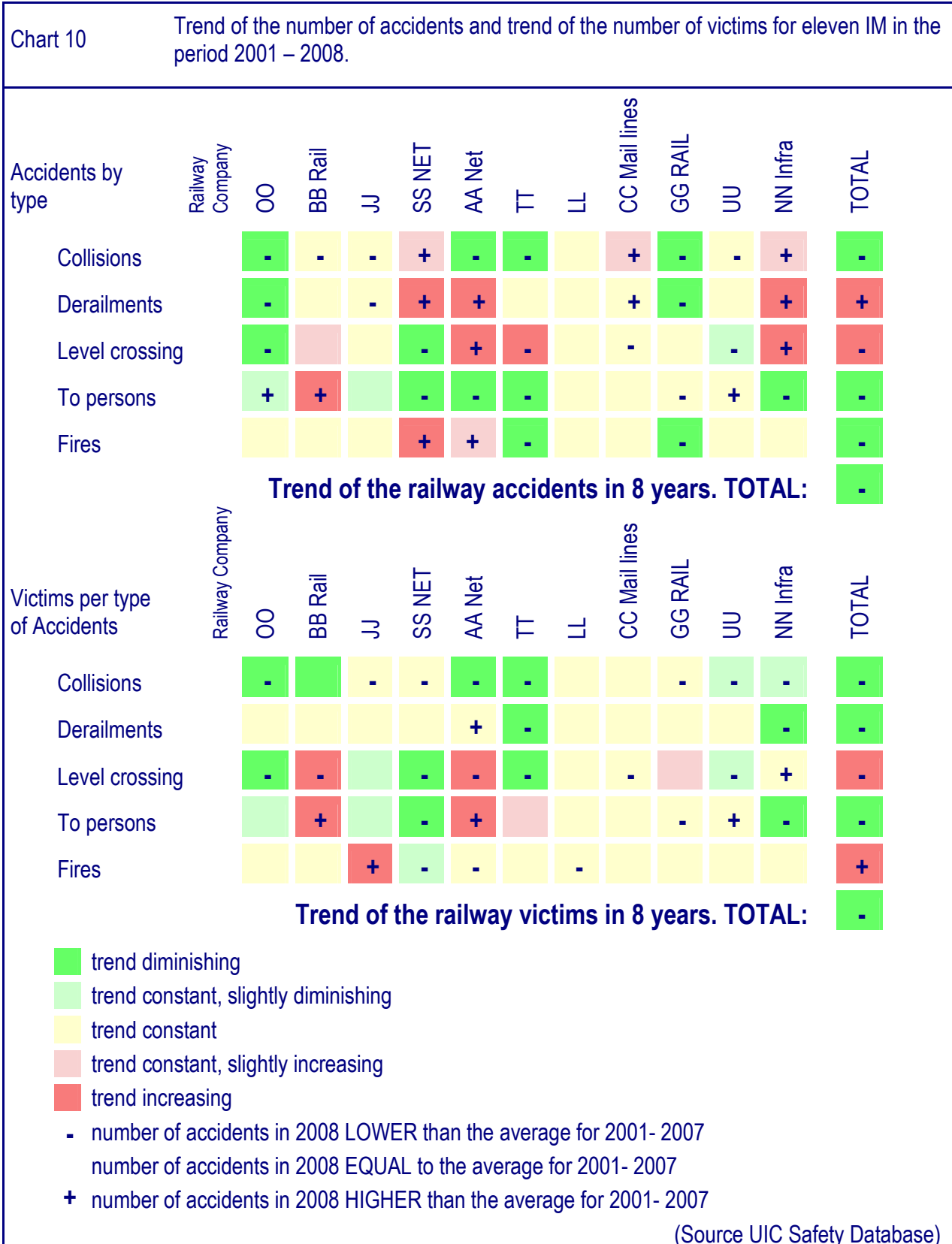


Summary results

- The annual variation in the number of accidents shows small differences from month to month. The previous year's tendency to register the greater number of accidents between June and September is not respected in 2008. Intermediate low points and peaks seem not to respect any particular law of occurrence. The lowest number of monthly incidents was recorded in September. (It was in May for 2007, in April in 2006 and in February in 2005).
- Around 20% of the accidents occurred between 4 and 7 p.m. The daily variation recalls the previous year's results, with a significant reduction in the peaks between 11:00 and 12:00 and between 20:00 and 21:00. The period with the lowest accident rate is from midnight to 05:00 a.m.

