intf

Instituto Nacional do Transporte Ferroviário

ANNUAL SAFETY REPORT
2006

DOCUMENT CONTROL		
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Version/Revision:	1.1	
Date:	20.09.2007	
Type of Document:	Report	
Document status:	Approved	

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A – SCOPE

This report describes the most relevant safety-related events in 2006 and the INTF's activities in exercising its powers in connection with rail transport on the national rail network open to traffic.

A.1 – SUMMARY

The Annual Safety Report 2006 is the first report made in accordance with Directive 2004/49/EC and was drafted following the template 'Structure for the content of the National Safety Authority Annual Report' and its guideline, both developed by ERA – European Railway Agency.

The report describes and analyses railway safety performance and the INTF's safety-related activities connected to rail transport on the Portuguese network opened to traffic.

B – INTRODUCTION

B.1 – Introduction to the report

The entry into force of Directive 2004/49/EC made it compulsory from 2007 for national railway authorities to draw up an annual safety report on the preceding year, to be sent to the European Railway Agency (ERA). This Community obligation was transposed into national legislation by means of Decree-Law No 231/2007 of 14 June.

Under these legal obligations the INTF, in carrying out the duties attributed to national safety authorities, drew up this report on 2006 in line with the recommendations of the ERA Task Force on National Safety Authorities Annual Reports.

This report describes the INTF's safety-related activities, particularly as regards: initiatives for improving railway system safety, publication of relevant safety rules, development of the safety certification and authorisation of undertakings, and supervision of their activities. Annex C also presents the Common Safety Indicators (CSIs) for measuring and assessing safety performance.

B.2 – Information on the structure of the railway sector

A generic description of the national rail network and railway and infrastructure management undertakings is given in detail in Annex A.

B.3.– Trends observed

B.3.1 – Accidents on the railway system

The Common Safety Indicators (CSIs) (Annex C) are published for the first time in this report. They have been determined not only on the basis of the definitions laid down in legal regulations – Directive 2004/49/EC and Regulations (EC) No 91/2003 and No 1192/2003 - but also on the basis of the definitions and methods developed by the ERA Monitoring of Safety Performance Working Group.

Official railway safety statistics were published hitherto by the *Instituto Nacional de Estatística* (INE) [National Statistics Institute], statistical data being determined according to concepts and definitions which do not coincide with those now used for the common safety indicators. This report therefore cannot rigorously compare data and identify trends, since the source comprises two sets of data determined in different ways – INE statistics and CSIs.

In the future, as data compiled on the basis of harmonised definitions being developed at European level by the ERA are built up, it will be possible to identify and analyse trends in the development of Portuguese railway accidents with certainty and to compare them with those in other European countries.

Based on the information collected, however, significant accidents in 2006 can be analysed to some extent and conclusions can be drawn. These are presented in detail in paragraph D.2 – Analysis of trends.

B.3.2 – Development of Safety Management

Two new goods transport undertakings – CARGO RAIL and COMSA RAIL – contacted the INTF with a view to obtaining a licence (CARGO RAIL) and obtaining recognition of the licence awarded in Spain (COMSA RAIL). By the end of the year in question, however, neither had submitted a formal application for a safety certificate.

FERTAGUS submitted a formal application for a safety certificate on 10 November 2006, having developed its safety management system in line with the requirements of Decree-Law No 270/2003 of 28 October, the INTF instruction of 11/11/2005 on safety certification, and standard NP 4397 (Portuguese standard based on the requirements of OHSAS standard 18 000).

In 2005 REFER notified the INTF of its intention to develop a safety management system encompassing both traffic safety and health and safety at work, in accordance with the Safety Directive and with standard NP 4397. No significant action was taken to achieve this in 2006, however.

In 2006 CP prepared an application for a licence but by the end of the year had not submitted a formal application to obtain a safety certificate, as provided for in Decree-Law No 270/2003 of 28 October.

B.4 – Safety-related action taken

B.4.1 – Implementation of Directive 2004/49/EC (Safety Directive)

The Portuguese railway sector has undergone a number of institutional changes in recent years. The process began in 1997 when infrastructure management was separated from the provision of transport services by the establishment of the public company REFER, which was made responsible for the former, and by the granting to CP of responsibility for the operation of rail transport services. The INTF was founded in 1998 to ensure technical and economic regulation and has acted since then as the National Safety Authority for the railway sector, as provided for in Directive 2004/49/EC. In 1999 the State

licensed FERTAGUS to operate passenger transport services on the North-South line, making it the first private undertaking to provide rail transport services.

In 2005 the Government approved the PRACE – Programa de Reestruturação da Administração Central do Estado [Programme for the reorganisation of the central State administration] by means of Council of Ministers Resolution No 124/2005 of 4 August. This programme involved the publication of Decree-Law No 210/2006 of 27 October, which established the new organisational structure of the Ministério das Obras Públicas, Transportes e Comunicações (MOPTC) [Ministry for Public Works, Transport and Communications]. This statute provided for the abolition of the INTF and the founding of the Instituto da Mobilidade e dos Transportes Terrestres (IMTT) [Institute for Mobility and Land Transport] and the Gabinete de Investigação de Segurança e Acidentes Ferroviários (GISAF) [Safety and Rail Accident Investigation Bureau]. The Decree-Law also makes provision for the IMTT to take on, among other things, the tasks previously ensured by the INTF. It can only do so, however, when the statute defining its organisational structure is published, which did not materialise in 2006.

In this context of institutional change the INTF drew up and submitted to the supervisory authority in 2006 a draft Decree-Law transposing Directive 2004/49/EC (Railway Safety Directive) into the Portuguese legal system. It was not until 2007, however, that this statute was approved and published.

In the spirit of the above-mentioned Directive, the lack of a legal framework did not prevent measures in preparation for its implementation from being taken in 2006, both by the INTF and by undertakings in the sector. The INTF played an active role in various European Railway Agency bodies and specialised Working Groups responsible for activities connected to implementing the Safety Directive in Member States. At internal level a Safety Working Group was set up in 2006, involving the INTF and undertakings in the sector. This group sought to discuss, raise awareness of and provide undertakings with clarification on actions and measures to be taken to implement the Safety Directive. The group's activities include disseminating up-to-date information on the work and documents being developed by the ERA with a view to anticipating and preparing measures to be established in the future.

B.4.2 – Introduction of safety systems

Railway safety continued to improve in 2006. This was achieved both by continuing previous measures, such as eliminating and reclassifying level crossings [LC], installing the CONVEL automatic train protection system in sections of track not equipped with it and installing

ground-train radio and CONVEL systems on trains, and by introducing new engineering solutions, such as installing an automatic system for detecting objects on level crossings and an automatic hot axle box and wheel detection system, and designing and testing a train and station platform video surveillance system based on wireless transmission technology.

C – Organisation of the INTF

In 2006 the INTF continued to be the public body responsible for regulating, supervising and developing the railway sector, meaning the infrastructure and services as a whole of the various means of transport in operation on dedicated systems: railways, metros, cable cars and other guided systems. The INTF was created by publication of Decree-Law No 299-B/98 of 29 September and began activity on 23 November 1998.

C.1 – Mission

The INTF's statutory mission is based on three main pillars:

- To propose and administer a legal, economic and technical framework fostering quality, safety and the economic efficiency of rail transport;
- To promote the growth and competitiveness of rail transport services in order to meet the nation's needs and foster the country's economic and social development;
- To work in a climate of constructive interaction with government, undertakings, customers and other bodies involved in the sector.

C.2 – Objectives

The INTF pursues objectives whose priorities are:

- To promote and bring about a far-reaching reform of the railway system;
- To create conditions for developing and modernising rail transport, having regard to integrating the railway into trans-European networks;
- To promote interoperability and an increase in the market share of rail transport, where economically relevant, thereby contributing to a better environment;
- To design a new legislative and regulatory framework making it possible to ensure the quality, safety and reliability of services provided by undertakings;
- To guarantee consumer rights.

C.3 – Safety-related activities

In the area of safety the INTF operates as the National Safety

Authority, its Statutes requiring it to develop the following activities:

C.3.1 – Regulatory and Supervisory Activities

- To draft legislation providing a framework for and governing the railway sector, including the transposing of Community directives;
- To propose the establishment of requirements for access to railway sector activities and to award and manage the respective licences and certificates;
- To define the scope and characteristics of public rail transport services;
- To guarantee the standardisation and technical specifications of railway infrastructure, rolling stock and other equipment and installations, ensuring the respective approvals.

C.3.2 – Safety Promotion Activities

- To approve or reject the safety management systems of undertakings, amending or revising them where necessary;
- To determine the gradual introduction of technical improvements contributing to the safety of infrastructure, rolling stock, maintenance workshops and other operational resources;
- To promote and coordinate technical enquiries into rail accidents whenever necessary.

C.3.3 – Monitoring Activities

- To monitor and inspect the services provided by undertakings, the premises in which they carry out their activities, and their infrastructure and rolling stock;
- To monitor compliance with applicable legal provisions and regulations, or others relevant to regulation and supervision, laid down in company articles of association, licences, concession contracts or other legal instruments governing the respective activity.

C.4 – Organisational Structure

The organisational structure of the INTF is shown in Annex B.1.

C.5 – Personnel

At the end of 2006 the INTF had 42 staff, categorised as follows:

- 12 managerial staff;
- 13 senior technical staff;
- 14 technical staff;
- 3 auxiliaries.

C.6 – Relations with other national bodies

The organisational structure of the INTF's institutional relations with other national bodies is shown in Annex B.2.

D – Development of railway safety

D.1 – Initiatives for maintaining or improving safety

Actions defined in previous years for maintaining and improving railway safety continued in 2006 and new initiatives were defined, either as a direct result of analysing the causes of accidents, or as a result of implementing policies defined by undertakings and by the INTF to improve the safety of railway operations.

The most relevant initiatives are shown in the following tables:

Safety initiatives decided	Accidents giving rise to the measure		
	Date	Place	Description
Change in procedure for controlling the brakes of goods trains whose composition includes empty wagons mixed with loaded wagons (Addendum 17 GSR V).	31.05. 2005	Vendas Novas line (Muge)	Derailment of NEOPUL ballast wagon.
Introduction of automatic system for detecting objects at LC.	03.06. 2005	Western line (Sabugo LC)	Collision of train with large goods vehicle semi-trailer.
INTF instruction on mandatory recording of data in the event of accidents or incidents.	10.11. 2005	Northern line (Pampilhosa)	Entry of runaway locomotive 2500 into plain line track.

Table D.1.1 – Most relevant safety initiatives decided following accidents.

Safety initiatives decided	Reason
Installation of pilot system for hot axle box and wheel detection on the Northern line – Pombal.	To avoid incidents and accidents caused by faults in running gear and/or braking system.
Planning and testing of train and station platform video surveillance system based on the wireless transmission of images.	To improve safety inside trains and in passenger embarkation/ disembarkation.
Obligation for all goods or passenger train traction units to be equipped with ground-train radio and automatic speed control systems (CSI	To establish uniform requirements for all rail operators, with significant

20/06).	improvements in the safety of operations.
Obligation for all trains to travel with headlights switched on during daylight hours (Addendum 37 GSR II).	To improve train visibility, particularly for LC users and workers on the track.
Continuation of the LC programme, eliminating 66 LC and reclassifying 87 LC.	To eliminate/reduce accidents associated with the crossing of level crossings.
Continued installation of the CONVEL system in traction units.	To avoid incidents and accidents caused by human error.
Continued installation of the ground-train radio system in traction units.	To improve operating conditions and reinforce transport safety.

Table D.1.2 – Most relevant safety initiatives decided for other reasons

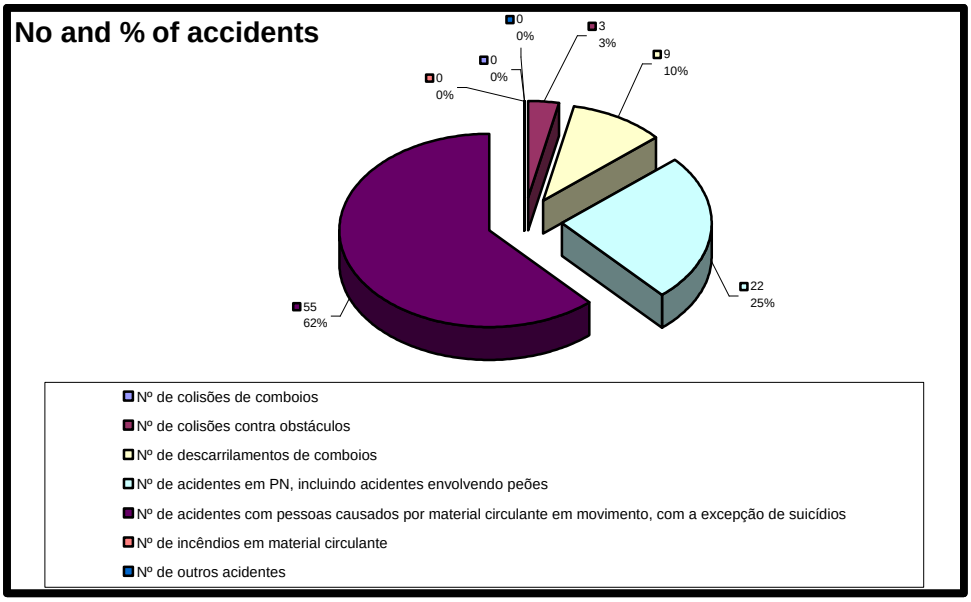
D.2 – Analysis of trends

As mentioned above, since this is the first report determining data on the basis of a set of definitions different from those previously used to produce rail accident statistics, it is not possible to compare data and identify trends with any certainty. However, significant accidents in 2006 can be analysed to some extent, conclusions can be drawn and some comparisons can be made with international indicators based in principle on definitions similar to those used in this report.

