

2009

The Railway Safety Performance in the European Union



European Railway
Agency









Foreword

The European Railway Agency produces a biennial report on the development of railway safety in the European Union (Regulation 881/49). The first report was published in autumn 2008 and the next report is due in 2010.

Reporting biennially allows the Agency to consider the macro trends in safety performance and to consider key questions. However the national safety authorities and the national investigation bodies report to the Agency annually and on an ongoing basis through the public database of safety documents.

The Agency recognises the usefulness of reflecting the annual reporting of data, this report is therefore an update of the 2008 biennial report. The aim is to provide the European Commission, the railway sector and other parties with an overview of the European railway safety performance for 2007 and with information on the development of safety and safety reporting during 2008. In this interim report we provide a simple overview of the key annual data as a supplementary update.





Contents

2	Foreword
7	Introduction
8	Summary, commentary and analysis
9	The development of safety
9	The risk profile of the railways
10	Individual accidents
10	Level crossing accidents
11	Suicides on railway premises
12	Safety Reporting and Coordination
12	Reporting of accident statistics and indicators
13	Definitions and reporting criteria
13	Data quality
14	Safety Performance
15	Accident types
15	Fatalities and injuries
17	Suicides
17	Precursors to accidents
18	Accident costs and other CSI's
19	Infrastructure
20	SMS monitoring
21	Traffic Volumes
22	Serious accidents in Europe 2007
23	The Network of Investigation Bodies
23	Accidents in Europe 2007
24	National investigation body reporting
26	Managing safety
27	Development in safety management
27	Safety certificates
27	Common Safety Targets
28	Challenges and changes: the future of railway safety
29	Improving data reporting and data quality
30	Harmonisation of safety management
30	Looking forward
32	Annexes



Introduction

This report includes information submitted to the Agency during 2007 and 2008 taking into account accident data for the years 2006 and 2007. It builds upon the common safety indicators and annual reports from the national safety

authorities (NSAs), the investigation reports and annual reports from the national investigation bodies (NIBs) as well as other information available to the Agency. The common safety indicators (CSIs) are only available for two years so far. However, the future aim is to include accident statistics for four years on a rolling basis.

There are currently two separate EU pieces of legislation in place requiring Member States to report rail accident data; they are Regulation (EC) N° 91/2003 for reporting data to Eurostat and the Safety Directive 2004/49/EC for reporting data to the Agency. This report therefore builds upon both Eurostat data and the common safety indicators as reported directly to the Agency.

The establishment of national investigation bodies has continued during 2008. The NIBs have notified accident investigations opened and sent investigation reports as required. The investigation reports contain recommendations issued to the safety authorities. The safety authorities shall report back to the investigation bodies on actions taken.

There are differences in the way the Safety Directive has been transposed. In many Member States the Safety Directive has still not been fully implemented in practice, with consequences for the quality of the safety reporting by the national safety authorities and the national investigation bodies.

The national safety authorities' issues safety certificates for infrastructure managers and railway undertakings in accordance with the requirements in the Safety Directive. It states among other things (Article 10) that the infrastructure managers and railway undertakings must have an established safety management system in order to be authorised. The first certificates were issued in October 2006 and the system is now in place. There are however differences in the way the certificates are issued and the way the safety management systems are assessed.





Summary commentary and analysis

The development of safety

The work on developing a common legal framework and the establishment of national safety authorities and national investigation bodies has continued during 2008 and 2009. There are now NSAs and NIBs in all countries with the exception of Luxembourg (NSA) and Greece (NIB). Reviews of the bodies' work show however great differences. There are big variations in budget and number of staff employed at the NSAs and NIBs, which naturally affects the abilities and capacities of the organisations. The Agency has concerns that some of the organisations are not able to fulfil all the requirements of Directive 2004/49/EC.

The introduction of safety management systems for railway undertakings (RU) and infrastructure managers (IM) have continued. However, from the 2007 data it is difficult to analyse information on certificates or authorisations issued. This is mainly due to there being insufficient information or differences on how the safety certification or authorisation regime is ensured and delivered on the ground. Following the publication of the common safety method (CSM) for conformity assessment, the Agency plans to undertake a dissemination exercise to help Member States understand and implement the requirements. This should help with future reporting.

2008 was the second year of reporting common safety indicators to the Agency. Problems with data quality make comparisons between 2006 and 2007 difficult. It has been important to show in this report the data received in order to enable a better understanding of the problems arising when harmonising safety reporting on a European level. However, there are no signs indicating problems of safety or railway risks, rather there are several positive signs. The railways remain a safe form of transport, the risk profile remains unchanged with unauthorised persons, level crossing users and "others"¹ counting for 93% of the railway fatalities. The remaining 7% are passengers and employees.

The investigation bodies notified the Agency of 176 accidents during 2008. The Agency has also received investigation reports during 2008 covering accidents dating from 2006 and onwards. The notification of accidents will continue but will be complemented by a safety information system aimed at providing immediate feedback to the Member States and the industry when urgent safety problems are identified.

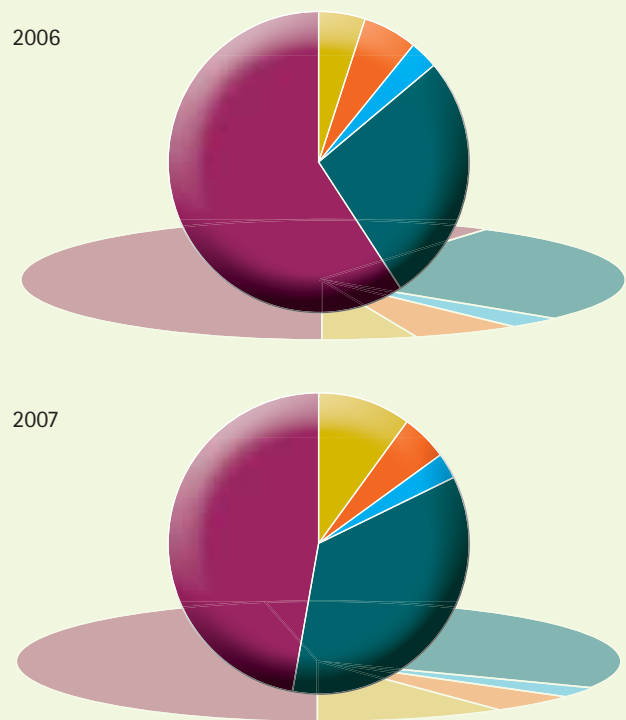
¹ 147 fatalities (10%) were classified as "Others" in 2007 data. Victims classified as "Others" are persons outside the railway system, standing on platforms and struck by open doors, etc. These accidents are rare, it is likely that some were misclassified.

The risk profile of the railways

The railways are generally safe for passengers and employees and this is confirmed by the 2007 data. Still, a large number of fatal accidents occur, mainly to unauthorised persons (mainly trespassers) and level crossing users. The reported number of trespasser fatalities changed from 782 (2006) to 730 (2007) and the reported number of level crossing users from 360 to 532. Even though the reported total number of fatalities is larger for 2007 than for 2006, the development in reporting procedures and the difficulties with comparing data makes it impossible to say anything about the real change in number of occurrences.

There are a large number of single fatality accidents accounting for the major part of the number of fatalities with only a few larger accidents causing passenger fatalities.

Chart 1.
Fatalities on European Railways 2006 and 2007



	2006	2007
● PASSENGERS	6%	5%
● EMPLOYEES	3%	3%
● LEVEL CROSSING USERS	27%	35%
● UNAUTHORISED PERSONS	59%	47%
● OTHERS	5%	10%

The number of passengers killed was 77 in 2006 and 70 in 2007 whereas the reported total number of fatalities changed from 1319 to 1517.² In fact, there were only two passenger train accidents in 2007 including passenger fatalities. These accidents together caused the death of two passengers and two employees³. Most of the passenger fatalities occur when passengers try to embark or disembark from trains that are moving. This means that the percentage of fatalities that are caused by traditional train movement accidents such as collisions, derailments and fires was close to zero.



Individual accidents

Even though the risks to the users of the railway system are low, there are a number of railway accidents including third parties. During the two years of CSIs reporting 2006 and 2007, the NSAs have reported a total of 1512 unauthorised persons and 207 "Other" fatalities. The majority of the accidents occur when persons trespass in order to cross railway lines where it is forbidden.

Level crossing accidents

The number of level crossing accidents constitutes a substantial share of the total number of accidents. The NSAs have reported a total of 2592 level crossing accidents and 892 level crossing users killed during 2006 and 2007.



² Figures according to CSI data as reported by the NSAs.

³ Passenger train derailment in Grayrigg, UK and a passenger train derailment on the Tua line in Portugal. Both accidents occurred in February, 2007.

The number of level crossings in Europe is being constantly reduced and the NSAs have reported a 6% reduction in the number of level crossings from 2006 to 2007. With the reservation for possible errors due to developments in the data collection procedures, the reduction indicates that the work on reducing level crossing risks is continuing. When new railway lines are built, they are normally conceived without level crossings. The closing down of existing crossings as well as other measures should continue to improve the situation.

Suicides on railway premises

The total number of suicides far outweighs the total number of fatalities in all types of accidents. Even though the railways cannot be given the responsibility for the suicides they still pose a problem for the railways in terms of the trauma for the persons involved, cost of delays, rescue services, police investigations etc.

There are several studies showing positive effects of strategic measures aimed at preventing suicides. These measures tend to be similar to the measures taken to prevent trespassing accidents and the costs are often acceptable.



Safety Reporting and Coordination

Reporting of accident statistics and indicators

Reporting of rail accident and incident information at European level is covered by two separate EU legislations: Regulation (EC) N° 91/2003 for reporting data to Eurostat and the Safety Directive 2004/49/EC for reporting data to the Agency.

The Rail Safety Directive requires the NSAs to report a number of safety indicators as laid out in Annex 1 to the Railway Safety Directive. This permits them to exclude the reporting of accidents occurring on metros and other rail systems that are functionally separate from the rest of the railway system, as well as privately owned infrastructure.

The Eurostat regulation on the other hand, requires the Member States to report, for example, the number of *significant* accidents, number of persons killed and number of persons seriously injured. The data to be reported is specified in detail in Annex H to the Eurostat regulation. According to the Eurostat regulation, Member States may exclude from the statistics railway undertakings that operate on industrial and similar installations as well as undertakings that provide purely tourist services such as historical steam railways.

"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;"

There has recently been a proposal to change how information is reported under the two legislations. In the future it is likely that Member States will report accident data only to the Agency and that the Agency will make the information available to Eurostat. This change will not be in place before 2010 and therefore a parallel reporting will need to continue until then.

Definitions and reporting criteria

The definitions of accidents, fatality and serious injury are the same in the two pieces of legislation. In fact, in the Safety Directive, there are no specific definitions given, with the exception of serious accident, instead a cross reference is made to Regulation (EC) N° 91/2003. This means that the definitions to be applied in the Safety Directive are found in this regulation. The table below gives a simple comparison of the difference in scope of the two pieces of legislations.

Definition	Eurostat – 2003/91/EC	Safety Directive – 2004/49/EC
Scope	<p>This regulation shall cover all railways in the community...</p> <p>Member States may exclude from the scope of this regulation</p> <p>(a) Railway undertakings which operate entirely or mainly within industrial and similar installations, including harbours;</p> <p>(b) Railway undertakings which mainly provide local tourist services, such as preserved historical steam railways</p>	<p>This directive applies to the railway system in the Member States...</p> <p>Member States may exclude from the measures they adopt in implementation of this Directive:</p> <p>(a) Metros, trams and other light rail systems</p> <p>(b) Networks that are functionally separate from the rest of the railway system and intended only for the operation of local, urban or suburban passenger services, as well as railway undertakings operation solely on these networks;</p> <p>(a) Privately owned railway infrastructure that exists solely for the use by the infrastructure owner for its own freight operations</p>

Table 1. Scope and definitions of Eurostat regulation and the Safety Directive

The Member States may use national definitions during the first five years of application of the Safety Directive. The first reporting year with harmonised definitions will be 2010. The deadline for sending in the reports will be 30 September 2011 and the first biennial report based on harmonised definitions will be published in 2012.

