



**DEPARTMENT OF RAILWAY SAFETY OF GREECE**

# **ANNUAL SAFETY REPORT FOR THE YEAR 2010**

Athens, September 2011

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## **A. General Information**

### **A.1. Scope of the report**

The Annual Report for the year 2010 contains information about the activities of the National Safety Authority concerning the preceding year and the situation of the railway transport for the reporting year in Greece.

The information given through this Report has the purpose to fulfill the requirements of Article 18 of Safety Directive and to inform the different actors in the railway field on Member State level, as well as the other NSAs.

The Report has been produced in accordance with the Template “Structure for the content of the NSA Annual safety Report “, version 14, date 25/08/2009 and was written by the Department of Railway Safety.

### **A.2. Summary in English**

All text is in English.

## **B. Introductory Section**

### **B.1. Introduction to the report**

According to Article 18 of the Safety Directive the Report contains information on:

- (a) the development of railway safety, including an aggregation at Member State’s level of the CSIs laid down in Annex I.
- (b) important changes in legislation and regulation concerning railway safety.
- (c) the development of safety certification and safety authorisation.

The Report interests the infrastructure manager, the present and future railway undertakings and the other European national safety authorities as well.

The data provided for the CSIs respects the format of those laid down in Annex I of the SD (as amended by Commission Directive 2009/149/EC). Nevertheless the data

provided in the field under heading 5 “Indicators to calculate the economic impact of accidents” are incomplete due to the lack of procedures in estimating the cost of damage to the environment and the fact that the economic impact of 16 out of 39 significant accidents has not yet been evaluated.

Moreover, the total number of passenger km is incomplete due to the fact that Suburban Railways passenger km were not submitted.

## **B.2. Railway Structure Information (Annex A)**

**Annex A.1** contains the Network map, as presented in the Infrastructure Manager’s Network Statement 2007, with some modifications. The railway network is separated in three different Regions. The Region of Athens, Peloponnesus and Macedonia-Thrace.

**Annex A.2** contains the list with the RU and IM in service in the country.

## **B.3. Summary – General trend analysis**

An improving trend in key risk areas is observed in the CSI data reported by the Greek railway industry for the period 2006-2010. The number of accidents, injuries and fatalities show a significant reduction during the last five years, improving the overall railway safety level.

## **C. Organisation**

### **C.1. Introduction to the organisation**

The *Department of Railway Safety (NSA)* has been established in the Ministry of Infrastructure, Transport and Networks\* according to the presidential decree 160 (Official Gazette of the Hellenic Republic A’ 201/23.08.2007), article 15, under the Directorate for Freight Transport of the Ministry. The department has been assigned the exercise of the duties of the National Safety Authority of the Safety Directive 2004/49/EC. These duties are defined in article 2 of the presidential decree 186 (Official Gazette of the Hellenic Republic A’ 221/12.09.2007) and specifically are:

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\* The Ministry of Transport and Communications was incorporated into the Ministry of Infrastructure, Transport and Networks on October 7th of 2009.

- a. The documentation and follow-up of the developments in the sector of technical certification in Greek, European and international environment, the elaboration of policy and measures and the exercise of the relevant regulating competence of state, in the sector of safety of railway transport of dangerous goods.
- b. The collaboration in Greek, European and international level in the sector of technical certification, the providing of information and the representation of Ministry in the corresponding organisations, the conduct of negotiations and the processing of agreements in European, international and inter-country level regarding the vehicles of transport of dangerous goods
- c. The elaboration of legal framework of exercising the regulating competence of state in the sector of railway safety and control of railway transports of dangerous goods
- d. Authorising the bringing into service of the structural subsystems constituting the trans-European high-speed rail system according to the existing legislation and the checking if they are operated and maintained in compliance with the relevant essential requirements,
- e. Authorising the bringing into service of the structural subsystems constituting the trans-European conventional rail system according to the existing legislation and the checking if they are operated and maintained in compliance with the relevant essential requirements,
- f. Supervising that the interoperability constituents are in compliance with the essential requirements as required by the existing legislation.
- g. Authorising the bringing into service of new and substantially altered rolling stock that is not yet covered by a TSI.
- h. The issue, renewal, amendments and revocation of relevant parts of safety certificates and of safety authorisations and checking that conditions and requirements laid down in them are met and that infrastructure managers and railway undertakings are operating under the requirements of Community or national law.
- i. Keep and update the national vehicle register and the registers of infrastructure of the railway system.
- j. Gathering of information from the infrastructure manager and railway undertakings in order to calculate the common safety indicators.
- k. The proposal to the Minister of Infrastructure, Transport and Networks for issuing new national safety rules
- l. The proposal to the Minister of Infrastructure, Transport and Networks for the modification of the existing national safety rules notified to the European Commission

- m. Issuing of safety certificates to railway undertakings and safety authorisations of infrastructure manager
- n. The publication of the annual safety report,
- o. Exchange of information and experiences with the other National Safety Authorities of European Union with the aim of the harmonisation of the criteria used for decision-making
- p. Cooperation with the National Investigation Body of railway accidents.

In 2010 the Department employed 4 people in total. All employees are in charge of several tasks.

Concisely, the Department of Railway Safety observes railway safety and its continuous improvement, as well as of the obligations that derive from the Interoperability Directive, taking into consideration the development of Community legislation, as well as the technical and scientific progress.

More information on the Department and its tasks can be retrieved from the link:

<http://www.yme.gov.gr/index.php?getwhat=1&oid=852&id=&tid=867>

## **C.2. The Organisational flow**

The relationship (diagram) between the NSA and the other national bodies (such as the National Investigation Body, National Regulatory Body, and Ministry of Infrastructure etc.) is provided in *Annex B.1*.

## **D. The development of railway safety**

### **D.1. Initiatives to maintain/improve safety performances**

The National Investigation Body is not operational in our country, so there is not any safety recommendation issued.

The Greek National Safety Authority has focused, on the consultation with the key players of the Greek railway sector and other interested parties, to harmonize national law with the Directive 2009/149/EC amending Directive 2004/49/EC on common

methods to calculate accidents costs, the Directive 2008/68/EC on the inland transport of dangerous goods and the Directive 2009/131/EC amending Annex VIII to Directive 2008/57/EC on the interoperability of the railway system within the Community, as well as with directive 2007/59/EC on the certification of train drivers.

*Table D.1.1 - Safety measures triggered by accidents/precursors to these:*

<b>Accidents/precursors which triggered the measure</b>			<b>Safety measure decided</b>
<b>Date</b>	<b>Place</b>	<b>Description of the event</b>	

*Table D.1.2 - Safety measures (or voluntary measures) with other triggers than accidents/precursors:*

<b>Description of the area of concern</b>	<b>Description of the trigger</b>	<b>Safety measure decided</b>

**D.2. Detailed data trend analysis**

Taking into account the CSIs reported in 2006, 2007, 2008 and 2009 the following trend analysis was conducted:

<i>Number of accidents:</i>				
2006	2007	2008	2009	2010
70	53	40	34	39

The total number of accidents occurred in 2010 including all types of accident, was reduced to 39 from 70 reported in 2006 (a 44.3 % reduction)

<i>Number of fatalities:</i>				
2006	2007	2008	2009	2010
39	18	17	22	29

For the time period 2006-2010, we had a reduction of persons killed from 39 reported in 2006 to 29 in 2009 (a 25.6% reduction)

<i>Number of suicides:</i>				
2006	2007	2008	2009	2010
				2

The Directive 2009/149/EC, introduces a separate collection of data on “suicides”. The total number of suicides occurred in 2010 is 2. The comparison with previous year’s data is not possible.

<i>Number of injuries:</i>				
2006	2007	2008	2009	2010
51	36	29	22	20

The total number of injuries occurred in 2010 including all categories of people, was reduced from 51 reported in 2006 to 20 reported in 2010 (a 60.8% reduction).

<i>Number of precursors to accidents:</i>				
2006	2007	2008	2009	2010
1	271	335	266	189

It is not possible to compare the data extracted from the specific category, as the first two years were not collected from all the sub categories.

*Cost of all accidents, hours worked on safety:*

The 2009 revision of Annex 1 to Directive 2004/49/EC introduces a transition from, “costs of all accidents” (2004 version of Annex 1), to the “economic impact of accidents” on society. Therefore, it is not possible to compare the data extracted from the specific category, as the related sub categories have been modified. Also, it should be noted that the data provided are incomplete due to the lack of procedures in estimating the



cost of damage to the environment and the fact that the economic impact of 16 out of 39 significant accidents has not yet been evaluated.

*Technical safety of infrastructure and its implementation, management of safety:*

2006	2007	2008	2009	2010
1270	1265	1265	1305	1305

The only data which can be compared in the specific category is the total number of level crossings, as the 2009 revision of Annex 1 introduces a different classification. Relating to the “Management of safety” we should clarify that the safety management system of the Infrastructure Manager and the Railway Undertakings has not been approved, so we have not any audits to be conducted in 2010.

The above-mentioned data have been provided in *Annex C* according to the definitions of Annex I of the Safety Directive.