Annex C contains tables showing the numerical data, ratios and definitions used in determining the common safety indicators.

D.2.1 – Number of accidents

Out of the total of 89 significant accidents in 2006, Graph 1 shows that two items represent 87% of occurrences – accidents to persons caused by rolling stock in motion, with the exception of suicides (62%) + accidents at LC, including accidents involving pedestrians (25%) – the former registering more than half the total number of accidents. These are therefore the two most common types of accidents on the Portuguese rail network. All the organisations involved (regulator, operators and infrastructure manager) must accordingly reflect on these issues in order to come to a better understanding of their underlying causes and to study and take measures to avoid them, particularly in the former case, though it should be noted that specific measures have been taken in recent years under the programme to eliminate and reclassify level crossings.



Graph 1 – No and % of accidents

[Key:
No of collisions of trains
No of collisions with objects
No of derrailments of trains
No of accidents at level crossings, including accidents involving pedestrians
No of accidents to persons caused by rolling stock in motion, with the exception of suicides
No of fires in rolling stock
No of other accidents]

The accident rate in Portugal in 2006 was 2.27 per million train-km.

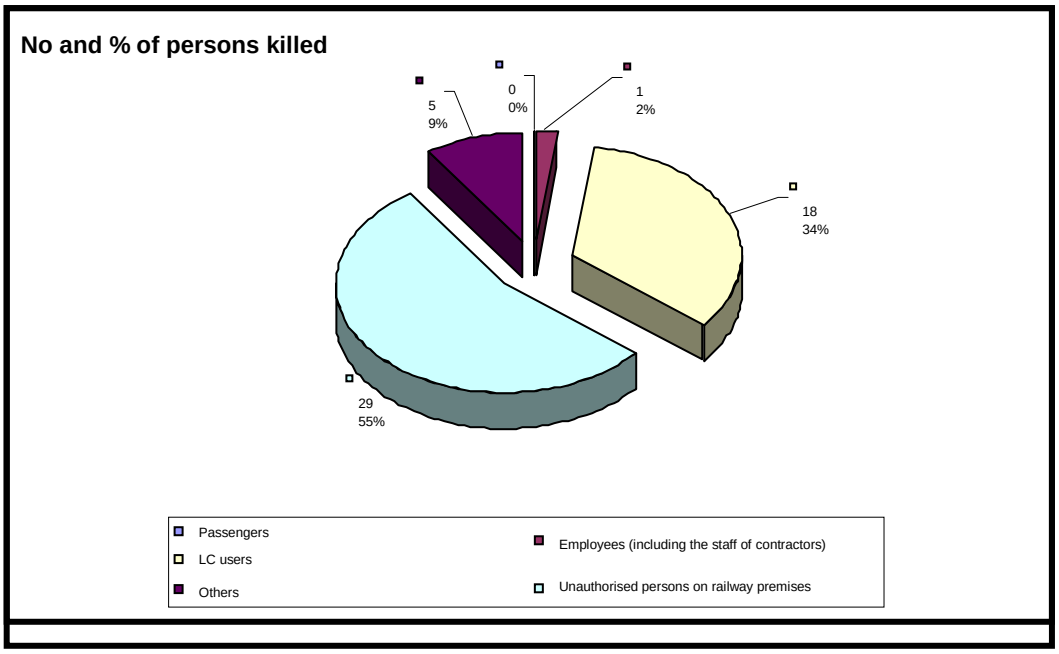
To give an idea of the order of magnitude of international figures rather than to make a rigorous comparison, in its activity report on the UIC Safety Database project in 2005, the Union International des Chemins de Fer (UIC) published a rate of significant accidents in Europe of 0.35 per million train-km, i.e. 6.5 times lower than that recorded in Portugal in 2006.

D.2.2 – Number of persons killed

The number of persons killed is the most reliable, important and representative indicator of the degree of railway system safety. In 2006 a total of 53 persons were killed, and as with the number of accidents, this item also involved two main categories, these being responsible for 89% of total occurrences – unauthorised persons on railway premises (55%) + LC users (34%) – see Graph 2.

As can be seen from Graph 2, virtually all the persons killed (98%) were unconnected with the railway but interacted with it – unauthorised persons on railway premises (55%) + LC users (34%) + others (9%) – which shows that the railway system's principal safety

problem is its interaction with third parties, mainly persons who trespass on the railway, thereby risking their lives.



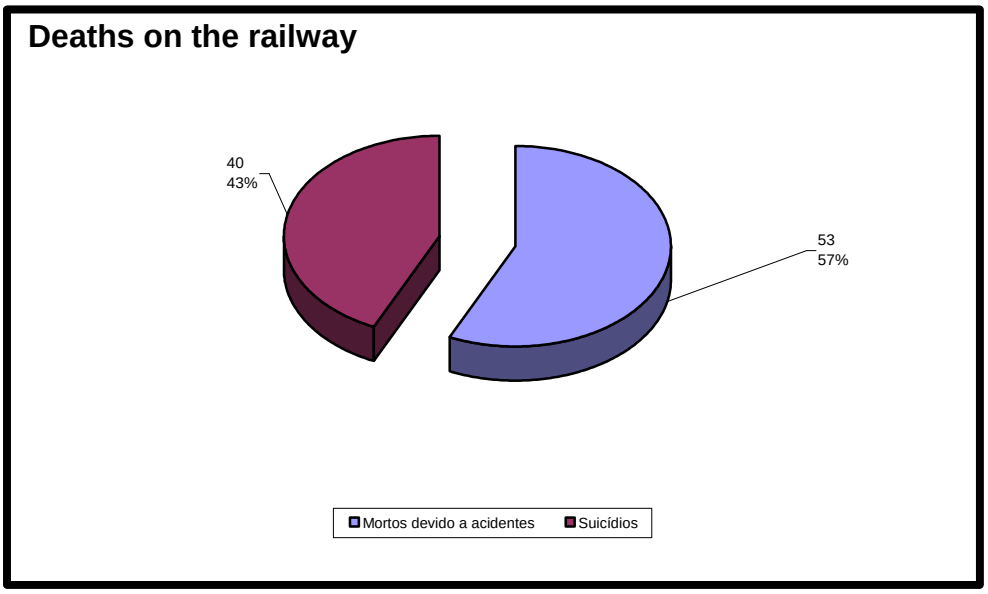
Graph 2 – No and % of persons killed

It should be noted that in 2006 no passenger died during rail transport, bearing witness to the high degree of safety this transport system offers direct users.

Another factor highlighting the high degree of safety is that in 2006 no-one was killed due to collisions, derailments or fires on trains.

As regards the ratio of 1.53 per million train-km recorded in 2006, accepting the assumptions set out in the preceding point, the UIC published a figure of 0.2 persons killed per million train-km for the 2005 average, i.e. 7.7 times less than in Portugal, indicating that there is still a great deal of room for improvement and that the railway accident death rate can be reduced substantially.

A total of 40 suspected suicides (Graph 3) were recorded on the railway, a figure which is almost as high as the number of persons killed due to accidents. In other words, out of the total of 93 people killed on the railway in these two categories, 43% were presumed to be due to suicides while 57% were due to accidents.



Graph 3 – Deaths on the railway
[Key:
Deaths due to accidents Suicides]

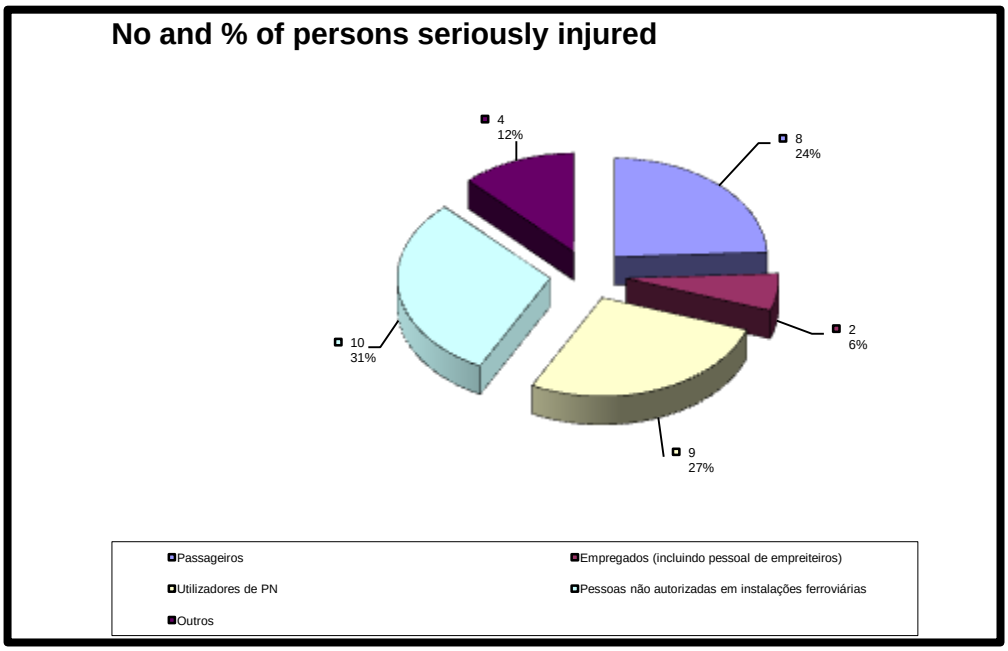
D.2.3 – Number of persons seriously injured

Although to a lesser extent, statistics on persons seriously injured follow the same pattern as for persons killed, with two categories – unauthorised persons on railway premises (31%) + LC users (27%) – being responsible for 58% of the total(see Graph 4).

Injured persons unconnected with the railway – unauthorised persons on railway premises (31%) + LC users (27%) + others (12%) – amount to 70%, again confirming that the railway system's main safety problem is connected to interaction with third parties.

The ratio of persons seriously injured per million train-km in 2006 was 0.84. The UIC published a figure of 0.3 persons seriously injured per million train-km for the 2005 European average, i.e. 2.8 times less than in Portugal.

Consideration will have to be given to why there were fewer persons seriously injured than persons killed (33 vs. 53), unlike UIC data published in 2005 (1 047 persons seriously injured compared to 943 persons killed). Research must be carried out into whether this reflects the real situation or whether there are shortcomings in data collection.



Graph 4 – No and % of persons seriously injured

[Key:
Passengers
LC users
Others]
Employees (including the staff of contractors)
Unauthorised persons on railway premises

D.2.4 – Number of incidents and near-misses

Two items were responsible for 83% of risk situations with the potential to cause accidents – track buckles (56%) + broken rails (27%).

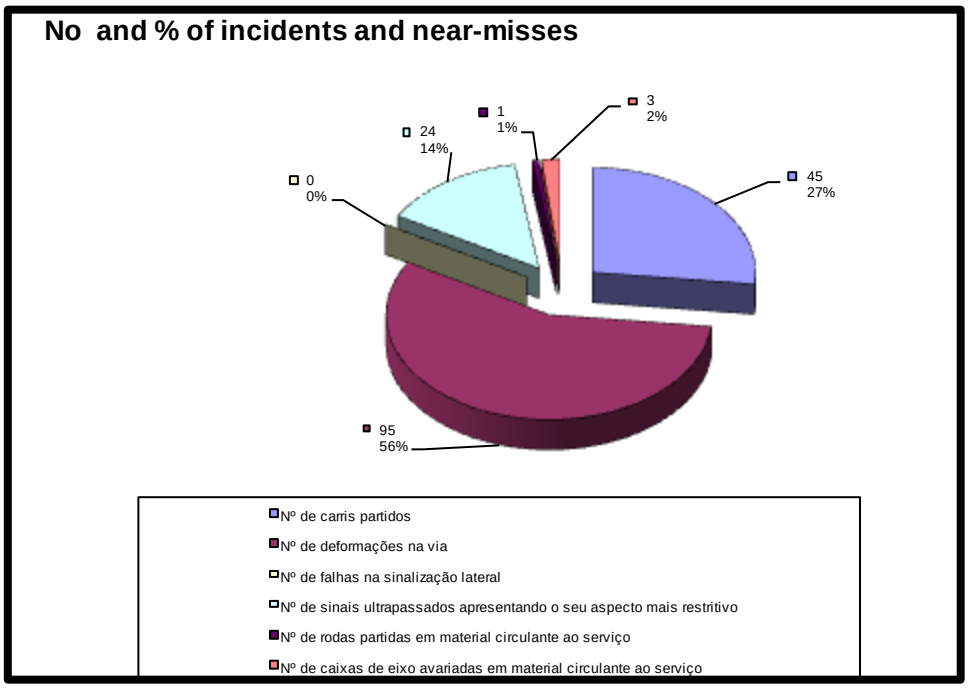
A detailed analysis (see Graph 5) shows that:

- Items associated to infrastructure – track buckles (56%) + broken rails (27%) + wrong-side signalling failures (0%) – amounted to 83%;

- Items associated to rolling stock – signals passed (14%) + broken wheels (1%) + faulty axles (2%) – amounted to 17%.