Data quality

A great deal of work has been undertaken this year on improving and ensuring data quality. Anomalies in the 2006 and 2007 data have largely been resolved. The remaining discrepancies in the data are due primarily to differences in reporting criteria and definitions between the member States. It is clear that the further harmonisation of the accident reporting will help to ensure a more consistent and reliable monitoring of rail safety in the future.

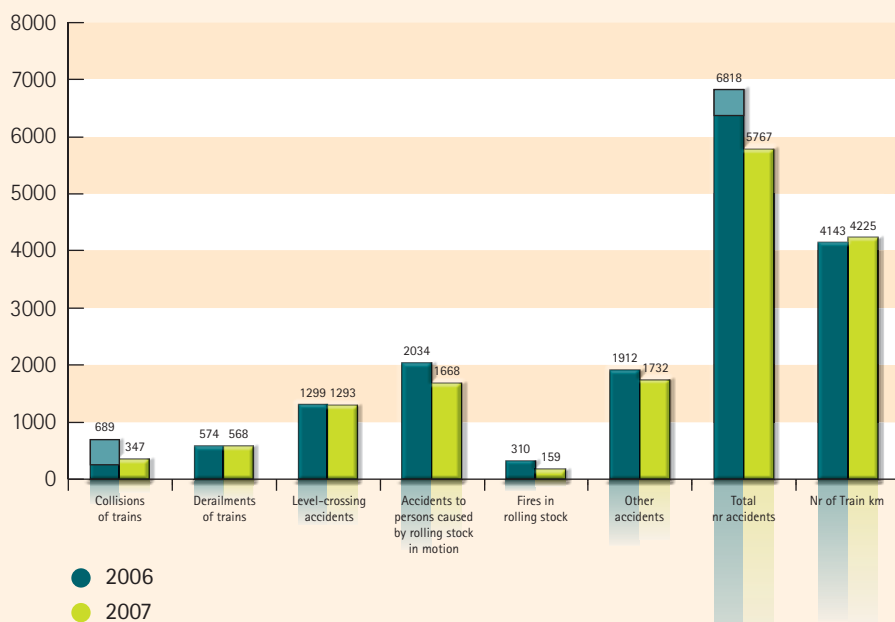


Safety Performance

Accident types

The number of significant collisions, derailments and fires are low compared to accidents that occur at level crossings or relate to accidents to persons caused by rolling stock in motion. There is a 15% decrease in the total number of accidents between 2006 and 2007. This is mainly due to a decrease in reported number of collisions and fewer accidents to persons caused by rolling stock in motion. This difference does not reflect a true variation but is instead due to changes in definitions. Germany and the Czech Republic have explained that they reported all collisions of trains in 2006 and only significant collisions in 2007 because significant accidents could not be extracted for 2006.

Chart 2. Reported number of accidents per accident type 2006–2007



The top of the bar for 2006 collisions of trains (and for all accidents) have been given a lighter colour to show the effect of the change in definition of "accident" in Germany.

Fatalities and injuries

The accident profile is also reflected in the number of fatalities, the largest number remains in the category "Unauthorised persons". Typically, this involves trespassers being hit by rolling stock in motion. Also in this chart, there are big fluctuations in the reported number of fatalities to level crossing users. Romania reported 0 fatalities to level crossing users in 2006 and 58 in 2007. Poland's corresponding value increased from 48 to 81. Hungary reported 22 level crossing fatalities in 2006 and 57 in 2007. Together, these account for 72% of the difference in reported number of level crossing fatalities.

The increase in total number of fatalities is 15%. In the Eurostat data set, the reported number of fatalities increased from 1325 to 1373, which only gives a 3.6% increase.

Chart 3. Reported number of fatalities per victim type 2006-2007

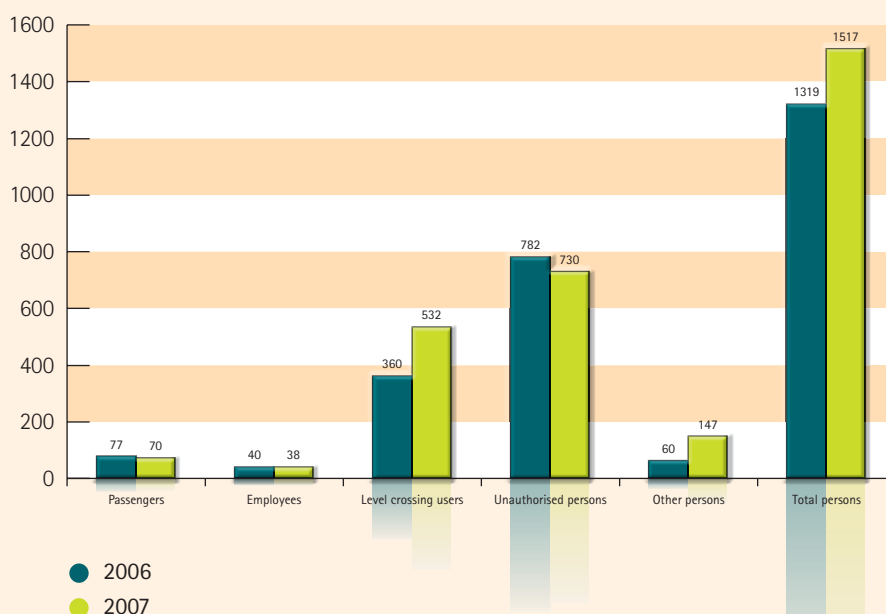
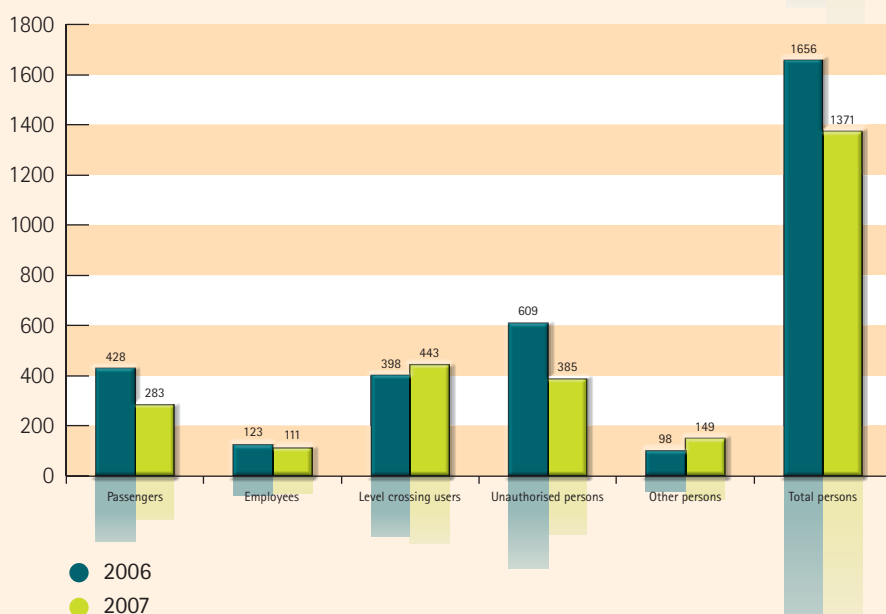


Chart 4. Reported number of serious injuries per victim type 2006-2007



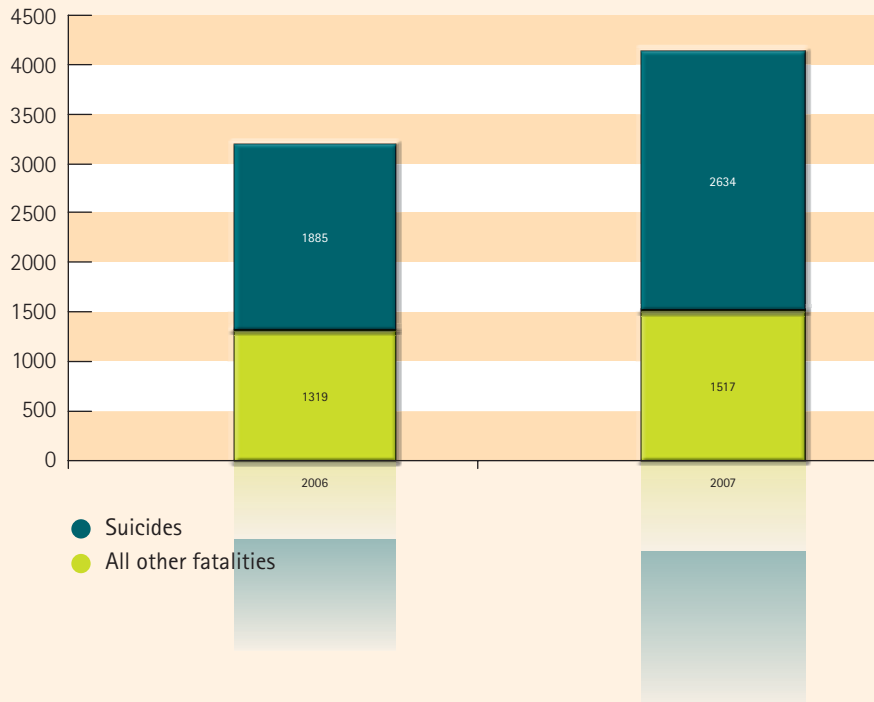
For serious injuries, the reported number of passengers and unauthorised persons injured show big variations that go beyond what can be expected from natural variation. There are only two countries that report a big difference in the number of injuries: Romania has 244 unauthorised persons injured in 2006 and 41 in 2007 and France reports 60 in 2006 and 12 in 2007. The decrease in reported number of injuries is 251 for these two countries only. The majority of the countries show a variation in the reporting for 2006 and 2007.

The conclusion is that there have been changes in the data reporting and the definitions used. It is therefore not possible to make any statements on the actual change in the number of accidents that have occurred.

Suicides

The work with data quality has resulted in updated figures for the number of suicides for 2006. The figures are given in chart 5. Suicides represent 61% of the casualties and together with the unauthorised persons constitute 82% of the fatalities occurring within the railway system.

Chart 5. Suicides and total fatalities 2006 and 2007



Precursors to accidents

The precursors to accidents show patterns that indicate changes in definitions and reporting procedures. From the wide variation, it is evident that the data is not fully reliable and therefore must be used with caution. The reported number of track buckles is reduced by more than 50% and the reported number of SPADs has increased three fold. The difference in reported number of track buckles is mainly accounted for by Italy, who reported 6743 track buckles in 2006 and 3113 in 2007. Regarding SPADs, Poland reported 0 SPADS for 2006 and 4013 in 2007. These two values make the main part of the difference.

Chart 6. Precursors to accidents



Accident costs and other CSI's

17 out of 27 NSAs sent some data on the costs of accidents, though most of the data sets are not complete. Two different approaches have been used; this is similar to that for the 2006 data. Some countries use the VPF (Value of Preventing a Fatality) approach with assigned values for preventing a fatality or injury, whilst the majority has used the traditional approach of calculating the costs borne by the railway undertakings and the infrastructure managers.

Annex 1 of the Safety Directive, once revised, requires the NSAs to use the VPF approach. They can either estimate a national value or use reference values given in a guidance of the Agency. The aim is to harmonise the approach and to enable calculations of the economic impact of accidents to society. This revision should be in force in 2010, which therefore is likely to be the first reporting year with harmonised definitions and a VPF approach to accident costs.



Infrastructure

There are two CSI's regarding railway infrastructure, one for the existence and use of lines with automatic train protection and one for the number of level crossings, normalised by the network length expressed in track km.