In addition, according to Annex I of the Safety Directive 2004/49/EC “if new facts or errors are discovered after the submission of the report the indicators for one particular year shall be amended or corrected by the safety authority at the first convenient opportunity and at the latest in the next annual report”. Due to the fact that it was noticed that the data units for train\*km and passenger\*km given in the CSIs charts were incorrect, we corrected the data for the previous years.

### **D.3. Results of safety recommendations**

The National Investigation Body is not operational in our country, so there is not any safety recommendation issued.

### **E. Important changes in legislation and regulation**

- The Presidential Decree 71 (Official Gazette of the Hellenic Republic A' 127/03.08.2010) amended the previous Presidential Decree 160 (Official Gazette of the Hellenic Republic A' 201/23.08.2007) for the adaptation of the Greek legislation to the provisions of Directive 2008/110/EC of the European Parliament and of the

Council of 16 December 2008 amending Directive 2004/49/EC on safety on the Community's railways, and of Commission Directive 2009/149/EC of 27 November 2009 amending Directive 2004/49/EC of the European Parliament and of the Council as regards common safety indicators and common methods to calculate accident costs.

- The Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods, was integrated into Greek Law with the Joint ministerial decision 35043/2524/1.9.2010 (Official Gazette of the Hellenic Republic B' 1385/02.09.2010).
- The adaptation of Greek legislation to the provisions of Directive 2008/57/EC of the European Parliament and the Council of 17 June 2008, on the interoperability of the rail system within the Community, and of the Commission Directive 2009/131/EC of 16 October 2009 amending Annex VII to Directive 2008/57/EC, has been made with the Presidential Decree 104 (Official Gazette of the Hellenic Republic A' 181/12.10.2010).
- The requirements of Directive 2008/110/EC of the European Parliament and of the Council of 16 December 2008, have been fulfilled with the article 37 of national law 3891 (Official Gazette of the Hellenic Republic A' 188/04.11.2010).

The details of the important changes in legislation and regulation including the notified rules have been provided in *Annex D*.

## **F. The development of safety certification and authorisation**

### **F.1. National legislation – starting dates – availability**

*1.1. Starting date for issuing Safety Certificates according to Article 10 of Directive 2004/49/EC (if necessary, distinguish between Part A and Part B):*

The documents required for issuing Safety Certificates to railways undertakings were determined by a Ministerial Decision published by the Ministry of Transport and Communications (AS.4.2/οικ.26697/2422 Official Gazette of the Hellenic Republic B' 986/22.05.2009).

*1.2. Starting date for issuing Safety Authorisations according to Article 11 of Directive 2004/49/EC:*

The documents required for issuing Safety Authorisations to Infrastructure Manager were determined by a Ministerial Decision published by the Ministry of Transport and Communications (AS.4.2/οικ.26697/2422 Official Gazette of the Hellenic Republic B' 986/22.05.2009).

*1.3. Availability of national safety rules or other relevant national legislation to Railway Undertakings and Infrastructure Managers (website, paper documentation on request, etc.):*

National safety rules and other relevant legislation are available to any interested party through the Official Gazette of the Hellenic Republic and on request from NSA, as well as from the link:

<http://www.yme.gov.gr/?getwhat=1&oid=842&id=&tid=856>.

## **F.2. Numerical data (Annex E)**

No safety certificates or authorisations have been issued.

## **F.3. Procedural aspects**

### 3.1. Safety Certificates Part A

There is no practical experience in the specific field.

### 3.2. Safety Certificates Part B

There is no practical experience in the specific field.

### 3.3. Safety Authorisations

There is no practical experience in the specific field.

## **G. Supervision of Railway Undertakings and Infrastructure Managers**

1. Description of the supervision of Railway Undertakings and Infrastructure Managers

### 1.1. Audits/Inspections/Checklists

No inspections or audits of RUs/IMs were conducted in 2010, since the safety management system has not been approved.

2. Description of the coverage of the legal aspects within the annual reports from the Infrastructure Managers and Railway Undertakings – Availability of the annual reports before 30 June (according to Article 9(4) of the Railway Safety Directive).

The Department of Railway Safety received the Annual Reports from the Infrastructure Manager (OSE S.A) and the Railway Undertaking (TRAINOSE S.A) in time.

INSPECTIONS		Issued Safety Certificates Part A	Issued Safety Certificates Part B	Issued Safety Authorisations	Other Activities (To specify)
3. Number of inspections of RUs/IMs for 2010	planned	0	0	0	
	unplanned	0	0	0	
	carried out	0	0	0	

AUDITS		Issued Safety Certificates Part A	Issued Safety Certificates Part B	Issued Safety Authorisations	Other Activities (To specify)
4. Number of audits of RUs/IMs for 2010	planned	0	0	0	
	carried out	0	0	0	

5. Summary of the relevant corrective measures/actions (amendment, revocation, suspension, important warning, etc.) related to safety aspects following these audits/inspections.

No information available.

6. Short summary/description of the complaints from IM('s) concerning RU('s) related to conditions in their Part A/Part B Certificate.

No information available.

7. Short summary/description of the complaints from RU('s) concerning IM('s) related to conditions in their authorisation.

No information available.

#### **H. Reporting on the application of the CSM on risk evaluation and assessment**

No information available.

#### **I. NSA Conclusions on the reporting year – Priorities**

The Greek National Safety Authority has originally focused for the year 2010, on the legal actions for the implementation of the provisions of the:

- Directive 2008/110/EC amending Directive 2004/49/EC on safety on the Community's railways,
- Directive 2009/149/EC of 27 November 2009 amending Directive 2004/49/EC as regards Common Safety Indicators and common methods to calculate accident cost,
- Directives 2008/57/EC and 2009/131/EC on the Interoperability of the rail system within the Community and
- Directive 2008/68/EC on the inland transport of dangerous goods.
- Directive 2007/59/EC on the certification of train drivers operating locomotives and trains on the railway system in the Community,

The rail sector has not yet fully absorbed the requirements set by the Safety Directive, as it is in a period of reconstruction.

The infrastructure manager and the railway undertaking submitted the Annual Report in time. They both pointed out the numerous incidents of vandalism and theft at the signalling, telecommunication and electrification premises, which prevent the safe operation of the railway sector.

The priorities of the Department include the enforcement of the Safety Directive requirements, the supervision of the railway sector and the further enhancement of the

legal framework. Above all, immediate pressure is going to be exerted upon railway undertaking and infrastructure manager to develop the safety management system foreseen in the Safety Directive, after having completed their corporate reconstruction.

#### **J. Sources of information**

1. Annual Report of the Infrastructure Manager Ref. Number 505296/25-07-2011.
2. Annual Report of the Railway Undertaking Ref. Number 1.760.031/25-07-2011.

#### **K. Annexes**

ANNEX A: Railway Structure Information

ANNEX B: Organisation chart(s) of the National Safety Authority

ANNEX C: CSIs data – Definitions applied

ANNEX D: Important changes in legislation and regulation

ANNEX E: The development of safety certification and authorisation – Numerical Data

## **ANNEX A. Railway Structure Information**

A.1: Network Map 2010.





## A.2. List of Railway Undertakings and Infrastructure Managers

### A.2.1. Infrastructure Manager

Name	Address	Website / Network Statement Link	Safety Authorisation (Number/Date)	Start date commercial activity	Total Track Length/Gauge	Electrified Track Length/Voltages	Total Double/Simple Track Length	Total Track Length HSL	ATP equipment used	Number of LC	Number of Signals
OSE	Karolou 1-3 104 37, Athens	<a href="http://www.ose.gr">www.ose.gr</a>  Network Statement: <a href="http://www.ose.gr/en/Home/NetworkStatement.aspx">http://www.ose.gr/en/Home/NetworkStatement.aspx</a>	not granted	20 December 2005	1) 1.435 gauge: 2.298 km <sup>(1)</sup> 2) 1.000 gauge : 699 km 3) Combined 1.435/1.000: 30 km 4) 0.75 gauge: 22 km 5) 0.60 gauge: 21 km  Total Track Length in use 3.070 km	368 km <sup>(2)</sup> 25kv 50Hz	double: 518 km single: 2.034 km  Total length of lines in use: 2.552 km	836 km <sup>(1),(3)</sup>		1.305	1.439

(1) Each track of a double track railway line was counted.

(2) Difference with previous year numbers: 104km of double track line (section Ano Liosia-Kiato) were electrified.

(3) Includes lines  $v \geq 160$  km/h.

## A.2.2. Railway Undertaking

Name	Address	Website	Safety Certificate 2001/14/EC (Number/Date)	Safety Certificate A-B 2004/49/EC (Number/Date)	Start date commercial activity	Traffic Type (Freight,...)	Number of Locomotives	Number of Railcars/Multiple Unit-sets	Number of Coaches/Wagons	Number of train drivers/safety crew	Volume of passenger transport	Volume of freight transport
TRAI NOSE	Karolou 1-3 104 37, Athens	www.trainose.gr	Not granted	Not granted	1st of January 2007	Passenger, Freight	172 <sup>(*)</sup>	EMUs 20 DMUs 103	372 passenger coaches 3.568 freight wagons	421 train drivers/ 142 safety crew <sup>(**)</sup>	1.059 passenger x km (in millions)	3.087 tonnes in thousands 393,166 Tonne-km (in millions)

(\*) 143 Diesel, 29 Electric

(\*\*) On-board staff. Difference with previous year numbers: Transfer of TRAI NOSE staff to other national organizations according to the National Law 3891/04.11.2010.