The vast majority of situations recorded as having the potential to cause accidents thus originated in the infrastructure. Consideration must therefore be given to this issue, though it should not be forgotten that the risks associated with occurrences connected to infrastructure and rolling stock do not necessarily have the same relative importance.

The ratio of incidents and near-misses was 4.3 per million train-km. It is not possible to make a comparative analysis with identical international indicators in this report.



Graph 5 – No and % of incidents and near-misses
[Key:
No of broken rails
No of track buckles
No of wrong-side signalling failures
No of signals passed at their most restrictive aspect
No of broken wheels in rolling stock in operation
No of faulty axles in rolling stock in operation]

D.2.5 – Cost of accidents

The methodology used for calculating the costs of accidents resulting in deaths and injuries was that developed under a Community project (HEATCO – Developing Harmonised European Approaches for Transport Costing and Project Assessment) which takes account of the value society attributes to preventing deaths and injuries in rail accidents. The ERA is studying the possibility of revising Annex I of Directive 2004/49/EC with a view to ensuring that this methodology is officially adopted when the CSIs are revised.

The HEATCO project methodology, based on the value of time for either passenger or goods transport, was also adopted for valuing delays.

Annex C shows the monetary values (in euro) borne by society as a whole because accidents were not avoided.

The value relating to persons killed is significant – 47.24 million euros – indicating that future investment decisions in the area of

safety should be duly studied and weighted so that resources are applied by priority to measures providing the greatest human and material benefits.

D.2.5 – Indicators relating to the technical safety of infrastructure and its implementation

D.2.5.1 – Automatic train protection systems

It should be noted as regards indicators relating to technical safety of infrastructure that half the network open to traffic is already equipped with automatic protection systems, including virtually all the busiest lines (Northern, Beira Alta, Southern, suburban Lisbon and Oporto, etc. - see map in Annex A.1.1). Some 90% of the train-kilometres travelled on the rail network are thus protected by these systems.

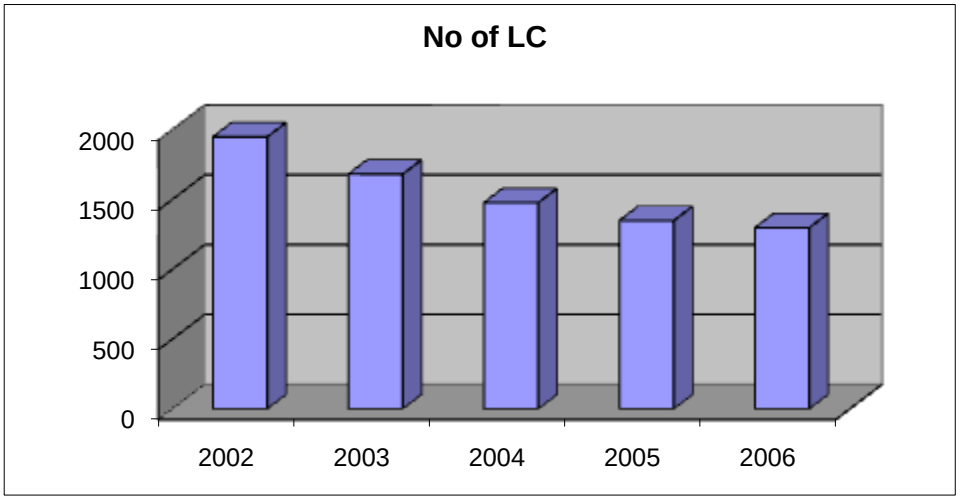
D.2.5.2 – Level crossings

Since high accident rates are recorded at level crossings, considerable work has been done in recent years to remove them and improve their safety.

This has resulted in a consistent fall in the number of level crossings (LC) on lines open to traffic, the total declining by one third in the five years from 2002 to 2006.

	2002	2003	2004	2005	2006	Reduction 2002-2006
No of LC	1947	1737	1476	1348	1297	33%
Density (LC / km line)	0.69	0.60	0.524	0.479	0.457	

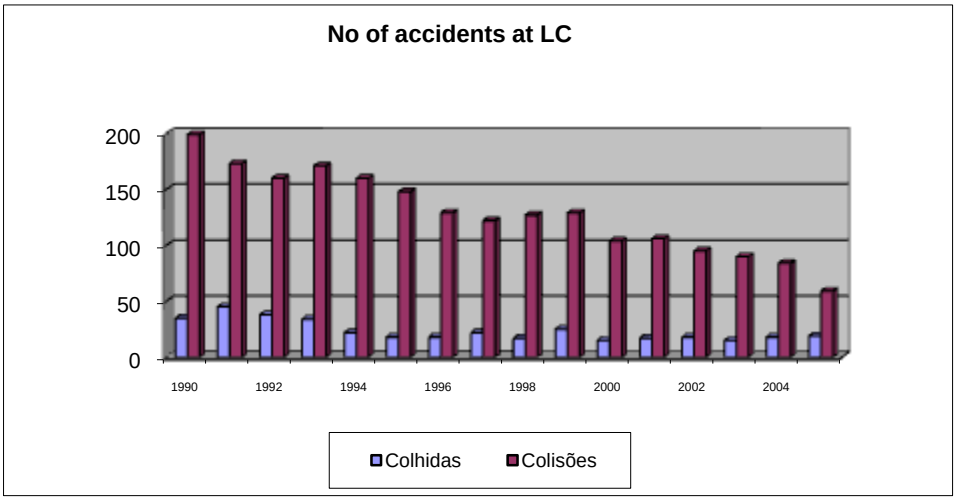
The following graph shows the development of the decrease.



Graph 6 – No of level crossings

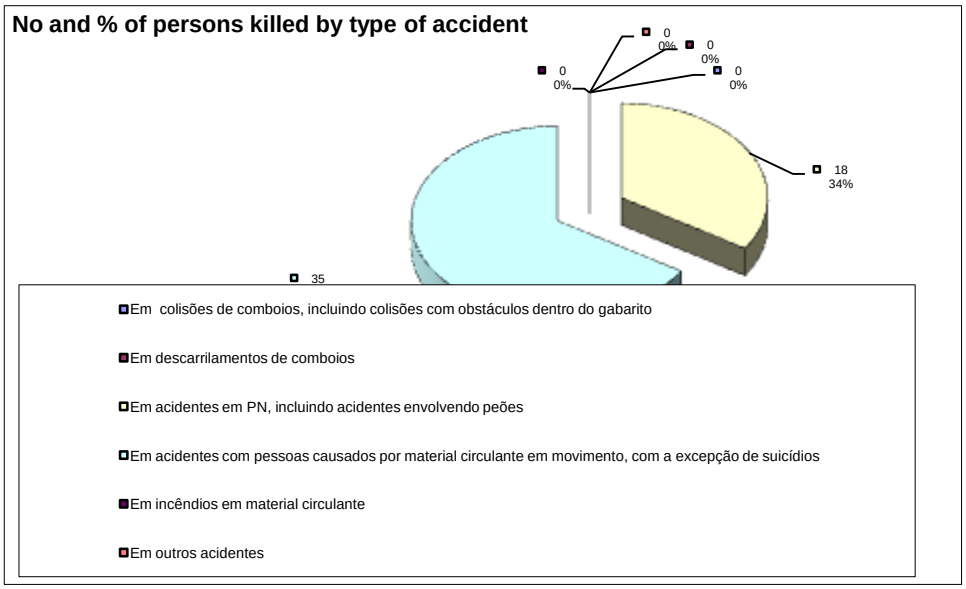
As might be expected, this has improved safety and has led to a fall in the number of accidents, as shown in the following table and in Graph 7.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Collisions with pedestrians	35	45	38	34	22	18	18	22	17	25	15	17	18	15	18	19
Collisions	199	173	160	171	160	148	129	122	127	129	104	106	95	90	84	59
Total	234	218	198	205	182	166	147	144	144	154	119	123	113	105	102	78



Graph 7 – Development of the number of accidents at LC
[Key:
Collisions with pedestrians Collisions]

Of the people who died in 2006 in rail accidents, those killed at LC represent one third of the total number killed in the various categories, which is still rather high (see Graph 8).



Graph 8 – No and % of persons killed by type of accident

[Key:
In collisions of trains, including collisions with objects within the clearance gauge
In derailments of trains
In accidents at level crossings, including accidents involving pedestrians
In accidents to persons caused by rolling stock in motion, with the exception of suicides
In fires in rolling stock
In other accidents]

As stated above, although the number of accidents has continued to fall, in its strategic guidelines for the railway published on 28 October 2006 the Government set a target of a 60% reduction in the number of accidents at LC by 2015. REFER must therefore adjust its level-crossing reclassification and elimination plan to that objective.

E – Relevant amendments to legislation and regulations

E.1 – Legislation

Following the approval of the PRACE programme by Council of Ministers resolution No 124/2005 of 4 August, Decree-Law No 210/2006 of 27 October, which defines the organisational structure of the MOPTC, was published in 2006.

This statute established the Instituto da Mobilidade e dos Transportes Terrestres (IMTT, I.P.), which is responsible for regulating, monitoring and ensuring coordination and planning for the land transport sector. It is also responsible for supervising and regulating activities in the sector to meet the mobility needs of people and goods while promoting safety, quality and users' rights. The same statute also established the Gabinete de Investigação de Segurança e de Acidentes Ferroviários (GISAF). When the IMTT was set up, the INTF was abolished and its functions were taken over by the IMTT and GISAF.

Decree-Law No 210/2006 of 27 October will bring about a far-reaching change in the institutional framework of the railway sector, since its sectoral regulator will be abolished and merged into a regulator with responsibilities covering land transport as a whole. The founding of the IMTT and publication of its articles of association did not materialise in 2006. This only took place in 2007 with publication of Decree-Law No 147/2007 of 27 April, which is why the bodies to be abolished continued to carry out their normal activities in that year.

The transport of dangerous goods by rail is regulated by Decree-Law No 189/2006 of 22 September, amending for the first time Decree-Law No 322/2000 of 19 December, which establishes the legal system on the designation and professional qualifications of safety advisers for the transport of dangerous goods by road, rail or inland waterway. Order No 23 721/2006 issued by the Direcção-Geral dos Transportes Terrestres e Fluviais (DGTTF) [Directorate General for Land and Inland Waterway Transport], which lays down the requirements to be met by training organisations, training courses, knowledge assessment and the certification of safety advisers and drivers of dangerous goods, was also published.

E.2 – Regulations

In the area of technical safety regulations various regulatory documents introducing changes to improve the system's safety were published, the most relevant being:

- INTF instruction on procedures to be introduced in connection with registers in the event of accidents, serious accidents or incidents likely to lead to an enquiry being opened;

- Addendum 37 to General Safety Regulation II (Signals) – establishes the obligation for all trains to travel with headlights switched on during daylight hours;

- Addendum 21 to General Safety Regulation III (Train Traffic) – introduces the use of a computer application in recording and transmitting telephone communications (telephoned telegrams);

- Addendum 22 to General Safety Regulation III (Train Traffic) – reinforces procedures to be adopted by the local control post traffic management body in the event of an abnormality or accident;

- Addendum 17 to General Safety Regulation V (Train Braking) – alters the procedure for controlling the brakes of goods trains which include empty wagons mixed with loaded wagons;

- Addendum 121 to General Signalling Instruction 7 (Automatic Level Crossings) – regulates commencement of the operation of the system for detecting objects at LC;

- Supplementary Safety Instruction 20/06 (Traction Unit Traffic) – establishes the obligation for all train traction units involved in goods or passenger rail transport to be equipped with ground-train radio and automatic speed control systems (CONVEL).

F. - Development of safety certification and authorisation

F.1 – National legislation

In 2006 the national legislation regulating the award of safety certificates was Decree-Law No 270/2003 of 28 October and the INTF Instruction on safety certification of 11/11/2005. Directive 2004/49/EC had not yet been transposed, though the legislative procedure leading to transposition in 2007 was in progress.

Pursuant to the above-mentioned Decree-Law, FERTAGUS submitted the documentation required for its formal application for a safety certificate on 10 November 2006. The analysis for drafting an opinion for the certificate to be issued began in REFER and subsequently continued in the INTF until the end of 2006, the parties involved exchanging clarifications and documents, and the certificate was issued in 2007.

SIMPLEX programme measure no 320 was published to provide applicants with guidance on submitting applications for safety certificates.

Other supporting documentation that might be required for the application, such as the list of railway-related legislation and regulations, was published in the Network Directory (REFER). Applicants can obtain these safety regulatory documents from REFER on request.

All the legal documentation relating to safety certification and authorisation is available on the INTF website (http:\\www.intf.pt)

F.2 – Numerical data

Numerical data on the development of safety certification and authorisation are presented in Annex E.