SECTION II

LEVEL 2 - TRENDS



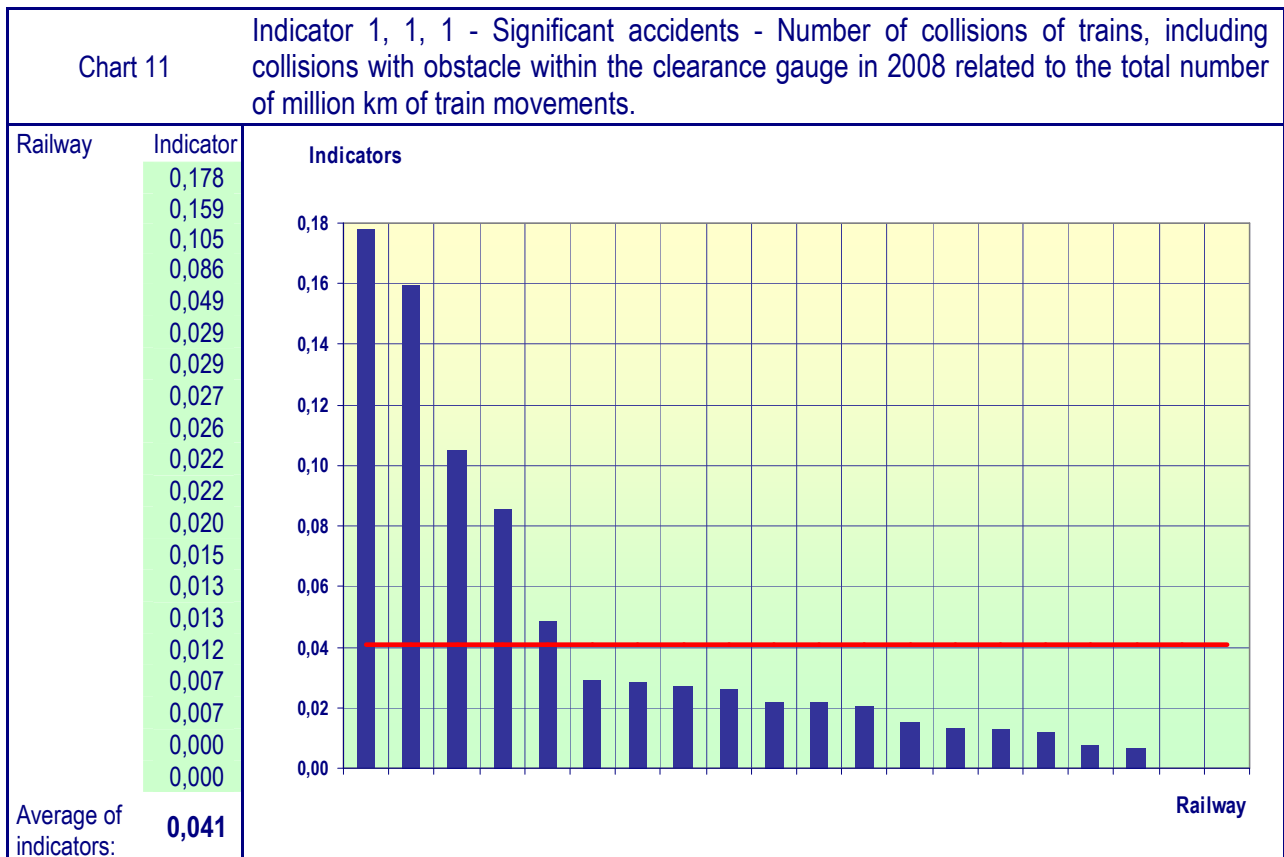
Summary results for 11 European railway companies

- Trend of total number of accidents from 2001 to 2008 is diminishing.
- Apart of derailments the number of accidents for all types of accidents on 2008 was lower than the average values of the past seven years.
- Trend of derailments frequencies which was diminishing for the previous seven years is now increasing.
- Despite the total number of level crossing accidents on 2008 lower than the average value in the past seven years, the trends for this type of accident is still increasing.
- Trend of total number of accident victims from 2001 to 2008 is diminishing.
- Apart of fire in rolling stock, a severe accident of this type occurred on 2008 in Bulgaria, the number of accident victims for all types of accidents on 2008 was lower than the average values of the past seven years.
- Despite the number of victims of level crossing accidents on 2008 was lower than the average value in the past seven years, the trends is still increasing.

LEVEL 2 - BENCHMARKING

The benchmarking proposed here is based on the indicators of significant accidents victims recorded in the SDB in 2008. Each infrastructure manager in the sample can evaluate their performances in relation to the others.

In Charts 11 to 20, the quoted axes represent the values of the indicator (number of accidents of the same type divided by million km of train movements).