Abbreviations:

HSL = High Speed Line (Definition acc. Directive 96/48/EC)

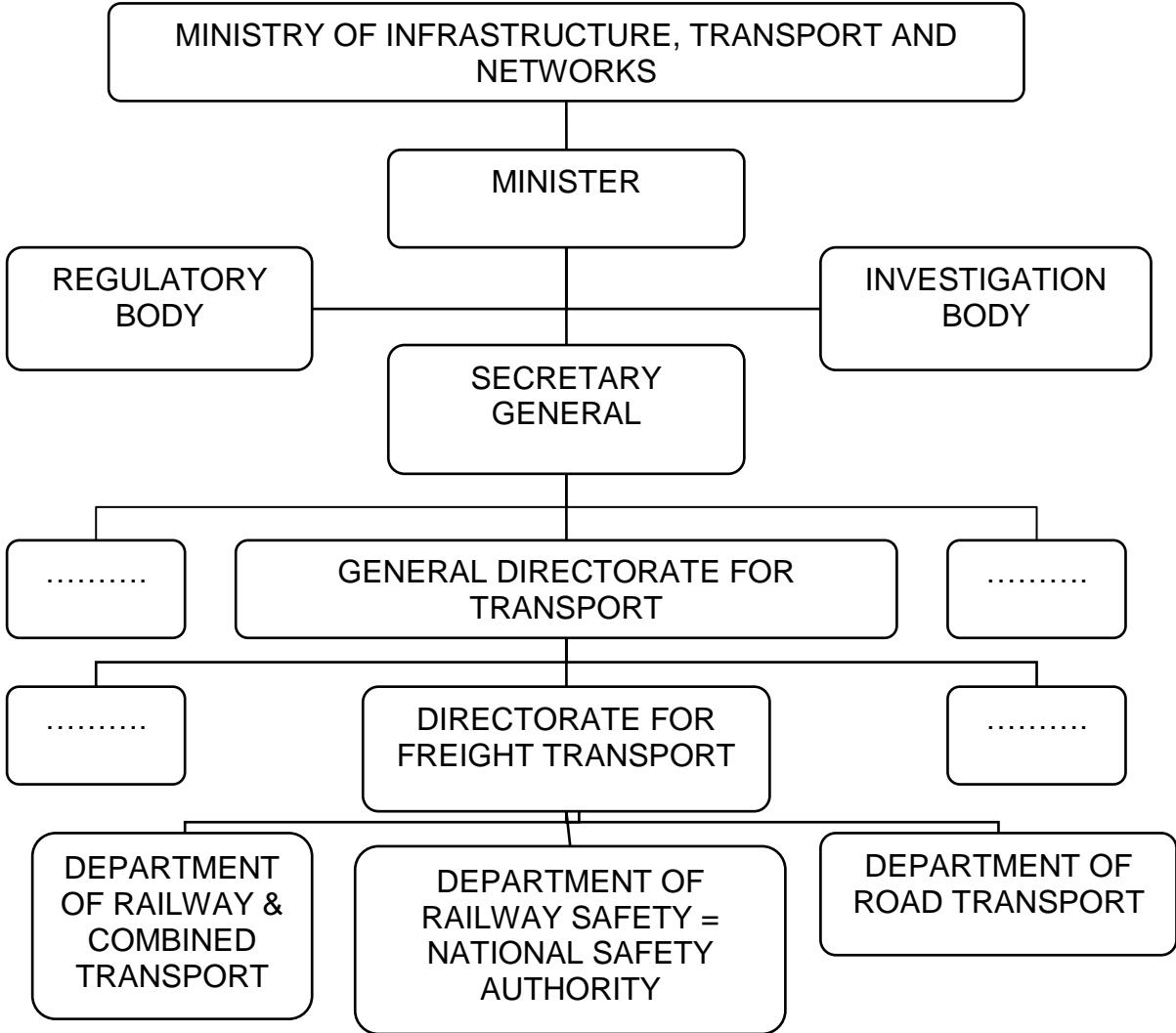
It concerns PATHE/P (Patra-Athina-Thessaloniki-Evzoni/Promachonas) axis, excluding parts of the abovementioned axis for which upgrading has not yet been completed.

ATP = Automatic Train Protection

LC = Level Crossing

## **ANNEX B. Organisation Chart(s) of the National Safety Authority**

**B.1. Chart: Internal organisation and Relationship with other National Bodies**



## **Annex C: CSIs data**

## C.1. CSIs values

Number of accidents and Train\*Km

Year	Type of accident						Train*Km (MLN)	
	Collisions	Derailments	Level crossing accidents	Accidents to persons caused by RS in motion	Fires in RS	Others		
2006	4	4	25	35	2	0	70	19
2007	3	8	22	20	0	0	53	20
2008	1	2	17	19	1	0	40	21
2009	2	2	28	11	0	1	42	20
2010	4	2	16	17	0	0	39	17
2011								
2012								
2013								
2014								
2015								

Number of accidents/Train\*Km

Year	Type of accident						Total
	Collisions	Derailments	Level crossing accidents	Accidents to persons caused by RS in motion	Fires in RS	Others	
2006	2.10E-01	2.10E-01	1.31E+00	1.84E+00	1.05E-01	0.00E+00	3.67E+00
2007	1.80E-01	3.08E-01	1.21E+00	1.41E+00	5.13E-02	0.00E+00	3.16E+00
2008	1.33E-01	2.33E-01	1.06E+00	1.23E+00	4.99E-02	0.00E+00	2.71E+00
2009	1.23E-01	2.01E-01	1.13E+00	1.07E+00	3.76E-02	1.25E-02	2.91E+00
2010	1.45E-01	1.86E-01	1.10E+00	1.05E+00	3.10E-02	1.03E-02	2.52E+00
2011							
2012							
2013							
2014							
2015							

N° of fatalities, Train\*Km and Passenger\*Km

Year	Category of persons						Passenger *Km (BLN)	Train*Km (MLN)
	Passengers	Employees	Level crossing users	Unauthorised persons	Others	Total		
2006	3	1	12	22	0	38	2	19
2007	0	0	5	13	0	18	2	20
2008	1	2	6	9	0	17	2	21
2009	0	1	13	8	0	22	1	20
2010	1	0	12	16	0	29	1	17
2011								
2012								
2013								
2014								
2015								

N° of fatalities/Train\*Km and Passenger\*Km

Year	Category of persons						Total
	Passengers	Passengers	Employees	Level crossing users	Unauthorised persons	Others	
2006	1.57E-01	1.66E+00	5.24E-02	6.29E-01	1.15E+00	0.00E+00	1.99E+00
2007	7.70E-02	8.02E-01	2.57E-02	4.36E-01	8.98E-01	0.00E+00	1.44E+00
2008	6.65E-02	7.41E-01	4.99E-02	3.63E-01	7.15E-01	0.00E+00	1.21E+00
2009	5.02E-02	5.87E-01	5.02E-02	4.51E-01	6.39E-01	0.00E+00	1.19E+00
2010	5.17E-02	6.29E-01	4.14E-02	4.96E-01	6.93E-01	0.00E+00	1.28E+00
2011							
2012							
2013							
2014							
2015							

N° of injuries, Train\*Km and Passenger\*Km

Year	Category of persons						Passenger *Km (BLN)	Train*Km (MLN)
	Passengers	Employees	Level crossing users	Unauthorised persons	Others	Total		
2006	14	7	20	10	0	51	2	19
2007	5	2	22	7	0	36	2	20
2008	9	2	12	6	0	29	2	21
2009	0	3	16	3	0	22	1	20
2010	3	3	8	6	0	20	1	17
2011								
2012								
2013								
2014								
2015								

N° of injuries/Train\*Km and Passenger\*Km

Year	Category of persons						Total
	Passengers	Passengers	Employees	Level crossing users	Unauthorised persons	Others	
2006	7.34E-01	7.73E+00	3.67E-01	1.05E+00	5.24E-01	0.00E+00	2.67E+00
2007	4.87E-01	5.08E+00	2.31E-01	1.08E+00	4.36E-01	0.00E+00	2.23E+00
2008	4.66E-01	5.19E+00	1.83E-01	8.99E-01	3.62E-01	0.00E+00	1.93E+00
2009	3.51E-01	4.11E+00	1.76E-01	8.28E-01	3.28E-01	0.00E+00	1.73E+00
2010	3.21E-01	3.90E+00	1.76E-01	8.06E-01	3.31E-01	0.00E+00	1.63E+00
2011							
2012							
2013							
2014							
2015							

Number of precursors and Train\*Km

Year	Type of accident						Total	Train*Km (MLN)
	Number of broken rails	Number of track buckles	Number of wrong-side signalling failures	Number of signals passed at danger	Number of broken wheels on rolling stock in service	Number of broken axles on rolling stock in service		
2006			0	1			1	19
2007	269		0	1	1	0	271	20
2008	223	110	0	1	1	0	335	21
2009	172	89	0	5	0	0	266	20
2010	143	44	0	1	1	0	189	17
2011								
2012								
2013								
2014								
2015								