F.3 – Procedural aspects

Because not much has been done in the area of safety certification and authorisation, there is little to report as yet, though it should be noted that FERTAGUS submitted its application for safety certification within the statutory time limit, and that REFER issued its opinion in response within the statutory time limit of 30 working days.

The cost of issuing the safety certificate is laid down in Order in Council 383/2005 of 5 April at a value of EUR 5 000 for each type of service.

G – Supervision of railway undertakings and the infrastructure manager

G.1 – Description of supervision

Various procedures are used in supervising the activities of the infrastructure manager and railway undertakings, i.e.:

- Analysis of occurrences recorded in the daily traffic report drawn up by REFER;
- Pre-planned monitoring;
- Monitoring decided after analysing occurrences relating to accidents or incidents, claims or investigation board recommendations.

Monitoring is always ensured by at least two INTF staff, who may ask personnel from the undertakings concerned for assistance in carrying out the work necessary for such monitoring.

The INTF has nine officially accredited employees (some 21% of its permanent staff at 31.12.2006) to carry out monitoring work.

It was not possible to calculate the cost of supervisory activity since the INTF's accounting system is not organised to that end.

G.2 – Railway undertaking and infrastructure manager annual safety reports

Under Orders No 1094/98 (2nd series) and No 4344/2000 (2nd series), undertakings, particularly public railway undertakings (CP and REFER), have been producing safety reports on a regular basis in the course of their business. With publication of Directive 2004/49/EC and its transposition by means of Decree-Law No 231/2007 of 14 June, however, each year undertakings are required to submit a new safety report concerning the preceding calendar year before 30 June. The report must contain a range of mandatory information defined in the Directive.

Since the 2006 report was the first to be drafted within the above-mentioned legal framework, the INTF, together with the undertakings, took a variety of steps in 2006 and 2007 to clarify and shed light on the legal requirements and to promote the use of a common document template.

As a result of that work and in compliance with the legal obligation, all the undertakings produced and submitted their 2006 safety report,

one delivering it within the statutory time limit and the other two failing to do so.

G.3 – Monitoring carried out

The following monitoring was carried out in 2006:

- seven initiatives to monitor operating conditions on railway premises in Pêgo, Bobadela, Entroncamento, Leixões, Loulé and Porto de Sines, in connection with preparing train compositions before departure, shunting and immobilising rolling stock;

- one initiative to monitor the conditions in which dangerous goods are transported by rail by application of the respective national regulations – Decree-Law No 124-A/2004 of 26 May – as regards the activity of safety advisers in particular;

- three initiatives to monitor wagons transporting dangerous goods;

- two initiatives to monitor rolling stock maintenance activities.

G.4 – Corrective action

Following the monitoring carried out and the recommendations made, the undertakings took corrective action, particularly the following:

- The training of operational personnel, focusing on the making-up/breaking-down of trains and rolling stock maintenance;

- Maintenance and replacement of chocks for immobilising rolling stock;

- Improvements in ensuring compliance with maintenance plans for foreign wagons operating in Portugal;

- Demolition of neglected water tanks at risk of falling onto tracks.

H – Conclusions

The year 2006 marked the beginning of a new cycle in the analysis of railway safety performance, brought about by the implementation of the Safety Directive. Since the assumptions on which the analysis is based are different from those commonly used to date, there is no firm benchmark for comparing the relative values of the safety indicators determined in this report. As data accumulates and using the harmonised methodology established at European level by the ERA, in years to come it will be possible to identify trends accurately and make international comparisons.

In terms of performance in 2006, analysed from the point of view of rail transport users, it can be seen that the system is safe, since no fatalities were recorded on trains. In overall safety terms, however, and in the light of data from international sources, there are indications that the safety of the Portuguese railway system falls below the European average. This may be confirmed or invalidated in the future through the common safety indicators compiled at European level by the ERA.

Analysis of the data shows that the main cause of accidents on the national rail network, in line with the European pattern, are those involving persons unconnected with the railway system, particularly accidents due to the presence of unauthorised persons on railway premises and LC users.

While in recent years the State, mainly through REFER, has invested a great deal in reducing the number and improving the safety of level crossings (reflected in a clear reduction in the number of accidents), significant measures with a positive impact do not appear to have been taken in relation to accidents involving the presence of unauthorised persons on railway premises. An action plan leading to a rapid and effective reduction in such accidents will therefore have to be defined, in cooperation with all the parties involved in the sector, particularly the infrastructure manager.

In addition to the continued modernisation of some stretches of track (Porto Campanhã-Contumil; Mouriscas A-Castelo Branco; Santo Tirso-Guimarães) on which automatic train protection systems have been installed (CONVEL), safety continued to be reinforced in 2006 by means of measures in the area of either engineering or safety regulation. Particularly important due to their importance and positive impact in both these areas was the introduction of automatic hot axle box and wheel detection systems and systems for detecting objects at automatic LC, and the obligation for all train traction units to be equipped with ground-train radio and CONVEL systems.

In terms of safety management 2006 also marked the beginning of the process for awarding safety certificates to railway undertakings. This is expected to continue and to develop in coming years as undertakings which already hold licences to provide rail transport services enter the market. This probable development and the INTF's accumulation of experience will make it possible to improve these processes, particularly in terms of their analysis and definition and the harmonising of requirements, and subsequently in verifying and monitoring compliance.

The following are the INTF/IMTT's priorities for 2007:

- To develop the regulations laid down in Decree-Law No 231/2007 of 14 June required for implementing safety certification and authorisation:
  - Regulations concerning procedures and requirements for issuing the safety certificate and safety authorisation;
  - Regulations concerning the approval of safety management systems;
  - Regulations concerning the approval of common emergency procedures;
  - Regulations concerning training, examinations and the award of certificates to personnel with significant safety responsibilities, in connection with the safety certificate and safety authorisation;
  - Rolling stock operating authorisation;
- To adapt the technical safety regulations to the current situation in the railway sector;
- To continue to help undertakings to develop their safety management systems, disseminating and clarifying the results of the work done by the ERA;
- To define measures with undertakings with a view to reducing the number of accidents involving unauthorised persons on railway premises;
- To increase the monitoring carried out and to improve control over the implementation of corrective measures, where applicable.

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- CSIs to measure: economic impact as a consequence of changes in safety performances, costs and benefits for the society – ERA: WG on Common Safety Indicators/Safety Performance

- UIC Safety Database – Activity Report
  Significant rail accidents in 2005
  Benchmarking and trends

- Annual Safety Report 2006 – REFER

- Annual Safety Report 2006 – CP

- Annual Safety Report 2006 – FERTAGUS

- REFER report and accounts: 2002; 2003; 2004; 2005.

- REFER report on action at level crossings: 1999 to 2006

J – Annexes

ANNEX A – INFORMATION ON THE STRUCTURE OF THE RAILWAY SYSTEM

ANNEX B – INFORMATION ON THE ORGANISATION OF THE INTF

ANNEX C – COMMON SAFETY INDICATORS AND DEFINITIONS USED

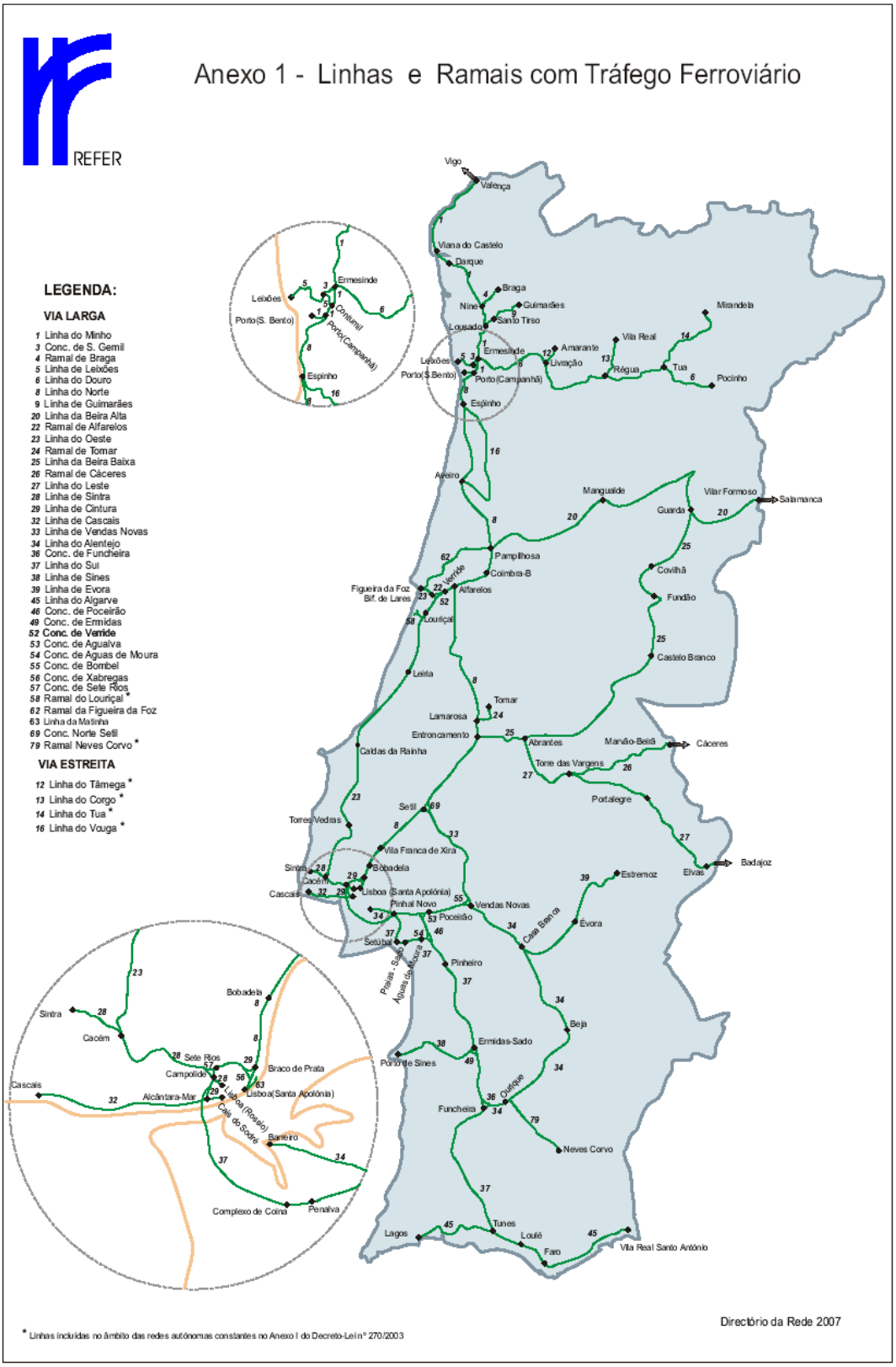
ANNEX D – RELEVANT AMENDMENTS TO LEGISLATION AND REGULATIONS

ANNEX E – DEVELOPMENT OF SAFETY CERTIFICATION AND AUTHORISATION

ANNEX A

INFORMATION ON THE STRUCTURE OF THE RAILWAY SYSTEM

A.1 – Map of the national rail network



Key to Map A.1 above:

Annex 1 – Lines and branches open to rail traffic

KEY

BROAD GAUGE

NARROW GAUGE

Key to Map A.1.1 below:

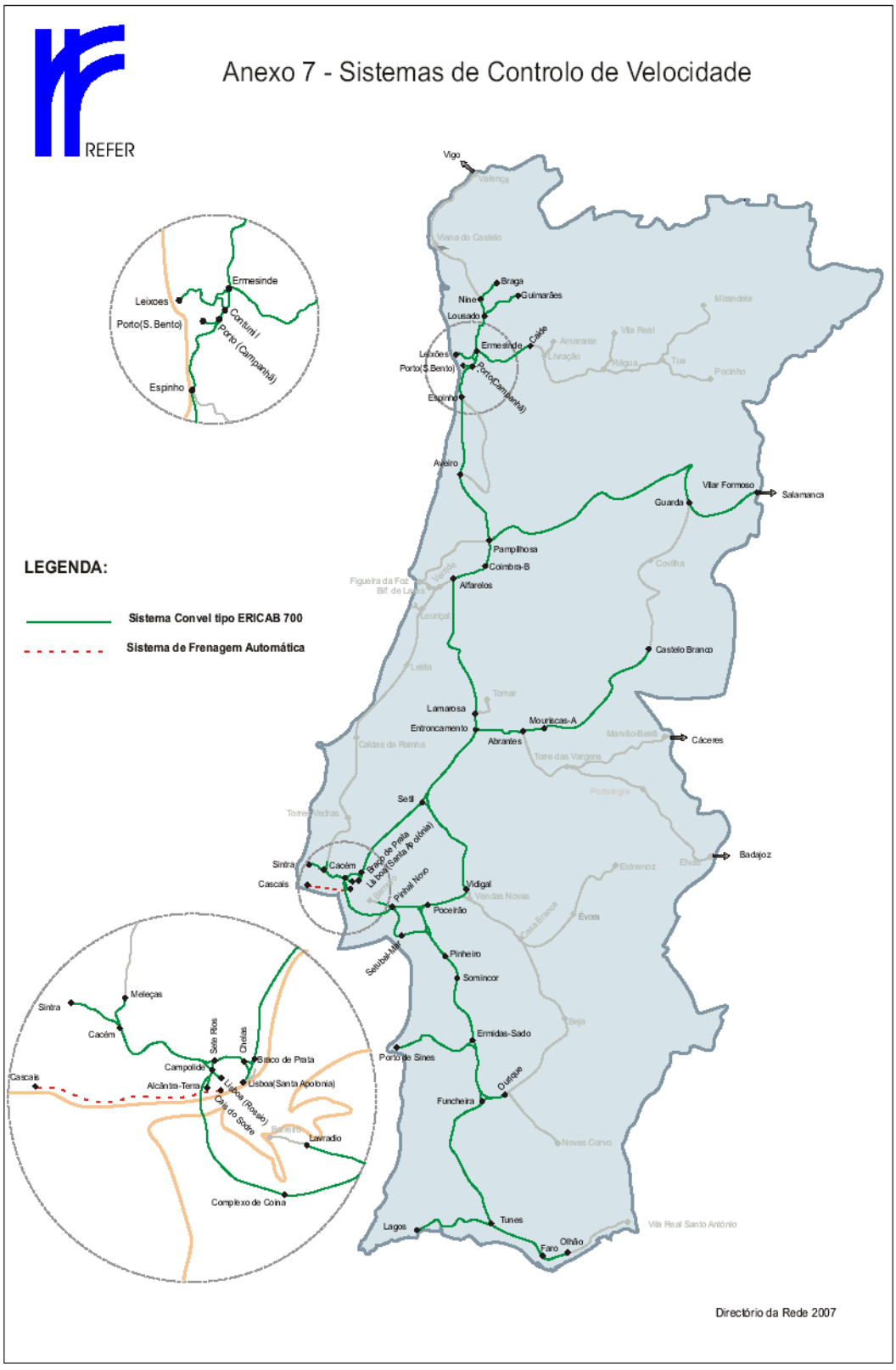
Annex 7 – Speed control systems

KEY:

ERICAB 700 Convel system

Automatic braking systems

A.1.1 – Map of Automatic Speed Control Systems



A.2 – List of infrastructure management and railway undertakings

A.2.1 – Infrastructure Manager

Description	Information
Name	REFER, Rede Ferroviária Nacional, E.P.
Address	Estação de Santa Apolónia, 1100-105 Lisbon, Portugal
Website	www.refer.pt
Safety Authorisation (Directive 2004/49/EC)	Not applicable – Directive 2004/49/EC had not been transposed into national law by 31 December 2006, so there was no legal framework regulating the issue of a safety authorisation to the infrastructure manager.
Date of commencement of activity	29 April 1997
Length of network open to traffic	Total: 2 839.3 km Broad gauge track (1 668 mm gauge): 2 647.6 km Narrow gauge track (1 000 mm gauge): 191.7 km
Length of lines by number of tracks	Multiple track: 607.3 km Single track: 2232 km
Length of electrified network	Total: 1 436.3 km 25 000 V_{CA}: 1 410.8 km 1 500 Vcc: 25.5 km % of network open to traffic: 50.6%
Length of lines equipped with CONVEL / ATS:	1 443.6 km % of network open to traffic: 50.8%

Length of lines equipped with ground-train radio:	1 428 km % of network open to traffic: 50.3%
Number of level crossings (including private and pedestrian)	1 297 density: 0.46 LC / km of line 0.37 LC / km of track
Level crossings with automatic or manual protection	510 % of total LC: 39.3%
Number of trains on network	Total: 694 007 (includes empty stock movements) Passengers: 510 868 (includes empty stock movements) Goods: 183 139 (includes empty stock movements)
Train km run on network (tk)	Total: 39.3 x 10^6 Passengers: 31.8 x 10^6 Goods: 7.5 x 10^6
% tk with CONVEL/ATS in operation	90%
No of hours worked on company business	6 523 462

A.2.2 – Railway undertakings

A.2.2.1 – CP – Caminhos-de-ferro Portugueses, E.P.E.

Description	Information
Name	CP – Caminhos-de-ferro Portugueses, E.P.E.
Address	Calçada do Duque, n.º 20 1249-109 Lisbon Portugal
Website	www.cp.pt
Licence to begin activity (DL no 270 / 2003 of 28 October)	Not yet awarded
Safety certificate (DL no 270/2003 of 28 October)	Not yet awarded
Date of commencement of activity	28 October 1856
Type of traffic	Passenger and goods
Number of locomotives	Total: 141 Diesel: 66 Electric: 75
Number of railcars	Total: 271 Diesel: 80 Electric: 191
Number of carriages	153
Number of wagons	2 961
Number of drivers	1 090

Number of driver's assistants	178
Number of commercial operators with safety-related responsibilities	655
Number of trains used	Total: 639 551 (includes empty stock movements) Passenger: 456 412 (includes empty stock movements) Goods: 183 139 (includes empty stock movements)
Train km travelled (tk)	Total: 37.508 x 10^6 Passengers: 30.056 x 10^6 Goods: 7.452 x 10^6
% of tk travelled with CONVEL / ATS in operation	Not available
Number of passenger km (pk)	3 514 x 10^6
Number of tonnes km (tonne.k)	2 430 x 10^6
Number of hours of work done on company business	7 913 014

A.2.2.2 – FERTAGUS

Description	Information
Name	FERTAGUS, Travessia do Tejo, Transportes, S.A.
Address	Estação do Pragal Porta 23 2805-333 Almada Portugal
Website	www.fertagus.pt
Licence for commencement of activity (DL no 270 / 2003 of 28 October)	Licence no 01 / 2005
Safety certificate (DL no 270 / 2003 of 28 October)	Application submitted on 10 November 2006. At 31 December 2006 the application was being analysed by the INTF.
Date of commencement of activity	29 July 1999
Type of traffic	Passenger
Number of railcars	Electric: 18
Number of drivers	45
Number of driver's assistants	Not applicable
Number of commercial operators with safety-related responsibilities	87
Number of trains	Passenger: 54 456 (includes empty stock movements)

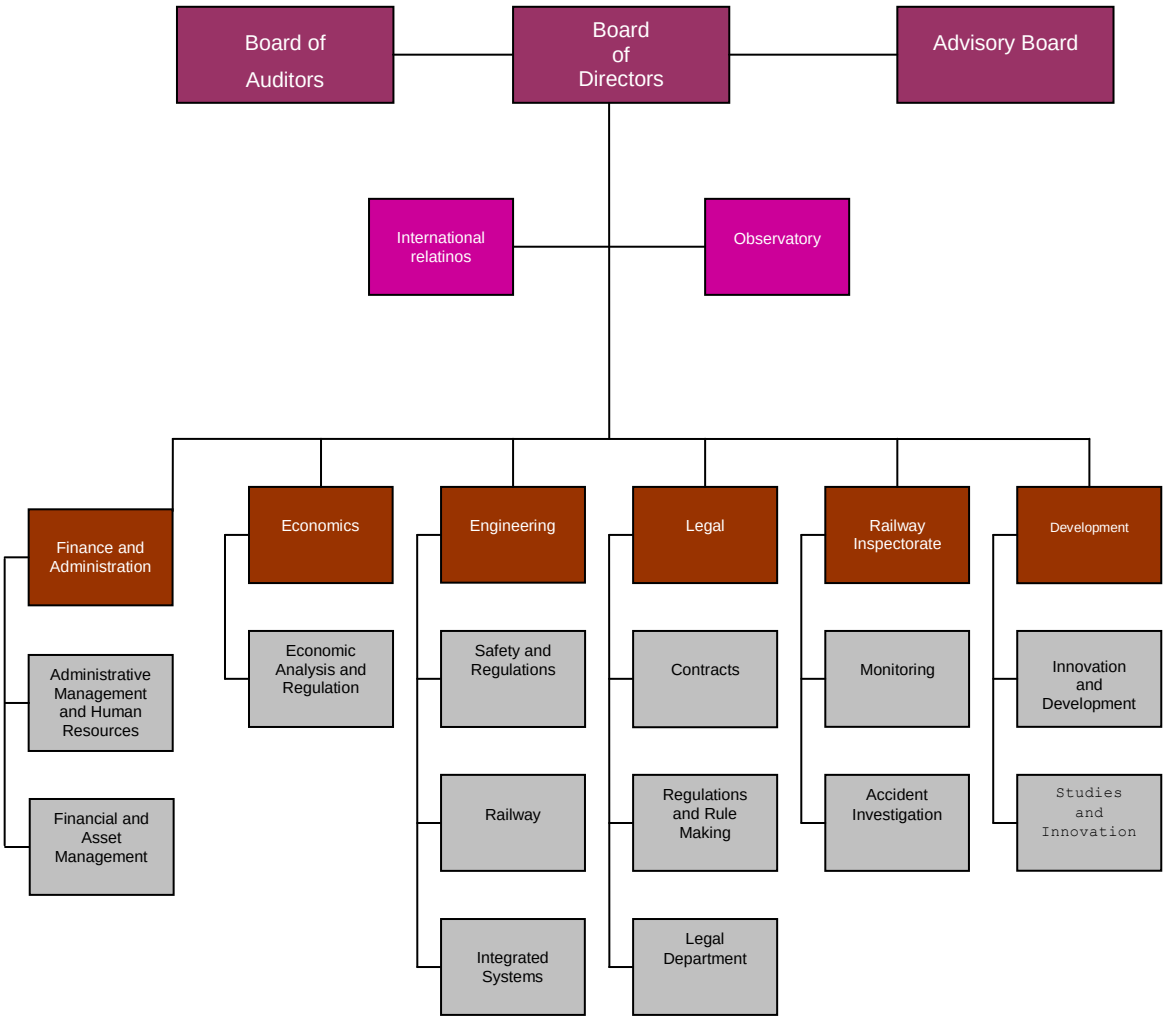
Train km travelled (tk)	Passengers: 1.756×10^6
Number of passenger km (pk)	361.541×10^6
% of tk travelled with CONVEL / ATS in operation	99.98%
Number of hours of work carried out on company business	325 898 h

ANNEX B

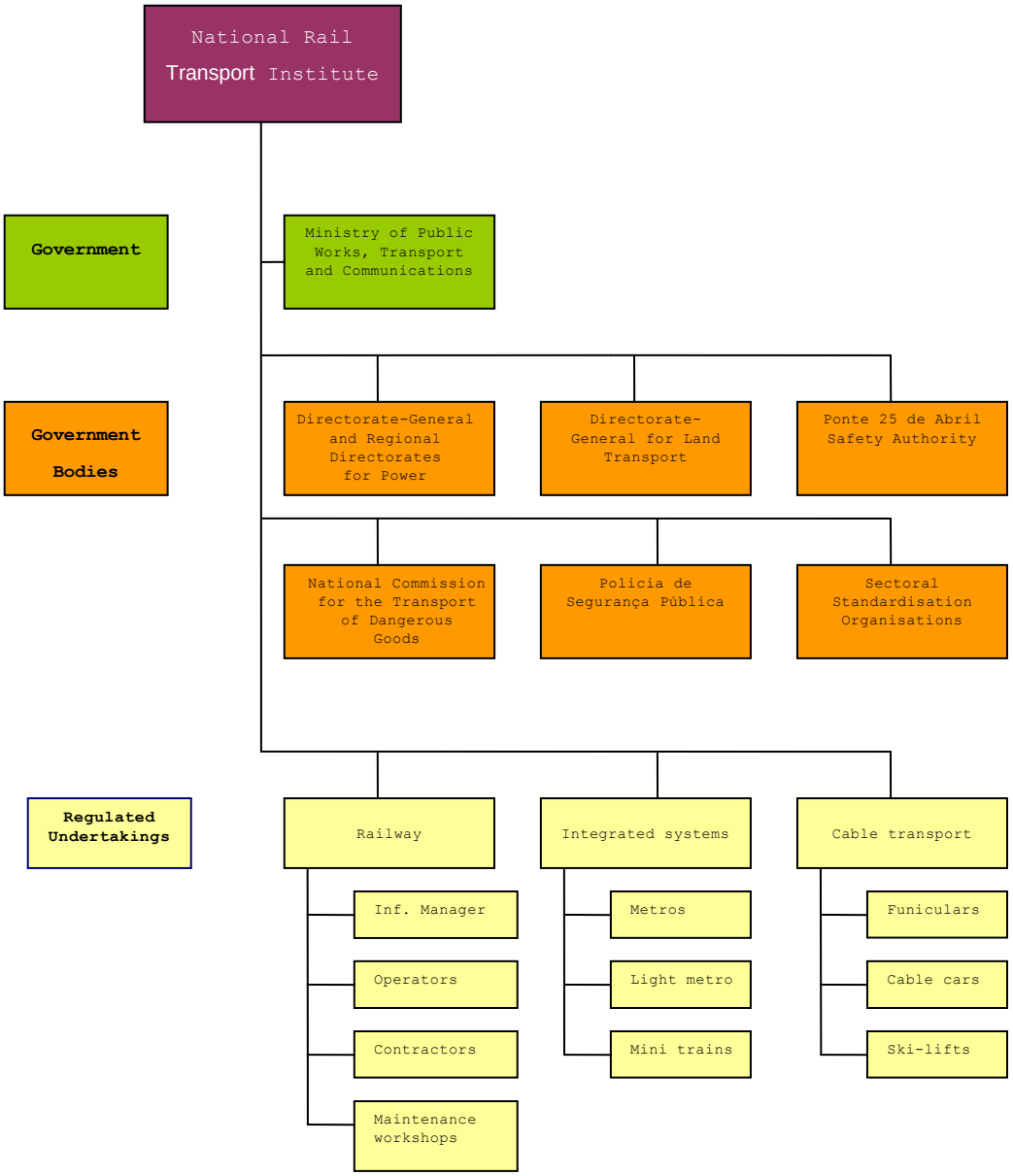
INFORMATION ON THE ORGANISATION OF THE INTF