Chart 7. Percentage of tracks equipped with Automatic Train Protection (ATP)

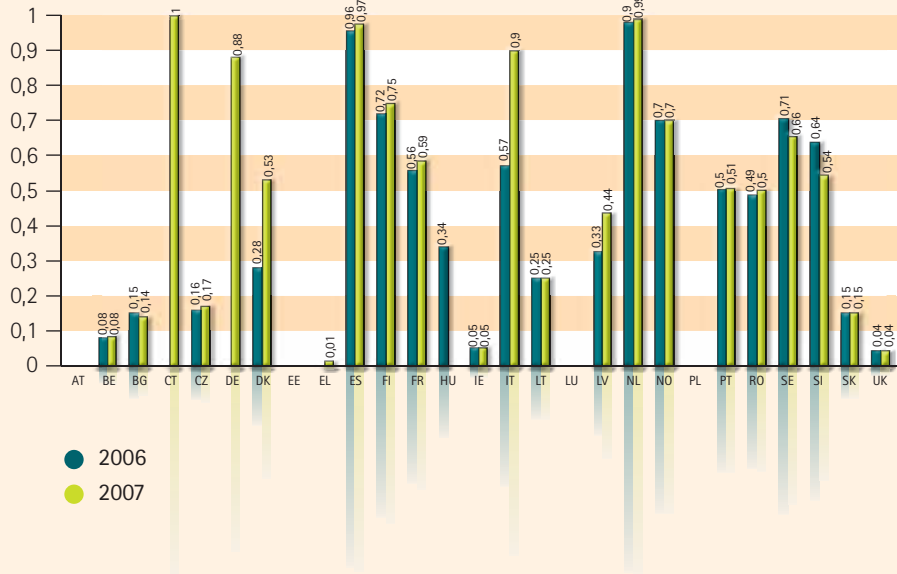


Chart 8 displays the number of level crossings per track km for all countries.

Chart 8. Number of level crossings per track km 2006 and 2007

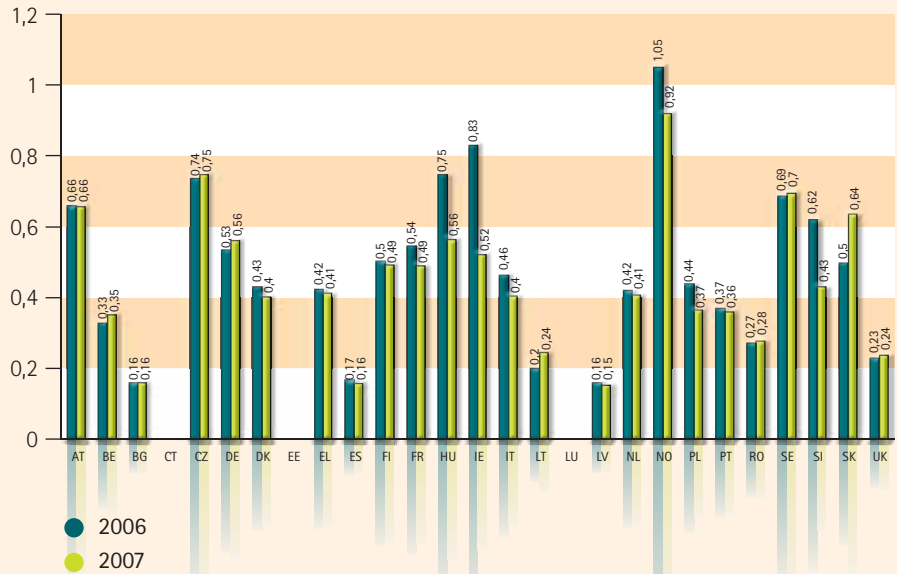
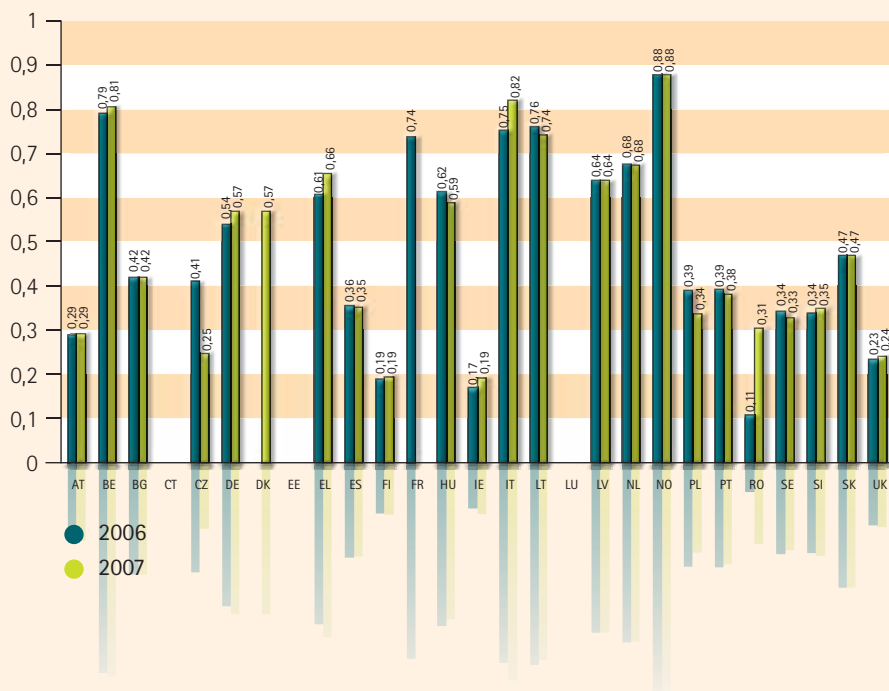


Chart 9. Percentage of level crossings with automatic or manual protection



SMS monitoring

NSAs are required to report on audits planned and conducted. However, the definitions of an audit and the concept of an audit vary across Europe. This has to be resolved before it can be used as a useful tool to monitor safety performance. The revision of Annex 1 to the Safety Directive contains specific definitions which will help to provide clearer and consistent reporting in the future.

Traffic Volumes

Chart 10. Number of million passenger kilometres

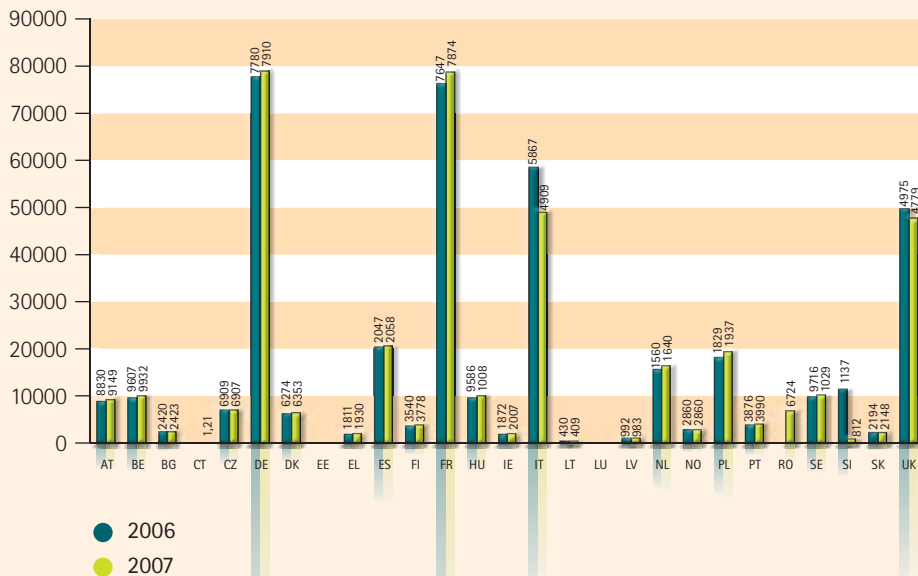
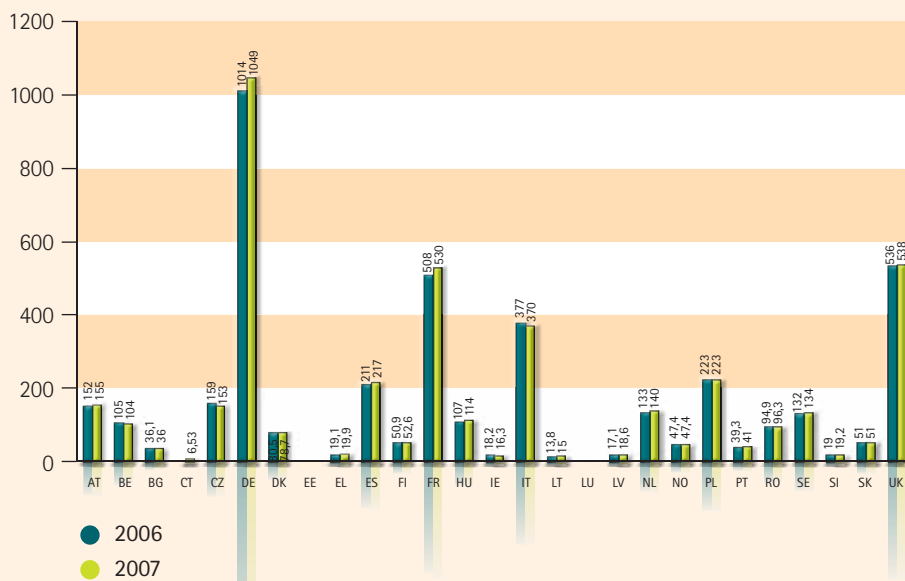


Chart 11. Number of million train km





Serious accidents in Europe 2007

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46

3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45

The Network of Investigation Bodies

During 2007 and 2008, the establishment of investigation bodies has continued. According to Article 21 in the Directive 2004/49/EC, each Member State is required to set up a permanent investigation body with the responsibility of investigating serious accidents and incidents. At the end of 2008 in nearly all of the Member States investigation bodies officially were established, in some there is a body but the transition (either structurally or culturally) to the format envisaged in 2004/49/EC is not yet complete. The Agency has serious doubts whether the organisation and the procedures in some Member States comply with the requirements of the Directive 2004/49/EC.

The Directive requires the NIBs to investigate serious accidents, defined as accident with at least one fatality, five serious injuries or with a monetary cost estimated immediately of at least 2.000.000 euro. The investigation bodies should notify the Agency within one week of the opening of the investigation into a serious accident and should send a full investigation report within one year after the occurrence of a serious accident. The accident report shall "contain, where appropriate, safety recommendations"¹. The recommendations should be addressed to the safety authorities that have to report back on actions taken.

Accidents in Europe 2007

During 2007 there were only 2 serious accidents with passenger fatalities in Europe. One occurred at Grayrigg in the UK, where a train derailed causing one passenger fatality and 22 injuries, of whom 5 were serious injuries. The accident was caused by defective points due to poor maintenance and inspection procedures.

The other accident occurred on the Tua line in Portugal where a passenger train derailed and plunged into a river, after a landslide that had destroyed the rails and the track. The accident caused the death of one passenger and two railway employees. Two passengers were seriously injured.

The Agency's public database of safety documents includes investigation notifications and reports. Currently the data base holds 606 notifications and 331 reports². In the database there are 4 more reports for accidents occurring during 2007 that are classified as passenger fatality accidents.

¹ The Safety Directive 2004/49/EC, Article 23

² As of 30th April 2009.

The common cause of these accidents is that the person was killed by rolling stock in motion, for example falling off the train after an attempt to get onboard after the doors were closed and the train started to move. Following the CSI definitions such persons are not considered as passengers but are reported as such whilst NSAs are still allowed to use their own definitions for the CSIs.



Figure 1 Passenger train derailment at Grayrigg in UK in February 2007 causing 1 passenger fatality and 5 serious injuries.