Number of precursors/Train\*Km

Year	Type of accident						Total
	Number of broken rails	Number of track buckles	Number of wrong-side signalling failures	Number of signals passed at danger	Number of broken wheels on rolling stock in service	Number of broken axles on rolling stock in service	
2006			0.00E+00	5.24E-02			5.24E-02
2007	1.38E+01		0.00E+00	5.13E-02	5.13E-02	0.00E+00	6.98E+00
2008	1.23E+01	5.49E+00	0.00E+00	4.99E-02	4.99E-02	0.00E+00	1.01E+01
2009	1.11E+01	4.99E+00	0.00E+00	1.00E-01	3.34E-02	0.00E+00	1.09E+01
2010	1.04E+01	4.19E+00	0.00E+00	9.31E-02	3.88E-02	0.00E+00	1.10E+01
2011							
2012							
2013							
2014							
2015							

Cost of all accidents, safety hours

Year	Type of accident						Total number of working hours	Train*Km (MLN)
	Costs of deaths in MLN €	Costs of injuries in MLN €	Costs of replacement or repair of damaged rolling stock and railway installations in MLN €	Costs of delays, disturbances and re-routing of traffic, including extra costs for staff and loss of future revenue in MLN €	Total costs in MLN €	Total number of working hours lost as a consequence of accidents		
2006					95312	16027	19	
2007					5840	15134	20	
2008					95104	14608	21	
2009					7232	15048	20	
2010					38091544		17	
2011								
2012								
2013								
2014								
2015								

Cost of all accidents, safety hours: indicators

Year	Type of accident						N° of working hours (MLN) of staff and contractors lost as a consequence of accidents/N° of working hours (MLN) of staff and contractors
	Costs of deaths in MLN €	Costs of injuries in MLN €	Costs of replacement or repair of damaged rolling stock and railway installations in MLN €	Costs of delays, disturbances and re-routing of traffic, including extra costs for staff and loss of future revenue in MLN €	Total costs in MLN €		
2006							594.70%
2007							324.61%
2008							428.80%
2009							334.59%
2010							
2011							
2012							
2013							
2014							
2015							

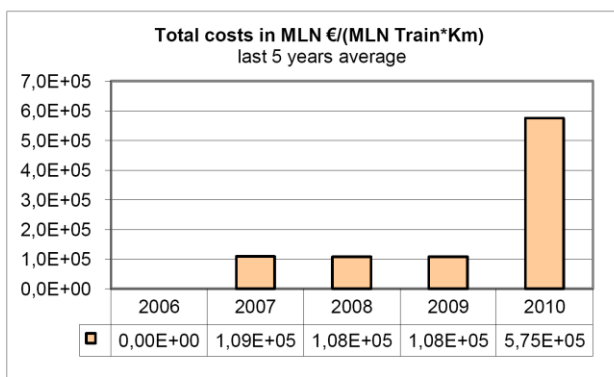
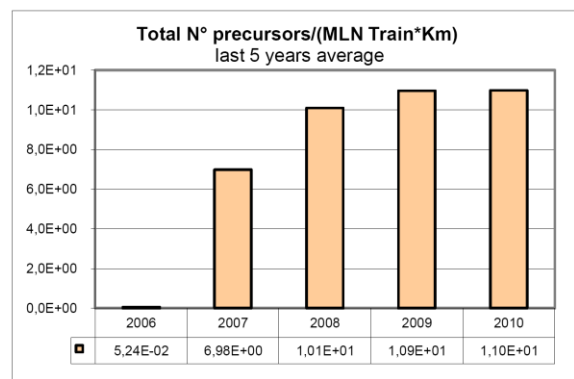
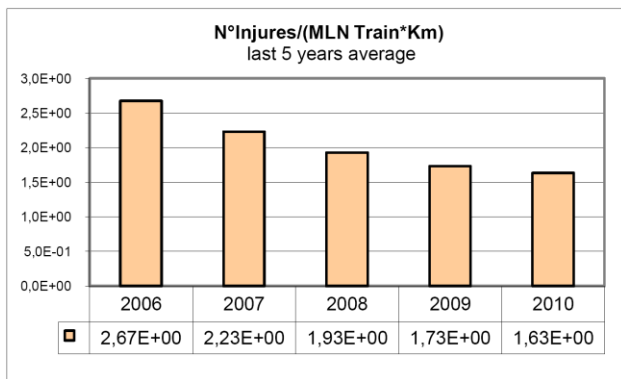
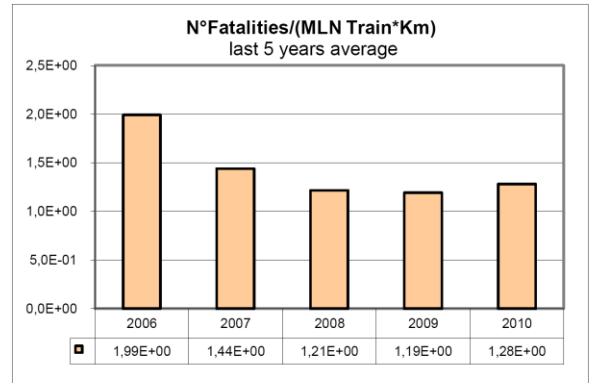
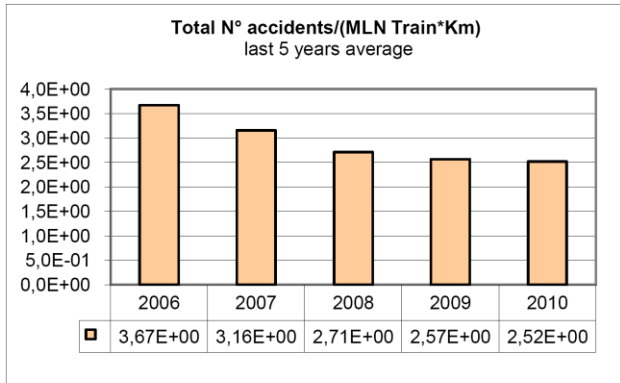
Technical safety of infrastructure and its implementation, management of safety

Year	Type of accident						N° of audits accomplished / N° of audits required (and/or planned)
	Percentage of tracks with Automatic Train Protection (ATP) in operation	Percentage of Train*Km using operational ATP systems	Total number of level crossings	Number of track Km (double track lines are to be counted twice)	Total number of level crossings per track Km	Percentage of level crossings with automatic or manual protection	
2006	0.00%	0.00%	1270	2997	4.24E-01	61.00%	0.00%
2007	0.00%	0.00%	1265	3060	4.13E-01	65.61%	0.00%
2008	0.00%	0.00%	1265	3062	4.13E-01	72.00%	0.00%
2009	0.00%	0.00%	1305	3070	4.25E-01	56.10%	0.00%
2010	0.00%	0.00%	1305	3070	4.25E-01	62.45%	0.00%
2011							
2012							
2013							
2014							
2015							

Technical safety of infrastructure and its implementation, management of safety

Year	Type of accident						N° of audits accomplished / N° of audits required (and/or planned)
	Percentage of tracks with Automatic Train Protection (ATP) in operation	Percentage of Train*Km using operational ATP systems	Total number of level crossings	Number of track Km (double track lines are to be counted twice)	Total number of level crossings per track Km	Percentage of level crossings with automatic or manual protection	
2006	0.00%	0.00%	1270	2997	4.24E-01	61.00%	0.00%
2007	0.00%	0.00%	1268	3029	4.19E-01	63.31%	0.00%
2008	0.00%	0.00%	1267	3040	4.19E-01	66.20%	0.00%
2009	0.00%	0.00%	1276	3047	4.19E-01	63.68%	0.00%
2010	0.00%	0.00%	1282	3052	4.20E-01	63.43%	0.00%
2011							
2012							
2013							
2014							
2015							