ANNEX B.1 – Organisational structure of the INTF

B.1 – Organisational structure of the INTF


Board of Auditors
Board of Directors
Advisory Board
International relatinos
Observatory
Finance and Administration
Economics
Engineering
Legal
Railway Inspectorate
Development
Administrative Management and Human Resources
Economic Analysis and Regulation
Safety and Regulations
Contracts
Monitoring
Innovation and Development
Financial and Asset Management
Railway
Regulations and Rule Making
Accident Investigation
Studies and Innovation
Integrated Systems
Legal Department

B.2 – INTF relations with other bodies in connection with safety



ANNEX C

COMMON SAFETY INDICATORS AND DEFINITIONS USED

C.1 – Common Safety Indicators

Total number of accidents and breakdown by type		Per million tk
Total number of all accidents	89	2.27
No of train collisions	0	0
No of collisions with objects	3	0.08
No of train derailments	9	0.23
No of accidents at LC, including accidents involving pedestrians	22	0.56
No of accidents to persons caused by rolling stock in motion, excluding suicides	55	1.4
No of fires in rolling stock	0	0
No of other accidents	0	0

Total number of suspected suicides		Per million tk
No of suicides	40	1.02

Total number of persons killed and breakdown by type of person		Per million tk	Per billion pk
Total number of persons killed	53	1.35	
Passengers	0	0	0
Employees (including the staff of contractors)	1	0.03	
LC users	18	0.46	
Unauthorised persons on railway premises	29	0.74	
Others	5	0.13	

Total number of persons killed and breakdown by type of accident		Per million tk
Total number of persons killed	53	1.35
In train collisions	0	0
In train derailments	0	0
In accidents at LC, including accidents involving pedestrians	18	0.46
In accidents to persons caused by rolling stock in motion, excluding suicides	35	0.89
In fires in rolling stock	0	0
In other accidents	0	0

Total number of persons seriously injured and breakdown by type		Per million tk	Per billion pk
Total number of persons seriously injured	33	0.84	
Passengers	8	0.2	0.05
Employees (including the staff of contractors)	2	0.05	
LC users	9	0.23	
Unauthorised persons on railway premises	10	0.25	

Others	4	0.1

Total number of incidents and near-misses and breakdown by type		Per million tk
Total number of incidents and near-misses	168	4.28
No of broken rails	45	1.15
No of track buckles	95	2.42
No of wrong-side signalling failures	0	0
No of signals passed at their most restrictive aspect	24	0.61
No of wheels broken in rolling stock in operation	1	0.03
No of faulty axles in rolling stock in operation	3	0.08

Total cost of accidents (million euros)		Per million tk
Total cost	52.11	1.33
Cost of persons killed	47.24	1.2
Cost of persons injured	3.93	0.1
Cost of replacing or repairing damaged rolling stock or infrastructure	n.a.	n.a.
Cost of delays, disturbance and rerouting of traffic, including additional personnel expenditure and loss of profits	0.94	0.02

No of hours lost by personnel as a result of accidents		Per million hours worked
Total number of hours lost by personnel as a result of accidents	n.a.	n.a.

Indicators relating to technical safety of infrastructure and its implementation	
% of lines with Automatic Train Protection systems (ATP) in operation	50.33%
% tk travelled using ATP systems in operation	90%
Total number of LC	1297
No of LC per kilometre of track	0.37
% LC with automatic or manual protection	39.32%

Reference data	
No of train km (million tk)	39.264
No of passenger km (million tk)	3.88
No of km of track (km of multiple lines multiplied by no of tracks)	3 512.7
Total number of hours worked	16 238 611

Table C.1.1 – Summary of Common Safety Indicators

Methodology

The following assumptions were adopted in determining the common safety indicators:

- The number of hours worked includes an estimated 10% increase to take account of the work of external service suppliers which the undertakings did not record in data provided to the INTF;
- The proportion of passengers who travel on business was estimated at 1%;
- The cost of accidents refers to the 89 significant accidents reported;
- Insufficient data were reported on the cost of replacing or repairing damaged rolling stock or infrastructure and hours lost by staff as a result of accidents.

C.2 – Definitions used

In general the definitions and methods developed by the ERA Safety Performance and Monitoring Working Group were used to determine the common safety indicators (CSIs). This set of definitions includes the definitions laid down in Regulation (EC) No 91/2003 (Railway Statistics) and in Directive 2004/49/EC (Safety).

Suspected suicides were used for the suicides indicator because, although the record of the circumstances in which the fatality occurred suggested an 'act to deliberately injure oneself resulting in death', the competent authorities had not at that time classified the act as suicide.

The costs of accidents resulting in persons killed and injured were calculated using the method developed under a Community project (HEATCO – Developing Harmonised European Approaches for Transport Costing and Project Assessment), which takes account of the value society attributes to preventing deaths and injuries in railway accidents.

The method used in the HEATCO project, which is based on the value of time, both for passenger transport and goods transport, was also adopted for valuing delays.

The considerations, guidelines, examples, methods and definitions based on the above-mentioned work of the ERA Monitoring of Safety

Performance Working Group, which the INTF plays an active part in, are set out below.

CSIs relating to accidents

Annex 1 of Directive 2004/49/EC stipulates that:

For indicators relating to accidents under heading 1 below, Regulation (EC) No 91/2003 of the European Parliament and of the Council of 16 December 2002 on rail transport statistics shall be applied as far as the information is available.

The scope of statistics in Directive 2004/49/EC is therefore the same as Regulation (EC) No 91/2003 and its Addendum – Regulation (EC) No 1192/2003. The scope is laid down in Regulation (EC) No 1192/2003 – Annex H, which lays down what Member States have to report:

Table H1: number of accidents by type of accident
Table H2: number of accidents involving the transport of dangerous goods
Table H3: number of persons killed by type of accident and category of person
Table H4: number of serious injuries by type of accident and category of person

Since Directive 2004/49/EC does not cover the transport of dangerous goods, the relevant tables for this document are H1, H3 and H4.

As regards table H1, ***significant accident*** is defined in Article 1 of Regulation (EC) No 1192/2003 as follows:

'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.*

Accident is defined in Article 3 of Directive 2004/49/EC as follows:

'Accident' *means an unwanted or unintended sudden event or a specific chain of such events which have harmful consequences; accidents are divided into the following categories: collisions, derailments, level-crossing accidents, accidents to persons caused by rolling stock in motion, fires and others;*

In summary, the scope of accident statistics in Directive 2004/49/EC comprises definitions of 'accident' and 'significant accident'. For an event to be reported it must therefore:

- be related to a railway vehicle in motion;
- result 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;
- not have occurred in workshops, warehouses or depots;
- be an unwanted or unintended sudden event, which excludes vandalism, suicides and terrorist acts.

The definitions of 'significant damage' and 'extensive disruptions to traffic' were approved by the CSIs/Safety Performance Working Group, and the ERA and *Eurostat* have taken measures to harmonise Regulation (EC) No 1192/03 for the values defined:

- **'Significant damage to stock, track, other installations or environment'** means damage equal to or greater than EUR 150 000;

- **'Extensive disruptions to traffic'** means that the operation of trains or traffic on a railway line is suspended for more than six hours.

CSIs relating to suicides

One of the CSIs relates to suicides. These events will be classified according to the following criteria:

- If an event leads to injuries or the death of another person or persons who do not wish to commit suicide, it will be included in one of the following CSIs:
    - Collisions of trains, including collisions with objects within the clearance gauge;
    - Derailments of trains;
    - Accidents at level crossings, including accidents involving pedestrians;
    - Accidents to persons caused by rolling stock in motion;
    - Fires in rolling stock;
    - Others.

The persons involved will be classified as:

- Passengers;
- Employees, including the staff of contractors;

- LC users;
- Unauthorised persons on railway premises;
- Others.

Example: a person who wishes to commit suicide at an LC, using a car, and thereby causes a collision with a train resulting in their death and the death of N passengers; this event will be classified as a collision at an LC resulting in the death of one LC user + N passengers.

CSIs relating to incidents and near-misses

All events (broken rails, track buckles, wrong-side signalling failures, signals passed at danger (SPAD), broken wheels and axle failures) must be reported. If one of these events results in an accident, this must also be reported.

Example: a signal passed at danger (SPAD) resulting in a collision; one SPAD + one collision will have to be reported.

CSIs relating to the consequences of accidents

The economic impact of all accidents, with significant costs or not, must be reported.

Definitions of CSIs and common methods of calculating the economic impact of accidents

Definitions of indicators relating to accidents

1. **'Train'** means one or more railway vehicles hauled by one or more locomotives or railcars, or one railcar travelling 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 travelling on its own, is not considered to be a train (Regulation (EC) No 1192/2003).

After talks with the CSIs WG, *Eurostat* proposed an amendment to this definition:

> **'Train'** means one or more railway vehicles hauled by one or more locomotives or railcars, or one rail car travelling 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 travelling on its own, is not considered to be a train, *except for the purposes of Annex H*.

The latter definition must be used for determining CSIs.

2. **'Collisions of trains, including collisions within the clearance gauge'** means a collision which may be: head-on between trains; between the front and rear of two trains; between a train and any part of another train within the clearance gauge; or the collision of a train involving:

    a. Shunting;
    b. Fixed objects such as catch points;
    c. Objects temporarily present at or near the track (except at level crossings, if lost by a road vehicle or pedestrian), such as stones, landslides, trees, parts lost by railway vehicles, road vehicles and machinery or equipment used in maintaining railway lines.

Guideline: a collision followed by a derailment is considered to be a collision. For statistical purposes animals are counted as

objects. Collisions between vehicles shunting or maintenance vehicles are classified in the category of 'others'. Collisions with objects lost at LC by road vehicles or pedestrians are classified as 'Accidents at LC'.

3. **'Derailment'** means any situation in which at least one train wheel leaves the track.

Guideline: collisions with rolling stock or objects followed by a derailment are not included. These events must be classified as collisions. Cases of rerailing (if causing significant damage) are included as derailments. Derailments caused voluntarily as a result of applying safety measures are excluded. Derailments of vehicles shunting or track maintenance vehicles must be classified in the category of 'others'.

4. **'Accidents at level crossings'** means accidents at level crossings involving: a least one rail vehicle and one or more road vehicles; other level crossing users such as pedestrians or objects at or near the track, if lost by a vehicle or LC user.

Guideline: collisions with objects at LC which have not been lost by an LC user or which have not fallen from a vehicle are classified as 'collisions' rather than 'accidents at LC'.

5. **'Accidents to persons caused by rolling stock in motion'** means accidents to one or more persons who are hit by a railway vehicle or by an object attached to it or by an object detached from the vehicle. Persons who fall from railway vehicles are included, as are persons who fall or who are hit by loose objects when travelling on trains.

6. **'Suicide'** means an act to deliberately injure oneself resulting in death, as recorded and classified by the competent national authority (Regulation (EC) No 1192/2003).

7. **'Fires in rolling stock'** means fires or explosions occurring in railway vehicles (including their load), when travelling between the station of origin and destination, including both, and intermediate stoppages and the making-up or breaking-down of trains during the journey.

Guideline: acts of vandalism are excluded. Fires during extensive stoppages in marshalling yards or stock yards are excluded.

8. **'Other types of accidents'** means all accidents which are not classified as collisions; derailments at LC; accidents to persons

caused by rolling stock in motion; fires in rolling stock; suicides.

Guideline: the principal cases in this category must be:

- Collisions/derailments of vehicles shunting or track maintenance machinery;
- The release of dangerous goods during transport;
- Objects thrown from a train, such as ballast, ice, etc.

9. **'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 (Regulation (EC) No 1192/2003).

Guideline: when they are involved in accidents, persons who cross tracks at stations are classified as 'unauthorised persons' if they cross where it is not permitted, or otherwise as 'others'. Persons waiting on platforms who are involved in accidents are classified as 'others'.

10. **'Employee (the staff of contractors are included)'** means any person whose employment is related to the railway and who is on duty at the time of the accident. This includes train crew and persons involved with rolling stock or infrastructure installations.

11. **'LC users'** means any person who uses a level crossing to cross railway lines by any means of transport or on foot.

12. **'Unauthorised persons on railway premises'** means any person present on railway premises in which their presence is prohibited, with the exception of LC users.

13. **'Others (third parties)'** means all persons not defined as 'rail passenger'; 'employees, including the staff of contractors'; LC users or unauthorised persons on railway premises.

14. **'Person killed'** means any person killed immediately or dying within 30 days as a result of an accident, excluding suicides (Regulation (EC) No 1192/2003).