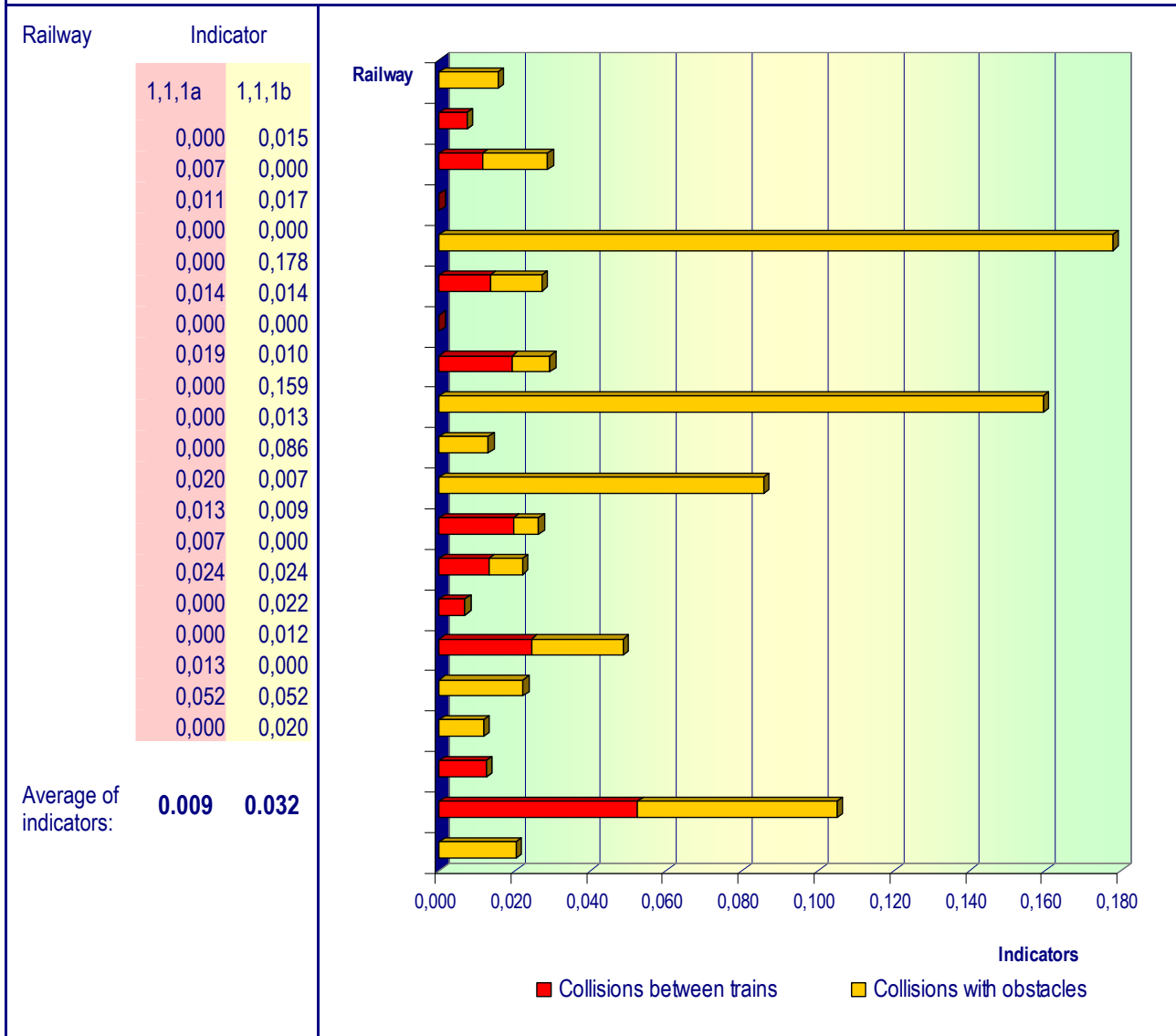


Summary results

- Collisions are very rare. The average frequency is 4.1 collisions for every 100 million Km of train movements. The above value was 3.4 in 2007
- Two more useful indicators should be obtained by splitting collisions into “train collision with another train” and “train collision with an obstacle”. The set of indicator values for collisions between trains is the most accurate (see Chart 12).

Chart 12

Indicators 1,1,1a: Number of collisions between trains and 1,1,1b: Number of trains collisions with an obstacle within the clearance gauge in 2008 related to the total number of million km of train movements.

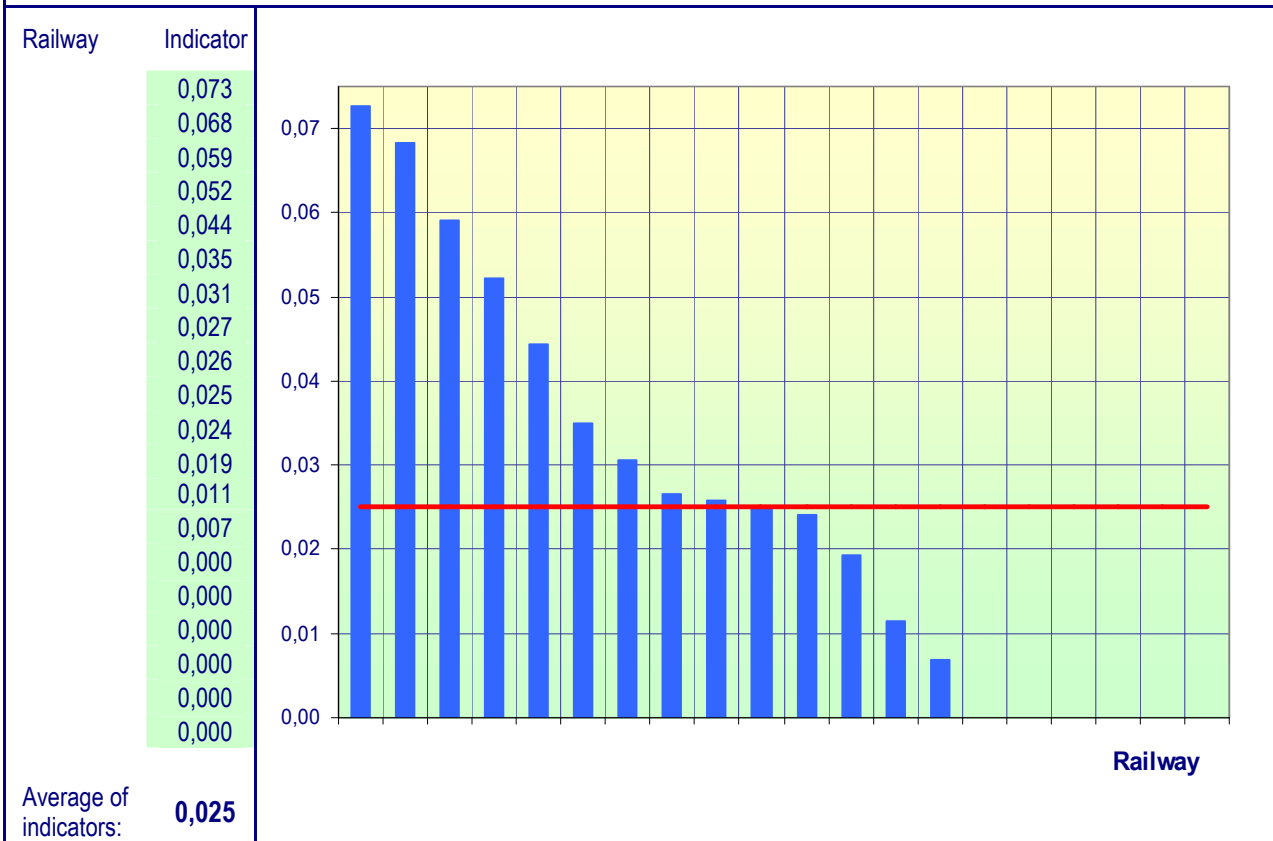


Summary results

- Collisions between trains are extremely rare. The average of their frequency is of 9 collisions for 1000 million Km of train movements.
- In 2008, as it was in 2007, no passengers died as consequence of collisions between trains.