National investigation body reporting

The Agency has received 190 notifications and 53 investigation reports from 19 NIBs for accidents occurring during 2008³. Of these, 33 of the notifications and 9 of the investigation reports concern serious accidents according to Article 19.1 of the Safety Directive. In 2008 a number of investigation reports were sent to the Agency about accidents that occurred in 2006 and 2007. However, for the 40 notifications of serious accidents the Agency received for 2007 only 23³ reports are submitted by the investigation bodies. This shows that the investigation of a serious accident very often lasts more than one year as it is required by Directive 2004/49/EC.

In an internal study during 2008, the Agency has evaluated the use Annex V of the Railway Safety Directive 2004/49/EC, which describes the principal content of an accident and incident investigation report, by the different NIBs.

The review focused mainly on the presence of a certain relevant content than on the strict reporting structure in itself. Based on this first analysis, it was however clear that some elements of Annex V are not understood and/or reported in the same way by all NIBs and that some elements of Annex V are not or hardly reported at all.

The Safety Directive also requires the national investigation bodies to send an annual report to the Agency before the 30th of September each year. The report should contain information on investigations opened in the preceding year, recommendations made and actions reported back in response to those recommendations by the NSA.

In 2008, the Agency received 22 annual reports from the NIB's reporting on 2007. Reports were not received from Greece, Luxembourg, Slovenia and Slovak Republic, mainly because in these countries, the NIB's were not yet fully established.

³ Status on June 4th 2009

3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45

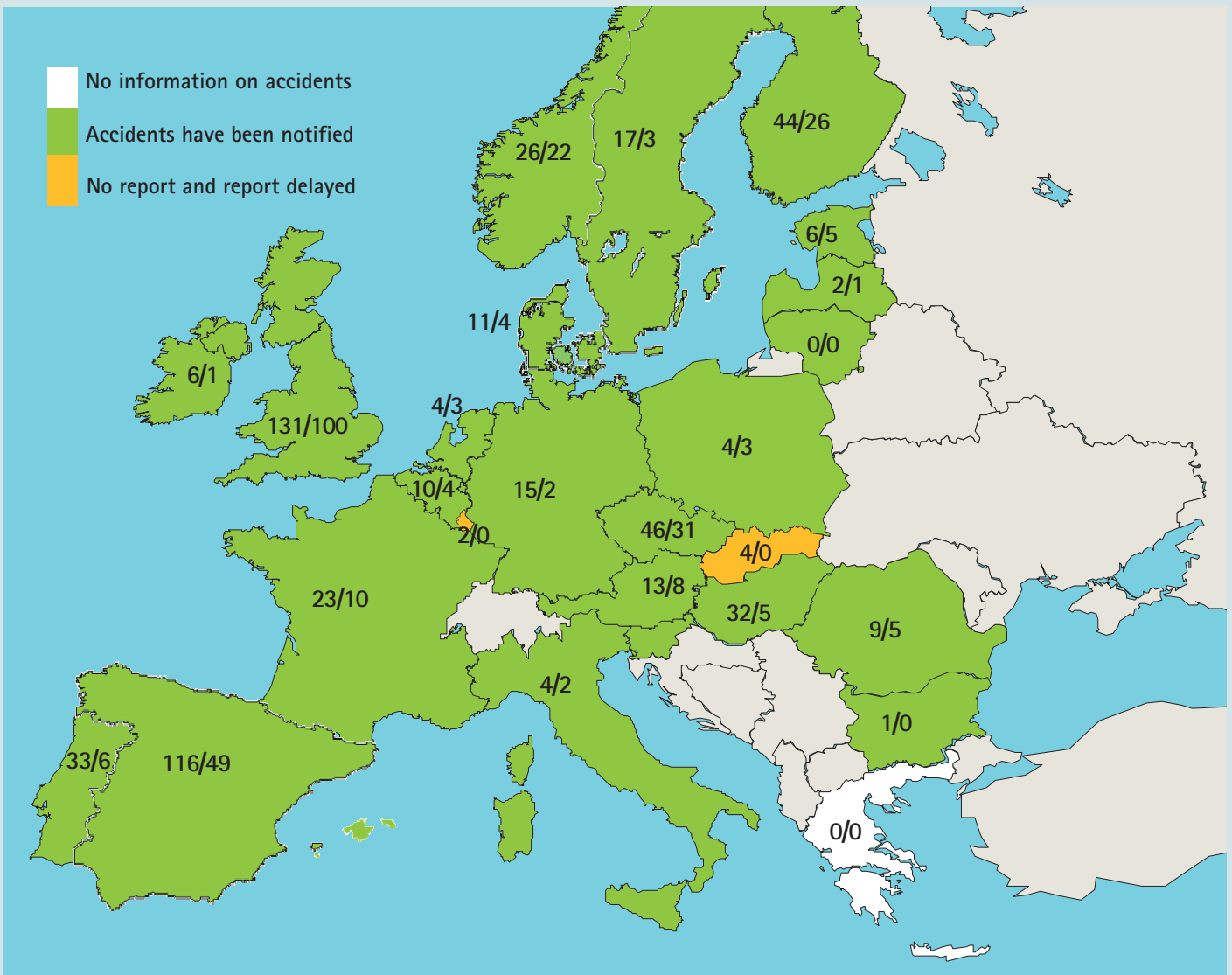


Figure 2. Accident notifications and reporting by national investigation bodies to 31st of December 2008 (from April 2006). The figures give the total number of notifications / final accident reports sent to the Agency.



Managing safety

Development in safety management

The Safety Directive requires railway undertakings and infrastructure managers to hold a safety certificate proving that they have established a safety management system and that they meet requirements in national and European legislation. European legislation is aiming at a common understanding of safety management to support market opening by turning it towards a system-based approach. The field of harmonisation embraces the implementation and setting up of safety management systems (SMS) as well as its assessment. In May 2007, the first part of the common safety method (CSM), the SMS assessment criteria, has been published.

Safety certificates

The NSAs issue safety certificates to infrastructure managers and railway undertakings. The safety certificates for a railway undertakings and infrastructure managers comprise two parts, one part confirming the acceptance by the NSA of the organisations Safety Management System (SMS). The second part refers to compliance to network specific provisions.

To date 17 NSAs have issued certificates according to the Safety Directive, the remaining NSAs still issue certificates according to directive 2001/14 and have time until 11 January 2011 to change to the new certification regime¹.

Out of 350 entries for Part A certificates present to date in the Agency's Public Data Base of Safety Documents, 184² have been issued in 2008. Only 2 countries (UK and SE) have also notified to the Agency authorisations (certificates) issued to infrastructure managers.

There are currently only three countries that have issued safety certificates for maintenance workshops; Germany, the Netherlands and Spain. No certificates have so far been issued for the entities in charge of maintenance.

Common Safety Targets

The CST concept can be regarded as one of the regulatory "pillars" on which the Safety Directive bases the global risk assessment of national railway systems operating within Member States. The purpose of the CSTs is to be a regulatory tool for ensuring that the current safety performance is at least maintained during the transition into an open market regime.

The Agency has developed a recommendation on the CSM for calculating and assessing achievement of CSTs, based on a new concept: the National Reference Value (NRV). This will be defined for each Member State and for each of the risk categories considered in Article 7 (4) of the Safety Directive. It will provide a quantitative evaluation of the current safety levels of railways, based on data for at least the most recent reported 4 years and expressed in terms of maximum tolerable risk levels. An EC Decision establishing this CSM was developed and will be issued before summer 2009.

The Agency has developed a draft recommendation establishing the values to be attributed to the 1st set of CSTs and to the NRVs, based on the mentioned CSM for CSTs and on Eurostat data on railway accidents. This will be delivered to the Commission as soon as the EC Decision establishing the CSM for CSTs will be officially issued. The main problems faced in setting the CSTs and NRVs are coming from the data delivered to Eurostat by some Member States, which are less reliable than those of the large majority of Member States. In the future, the NRV calculations will be based on CSI data. This has not been possible for the first set of CSTs since there is only two years of CSI data available so far.

¹ (Regulation 653/2007, Art. 6)

² As per 08/05/2009



Challenges and changes: the future of railway safety

The current report is an interim update of the Biennial report. The next biennial report will be published in 2010 covering the years 2007, 2008 and, where information is available from the database, 2009. The implementation of the Safety Directive is still not complete in all Member States and Annex 1 to the Directive should be revised next year. These factors are likely to affect the development of the safety performance reporting in Member States.

It is hoped that the reporting of the revised safety indicators and the further experience in the development of the annual reports of the NSA's and the NIB's will start to show greater harmonisation and be more consistent in order to help provide better and more meaningful comparisons.

Improving data reporting and data quality

During 2008 and up until the drafting of this report, the Agency has worked with the NSAs to improve data quality and consistency in the safety performance reporting. This work will continue next year and will be facilitated by the revision of Annex 1 to the Safety Directive.

Until now, only 17 out of 27 NSAs have reported costs of accidents. There has also been great variation in the definitions and reporting procedures used. In fact, the majority of the data sets reported are incomplete. The revised Annex 1 establishes fall back values for societal costs, procedures on how to estimate costs of delays as well as definitions of material costs. The intention is to simplify and enable a consistent and harmonised reporting of accident costs.



Harmonisation of safety management

With the implementation of the Safety Directive, Member States will need to consolidate the requirements into their existing legal frameworks, a process that will take some time. However, the 2008 data, information from the impact assessments, NSA peer reviews and further research should help to provide more knowledge on the status of Certificates and Authorisations issued. The CSM on Conformity Assessment will also help to provide a consistent and harmonised approach to safety management. From these developments, the Agency can begin to prepare a report to the Commission under Article 10 (7) setting out a strategy for the migration towards a single certificate. This should set in motion the building blocks for the future development of harmonised safety management systems across Europe and provide for a single effective European Community rail system.

Looking forward

Safety performance reports must look both backwards to trends and forwards to future developments. The report of 2008 was the first to consider railway safety performance across the Europe Union. In 2005, 2006 and 2007 the Railway Safety Directive (2004/49/EC) was still in the early stages of implementation. Now in 2009 reporting is established from the majority of NSAs and NIBs and a meaningful update can be given.

In 2009 we undertook to develop common definitions and develop data quality to improve data reporting. The proposal for the revision of Annex 1 for the common safety indicators (CSIs) has been developed, this has provided a basis to work with NSAs to develop the quality and consistency of data. From the biennial report 2010 onwards an improvement in data quality is anticipated.



For CSTs, in 2011 the Agency will update the national reference values by considering longer time series of data. The second set of CSTs will also be developed, based on the experience gained from development and implementation of the first set. Although the Safety Directive requires the adoption of the second set of CSTs before end of April 2011, the Agency will propose their adoption not before 2013 in order to consider 6-year time series of CSIs data for their development. The second set of CSTs shall reflect any priority areas where safety needs to be further improved.

Trends and detailed analysis of lessons learned from accidents require data that can be traced historically. As serious accidents on the railways are rare events – the Agency has worked to

bring on line an historic database to mirror the database of serious accidents reported according to the Safety Directive. This will come online mid 2009 and will provide access to the most complete records in Europe for serious railway accidents from 1990 to the present time, allowing developments in serious accidents to be monitored more readily.

In the coming period we look forward to the development in certification both for SMS and maintenance workshops. The Agency will continue to focus on the key challenges in addressing trespasser accidents and level crossing safety. In 2010 the Agency will issue the next biennial railway safety performance report for the European Union.



Annexes

33	Annex 1 – Common Safety Indicators
33	List of tables
34	CSI data tables
42	Comments on CSI data tables
44	Annex 2 – List of National Safety Authorities and National Investigation Bodies
46	Key documents and references

Annex 1 – Common Safety Indicators

List of tables

Table number	Name
1	Fatalities by category of person
2	Serious injuries by category of person
3A	Fatalities by type of accident and person category – 2006
3B	Fatalities by type of accident and person category – 2007
4A	Serious injuries by type of accident and person category – 2006
4B	Serious injuries by type of accident and person category – 2007
5	Total and relative number of suicides
6	Number of accidents by type of accidents
7	Number of precursors to accidents
8	Costs of all accidents
9	Hours lost due to accidents
10	Technical safety of infrastructure and its implementation
11	Management of safety – number of audits planned and conducted

CSI data tables

Figures with a yellow background has a comment in the list of comments on pages 42 and 43.