## Performances at a glance



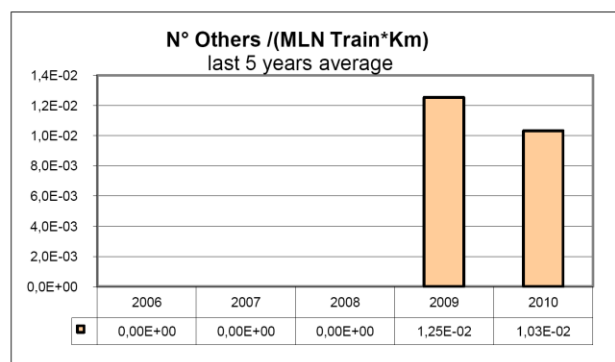
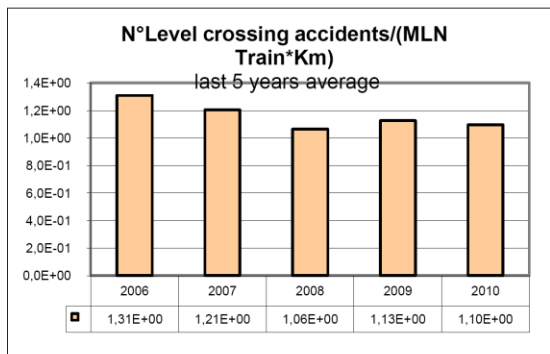
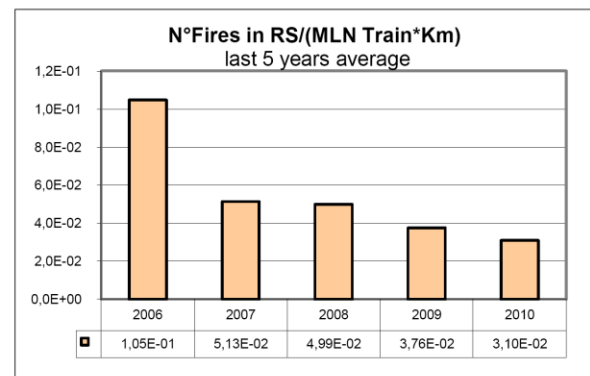
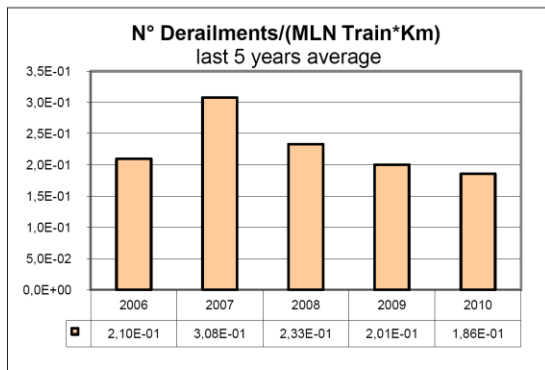
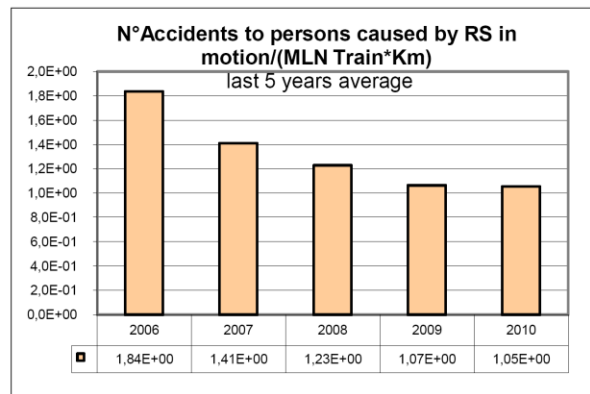
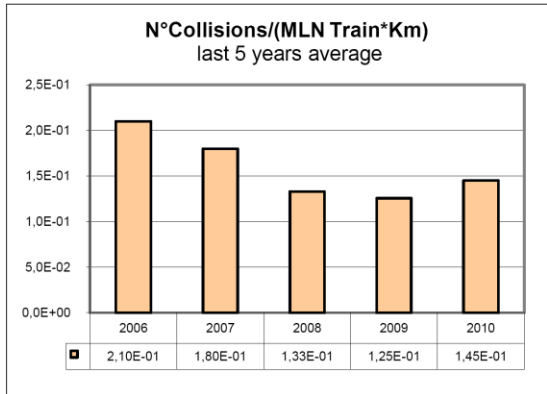
2007 report: values related to 2006.

2008 report: values related to the average between 2006 and 2007.

2009 report: values related to the average among 2006, 2007 and 2008.

2010 report: values related to the average among 2006, 2007, 2008 and 2009.

## Accidents divided by type



2007 report: values related to 2006.

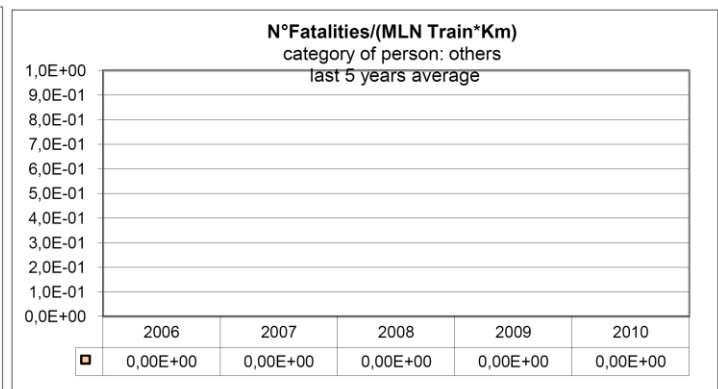
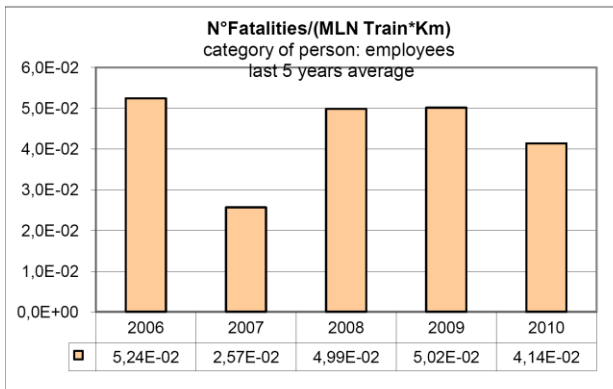
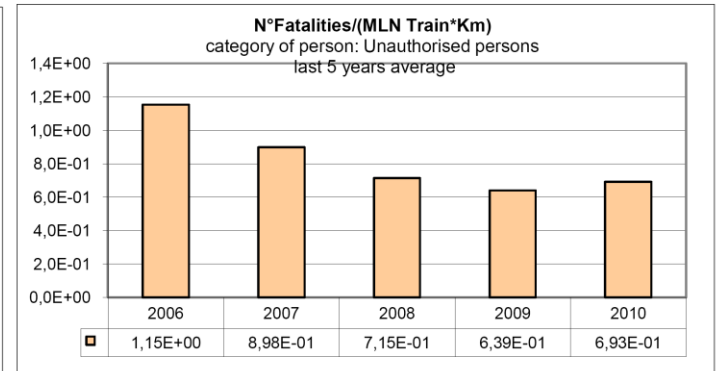
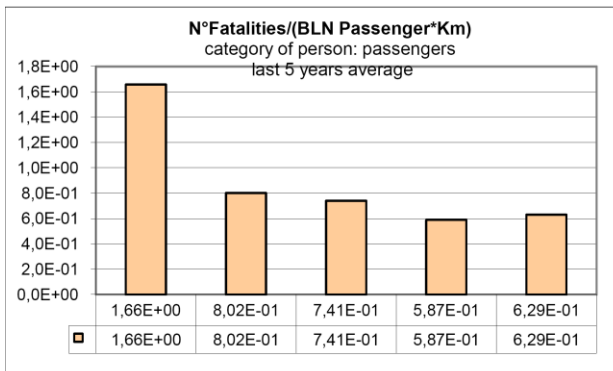
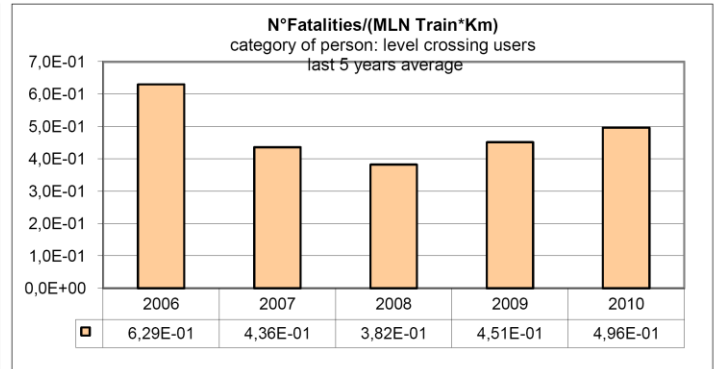
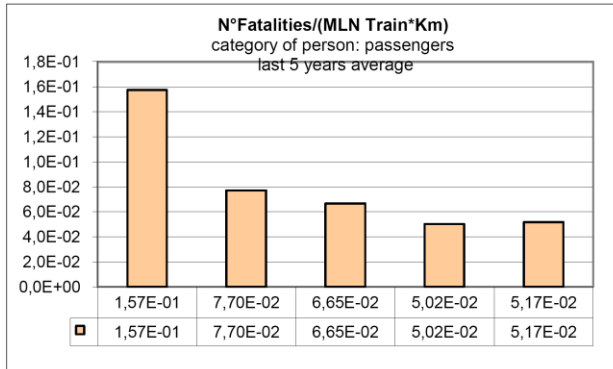
2008 report: values related to the average between 2006 and 2007.

2009 report: values related to the average among 2006, 2007 and 2008.

2010 report: values related to the average among 2006, 2007, 2008 and 2009.