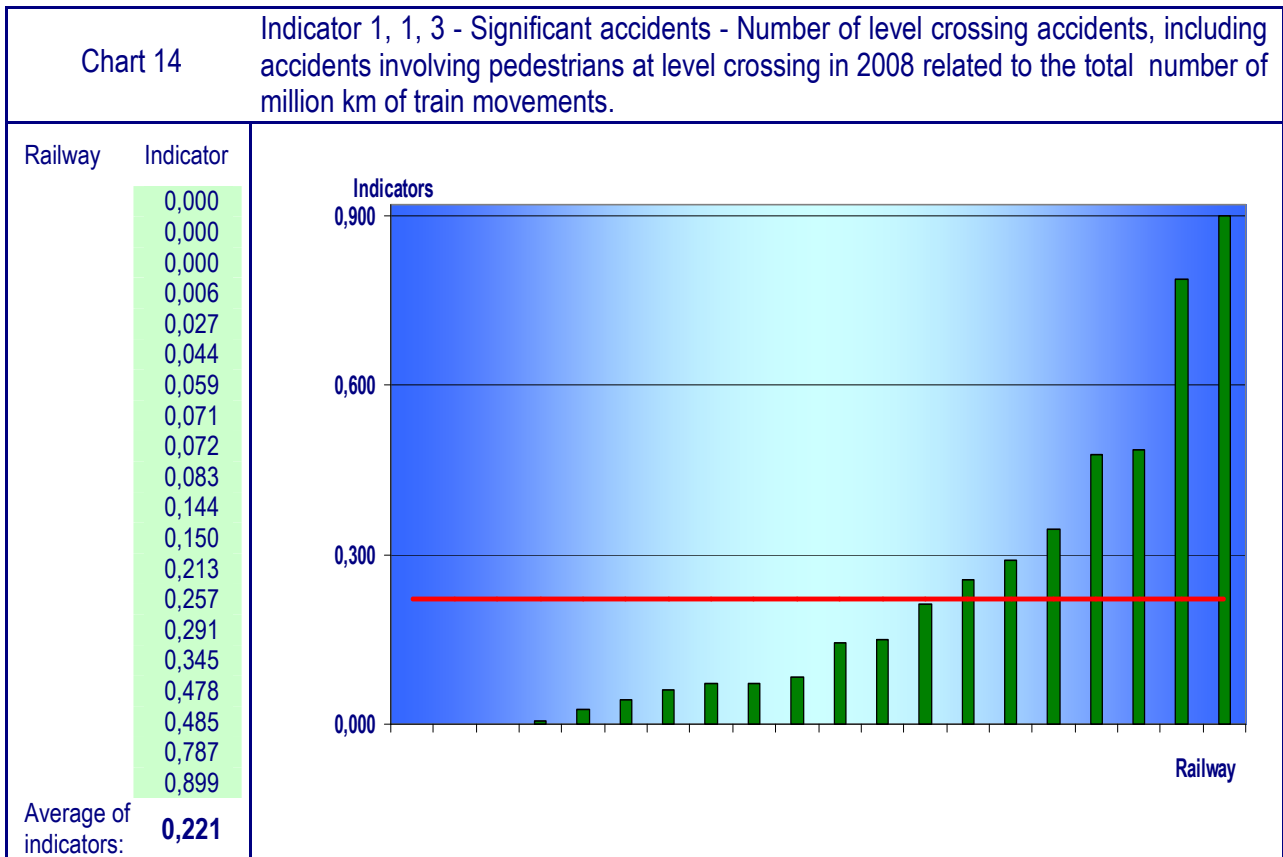
Chart 13

Indicator 1,1,2 - Significant accidents - Number of derailments of train in 2008 related to the total number of million km of train movements.



Summary results

- Train derailments are very rare in Europe. The mean value of the distribution of these events indicates less than 2.5 derailments per 100 million Km of train movements. Railway performances indicate as poorer those results of more than 1 derailment per 10 million Km of train movements.