Table 1 – Fatalities by category of persons

ID	Victim types - fatalities	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total	
PK00	Passengers	2006	0	4	1	4	18	0	3	9	1	12	4	0	5	0	10	0	0	0	0	1	1	10	0	0	0	0	4	0	77
		2007	1	9	2	0	3	0	0	13	0	9	14	0	5	0	9	1	0	0	0	0	0	9	1	0	0	0	1	3	70
SK00	Employees	2006	0	0	0	1	6	1	3	0	4	0	0	13	3	0	5	1	0	0	0	0	5	1	0	0	0	1	0	0	40
		2007	3	3	0	0	1	9	0	0	1	3	0	0	3	0	3	0	4	5	0	0	0	4	5	0	0	0	0	2	38
LK00	Level crossing users	2006	22	9	4	31	50	5	12	14	5	38	22	0	19	0	48	18	0	0	12	0	48	18	0	9	9	16	5	360	
		2007	33	19	5	0	23	67	5	5	19	10	38	57	1	16	6	81	20	0	4	19	0	81	20	58	9	15	13	532	
UK00	Unauthorised persons	2006	0	7	31	16	118	1	23	30	17	44	37	0	42	23	177	29	0	0	26	2	177	29	0	10	12	81	56	762	
		2007	14	7	20	0	1	88	5	13	33	7	20	3	1	44	30	260	27	38	14	1	260	27	38	14	8	40	33	730	
OK00	Other persons	2006	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	5	0	0	0	0	0	4	60
		2007	1	0	0	0	13	0	0	0	13	2	1	0	0	0	0	12	5	90	0	0	12	5	90	0	0	0	1	7	147
TK00	Total persons	2006	46	20	36	52	192	18	39	56	23	98	63	0	79	34	300	34	30	16	1	256	53	0	19	22	101	65	1319		
		2007	52	38	27	0	25	180	10	18	65	18	83	79	3	68	36	366	58	186	23	2	366	58	186	23	17	57	58	1517	
R01	Nr of Trainkm	2006	152,19	104,937	36,09	158,989	103,5	80,541	19,071	210,757	50,9	508	106,787	18,242	377	13,827	47,392	22,875	39,264	94,9	132,295	18,98	50,978	537,757	132,295	18,98	50,978	537,757	4,143,404		
		2007	155	103,587	36,03	152,88	104,67	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,992	47,392	22,331	40,98	96,262	134,345	19,16	51,003	538,104	134,345	19,16	51,003	538,104	4,224,514		
R02	Nr of Passengerkm	2006	8830	9607	2420	6908,99	77903	6274	1811	20477,531	3540	76470	9586	1872,067	58679	430	982	18299	3876	3876	-	9716	11370	2194	49750	10295,949	812	2,147,956	47791	398665,339	
		2007	9149	9832	2423	1,214	6906,6	79100	6353	1930	20584	3778	78740	10080	2007	49090	409	983,026	19374	3890	6724	10295,949	812	2,147,956	47791	10295,949	812	2,147,956	47791	398665,339	

Table 2 – Serious injuries by category of persons

ID	Victim types - Serious injuries	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total	
PS00	Passengers	2006	12	63	29	12	65	4	17	22	1	17	26	0	39	0	58	8	36	1	0	1	58	8	36	1	0	6	1	428	
		2007	8	41	6	0	18	20	3	6	11	0	10	37	0	10	0	79	5	6	1	1	1	79	5	6	1	1	4	13	283
SS00	Employees	2006	19	14	2	2	18	4	5	1	3	10	3	0	4	3	4	2	8	2	8	1	4	2	8	1	9	3	4	173	
		2007	9	27	2	0	0	25	1	3	2	0	5	3	0	5	0	9	2	3	3	5	2	3	2	3	5	2	3	111	
LS00	Level crossing users	2006	26	14	7	49	39	3	20	1	5	13	23	0	16	8	7	2	100	9	22	8	10	100	9	22	8	10	12	3	398
		2007	34	25	8	0	41	55	1	22	4	2	7	27	0	4	4	7	2	107	8	41	8	107	8	41	8	15	13	1	443
US00	Unauthorised persons	2006	0	6	23	25	27	1	9	11	4	60	22	0	16	14	25	2	75	10	244	4	4	75	10	244	4	4	13	14	609
		2007	5	4	17	0	42	34	6	7	9	1	12	25	1	21	6	93	16	41	2	8	1	93	16	41	2	8	17	7	385
OS00	Other persons	2006	19	9	0	1	0	1	0	0	0	0	0	0	1	0	0	0	58	4	0	0	0	58	4	0	2	0	0	3	98
		2007	4	1	0	0	23	1	0	23	1	0	0	0	0	0	0	2	3	94	0	0	0	2	3	94	0	0	0	7	149
TS00	Total persons	2006	76	106	61	89	149	13	51	35	13	100	75	0	75	25	33	15	295	33	310	16	23	34	310	16	23	34	25	1656	
		2007	60	98	33	0	101	157	12	38	26	3	46	92	1	40	13	17	10	280	34	185	14	29	36	31	36	31	1371		
R01	Nr of Trainkm	2006	152,19	104,937	36,09	158,989	103,5	80,541	19,071	210,757	50,9	508	106,787	18,242	377	13,827	47,392	22,875	39,264	94,9	132,295	18,98	50,978	537,757	132,295	18,98	50,978	537,757	4,143,404		
		2007	155	103,587	36,03	152,88	104,67	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,992	47,392	22,331	40,98	96,262	134,345	19,16	51,003	538,104	134,345	19,16	51,003	538,104	4,224,514		
R02	Nr of Passengerkm	2006	8830	9607	2420	6908,99	77903	6274	1811	20477,531	3540	76470	9586	1872,067	58679	430	982	18299	3876	3876	-	9716	11370	2194	49750	10295,949	812	2,147,956	47791	398665,339	
		2007	9149	9832	2423	1,214	6906,6	79100	6353	1930	20584	3778	78740	10080	2007	49090	409	983,026	19374	3890	6724	10295,949	812	2,147,956	47791	10295,949	812	2,147,956	47791	398665,339	

Table 3 A — 2006 — Fatalities by type of accident and victim category

ID	Accident types	Victim types - fatalities	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total	
TK01	Collisions of trains	Persons	0	0	0	0	0	0	0	0	8	0	0	9	0	0	3	0	0	0	0	3	0	0	0	1	0	1	0	25
PK01		Passengers	0	0	-	0	0	0	0	0	1	0	0	4	-	-	-	0	0	-	-	0	-	-	-	-	-	-	-	5
SK01		Employees	0	0	-	0	0	0	0	0	1	0	0	2	-	-	-	3	0	0	-	2	-	-	-	1	-	-	-	9
LK01		Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
UK01		Unauthorised persons	-	0	-	0	0	0	0	0	6	0	0	3	-	-	-	0	0	0	-	-	1	-	-	-	-	-	-	10
OK01		Other persons	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	1
TK02	Derailments of trains	Persons	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
PK02		Passengers	0	0	-	0	0	0	0	0	7	0	0	-	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	7
SK02		Employees	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
LK02		Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
UK02		Unauthorised persons	-	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
OK02		Other persons	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
TK03	Level-crossing accidents	Persons	22	10	4	31	50	6	14	14	14	5	40	22	0	19	8	8	4	12	0	49	18	-	9	0	17	5	359	
PK03		Passengers	0	1	-	0	0	0	0	2	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	1	-	4
SK03		Employees	0	0	-	0	0	0	0	0	0	0	0	2	-	-	-	0	0	0	-	1	-	-	-	-	-	-	-	3
LK03		Level crossing users	22	9	4	31	50	5	12	14	14	5	38	22	-	19	8	4	12	0	48	18	-	9	-	9	-	16	5	351
UK03		Unauthorised persons	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
OK03		Other persons	0	0	-	0	0	0	1	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	1
TK04	Accidents to persons caused by rolling stock in motion	Persons	22	10	32	21	142	12	17	33	18	37	41	0	55	26	26	26	4	0	188	35	-	10	10	21	35	59	844	
PK04		Passengers	0	3	1	4	18	0	2	1	8	4	-	4	-	5	0	0	1	0	10	-	-	-	-	-	3	-	60	
SK04		Employees	0	0	-	1	6	1	0	1	0	1	0	-	8	3	0	1	0	1	0	2	1	-	-	-	-	-	-	24
LK04		Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	9	-	9	
UK04		Unauthorised persons	-	7	31	16	118	1	17	30	17	29	37	-	42	23	26	2	0	0	176	29	-	10	12	32	56	-	711	
OK04		Other persons	22	0	-	0	0	10	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	5	-	-	-	3	40	
TK05	Fires in rolling stock	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PK05		Passengers	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
SK05		Employees	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
LK05		Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
UK05		Unauthorised persons	-	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
OK05		Other persons	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
TK06	Other accidents	Persons	2	0	0	0	0	0	0	2	0	2	0	12	0	0	2	0	0	0	1	16	0	-	0	0	49	0	84	
PK06		Passengers	0	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	1	0	-	-	-	-	-	1	
SK06		Employees	0	0	-	0	0	0	0	0	0	2	0	0	-	-	-	2	0	0	-	0	0	-	-	-	-	-	4	
LK06		Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	-	0	0	0	-	0	0	-	-	-	-	-	-	0
UK06		Unauthorised persons	-	0	-	0	0	0	0	0	0	0	0	12	-	-	-	0	0	0	-	0	0	-	-	-	-	49	-	61
OK06		Other persons	2	0	-	0	0	0	0	0	0	0	0	0	-	-	-	0	0	0	-	16	0	-	-	-	-	-	18	
RO1	Nr of Trainkm		152,19	104,937	36,09	158,999	10,13,5	80,544	1811	20477,531	50,9	508	106,787	182,42	371	13,827	430	982	15600	2859,751	47,392	222,875	39,264	94,9	132,895	18,98	50,978	535,757	4143,404	
RO2	Nr of Passengerkm		8830	9607	2420	6808,99	77803	6274	3540	76670	9586	1872,667	58679	3876	8076	2194	49750	395865,339	9716	11370	2194	49750	395865,339	9716	11370	2194	49750	395865,339		

Table 3 B — 2007 — Fatalities by type of accident and victim category

ID	Accident types	Victim types - fatalities	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total					
TK01	Collisions of trains	Persons	0	0	0	0	1	1	0	2	0	0	0	2	5	0	1	0	0	0	0	0	1	0	0	0	0	0	13						
PK01		Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
SK01		Employees	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3					
UK01		Level crossing users	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4					
UK01	Unauthorised persons	Persons	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3						
OK01		Other persons	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3						
TK02		Deaths of trains	Persons	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1	5					
PK02			Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2					
SK02	Employees		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2					
UK02	Level crossing users		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1					
UK02	Unauthorised persons	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
OK02		Other persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
TK03		Level-crossing accidents	Persons	33	20	5	0	23	66	5	5	19	10	39	60	1	16	6	4	19	4	19	0	39	20	65	9	9	15	501					
PK03			Passengers	0	1	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8				
SK03	Employees		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3					
UK03	Level crossing users		33	19	5	0	23	66	5	5	19	10	38	53	1	16	6	4	19	4	19	0	36	20	39	9	9	15	13	463					
UK03	Unauthorised persons	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0					
OK03		Other persons	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	16	0	0	0	0	17					
TK04		Accidents to persons caused by rolling stock in motion	Persons	16	18	22	0	1	111	4	11	46	8	39	9	1	51	30	24	1	2	325	35	121	14	14	8	42	44	983					
PK04			Passengers	1	8	2	0	3	0	3	0	13	0	9	8	0	5	0	0	0	0	8	0	0	0	0	0	0	1	2	60				
SK04	Employees		3	3	0	0	7	0	0	0	0	0	1	2	1	0	3	0	1	0	0	0	0	3	0	0	0	0	0	26					
UK04	Level crossing users		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	19	0	0	0	0	0	64					
UK04	Unauthorised persons	Persons	12	7	20	0	1	88	4	11	33	7	20	0	1	43	30	21	1	2	260	27	28	14	8	40	33	711	0						
OK04		Other persons	0	0	0	0	0	13	0	0	0	0	8	0	0	0	0	2	0	0	12	5	74	0	0	0	1	7	122	0					
TK05		Fires in rolling stock	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PK05			Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
SK05	Employees		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
UK05	Level crossing users		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
UK05	Unauthorised persons	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
OK05		Other persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TK06		Other accidents	Persons	3	0	0	0	2	1	0	0	0	0	3	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	15	0			
PK06			Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SK06	Employees		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UK06	Level crossing users		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UK06	Unauthorised persons	Persons	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
OK06		Other persons	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
R01		Nr of Trainkm		155	103,587	96,03	6,533	104,87	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,92	18,578	140	47,392	223,031	40,98	96,262	134,345	19,16	51,003	538,04	424,514	391,660,896						
R02			Nr of Passengerkm	9 149	9 932	24 23	1 214	69 066	79 000	63 53	1 980	20 584	378	7 8740	10 080	2 007	49 000	409	9 83 026	16 400	2 859 751	1 937 4	3 990	67 24 1	102 955 949	8 12	21 47 956	47 791	3 818 600 896						