15. **'Person seriously injured'** means any person injured who was hospitalised for more than 24 hours as a result of an accident, excluding attempted suicides. (Regulation (EC) no 1192/2003)

Definitions of indicators relating to incidents and near-misses

16. **'Incident'** means any occurrence, other than accident or serious accident, associated with the operation of trains and affecting the safety of operation.

17. **'Broken rails'** means any rail that breaks into two or more parts, or any rail from which a piece of metal detaches, causing a break in the rolling surface of over 50 mm in length and over 10 mm in depth.

18. **'Track buckles'** means a failure in relation to track continuity and geometry, requiring traffic on the track to be stopped or an immediate reduction in speed to maintain safety.

19. **'Wrong-side signalling failure'** means any failure in the signalling system (whether in infrastructure or rolling stock), resulting in its presentation of a less restrictive signal than is required.

Guideline: examples include:

- Presentation of a signal showing green instead of a signal with a restrictive aspect, e.g.: warning signal to reduce speed, caution signal, signal announcing a stop or a maximum speed limitation signal;
- Signal with a less restrictive aspect than stop, presented instead of a stop signal;
- Failure to indicate an aspect in a distance signal providing a warning of either a stop signal or a maximum speed limitation signal.

Failures relating to degraded operation must be excluded.

20. **'Signal passed at danger' (SPAD)** means any occurrence when any part of a train runs beyond its authorised movement.

Guideline: examples of unauthorised movements include:

- Passing a light or semaphore signal indicating stop;
- Passing an authorisation movement provided for in an automatic train protection system (ATP);
- Passing a place communicated by means of a verbal or written authorisation provided for in the regulations;
- Passing mechanical or portable signals indicating stop.

Situations in which vehicles without coupled traction units or unscheduled trains pass signals must not be included. Situations in which, for a variety of reasons, the signal is suddenly placed in a

restrictive aspect without the driver being able to stop the train before the signal must not be included.

21. **'Broken wheels and axles'** means a break affecting essential parts of a wheel or axle, creating an accident risk (derailment or collision).

Definitions and methods for indicators relating to the consequences of accidents

22. **Cost of persons killed and injured (Value of Preventing a Casualty – VPC)**

The methodology developed by the HEATCO project (Developing Harmonised European Approaches for Transport Costing and Project Assessment) is recommended for calculating indicators relating to the consequences of accidents (persons killed and injured). This uses the concept of **VPC** (**V**alue of **P**reventing a **C**asualty), the two components of which are:

a) **Value of safety *per se*:** Willingness to Pay (WTP) – values based on stated preference studies carried out in the Member State in which they are applied.

b) **Direct and indirect economic costs**: costs assessed in the Member States, consisting of:
   - Medical and rehabilitation costs;
   - Legal and police costs, cost of private collision investigations, emergency services and administrative insurance costs;
   - Production losses (value to society of goods and services that could have been provided by the person had the accident not occurred).

Local values must be used whenever possible for a) and b), provided they have been developed by means of an appropriate methodology.

If these are not available, the values in **Table 1** can be used, the reference year for which is 2002. These values must be updated on a linear basis in accordance with growth in per capita GDP for the year of calculation.

For 2006 the correcting factor for Portugal is **1.11**, based on the following values:

	2002	**2006**
GDP	135 433.6 x €10^6	152 873.0 x €10^6
Population	10 407 465	10 569 592

***Per capita* GDP**	€13 013 / inhab	€14 463 / inhab

Sources: *Eurostat* and INE

Portugal – Application of Table 1

Value of Preventing a Casualty in 2006 = 803 000 * 1.11 = EUR 891 330

Value of Preventing a Serious Injury in 2006 = 107 400 * 1.11 = EUR 119 214

	a) Value of safety per se			b) Direct and indirect costs			VPC (a+b)		
Country	Fatality	Severe injury	Slight injury	Fatality	Severe injury	Slight injury	Fatality	Severe injury	Slight injury
Austria	1,600,000	208,000	16,000	160,000	32,300	3,000	1,760,000	240,300	19,000
Belgium	1,490,000	194,000	14,900	149,000	55,000	1,100	1,639,000	249,000	16,000
Cyprus	640,000	83,000	6,400	64,000	9,900	400	704,000	92,900	6,800
Czech Republic	450,000	59,000	4,500	45,000	8,100	300	495,000	67,100	4,800
Denmark	2,000,000	260,000	20,000	200,000	12,300	1,300	2,200,000	272,300	21,300
Estonia	320,000	41,000	3,200	32,000	5,500	200	352,000	46,500	3,400
Finland	1,580,000	205,000	15,800	158,000	25,600	1,500	1,738,000	230,600	17,300
France	1,470,000	191,000	14,700	147,000	34,800	2,300	1,617,000	225,800	17,000
Germany	1,510,000	196,000	15,100	151,000	33,400	3,500	1,661,000	229,400	18,600
Greece	760,000	99,000	7,600	76,000	10,500	800	836,000	109,500	8,400
Hungary	400,000	52,000	4,000	40,000	7,000	300	440,000	59,000	4,300
Ireland	1,940,000	252,000	19,400	194,000	18,100	1,300	2,134,000	270,100	20,700
Italy	1,300,000	169,000	13,000	130,000	14,700	1,100	1,430,000	183,700	14,100
Latvia	250,000	32,000	2.500	25,000	4,700	200	275,000	36,700	2,700
Lithuania	250,000	33,000	2.500	25,000	5,000	200	275,000	38,000	2,700
Luxembourg	2,120,000	276,000	21,200	212,000	87,700	700	2,332,000	363,700	21,900
Malta	910,000	119,000	9,100	91,000	8,800	400	1,001,000	127,800	9,500
Netherlands	1,620,000	211,000	16,200	162,000	25,600	2,800	1,782,000	236,600	19,000
Norway	2,630,000	342,000	26,300	263,000	64,000	2,800	2,893,000	406,000	29,100
Poland	310,000	41,000	3,100	31,000	5,500	200	341,000	46,500	3,300
Portugal	730,000	95,000	7,300	73,000	12,400	100	803,000	107,400	7,400
Slovakia	280,000	36,000	2,800	28,000	6,100	200	308,000	42,100	3,000
Slovenia	690,000	90,000	6,900	69,000	9,000	400	759,000	99,000	7,300
Spain	1,020,000	132,000	10,200	102,000	6,900	300	1,122,000	138,900	10,500
Sweden	1,700,000	220,000	17,000	170,000	53,300	2,700	1,870,000	273,300	19,700
United Kingdom	1,650,000	215,000	16500	165,000	20,100	2100	1,815,000	235,100	18,600

Developing Harmonised European Approaches for Transport Costing and Project Assessment (for details on deliverable 5, of interest for the CSIs WG - Proposal for Harmonised Guidelines: http://heatco.ier.uni-stuttgart.de/)

[1] Items are valued as if no indirect taxation or subsidy were applied

Source: European Railway Agency Safety Performance and Monitoring WG/HEATCO project

Table 1 - Value of Preventing a Casualty (VPC) – 2002 values

Source: European Railway Agency Safety Performance and Monitoring WG/HEATCO project

Example: costs associated to the occurrence of 10 fatalities and 50 severe injuries in 2006 in Portugal (notional values)

Fatalities: 10 x 803 000 x 1.11 = EUR 8 913 300
Severe injuries: 50 x 107 400 x 1.11 = EUR 5 960 700

23. **'Cost of replacing or repairing damaged rolling stock or infrastructure'** means the cost of introducing new rolling stock or infrastructure with the same functionalities and technical parameters when repair is not possible, or the cost of restoring rolling stock or infrastructure to its condition prior to the accident. Both must be estimated on the basis of the experience of the operator/infrastructure manager. Possible costs of leasing rolling stock because damaged rolling stock is not available must be included.

24. **'Cost of damage caused to the environment'** means the cost the operator/IM estimates will have to be met, based on their experience, to restore the area damaged to its condition prior to the accident.

Guideline: accidents must be reported whenever polluting solids, liquids or gases are released. Fires caused in forests by rolling stock in motion are also included.

25. **'Cost of delays'** means the monetary value of delays incurred by users, passengers and clients of goods transported by rail as a result of an accident, calculated as follows:

VTTS = Value of travel time savings

The underlying principle in VTTS is that each country's values are used wherever possible, provided they have been developed by means of an appropriate methodology.

If these values are not available, the values in **Tables 2 and 3** can be used, which are based on HEATCO project values and assumptions.

The reference year is 2002, and the values must be updated on a linear basis in accordance with growth in per capita GDP for the year of calculation.

For passengers not on business trips, the VTTS is approximately one third of the values shown in Table 2. Passengers travelling to or from their workplace are not considered to be on business.

- **Value of time for a train passenger (per hour)**

VT_1 = [VTTS $_{(Table\ 2)}$] * [annual average percentage of business passenger trips] + 1/3 * [VTTS $_{(Table\ 2)}$] * [annual average percentage of non-business passenger trips]

	Business		
Country	Air	Bus	Car, Train
Austria	39.11	22.79	28.4
Belgium	37.79	22.03	27.44
Cyprus	29.04	16.92	21.08
Czech Republic	19.65	11.45	14.27
Denmark	43.43	25.31	31.54
Estonia	17.66	10.3	12.82
Finland	38.77	22.59	28.15
France	38.14	22.23	27.7
Germany	38.37	22.35	27.86
Greece	26.74	15.59	19.42
Hungary	18.62	10.85	13.52
Ireland	41.14	23.97	29.87
Italy	35.29	20.57	25.63
Latvia	16.15	9.41	11.73
Lithuania	15.95	9.29	11.58
Luxembourg	52.36	30.51	38.02
Malta	25.67	14.96	18.64
Netherlands	38.56	22.47	28
Poland	17.72	10.33	12.87
Portugal	26.63	15.52	19.34
Slovakia	17.02	9.92	12.36
Slovenia	25.88	15.08	18.8
Spain	30.77	17.93	22.34
Sweden	41.72	24.32	30.3
United Kingdom	39.97	23.29	29.02
EU (25 Countries)	32.8	19.11	23.82

Source: European Railway Agency Safety Performance and Monitoring WG / HEATCO project

Table 2 - Value of time for business passenger trips (VT_1) – 2002 values

Example: assuming that in Portugal 10% of passengers travel on business, VT_1 (relating to 2002) would be:

$VT_1 = 19.34*0.1 + 1/3 * (19.34*0.9) = EUR\ 7.74\ /hour$

- **Value of time for a goods train (one hour):**

VT_2 = [VTTS $_{(Table\ 3)}$] * tonne.k/tk

	Per tonne of freight carried	
Country	Road	Rail
Austria	3.37	1.38
Belgium	3.29	1.35
Cyprus	2.73	1.12
Czech Republic	2.06	0.84
Denmark	3.63	1.49
Estonia	1.9	0.78
Finland	3.34	1.37
France	3.32	1.36
Germany	3.34	1.37
Greece	2.55	1.05
Hungary	1.99	0.82
Ireland	3.48	1.43
Italy	3.14	1.3
Latvia	1.78	0.73
Lithuania	1.76	0.72
Luxembourg	4.14	1.7
Malta	2.52	1.04
Netherlands	3.35	1.38
Poland	1.92	0.78
Portugal	2.58	1.06
Slovakia	1.86	0.77
Slovenia	2.51	1.03
Spain	2.84	1.17
Sweden	3.53	1.45
United Kingdom	3.42	1.4
EU (25 Countries)	2.98	1.22

Source: European Railway Agency Safety Performance and Monitoring WG /HEATCO project

Table 3 - Value of time for goods trains (VT_2) - 2002 values

Example: assuming that in Portugal the tonne.k/tk value of goods trains is 300 tonnes.

VT_2 = 300 * 1.06 = EUR 318 /hour

- **Calculation of the cost of a 1 minute delay of a train (C_m)**

a) Passenger trains (C_{mp})

$C_{mp} = 2.5 * (VT_1 / 60) * pk/tk$

b) Goods trains (C_{mf})

$C_{mf} = 2.15 * (VT_2 / 60)$

NB: The factors 2.5 and 2.15 between the VTTS and the value of the delay have been suggested by the HEATCO project

Calculation of the cost of train delays due to an accident:

$C_{accident} = C_{mp} *$ (Minutes' delay for passenger trains) + $C_{mf} *$ (Minutes' delay for goods trains)

Example: cost of train delays caused by an accident in 2006 that caused 100 minutes' delay for passenger trains and 300 minutes' delay for goods trains:

Data: pk/tk = 150
ton/tk = 300
% passengers on business = 10%
(notional values)
Correcting factor for 2006 = 1.11
VT1 = EUR 7.74 /hour
VT2 = EUR 318 /hour

$C_{mp} = 2.5* (7.74/60) * 150 * 1.11 =$ EUR 53.70 /min

$C_{mf} = 2.15* (318/60) *1.11 =$ EUR 12.65 /min

$C_{accident} = 53.7* 100 + 12.6* 300 =$ EUR 9 150

26. **'Total number of hours lost due to accidents'** means the number of hours, estimated on the basis of the experience of the operator/infrastructure manager, lost due to absence from work

of their own regular staff or the staff of contractors injured in accidents.