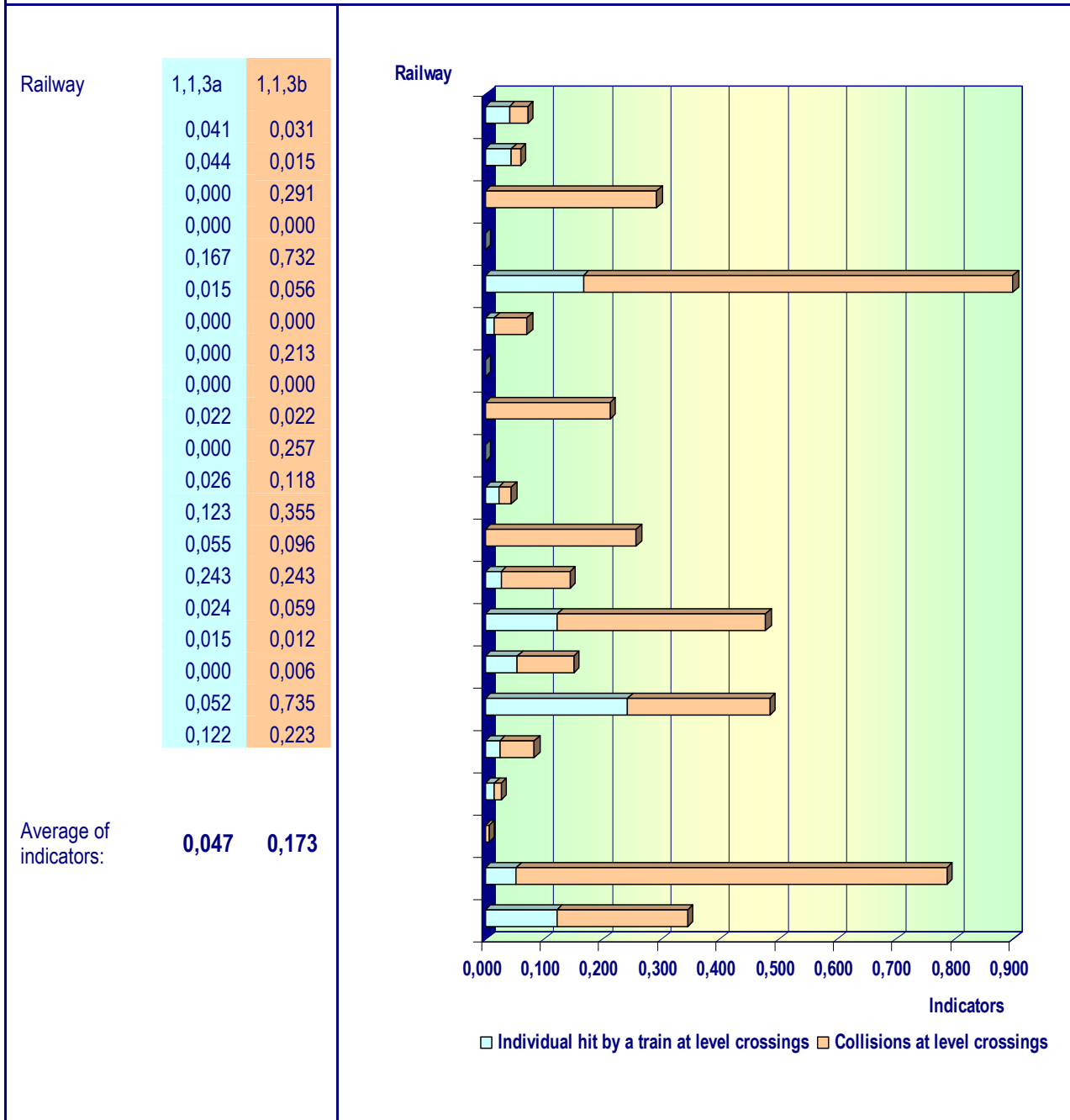


Summary results

- Chart 14 shows the values of the indicators (number of level crossing accidents, including accidents involving pedestrians at level crossing in 2008 relating to the total number of million km of train movements) as the sum of indicators of individual hit by a train at level crossing and indicators of collisions with an obstacle at level crossing.
- Cases of a few level crossings accidents per 100 million Km of train movements should be considered as an excellent performance. These results are from an appropriate combination of users' behaviour, chosen technology and adopted regulation to prevent accidents.
- Poorer performances are registered for more than 5 significant level crossings accidents per 10 million Km of train movements.

Chart 15

Indicators 1,1,3a: Number of level crossing accidents - individual hit by a train and 1,1,3b: Number of level crossing accidents - collisions with an obstacle relating to the total number of million km of train movements in 2008.



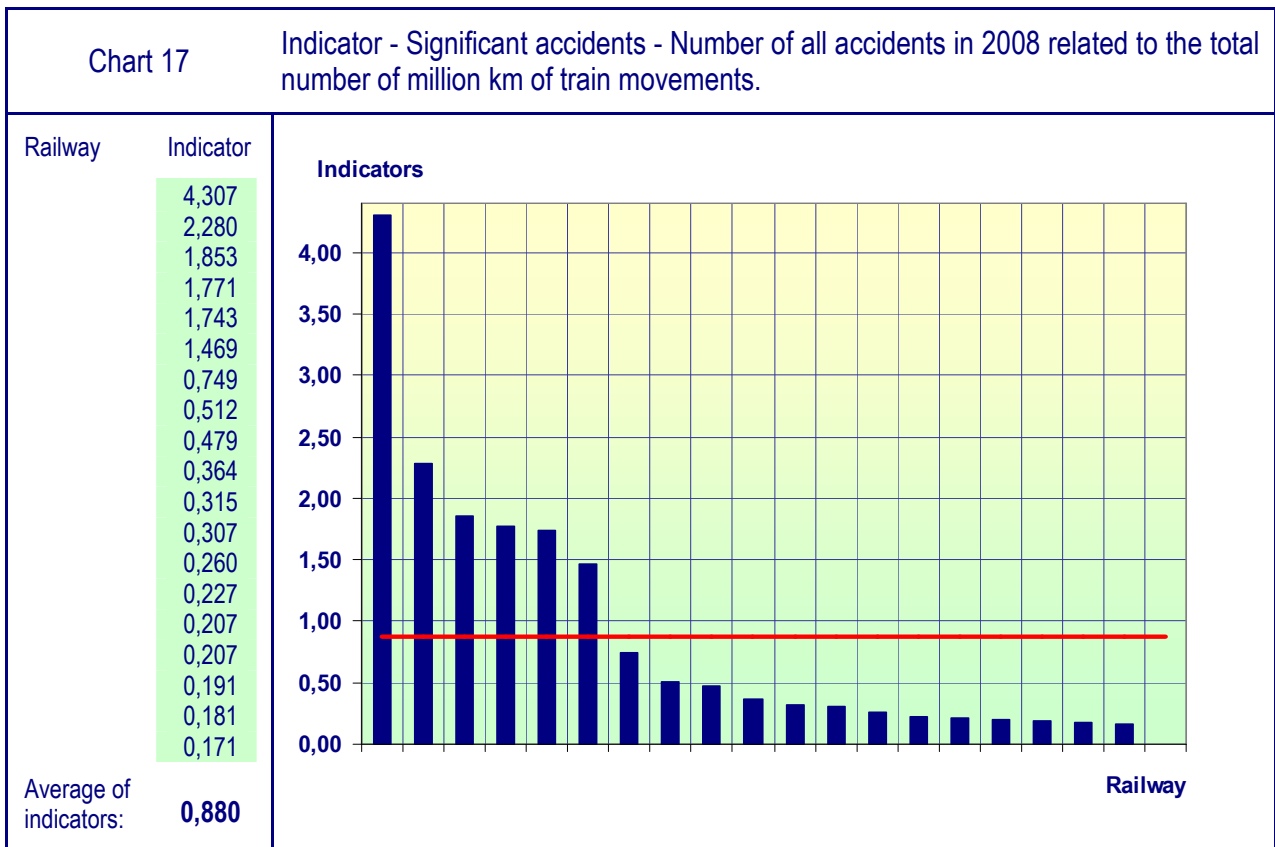
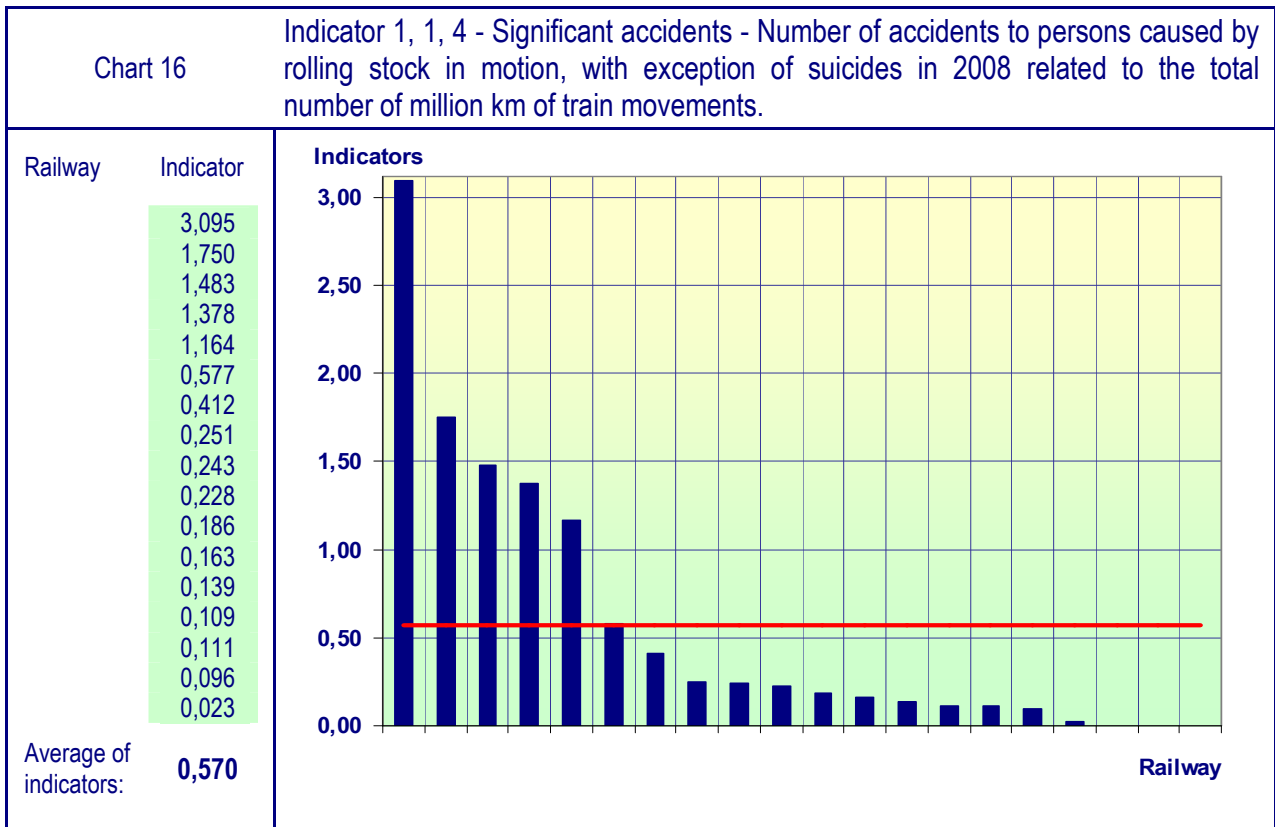