## Fatalities divided by category of people involved



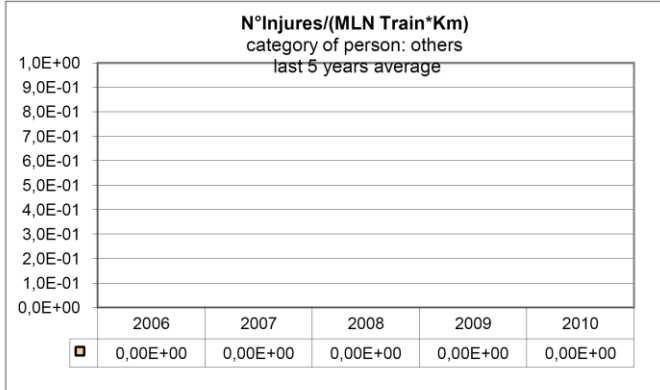
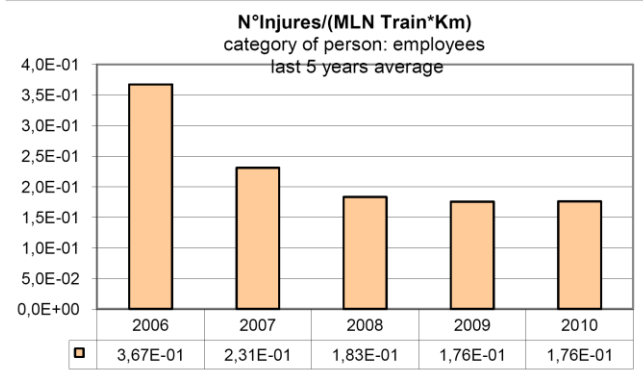
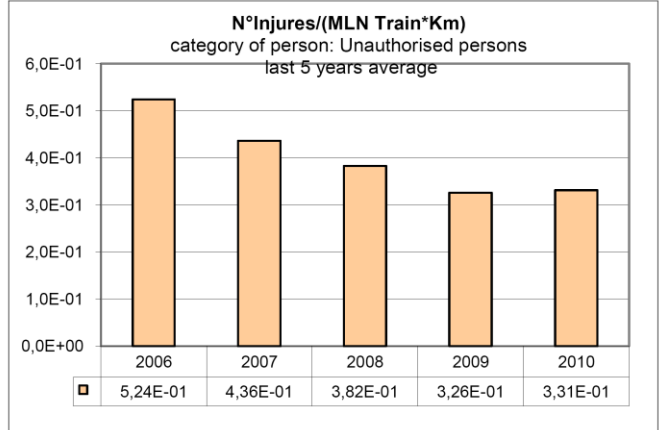
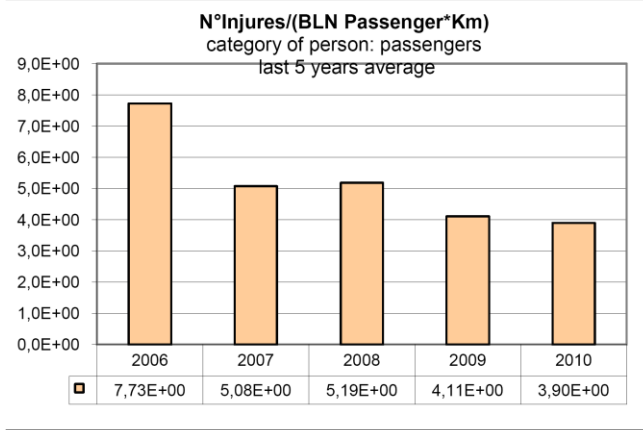
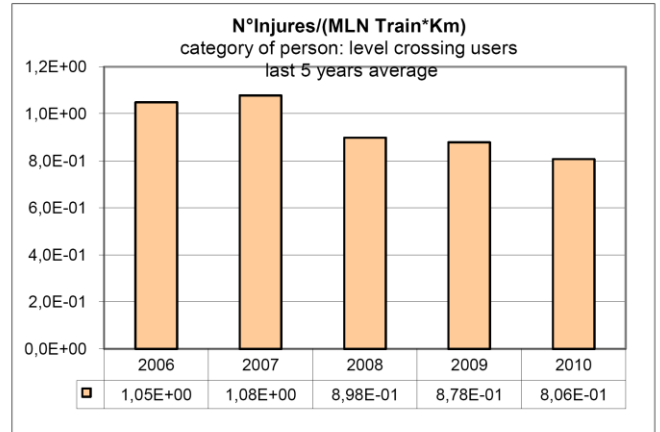
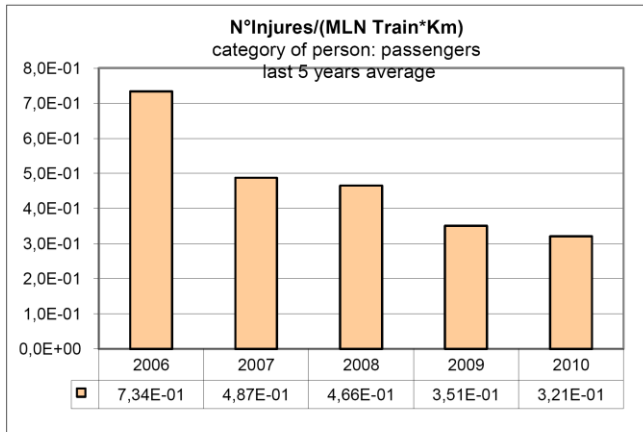
2007 report: values related to 2006.

2008 report: values related to the average between 2006 and 2007.

2009 report: values related to the average among 2006, 2007 and 2008.

2010 report: values related to the average among 2006, 2007, 2008 and 2009.

## Injures divided by category of people involved



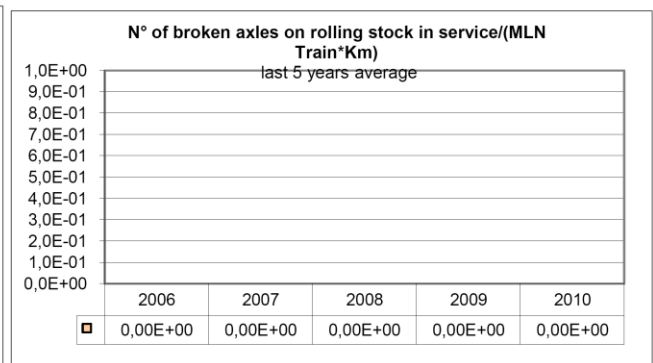
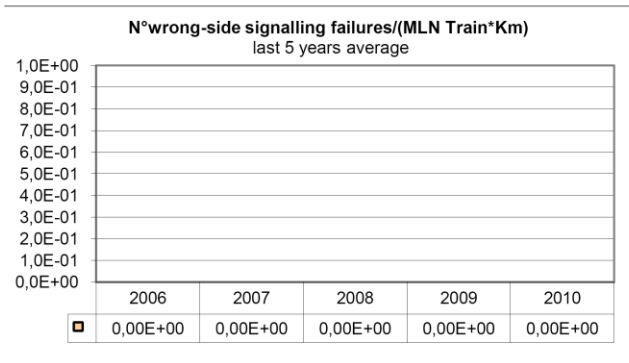
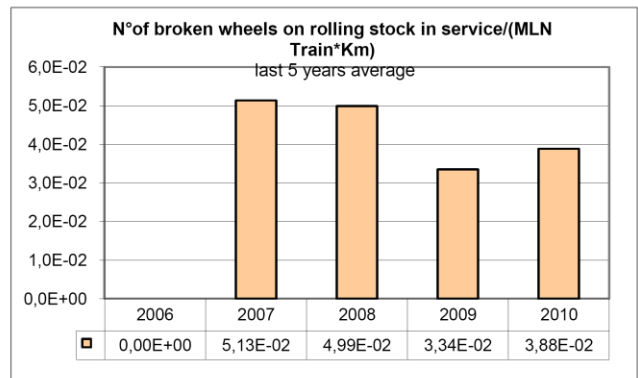
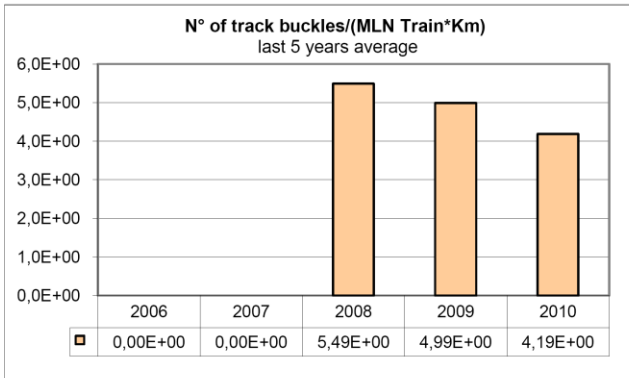
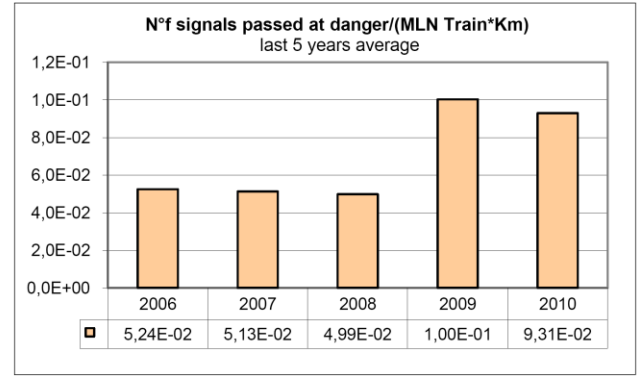
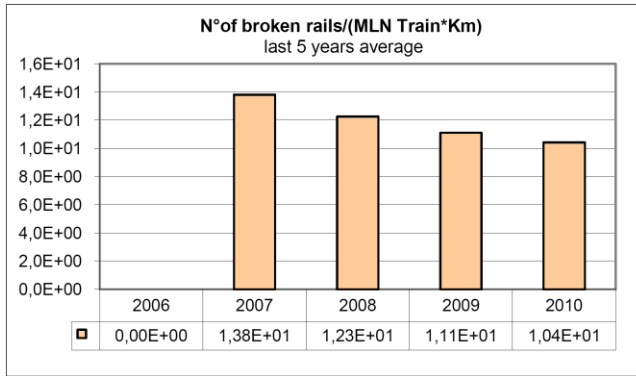
2007 report: values related to 2006.