Table 4 A — 2006 — Serious injuries by type of accident and victim category

ID	Accident types	Victim types - fatalities	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total	
TS01	Collisions of trains	Persons	5	0	0	4	10	0	0	7	0	0	3	2	0	15	0	0	0	0	6	0	0	3	1	310	0	0	0	0	1	367
PS01		Passengers	1	0	-	1	2	0	0	5	0	0	0	2	2	-	15	0	0	0	6	0	0	0	-	36	-	-	-	-	70	
SS01		Employees	4	0	-	2	8	0	0	1	0	0	0	0	-	-	0	0	0	0	0	-	0	2	1	8	-	-	-	-	27	
LS01		Level crossing users	-	0	-	0	0	0	0	0	-	0	0	0	-	-	0	0	0	0	0	-	0	0	0	-	22	-	-	-	-	22
US01		Unauthorised persons	-	0	-	0	0	0	0	0	1	0	0	0	1	-	0	0	0	0	0	0	0	1	-	-	244	-	-	-	-	247
OS01		Other persons	0	0	-	1	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	-	0	-	-	-	-	1	
TS02		Deaths of trains	Persons	1	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	19
PS02	Passengers	0	0	-	0	0	0	0	0	0	14	0	0	-	-	0	0	0	0	0	1	0	0	0	-	-	-	-	-	-	15	
SS02	Employees	1	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	1	-	-	-	-	-	2	
LS02	Level crossing users	0	0	-	0	0	0	0	0	-	0	0	0	-	-	0	0	0	0	0	-	0	0	0	-	-	-	-	-	-	0	
US02	Unauthorised persons	-	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	0	
OS02	Other persons	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	2	-	0	-	-	-	-	2	
TS03	Level-crossing accidents	Persons	26	19	7	49	45	2	32	1	6	13	25	0	17	8	7	2	1	116	9	0	8	10	14	3	420	-	-	-	420	
PS03		Passengers	0	2	-	0	1	0	0	11	0	0	0	2	-	1	0	0	0	9	-	0	-	0	-	-	-	26	-	-	-	26
SS03		Employees	0	3	-	0	4	0	0	1	0	1	-	-	-	0	0	0	0	2	-	0	0	2	-	-	-	2	-	-	-	13
LS03		Level crossing users	26	14	7	49	39	2	20	1	5	13	23	-	16	8	7	2	1	100	9	-	8	10	12	3	375	-	-	-	-	1
US03		Unauthorised persons	-	0	-	0	1	0	0	-	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	1
OS03		Other persons	0	0	-	0	0	0	0	0	-	0	0	-	-	0	0	0	0	5	-	0	-	0	0	-	0	-	-	-	-	5
TS04		Accidents to persons caused by rolling stock in motion	Persons	38	8	52	36	39	6	12	20	6	39	39	0	38	17	26	3	1	168	22	0	7	13	20	19	629	-	-	-	629
PS04	Passengers	10	2	29	11	14	4	1	8	1	8	12	17	-	20	0	0	1	1	49	8	-	1	-	6	1	196	-	-	-	196	
SS04	Employees	14	0	-	0	5	1	3	1	1	5	1	-	2	3	1	0	0	0	0	-	-	-	-	9	1	1	1	48	-	0	
LS04	Level crossing users	0	0	-	0	0	0	0	-	0	0	-	-	-	0	0	0	0	0	0	-	0	0	0	-	-	-	-	-	-	0	
US04	Unauthorised persons	-	6	23	25	20	0	8	11	4	22	20	-	16	14	25	2	0	74	10	-	4	4	13	14	315	-	-	-	-	0	
OS04	Other persons	14	0	-	0	0	1	0	0	0	0	0	-	1	0	0	0	0	45	4	0	2	-	0	0	10	-	-	-	-	10	
TS05	Fires in rolling stock	Persons	1	0	2	0	0	1	0	0	0	0	1	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
PS05		Passengers	0	0	-	0	0	0	0	0	0	0	0	-	3	0	0	0	0	0	0	-	0	0	0	-	-	-	-	-	-	3
SS05		Employees	0	0	2	0	0	0	1	0	0	0	1	-	-	0	0	0	0	0	0	-	2	0	0	-	-	-	-	-	-	6
LS05		Level crossing users	0	0	-	0	0	0	0	-	0	0	-	-	-	0	0	0	0	0	0	-	0	0	0	-	-	-	-	-	-	0
US05		Unauthorised persons	-	0	-	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	0	0	-	-	-	-	-	-	0
OS05		Other persons	1	0	-	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	-	0	-	-	-	-	1
TS06		Other accidents	Persons	5	79	0	55	4	0	0	0	1	44	9	0	2	0	0	3	0	6	0	0	1	0	0	0	211	-	-	-	211
PS06	Passengers	1	59	-	0	48	0	0	0	0	0	3	5	-	0	0	0	0	0	0	2	0	0	0	-	-	-	-	-	-	118	
SS06	Employees	0	11	-	0	1	2	0	0	0	1	4	2	-	2	0	0	0	0	0	1	0	0	0	-	1	-	-	-	-	27	
LS06	Level crossing users	0	0	-	0	0	1	-	0	0	-	0	-	-	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	1	
US06	Unauthorised persons	-	0	-	0	6	1	0	0	0	0	0	0	37	2	-	0	0	0	0	0	0	0	0	-	-	-	-	-	-	46	
OS06	Other persons	4	9	-	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	6	-	0	-	-	-	-	-	19	
R01	Nr of Trainkm		152,19	104,937	36,09	158,999	103,5	80,541	19,071	210,757	50,9	508	106,787	18,242	377	13,827	17,122	133	47,392	222,875	39,264	94,9	132,295	18,98	50,978	535,757	4143,404	-	-	-	4143,404	
R02	Nr of Passengerkm		880	9807	24,20	6908,99	77803	6274	1811	20477,531	3540	74470	9586	1827,067	58679	430	982	16500	2859,751	18299	3876	9716	11370	2194	49750	399265,339	-	-	-	-	399265,339	

Table 4 B – 2007 – Serious injuries by type of accident and victim category

ID	Accident types	Victim types - fatalities	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total	
TS01	Collisions of trains	Persons	4	3	4	0	1	8	0	5	0	0	2	4	4	0	1	0	0	1	0	0	1	0	0	0	0	0	0	34	
PS01		Passengers	1	2	0	0	1	3	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
SS01		Employees	2	1	2	0	0	4	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	14	
LS01		Level crossing users	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
US01		Unauthorised persons	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
OS01	Other persons	1	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
TS02	Derailments of trains	Persons	0	0	0	0	0	0	0	1	0	0	0	0	12	0	0	0	0	0	0	0	1	2	0	0	0	0	12	28	
PS02		Passengers	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	14	
SS02		Employees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	
LS02		Level crossing users	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
US02		Unauthorised persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OS02	Other persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TS03	Level-crossing accidents	Persons	34	53	8	0	42	63	1	24	4	2	9	23	0	4	7	4	7	4	7	2	106	8	94	8	15	16	1	555	
PS03		Passengers	0	25	0	0	1	4	0	1	0	0	0	1	8	0	0	0	0	0	0	0	11	0	0	0	0	0	2	0	53
SS03		Employees	0	4	0	0	0	5	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	15
LS03		Level crossing users	34	24	8	0	41	54	1	22	4	2	7	15	0	4	7	4	7	4	7	4	93	8	41	8	15	13	1	415	
US03		Unauthorised persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	24	
OS03	Other persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	
TS04	Accidents to persons caused by rolling stock in motion	Persons	15	20	21	0	58	83	9	8	20	1	28	52	1	34	6	13	2	0	13	2	181	23	90	6	9	20	18	718	
PS04		Passengers	7	14	6	0	16	13	2	1	10	0	9	26	0	10	0	1	2	0	1	2	68	2	6	1	1	2	2	199	
SS04		Employees	2	1	0	0	0	14	0	0	1	1	0	1	0	3	0	0	0	0	0	0	4	2	2	3	0	1	2	38	
LS04		Level crossing users	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	14	
US04		Unauthorised persons	4	4	15	0	42	33	6	6	9	1	10	25	1	21	6	10	0	0	2	0	93	16	17	2	8	17	7	353	
OS04	Other persons	2	1	0	0	0	23	1	0	0	0	0	8	0	0	0	2	0	0	0	0	2	3	65	0	0	0	7	114		
PS05	Fires in rolling stock	Persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SS05		Employees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LS05		Level crossing users	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
US05		Unauthorised persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OS05		Other persons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TS06	Other accidents	Persons	7	22	0	0	3	2	0	2	0	2	0	7	1	0	1	0	0	0	0	3	1	1	1	1	0	5	0	56	
PS06		Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SS06		Employees	5	21	0	0	0	2	1	0	0	1	0	3	1	0	1	0	0	0	0	0	1	1	0	0	0	5	0	0	42
LS06		Level crossing users	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
US06		Unauthorised persons	1	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
OS06	Other persons	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
R01	Nr of Trainkm		155	103,587	96,03	6,533	152,89	104,87	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,922	18,578	140	47,392	223,031	40,98	96,262	134,345	19,16	51,003	538,04	42,451,4			
R02	Nr of Passengerkm		9,149	9932	24,23	1,214	69,065	79,100	63,53	1,900	20,584	3778	78,740	10,080	2,007	49,000	409	983,026	16,400	2,659,751	1,937,4	3,990	67,24,1	102,95,949	812	2,147,856	47,791	3,918,60,896			

Table 5 — Total and relative nr of suicides

ID	Category	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
N07	Total nr of suicides	2006	78	97	32	174	0	706	31	0	4	189	42	351	128	8	126	0	0	6	190	11	25	40	16	69	6	48	227	1865
		2007	113	94	39	150	706	-	0,248	0,087	0,052	0,087	0,025	0,691	1,199	0,439	0,334	0	0,350	1,429	0,222	0,112	1,019	0,169	0,522	0,316	0,861	0,424	13,616	
N17	Relative to trainkm, nr of suicides	2006	0,513	0,924	0,087	1,094	-	0,673	0,394	0,201	0,0867	1,027	0,050	1,018	0,245	0,373	0	0	0,538	1,379	0,169	0,130	1,289	0,249	0,581	0,731	0,941	0,366	15,489	
		2007	0,729	0,907	1,082	0,981	1,035	0,80541	19,071	210,757	50,9	508	106,787	18,242	377	13,927	17,122	133	47,392	222,875	40,98	96,262	134,345	19,16	51,003	538,004	424,514			
R01	Trainkm	2006	152,19	104,937	36,09	158,999	103,35	80,541	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,031	40,98	96,262	134,345	19,16	51,003	538,004	424,514			
		2007	155	103,587	36,03	152,89	104,87	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,031	40,98	96,262	134,345	19,16	51,003	538,004	424,514			