Chart 18

Indicator - Significant accidents - Number of fatalities in 2008 related to the total number of million km of train movements.

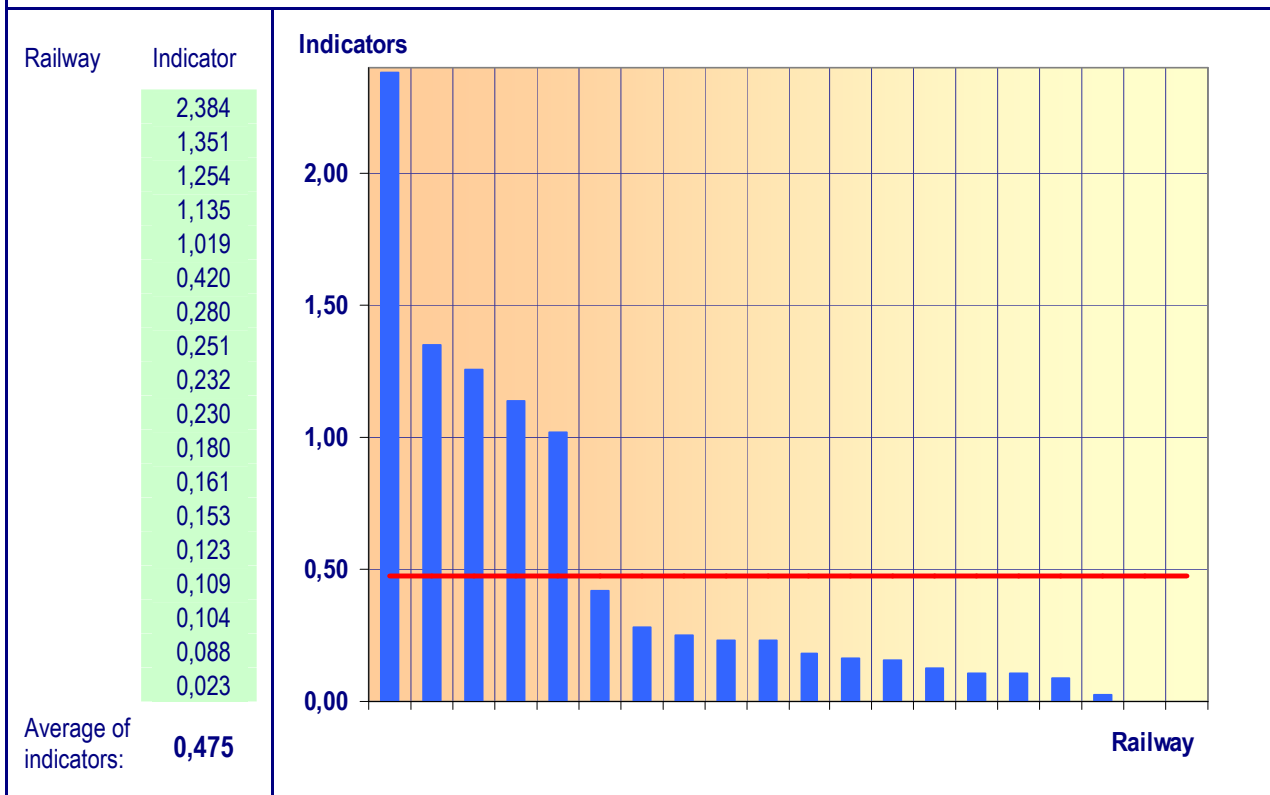


Chart 19

Indicator - Significant accidents - Number of serious injury in 2008 related to the total number of million km of train movements.