2008 report: values related to the average between 2006 and 2007.

2009 report: values related to the average among 2006, 2007 and 2008.

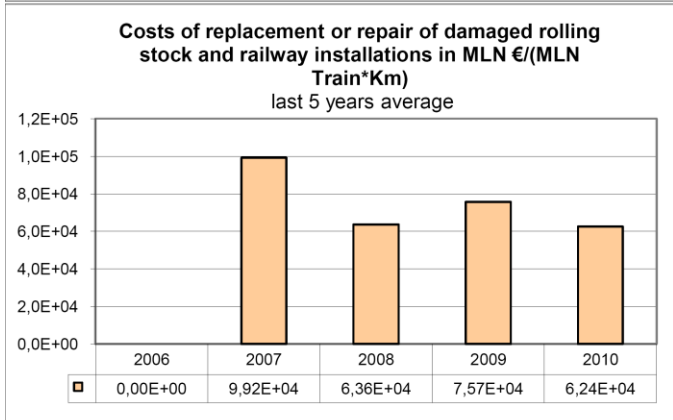
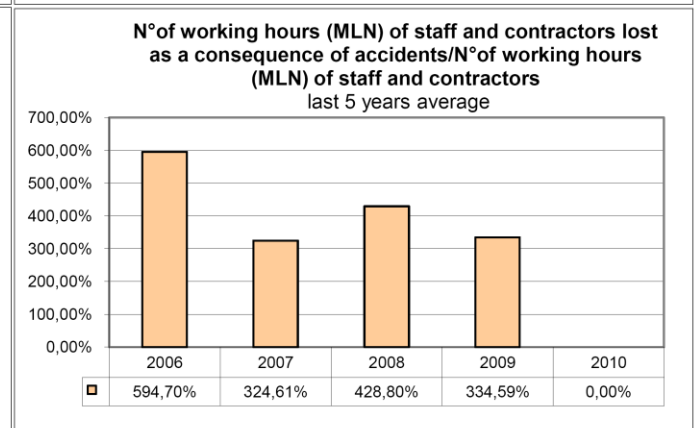
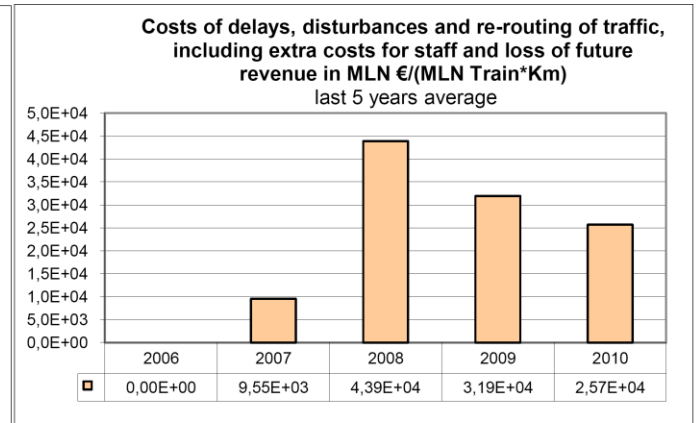
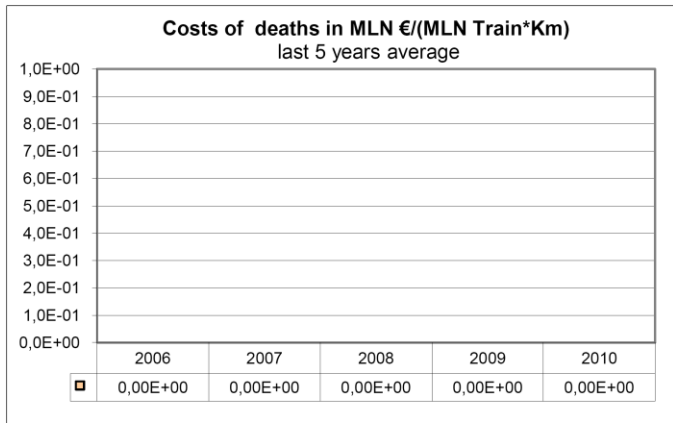
2010 report: values related to the average among 2006, 2007, 2008 and 2009.

## Precursors to accidents



2007 report: values related to 2006.  
 2008 report: values related to the average between 2006 and 2007.  
 2009 report: values related to the average among 2006, 2007 and 2008.  
 2010 report: values related to the average among 2006, 2007, 2008 and 2009.

## Cost of all accidents, number of working hours of staff and contractors lost as a consequence of accidents



2007 report: values related to 2006.

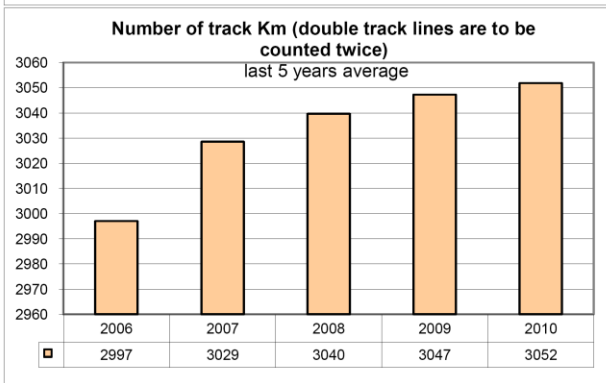
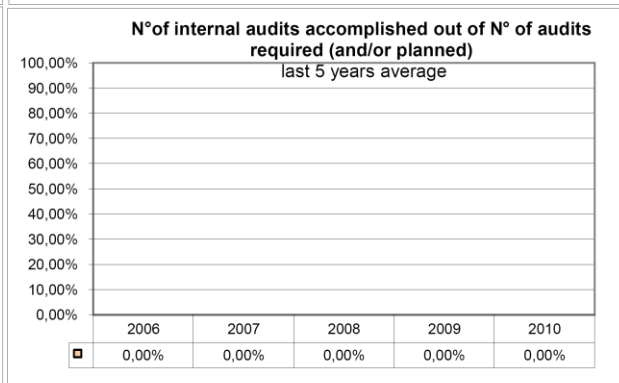
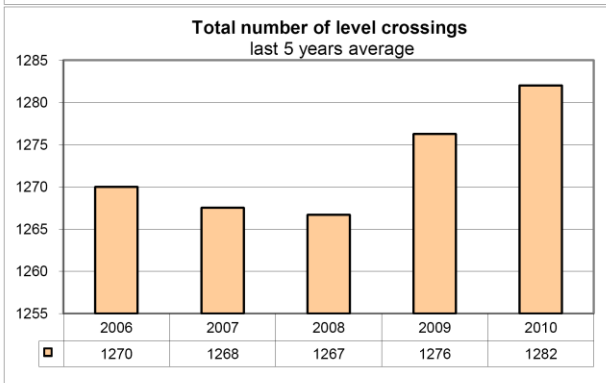
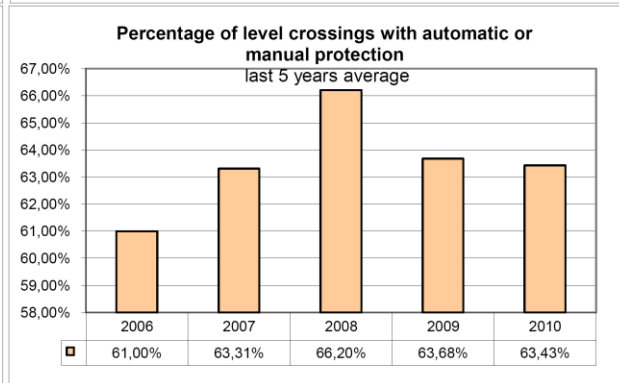
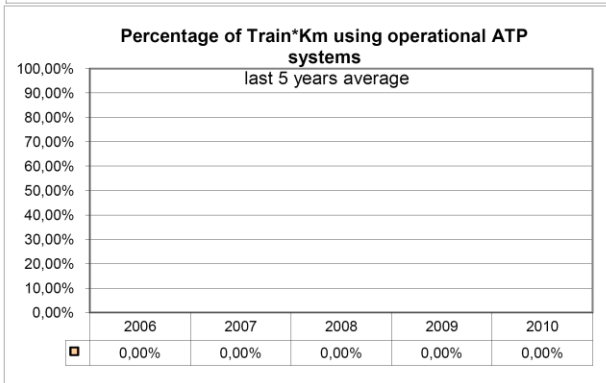
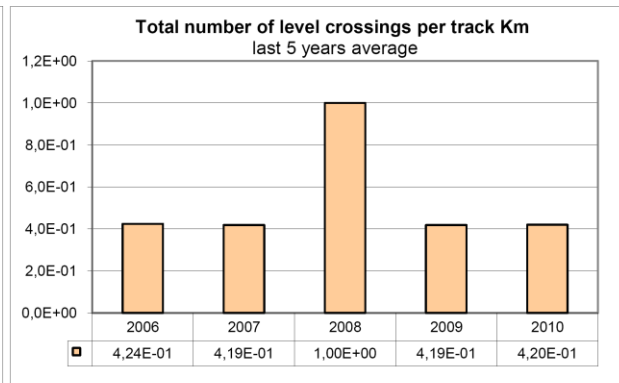
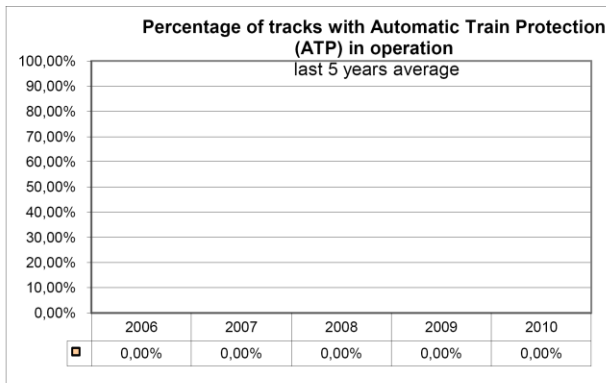
2008 report: values related to the average between 2006 and 2007.