Table 6 — Number of accidents by type of accidents

ID	Accident types	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
N01	Collisions of trains	2006	1	84	44	13	422	9	0	0	0	0	48	4	1	5	1	5	1	0	4	5	16	3	5	3	-	7	4	889
		2007	4	77	20	3	15	1	4	0	0	85	5	1	4	6	6	6	6	0	4	4	17	3	65	1	2	14	12	347
N02	Derailments of trains	2006	1	7	139	10	52	6	9	0	42	16	-	11	7	1	7	1	2	1	2	3	195	9	22	5	3	8	22	574
		2007	3	17	130	0	3	6	8	12	0	68	7	0	10	27	10	27	0	0	0	206	3	20	11	5	11	20	568	
N03	Level-crossing accidents	2006	40	56	31	104	181	11	25	13	9	140	104	-	38	21	13	13	10	10	12	2	216	22	130	16	41	68	9	1299
		2007	55	76	44	0	48	97	22	19	11	115	54	1	23	13	13	37	9	26	9	325	27	189	14	32	71	14	1293	
N04	Accidents to persons caused by rolling stock in motion	2006	55	22	72	104	216	23	30	51	23	74	244	-	88	37	23	37	52	52	9	2	408	55	295	17	23	53	81	2034
		2007	27	30	81	0	59	184	13	19	63	9	77	92	2	85	36	36	37	37	3	2	419	56	211	20	19	63	61	1688
N05	Fires in rolling stock	2006	1	18	23	0	49	98	5	2	0	17	62	1	-	5	0	0	0	0	1	3	5	5	8	3	1	8	-	310
		2007	1	17	38	0	2	14	40	0	0	0	37	3	0	5	0	5	0	0	0	7	7	0	15	4	0	22	3	159
N06	Other accidents	2006	8	0	1630	2	14	40	0	4	0	4	3	65	40	-	5	0	0	0	-	1	0	0	35	7	2	55	1	1912
		2007	14	0	1554	0	1	14	3	0	4	0	31	1	1	3	0	0	5	5	0	3	8	4	34	6	5	41	0	1732
N00	Total nr accidents	2006	106	187	1939	282	983	94	71	77	52	431	409	1	152	66	66	66	63	63	28	16	840	89	495	51	70	199	117	6818
		2007	104	217	1867	0	115	319	24	53	98	21	413	162	5	130	83	83	51	51	33	12	982	93	534	56	63	222	110	5767
R01	Nr of Trainkm	2006	152,19	104,937	36,09	158,999	103,35	80,541	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,875	40,98	96,262	134,345	19,16	51,003	538,004	424,514			
		2007	155	103,587	36,03	152,89	104,87	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,031	40,98	96,262	134,345	19,16	51,003	538,004	424,514			

Table 7 — Number of precursors to accidents

ID	Precursors to accidents	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
I01	Broken rails	2006	171	115	7	0	124	0	-	74	65	11	788	8	361	1	5	1	1	1	34	51	3054	45	349	256	76	1	232	5804
		2007	-	98	92	13	21	407	33	289	54	21	654	1	430	62	4	6	6	5	31	10	2456	39	319	187	57	5	192	5779
I02	Trackbuckles	2006	0	1	-	1	72	1	-	186	10	171	3	5	6743	2	6743	2	2	1	143	96	80	95	-	80	26	1	86	7803
		2007	-	0	25	0	0	68	5	-	171	7	177	4	1	3113	40	40	4	1	13	14	14	40	3	102	11	2	5	3816
I03	Wrong side-signalling failures	2006	0	1	-	0	0	0	545	0	6	-	290	-	4	4	4	4	4	3	-	0	-	-	2335	8	-	4	617	3821
		2007	7	1	10	0	0	0	273	0	5	-	277	0	1	0	245	0	0	0	0	0	0	0	2456	6	0	6	550	3837
I04	Signals passed at danger	2006	15	55	5	60	60	508	1	93	18	35	8	35	24	124	124	124	4	292	78	-	24	425	194	147	78	352	2975	
		2007	12	81	15	5	26	727	581	1	93	22	112	12	31	15	60	60	60	2	275	73	403	20	425	217	154	79	324	7375
I05	Broken wheels	2006	0	0	-	0	2	11	1	0	14	-	1	1	-	1	0	0	0	5	-	52	137	1	-	8	-	-	-	233
		2007	2	1	17	0	0	6	22	1	0	-	2	0	0	0	0	0	9	0	39	66	0	5	2	0	1	0	1	173
I06	Broken Axles	2006	0	0	-	0	9	8	8	-	0	0	0	0	3	-	0	22	2	2	-	0	3	3	3	10	1	-	-	64
		2007	3	0	29	0	4	5	4	0	0	0	0	0	1	0	1	28	1	1	0	22	1	2	3	0	0	0	0	100
R01	Nr of Trainkm	2006	152,19	104,937	36,09	158,999	103,35	80,541	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,875	40,98	96,262	134,345	19,16	51,003	538,004	424,514			
		2007	155	103,587	36,03	152,89	104,87	78,7	19,905	216,873	52,577	529,54	114	16,332	370	14,992	18,578	140	47,392	222,031	40,98	96,262	134,345	19,16	51,003	538,004	424,514			

Table 8 — Costs of all accidents

ID	Category	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
C00	Costs of all accidents	2006	0	0	1091619	3015487,38	0	0	0	0	0	0	4536603	0	1873308	750000	0	1242	4342427	4342427	0	3462321,041	4523000	5211323,37	638670	671452962,28	1944225	1160000	18527591	399578600,299
		2007	0	0	674623	3844692	0	162410	219403	0	1668800	0	35316435	0	1668800	0	6000168	0	6000168	3393087	0	6375000	5270073,014	55380000	5805903,66	79530122,366	0	1990000	18988101	38801673,420
C01	Costs of deaths	2006	-	-	-	94510,87	-	-	-	-	-	-	42770504	-	33854	-	-	-	-	0	0	0	4724000	112	35775161,290	-	750000	14560500	27267042,160	
		2007	-	-	0	0	12623	-	-	-	-	-	34589918	-	559	-	-	-	0	1328396	-	15829574	50220000	2125	42308774,194	-	0	123925000	288238214,884	
C02	Costs of injuries	2006	-	-	-	47437,95	-	-	-	-	-	-	3095599	-	559	-	-	-	0	95126	-	31657	3844062	0	8724086,022	-	3870000	5600250	22248537,222	
		2007	-	-	2523	0	6208	-	-	-	-	-	746517	-	-	-	-	-	0	40036391	-	275000	2463924	4180000	0	7412473,118	0	6944310	19689730,358	
C03	Costs of replacement or repair of damaged RS and railway installations	2006	-	-	1091619	1593033,56	-	-	-	-	-	-	-	-	1838231	750000	-	12442	40036391	-	1638947,041	4523000	-	639858	21038726,56	1944225	20000	16071468	6598584,071	
		2007	-	-	572094	0	3724791	-	-	-	-	-	-	-	-	1668800	-	-	6000168	5352351,3	-	3000000	5095911,574	-	31719722	24779842,796	0	1880000	44406218	102778476,400
C04	Costs of delays etc	2006	-	-	-	-	-	-	-	-	-	-	-	-	864	-	-	-	24361	-	18204080	1567322,366	939861,37	8700	1567322,366	-	3000	179897673	38723936,856	
		2007	-	-	100016	0	101070	-	-	-	-	-	-	-	-	-	-	-	0	274461	-	3100000	9322646	980000	26124144	4038322,258	0	100000	8404773	1736451,788
R01	Nr of Trainkm	2006	152119	104937	3609	158999	1013,5	80541	19071	210757	50,9	508	508	18,242	377	13827	17,122	133	47,392	222,875	132,295	18,38	94,9	132,295	18,38	50,978	535,757	4143,404		
		2007	155	103587	3603	6533	1048,7	78,7	19305	216873	52,577	529,54	370	14,992	18448	370	14,992	140	47,392	223,031	134,345	19,16	51,003	538,104	188221736,258					

Table 9 — Hours lost due to accidents

ID	Category	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
W00	Total nr of hours lost	2006	-	-	-	-	-	-	-	-	95312	-	-	-	9038	441,2	-	9038	441,2	0	487,5	3406	-	233	2299	-	-	38887	154284,7	
		2007	-	-	-	-	-	-	-	-	5840	-	-	-	-	12164,6	8149,75	-	12164,6	8149,75	0	9283	25635	-	1185	7124	0	0	21349	919193,5
W10	Nr of hours lost relative to total nr of working hours	2006	-	-	-	-	-	-	-	-	0,006	-	-	-	-	0	0,000	-	0,000	-	0,000	0,000	-	-	-	-	-	0	0,006	
		2007	-	-	-	-	-	-	-	-	0,000	-	-	-	-	-	0	0,000	-	0,000	-	0,000	0,000	-	0,000	-	-	0	0,001	
R04	Total nr of working hours	2006	-	-	-	102000	-	-	-	-	16027	-	-	-	837	-	145790322	18689348	24181	-	22910	119880	-	16238611,4	-	15163144	16857	-	184127400	36167958,749
		2007	-	-	3400235	87822437	-	-	-	-	-	15133824	-	-	-	-	-	131620554	18448	22910	-	12597795	235540394	15811723	117583388	27486739	16688	0	188623,8	188221736,258

Table 10 — Technical safety of infrastructure and its implementation

ID	Category	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
T01	Pec of track with ATP in operation	2006	-	0,081	0,15	-	0,16	-	0,28	-	-	0,957	0,72	0,558	0,940	0,05	0,572	0,25	0,25	0,25	0,98	0,7	0	0,503	0,488	0,706	0,64	0,151	0,043	8,654
		2007	-	0,084	0,14	1	0,17	0,881	0,53	-	-	0,015	0,975	0,749	0,585	-	0,05	0,9	0,250	0,250	0,46	0,99	0,7	0	0,508	0,500	0,656	0,546	0,151	0,057
T02	Pec of trainkm using operational ATP	2006	-	0,06	0,08	-	-	-	-	-	-	0,96	0,9	-	0,780	0,12	0,490	0,841	-	-	0,999	0,9	0	0,9	0,194	-	-	0,418	0,030	7,472
		2007	-	-	0,2	1	-	-	-	-	-	0	0,97	0,97	0,791	-	0,137	0,625	0,698	-	-	0,999	0,9	0	0,9	0,932	-	0	0,030	9,862
T03	Total nr of level crossings	2006	6977	2037	820	8576	20317	1548	1270	2885	1270	2885	4430	16804	5981	1595	8383	436	436	657	2724	4300	17049	1297	5534	10541	965	2322	7211	134659
		2007	6932	2180	820	8628	19011	1449	1285	2811	1285	2811	4334	14651	5972	1126	7350	531	531	660	2720	3761	14219	1266	5625	10572	944	2307	7456	126590
T04	Tot nr of level crossings per line km	2006	0,657	0,351	0,160	0,747	0,391	0,432	0,366	0,402	0,43	0,157	0,492	0,489	0,655	0,520	0,404	0,424	0,199	0,161	0,419	1,052	0,438	0,389	0,271	0,686	0,619	0,496	0,228	11,224
		2007	0,29	0,392	0,42	0,412	0,54	-	-	-	0,61	0,358	0,19	0,74	0,615	0,17	0,753	0,764	0,64	0,64	0,677	0,988	0,39	0,393	0,109	0,344	0,34	0,470	0,234	10,444
T05	Pec of level crossings with automatic or manual protection	2006	0,294	0,808	0,42	0,247	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	11,070
		2007	0,294	0,808	0,42	0,247	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	11,070
R03	Nr of Trackkm	2006	10886	6212	519	11641,5	51959	3586	2987	17155,9	8830	30860	8007,49	1919	18154	18154	18154	21874	21874	4091,4	6500	4087	38920	3512,7	20384,809	15390	1559	4678	31594	309905,28
		2007	10853	6215	519	11553,8	51959	3605	3060	17885,3	8816	29973	8007,49	1919	18194,72	18194,72	18194,72	21809	21809	4352,55	6700	4080	38920	3527,7	20384,809	15198	2193	3629	31473	31472,779