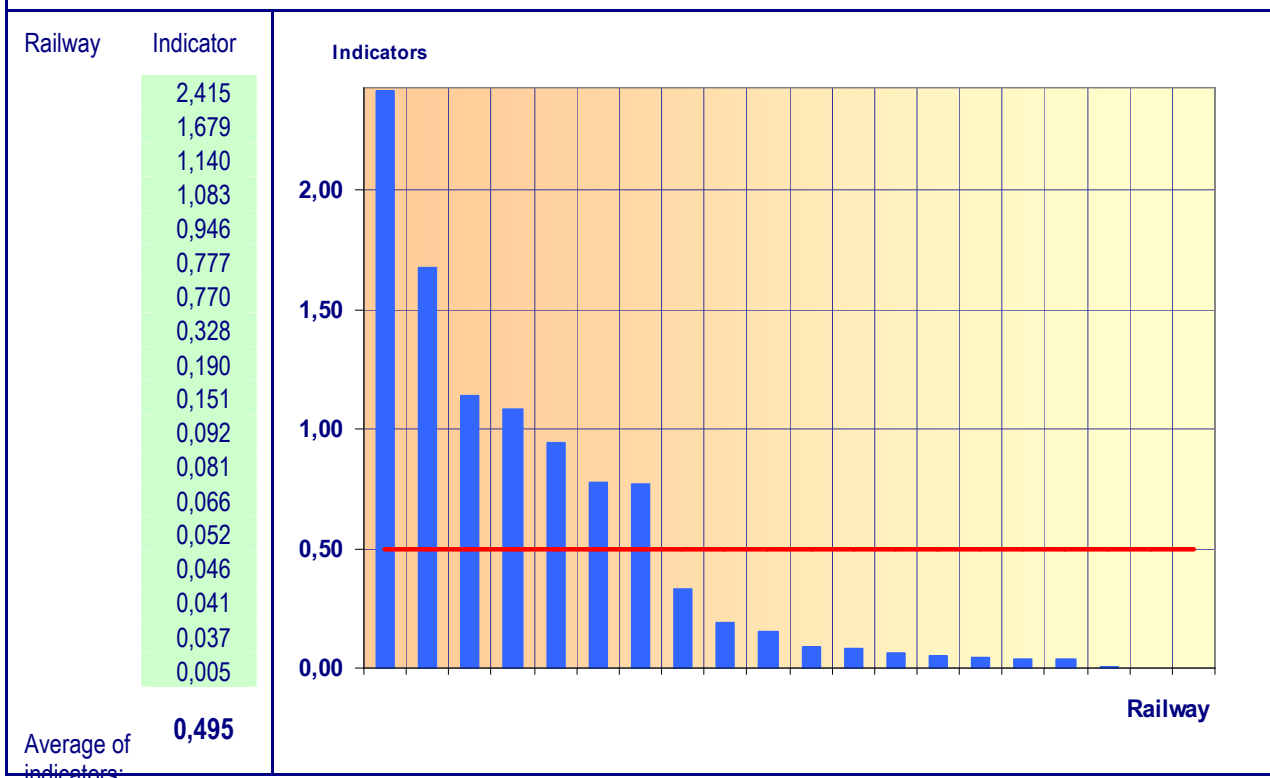
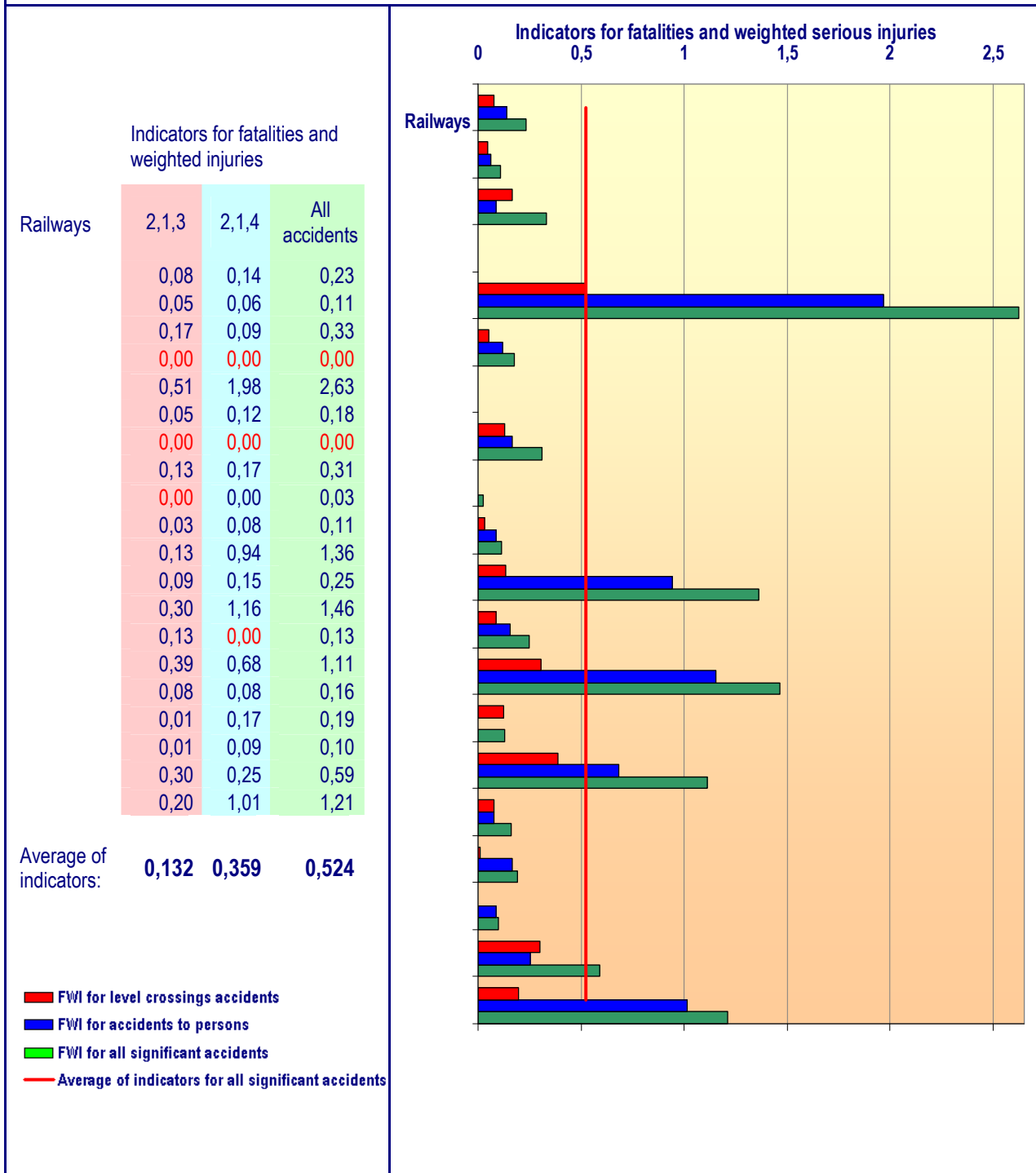