2008 report: values related to the average among 2006, 2007 and 2008.

2009 report: values related to the average among 2006, 2007, 2008 and 2009.

# Technical safety of infrastructure and its implementation, management of safety

Technical safety of infrastructure and its implementation, management of safety



2007 report: values related to 2006.

2008 report: values related to the average between 2006 and 2007.

2008 report: values related to the average among 2006, 2007 and 2008.

2009 report: values related to the average among 2006, 2007, 2008 and 2009.

## C.2. Definitions used in the annual report

### C.2.1. The definitions used in the annual report are in compliance with the Regulation 91/03 concerning:

#### ***deaths (killed person)***

means any person killed immediately or dying within 30 days as a result of an injury accident, excluding suicides

#### ***injures (seriously injured person)***

means any person injured who was hospitalized for more than 24 hours as a result of an accident, excluding attempted suicides

#### **passenger-km**

means the unit of measure representing the transport of one passenger by rail over a distance of one kilometre. Only the distance on the national territory of the reporting country shall be taken into account

#### ***rail passenger***

means any person, excluding members of the train crew, who makes a trip by rail. For accident statistics, passengers trying to embark/disembark onto/from a moving train are included

#### ***suicide***

means an act to deliberately injure oneself resulting in death, as recorded and classified by the competent national authority

#### ***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

***train***

means one or more railway vehicles hauled by one or more locomotives or railcars, or one railcar traveling alone, running under a given number or specific designation from an initial fixed point to a terminal fixed point. A light engine, i.e. a locomotive traveling on its own, is not considered to be a train

***train\*Km***

means the unit of measure representing the movement of a train over one kilometre. The distance used is the distance actually run, if available, otherwise the standard network distance between the origin and destination shall be used. Only the distance on the national territory of the reporting country shall be taken into account

**C.2.2. National definitions**

All definitions and calculation methods are used as defined in Annex I of the SD (as amended by Commission Directive 2009/149/EC)

**C.3. Abbreviations**

CSI	Common Safety Indicator
ERA	European Railway Agency
LC	Level Crossing
MLN	10 <sup>6</sup>
BLN	10 <sup>9</sup>
NSA	Network Safety Authorities
RS	Rolling Stock
RU/IM	Railway Undertaking and Infrastructure Manager

## **ANNEX D: Important changes in legislation and regulation**



## D: Important changes in legislation and regulation

	Legal reference	Date legislation comes into force	Reason for introduction (Additionally specify new law or amendment to existing legislation)	Description
<b>General national railway safety legislation</b>				
Legislation concerning the national safety authority	P.D 71/2010	Official Gazette of the Hellenic Republic A' 127/03.08.2010	Transposition into national law of the Directive 2008/110/EC and of the Commission Directive 2009/149/EC  Amendment of P.D 160/2007	
	P.D 104/2010	Official Gazette of the Hellenic Republic A' 181/12.10.2010	Transposition into national law of the Directive 2008/57/EC and of the Commission Directive 2009/131/EC.	
	Joint Ministerial Decision 35043/2524/2010	Official Gazette of the Hellenic Republic B' 1385/02.9.2010	Transposition into national law of the Directive 2008/68/EC	
Legislation concerning notified bodies, assessors, third parties bodies for registration, examination, etc.	NONE			
<b>National rules concerning railway safety</b>	NONE			
Rules concerning national safety targets and methods	NONE			
Rules concerning requirements on safety management systems and safety certification of Railway Undertakings	NONE			
Rules concerning requirements on safety management systems and Safety Authorisation of Infrastructure Managers	NONE			

Rules concerning requirements for wagon keepers	NONE			
Rules concerning requirements for maintenance workshops	Article 37 of National Law 3891	Official Gazette of the Hellenic Republic A' 188/04.11.2010	Obligation from the Directive 2008/110/EC	
Rules concerning requirements for the authorisation of placing in service and maintenance of new and substantially altered rolling stock, including rules for exchange of rolling stock between Railway Undertakings, registration systems and requirements on testing procedures.	NONE			
Common operating rules of the railway network, including rules relating to the signalling and traffic procedures	NONE			
Rules laying down requirements on additional internal operating rules (company rules) that must be established by the Infrastructure Managers and Railway Undertakings	NONE			
Rules concerning requirements on staff executing safety critical tasks, including selection criteria, medical fitness and vocational training and certification	NONE			
Rules concerning the investigation of the accident and incidents including recommendation	NONE			
Rules concerning requirements for national safety indicators including how to collect and analyse the indicators	NONE			
Rules concerning requirements for authorisation of placing in service the infrastructure (tracks, bridges, tunnels, energy, ATC, radio, signalling, interlocking, level crossing, platforms, etc.)	NONE			

**ANNEX E: The development of safety certification and  
authorisation – Numerical Data**

E.1. Safety Certificates according to Directive 2001/14/EC

Number of Safety Certificates issued according to Directive 2001/14/EC, held by Railway Undertakings in year 2010 being licensed	in your Member State	0
	in another Member State	0

E.2. Safety Certificates according to Directive 2004/49/EC

		New	Updated / amended	Renewed
E.2.1. Number of valid Safety Certificates <b>Part A</b> held by Railway Undertakings in the year 2010 being registered	in your Member State	0	0	0
	in another Member State	0	0	0

		New	Updated / amended	Renewed
E.2.2. Number of valid Safety Certificates <b>Part B</b> held by Railway Undertakings in the year 2010 being registered	in your Member State	0	0	0
	in another Member State	0	0	0

			A	R	P
E.2.3. Number of applications for Safety Certificates <b>Part A</b> submitted by Railway Undertakings in year 2010 being registered	in your Member State for	new certificates	0	0	0
		updated / amended certificates	0	0	0
		renewed certificates	0	0	0
	in another Member State for	new certificates	0	0	0
		updated / amended certificates	0	0	0
		renewed certificates	0	0	0

			A	R	P
E.2.4. Number of applications for Safety Certificates <b>Part B</b> submitted by Railway Undertakings in year 2010 being registered	in your Member State for	new certificates	0	0	0
		updated / amended certificates	0	0	0
		renewed certificates	0	0	0
	in another Member State for	new certificates	0	0	0
		updated / amended certificates	0	0	0
		renewed certificates	0	0	0

A = Accepted application, certificate is already issued

R = Rejected applications, no certificate was issued

P = Case is still pending, no certificate was issued so far

E.2.5. List of countries where RUs applying for a Safety Certificate Part B in your Member State have obtained their Safety Certificate Part A

E.3. Safety Authorisations according to Directive 2004/49/EC

	New	Updated / amended	Renewed
E.3.1. Number of valid Safety Authorisations held by Infrastructure Managers in the year 2010 being registered in your Member State	0	0	0

		A	R	P
E.3.2. Number of applications for Safety Authorisations submitted by Infrastructure Managers in year 2010 being registered in your Member State	new authorisations	0	0	0
	updated / amended authorisations	0	0	0
	renewed authorisations	0	0	0

- A = Accepted application, authorisation is already issued
- R = Rejected applications, no authorisation was issued
- P = Case is still pending, no authorisation was issued so far

E.4. Procedural aspects – Safety Certificates part A

		New	Updated / amended	Renewed
Mean time after having received all necessary information between the receipt of an application and the final delivery of a Safety Certificate <b>Part A</b> in year 2010 for Railway Undertakings holding	a licence released by your Member State	0	0	0
	a licence released by another Member State	0	0	0

E.5. Procedural aspects – Safety Certificates part B

		New	Updated / amended	Renewed
Mean time after having received all necessary information between the receipt of an application and the final delivery of a Safety Certificate <b>Part B</b> in year 2010 for Railway Undertakings holding	a licence released by your Member State	0	0	0
	a licence released by another Member State	0	0	0

E.6. Procedural aspects – Safety Authorisations

		New	Updated / amended	Renewed
Mean time after having received all necessary information between the receipt of an application and the final delivery of a Safety Authorisation in year 2010 for Infrastructure Managers holding	a licence released by your Member State			
	a licence released by another Member State			