Table 11 — Management of safety — number of audits planned and conducted

ID	Category	Years	AT	BE	BG	CT	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	NL	NO	PL	PT	RO	SE	SI	SK	UK	Total
A01	Total nr of accomplished audits	2006	-	0	2719	-	159	-	33	-	-	731	44	1	-	21	1278	21	-	131	-	55	193	2	-	319	-	6	720	6432
		2007	-	0	3215	25	290	-	36	0	755	43	44	21	13	13	2157	27	-	1853	20	66	0	6	0	188	-	0	189	8948
A02	Accomplished audits as percentage of required / planned audits	2006	-	0	-	0,85	1	-	1,38	-	-	1,005	0,91	1	-	1,05	0,963	0,81	-	1,19	-	0,7	1	1	-	0,982	-	-	0,932	13,942
		2007	-	-	-	0,85	1,1	-	1,57	0	1,015	0,67	1	0,77	1	0,563	1	1	-	0,975	1	0,74	0	1	0	0,989	-	0	0,976	15,188

Comments on CSI data tables

Table	Country	Year	Variable	Comment
Table 4 A	EL	2006	PS03	One significant level crossing accident in 2006 explaining the large number of passengers seriously injured.
Table 4 B	BG	2007	PS05	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	BE	2007	PS03	The figure includes suicides. It has not been possible to correct the figure.
	BE	2007	SS06	The figure includes work accidents.
	BG	2007	PS04	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	BG	2007	US01	Collision with road vehicle on track not at level crossing.
	EL	2007	US01	There was a collision with an obstacle on the tracks, seriously injuring 1 person.
	BG	2007	N01-N06	The variable includes non-significant accidents.
	DE	2006	N01-N06	Data include non-significant accidents
Table 6	FI	2006	N04-N05	Data include non-significant accidents
	FR	2006	N01-N02	Does not include collisions/derailments on sidings.
	FR	2006-2007	N03	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	FR	2006-2007	N05-N06	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	HU	2006-2007	N00	The fluctuation in number of occurrences between 2006 and 2007 is due to a combination of change in reporting procedures and true change in number of events.
	IT	2006-2007	N03	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	RO	2006	N01	The variable does not include collisions with objects.
	RO	2006	N02	The variable only considers derailments of trains, as trains with planned movements. Derailments with isolated locomotives are excluded.
	RO	2006	N05	Does not include fires intentionally caused to sabotage.
	RO	2007	N02	The variable only considers derailments of trains, as trains with planned movements. Derailments with isolated locomotives are excluded.

Table	Country	Year	Variable	Comment
Table 7	BG	2006	I01	Only includes broken rails that gave more than 30 min delay of traffic.
	DE	2006	I01	Only includes broken rails with a subsequent dangerous situation
	DK	2006-2007	I03	National definition: All events when the signal changes unexpectedly, also to a more restrictive is registered.
	DK	2006-2007	I04	National definition: All events when a restrictive signal is passed is registered, also when there is no real danger and in many cases just by a few meters.
	FI	2006-2007	I01	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	FR	2006	I01	There was a change in reporting procedures between 2006 and 2007. Using 2007 reporting procedures, the figure would have been 346.
	FR	2006	I04	There was a change in reporting procedures between 2006 and 2007. Using 2007 reporting procedures, the figure would have been 110.
	IT	2006-2007	I02	National definition: track buckles are reported every time line speed is reduced.
	LT	2006-2007	I01-I04	Fluctuation in reported nr of occurrences is the effect of a change in definition.
	NL	2006	I01	The large reported number of track buckles is confirmed. 2006 was a hot summer causing a lot of track buckles.
Table 8	NO	2006-2007	I01-I02	Varying weather conditions caused large fluctuations in this variable between 2006 and 2007.
	PL	2006	I04	The infrastructure manager did not collect information on incidents and near misses before 2007. The information is therefore incomplete. SPADS were not collected.
	RO	2007	I03	The variable includes all signalling failures.
	BG	2006-2007	C03	There is a confirmed fluctuation in material costs between 2006 and 2007.
	LT	2006-2007	C03	There is a confirmed fluctuation in number of occurrences between 2006 and 2007.
	LV	2007	C03	The large number is explained by three major accidents that occurred during 2007 and improved reporting and data collection procedures.
	BE	2006-2007	R03	The figure is taken from Eurostat 2005 data.
	DE	2006	R03	The figure given is per 31/12/2007.
	PL	2006-2007	R03	The figure is excluding crossovers on main lines and is taken from Eurostat 2005 data.
	Table 11	LV	2006	A01
LV		2007	A01	The figure includes audits conducted by IM, RU and State Railway Technical Inspectorate

Annex 2 – List of National Safety Authorities and National Investigation Bodies

Country	National Safety Authority	National Investigation Body
Austria	Bundesministerium für Verkehr, Innovation und Technologie Oberste Eisenbahnbehörde www.bmvit.gv.at	Bundesanstalt für Verkehr (VERSA) Unfalluntersuchungsstelle des Bundes, Fachbereich Schiene versa.bmvit.gvat bav@bmvit.gvat
Belgium	Federale Overheidsdienst Mobiliteit en Vervoer Directoraat-generaal vervoer te Land Service Public fédéral Mobilité et Transports Direction générale Transport terrestre www.mobilit.fgov.be	Federale Overheidsdienst Mobiliteit en Vervoer Directoraat-generaal vervoer te Land Service Public fédéral Mobilité et Transports Direction générale Transport terrestre www.mobilit.fgov.be
Bulgaria	Ministry of Transport – Railway Administration Executive Agency www.taja.government.bg	Ministry of Transport – Independent Railway Investigation Body Directorate General Railway Inspectorate www.mt.government.bg
Czech Republic	Dražní Úrad – Rail Authority www.du-praha.cz	Dražní inspekce – The Rail Safety Inspection office www.dicr.cz mail@dicr.cz
Germany	Eisenbahn – Bundesamt (EBA) www.eba.bund.de	Bundesministerium für Verkehr, Bau und Stadtentwicklung Eisenbahn-Unfalluntersuchungsstelle beim www.bmvbs.de
Denmark	Trafikstyrelsen www.trafikstyrelsen.dk	Havarikommissionen for Civil Luftfart og Jernbane www.havarikommissionen.dk
Estonia	Estonian Technical Surveillance Authority www.tji.ee	Ministry of Economic Affairs and Communications Emergency Management Department www.mkm.ee
Greece	Hellenic Ministry of Transport and Communications Safety Authority for Rail Transport www.yme.gr	Hellenic Ministry of Transport and Communications Committee for Accident Investigation www.yme.gr
Spain	Ministerio de Fomento www.fomento.es	Ministerio de Fomento www.fomento.es
Finland	Finnish Rail Agency www.rautatieturvasto.fi	Accident Investigation Board of Finland www.onnettomuustutkinta.fi
France	Securite ferroviaire Établissement Public de Sécurité Ferroviaire (EPSF) www.securite-ferroviaire.fr	Bureau d'Enquêtes sur les Accidents de Transport Terrestre www.bea-tt.equipement.gouv.fr
Hungary	National Transport Authority www.nkh.hu	Transportation Safety Bureau www.kbsz.hu

Country	National Safety Authority	National Investigation Body
Ireland	Railway Safety Commission www.rsc.ie	Railway Safety Commission www.rsc.ie
Italy	Agenzia Nazionale per la Sicurezza Ferroviaria www.ansf.it	Ministero delle Infrastrutture e dei Trasporti Railway Safety Commission www.infrastrutturetrasporti.it
Lithuania	Valstybinė geležinkelio inspekcija State Railway Inspectorate www.vgi.lt	Katastrofu tyrimu vadovas National Investigation Body www.transp.lt
Luxembourg	Ministère des Transports www.gouvernement.lu	Ministère des Transports www.gouvernement.lu
Latvia	State Railway Technical Inspectorate (SRTI) www.vdzti.gov.lv	Responsible for serious accidents: Transport Accident and Incident Investigation Bureau (TAIIB) www.taiib.gov.lv Responsible for accidents and incidents: State Railway Technical Inspectorate (SRTI) www.vdzti.gov.lv
Netherlands	Inspectie Verkeer en Waterstaat www.ivw.nl	The Dutch Safety Board www.safetyboard.nl
Norway	Norwegian Railway Inspectorate www.sjt.no	Accident Investigation Board Norway www.aibn.no
Poland	Urząd Transportu Kolejowego www.utk.gov.pl	Państwowa Komisja Badania Wypadków Kolejowych (NIB) www.mi.gov.pl
Portugal	Instituto da Mobilidade e dos Transportes Terrestres www.imtt.pt	Gabinete de Investigação de Segurança e de Acidentes Ferroviários (GISAF) www.iot.gov.pt
Romania	Autoritatea Feroviara Romana (AFER) www.fer.ro	Autoritatea Feroviara Romana (AFER) www.fer.ro
Sweden	Transportstyrelsen www.transportstyrelsen.se	Statens haverikommission www.havcom.se
Slovenia	Public Agency for Rail Transport of RS www.azp.si	Ministry of Transport Railway Accident and Incident Investigation Division www.mzp.gov.si
Slovakia	Railway Regulatory Authority (URZD) www.urzd.sk	Ministry of Transport Posts and Telecommunication www.telecom.gov.sk
United Kingdom	Office of Rail Regulation (ORR) www.rail-reg.gov.uk	Rail Accident Investigation Branch www.raib.gov.uk
Channel Tunnel	Channel Tunnel Safety Authority ctsa@orrgsi.gov.uk Secrétariat général au Tunnel sous la Manche (SGTM) tunnelmanche@equipement.gouv.fr	See the relevant authority or body in France or United Kingdom for the respective part of the Channel Tunnel

Key documents and references

All documents can be obtained through our web pages www.era.europa.eu

Regulation (EC) no 881/2004 of the European Parliament and Council of 29 April 2004 establishing a European Railway Agency

Directive 2004/49/EC of the European Parliament and Council of 29 April 2004 on safety on the Community's railways and amending

Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification.

EU energy and transport in figures, Statistical Pocketbook 2007/2008, Directorate General for Energy and Transport

The annual reports of all Member States' NIBs and NSAs submitted to the Agency are available at www.era.europa.eu

Design: GELLIS Communication

Photographs: Carl Cordonnier, and Lancashire police, UK

The Railway Safety Performance in the European Union

A report from the European Railway Agency

48 pages, 29.7 x 21 cm

Luxembourg: Office for Official Publications of the European Communities, 2009

© European Railway Agency, 2009. Reproduction is authorised provided the source is acknowledged.

European Railway Agency

120, Rue Marc Lefrancq

BP 20392

FR 59307 Valenciennes Cedex

Tel.: +33 (0) 3 27 09 65 00

Fax: +33 (0) 3 27 33 40 65

www.era.europa.eu



Printed on recycled paper that has been awarded the EU eco-label for graphic paper. (<http://ec.europa.eu/environment/ecolabel>)
PRINTED IN BELGIUM



Headquarters in Valenciennes

120, Rue Marc Lefrancq
59300 Valenciennes
France

Tel. +33 327 096-500

Conference centre in Lille

Espace International
299, Boulevard de Leeds
59777 Lille
France

www.era.europa.eu



Publications Office
Publications.europa.eu

ISBN 978-92-9205-003-0



9 789292 050030