Chart 20

Indicators – Fatalities and weighted injuries registered in 2008 related to the total number of million km of train movements.



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 2008 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 Directive 2004/49/EC of 29 April 2004 (Railway Safety Directive):

- (1) **"accident"** means an unwanted or unintended sudden event or a specific chain of such events which have harmful consequences; accidents are divided into the following categories: collisions, derailments, level-crossing accidents, accidents to persons caused by rolling stock in motion, fires and others;
- (4) **"serious accident"** means any train collision or derailment of trains, resulting in the death of at least one person or serious injuries to five or more persons or extensive damage to rolling stock, the infrastructure or the environment, and any other similar accident with an obvious impact on railway safety regulation or the management of safety; "extensive damage" means damage that can immediately be assessed by the investigating body to cost at least EUR 2 million in total.

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

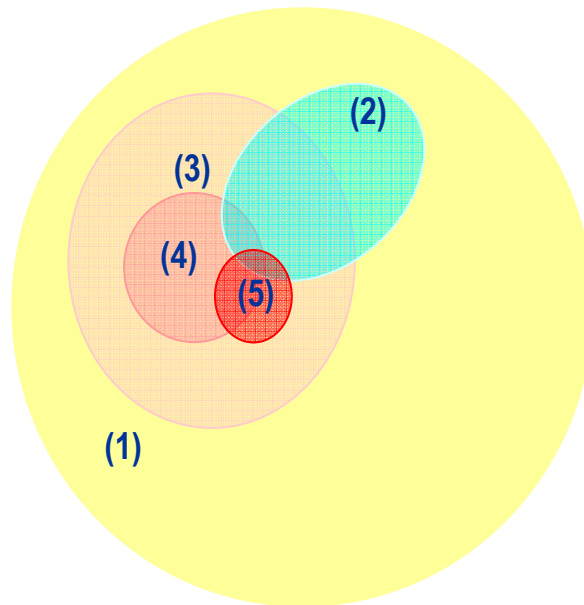
- (2) **"Significant accident"** means any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic. Accidents in workshops, warehouses and depots are excluded. **Notes from the European Office of Statistics (EUROSTAT) specify the following factors:** significant damage over €150K and extensive disruptions to traffic with tracks blocked for more than 6 hours.
- (3) **"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*).

Fig 1 comprises a diagram showing 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 and the notes from European Office of Statistics **is mandatory**.

Moreover, SDB offers specific reports and analysis for the community or for a single railway based on filtering the data collection according the definitions in force. So, for its own information, an SDB member can declare accidents to the database other than significant accidents without prejudice to its relative position in the international benchmarking where only significant accidents are automatically taken into account for declarations in accordance with Commission Regulation.

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.

Fig 1 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.

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.

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 Committee for International Statistics. 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".

Tables index and Glossary of terms

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GLOSSARY OF TERMS

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

Country	Country code	Railway Company	Railway Company name
-	-	Eurotunnel	Eurotunnel
Austria	AT	ÖBB	Österreichische Bundesbahnen
Belgium	BE	Infrabel	Infrabel
Bulgaria	BU	NRIC	National Railways Infrastructure Company
Czech Republic	CZ	CD; SZDC	Ceské Dráhy; Správa železniční dopravní cesty
Denmark	DK	DSB	Danske Statsbaner
Finland	FI	RHK	Ratahallintokeskus
France	FR	RFF SNCF	Réseau Ferré de France Société Nationale des Chemins de fer Français
Germany	DE	DB	Deutsche Bahn
Hungary	HU	MAV	Magyar Allamvasutak Rt.
Ireland	IE	CIE	Coras Iompair Eireann
Italy	IT	RFI	Rete Ferroviaria Italiana
Luxembourg	LU	CFL	Société Nationale des Chemins de Fer Luxembourg
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	Compania Nationala de Cai Ferate CFR SA
Slovak Republic	SK	ZSR	Železnice Slovenskej Republiky
Slovenia	SI	SZ	Slovenske Zeleznice
Spain	ES	ADIF	Administrador de Infraestructuras Ferroviarias
Sweden	SE	BV	Banverket
Switzerland	CH	SBB-CFF-FFS	Chemin de Fer Suisse - Schweizerische Bundesbahnen
United Kingdom	UK	Network Rail	Network Rail Limited

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