27. **'Number of hours worked by staff and contractors in a year'** means the total number of hours, estimated on the basis of the experience of the operator/infrastructure manager, worked in a year by their own regular staff or the staff of service providers, in order to carry out ***all*** the undertaking's activities rather than those relating to safety alone.

Indicators relating to the technical safety of infrastructure and its implementation

28. **'Automatic Train Protection' (ATP)** means a system determining compliance with signals and speed limits by means of speed control, including automatic stopping at signals.

Guideline: safety authorities must list the ATP systems in operation on the network in their Annual Safety Report.

29. **'Level crossing'** means any level intersection between the road and the railway, if authorised by the infrastructure manager and open to the public or to private road users.

30. **'Active level** crossing' means a level crossing the users of which are protected and/or warned of the approach of trains, when it is not safe to cross, by activated devices.

Protection may be ensured by means of the following physical devices:

- Half or full barriers;
- Gates.

The warning may be given by means of:

- Visual devices: lights, flags, flares;
- Audible devices: bells, horns, etc.;
- Physical devices: e.g.: vibration of ridges on the road.

This type of crossing can be classified as being controlled by an automatic system, or manually by a railway employee (traffic controller, level crossing guard or train crew member).

a) 'Level crossing with automatic protection and/or warning for road traffic' means an LC whose protection and/or warning is activated by the approach of a train.

These LC can be classified as follows:

- LC with automatic protection for road traffic;
- LC with automatic warning for road traffic;
- LC with automatic protection and warning for road traffic.

Guideline: LC with protection and/or warning activated by a railway employee are also included, provided they are equipped with an interlocking signal showing the train a signal that the track is clear, and provided that the LC's protection and/or warning has been activated.

b) **'Level crossing with manual protection for road traffic'** means an LC whose protection and/or warning is activated manually by a railway employee and which is not interlocked with the rail signalling.

These LC can be classified as follows:

- LC with manual protection for road traffic;
- LC with manual warning for road traffic;
- LC with manual protection and warning for road traffic.

31. 'Passive level crossing' means a level crossing with no way of activating the train approach protection and/or warning system, when it is not safe to cross.

Guideline: this includes LC used only by pedestrians, and LC with only a road sign indicating their presence.

32. **'Road'** means, for the purposes of data reported under Regulation (EC) No 1192/2003 – Annex H, any private or public road, avenue or highway, including pedestrian paths and cycle paths.

Indicators relating to safety management

33. **'Auditing'** means a systematic, independent and documented process for obtaining auditing evidence and its objective examination with a view to determining the extent to which auditing criteria are met (ISO 9000).

Scale factors

34. **'Train-km'** (tk) means the unit of measure representing the movement of a train over a distance of 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 (Regulation (EC) No 1192/2003).

35. **'Passenger-km'** (pk) 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 (Regulation (EC) No 1192/2003).

C.3 – CSI Tables and Graphs – ERA

European Railway Agency
Agence Ferroviaire Européenne

País de reporte: Portugal Ano de reporte: 2006

Directiva da Segurança 2004/49/EC - Anexo 1: ICS´s

1. Indicadores relativos a acidentes

1.1a. Número total de acidentes e desagregação nos seguintes tipos

1.1b. Número total de acidentes e desagregação por tipo, por milhão de comboio.quilómetro (ck)

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	N00	N01	N02	N03	N04	N05	N06
1.1a. Número de acidentes	89	3	9	22	55	0	0

Código da variável	N10	N11	N12	N13	N14	N15	N16
1.1b. Número relativo de acidentes	2,27E+00	7,64E-02	2,29E-01	5,60E-01	1,40E+00	0,00E+00	0,00E+00

	Suicídios
Código da variável	N07
1.1a. Nº total de suicídios	40

Código da variável	N17
1.1b. Número total de suicídio por milhão de comboio.quilómetro	1,02E+00

1.2a. Número total de feridos graves por tipo de acidente divididos nas seguintes categorias

1.2b. Número total de feridos graves por tipo de acidente, por milhão de ck, divididos nas seguintes categorias

1.2c. Número total passageiros com ferimentos graves por tipo de acidente, por billão de passageiro.quilómetro (pk), divididos nas seguintes categorias

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	TS00	TS01	TS02	TS03	TS04	TS05	TS06
1.2a. Número total de feridos graves	33	1	1	9	22	0	0

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	TS10	TS11	TS12	TS13	TS14	TS15	TS16
1.2b. Número relativo de feridos graves	8,40E-01	2,55E-02	2,55E-02	2,29E-01	5,60E-01	0,00E+00	0,00E+00

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	PS00	PS01	PS02	PS03	PS04	PS05	PS06
1.2a.Número de Passageiros	8	0	0	0	8	0	0

Código da variável	PS10	PS11	PS12	PS13	PS14	PS15	PS16
1.2b. Número relativo de Passageiros	2,04E-01	0,00E+00	0,00E+00	0,00E+00	2,04E-01	0,00E+00	0,00E+00

Código da variável	PS20	PS21	PS22	PS23	PS24	PS25	PS26
1.2c. Número relativo de Passageiros	2,06E+00	0,00E+00	0,00E+00	0,00E+00	2,06E+00	0,00E+00	0,00E+00

Código da variável	SS00	SS01	SS02	SS03	SS04	SS05	SS06
1.2a. Nº de empregados, incluindo empreiteiros, com ferimentos graves	2	1	1	0	0	0	0

Código da variável	SS10	SS11	SS12	SS13	SS14	SS15	SS16
1.2b. Nº relativo de empregados, incluindo empreiteiros, com ferimentos graves	5,09E-02	2,55E-02	2,55E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Código da variável	LS00	LS01	LS02	LS03	LS04	LS05	LS06
1.2a. Número de utilizadores de passagens de nível	9	0	0	9	0	0	0

Código da variável	LS10	LS11	LS12	LS13	LS14	LS15	LS16
1.2b. Número relativo de utilizadores de passagens de nível	2,29E-01	0,00E+00	0,00E+00	2,29E-01	0,00E+00	0,00E+00	0,00E+00

Código da variável	US00	US01	US02	US03	US04	US05	US06
1.2a. Número de pessoas não autorizadas	10	0	0	0	10	0	0

Código da variável	US10	US11	US12	US13	US14	US15	US16
1.2b. Número relativo de pessoas não autorizadas	2,55E-01	0,00E+00	0,00E+00	0,00E+00	2,55E-01	0,00E+00	0,00E+00

Código da variável	OS00	OS01	OS02	OS03	OS04	OS05	OS06
1.2a. Outros	4	0	0	0	4	0	0

Código da variável	OS10	OS11	OS12	OS13	OS14	OS15	OS16
1.2a. Número relativo de "outros	1,02E-01	0,00E+00	0,00E+00	0,00E+00	1,02E-01	0,00E+00	0,00E+00

Key to above table:
European Railway Agency Reporting country: Portugal Reporting year: 2006

Safety Directive 2004/49/EC – Annex 1: CSIs

1. Indicators relating to accidents
1.1a. Total number of accidents and breakdown into the following types
1.1b. Total number of accidents and breakdown by type, per million train kilometres (tk)

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.1a No of accidents							

Variable code							
1.1b Relative no of accidents							

	Suicides
Variable code	
1.1a Total no of suicides	

Variable code	
1.1b Total no of suicides per million tk	

1.2a. Total number of persons seriously injured, by type of accident, categorised as follows
1.2b. Total number of persons seriously injured, by type of accident, per million tk, categorised as follows
1.2c. Total number of passengers with serious injuries by type of accident, per billion passenger kilometres (pk), categorised as follows

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.2a Total no of persons seriously injured							

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.2b Relative no of persons seriously injured							

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.2a No of passengers							

Variable code							
1.2b Relative							

no of passengers							

Variable code							
1.2c Relative no of passengers							

Variable code							
1.2a No of employees, including contractors, with serious injuries							

Variable code							
1.2b Relative no of employees, including contractors, with serious injuries							

Variable code							
1.2a No of level crossing users							

Variable code							
1.2b Relative no of level crossing users							

Variable code							
1.2a No of unauthorised persons							

Variable code							
1.2b Relative no of unauthorised persons							

Variable code							
1.a Others							

Variable code							
1.2b Relative no of 'Others'							

European Railway Agency
Agence Ferroviaire Européenne

País de reporte: Portugal Ano de reporte: 2006

Directiva da Segurança 2004/49/EC - Anexo 1: ICS´s

1.3a. Número total de mortos por tipo de acidente divididos nas seguintes categorias

1.3b. Número total de mortos por tipo de acidente, por milhão de ck, divididos nas seguintes categorias

1.3c. Número total passageiros mortos por tipo de acidente, por bilião de passageiro.quilómetro (pk), divididos nas seguintes categorias (só para passageiros)

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	TK00	TK01	TK02	TK03	TK04	TK05	TK06
1.2a. Número total de mortos	53	0	0	18	35	0	0

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	TK10	TK11	TK12	TK13	TK14	TK15	TK16
1.2b. Número relativo de mortos	1,35E+00	0,00E+00	0,00E+00	4,58E-01	8,91E-01	0,00E+00	0,00E+00

	Nº total de todos os acidentes	Nº de colisões de comboios, incluindo colisões com obstáculos dentro do gabarito	Nº de descarrilamentos de comboios	Nº de acidentes em PN, incluindo acidentes envolvendo peões	Nº de acidentes com pessoas causados por material circulante em movimento, com a excepção de suicídios	Nº de incêndios em material circulante	Nº de outros acidentes
Código da variável	PK00	PK01	PK02	PK03	PK04	PK05	PK06
1.3a. Número de Passageiros	0	0	0	0	0	0	0

Código da variável	PK10	PK11	PK12	PK13	PK14	PK15	PK16
1.3b. Número relativo de Passageiros	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Código da variável	PK20	PK21	PK22	PK23	PK24	PK25	PK26
1.3c. Número de Passageiros	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Código da variável	SK00	SK01	SK02	SK03	SK04	SK05	SK06
1.3a. Nº de empregados, incluindo empreiteiros	1	0	0	0	1	0	0

Código da variável	SK10	SK11	SK12	SK13	SK14	SK15	SK16
1.3b. Nº relativo de empregados, incluindo empreiteiros	2,55E-02	0,00E+00	0,00E+00	0,00E+00	2,55E-02	0,00E+00	0,00E+00

Código da variável	LK00	LK01	LK02	LK03	LK04	LK05	LK06
1.3a. Número de utilizadores de passagens de nível	18	0	0	18	0	0	0

Código da variável	LK10	LK11	LK12	LK13	LK14	LK15	LK16
1.3b. Número relativo de utilizadores de passagens de nível	4,58E-01	0,00E+00	0,00E+00	4,58E-01	0,00E+00	0,00E+00	0,00E+00

Código da variável	UK00	UK01	UK02	UK03	UK04	UK05	UK06
1.3a. Nº de pessoas não autorizadas em instalações ferroviárias	29	0	0	0	29	0	0

Código da variável	UK10	UK11	UK12	UK13	UK14	UK15	UK16
1.3b. Nº relativo de pessoas não autorizadas em instalações ferroviárias	7,39E-01	0,00E+00	0,00E+00	0,00E+00	7,39E-01	0,00E+00	0,00E+00

Código da variável	OK00	OK01	OK02	OK03	OK04	OK05	OK06
1.3a. Outros	5	0	0	0	5	0	0

Código da variável	OK10	OK11	OK12	OK13	OK14	OK15	OK16
1.3a. Número relativo de "outros"	1,27E-01	0,00E+00	0,00E+00	0,00E+00	1,27E-01	0,00E+00	0,00E+00

2. Indicadores relativos a incidentes e acidentes

2.1a. Número total de incidentes e quase-acidentes e desagregação por tipo

2.1b. Número total de incidentes e quase-acidentes e desagregação por tipo, por milhão de comboios.quilómetro

	Nº Total de incidentes e quase acidentes	Nº de carris partidos	Nº de deformações na via	Nº de falhas na sinalização lateral	Nº de sinais ultrapassados apresentando o seu aspecto mais restritivo	Nº de rodas partidas em material circulante ao serviço	Nº de eixos avariados em material circulante ao serviço
Código da variável	I00	I01	I02	I03	I04	I05	I06
2.1a. Número de acidentes	168	45	95	0	24	1	3

Código da variável	I10	I11	I12	I13	I14	I15	I16
2.1b. Número relativo de acidentes	4,28E+00	1,15E+00	2,42E+00	0,00E+00	6,11E-01	2,55E-02	7,64E-02

Key to above table:
European Railway Agency Reporting country: Portugal Reporting year: 2006

Safety Directive 2004/49/EC – Annex 1: CSIs

1.3a. Total number of persons killed by type of accident, categorised as follows
1.3b. Total number of persons killed by type of accident, per million tk, categorised as follows
1.3c. Total number of persons killed by type of accident, per billion pk, categorised as follows (passengers only)

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.3a Total no of persons killed							

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.3b Relative no of persons killed							

	Total no of all accidents	No of collisions of trains, including with obstacles within the clearance gauge	No of train derailments	No of accidents at LC, including accidents involving pedestrians	No of accidents to persons caused by rolling stock in motion, excluding suicides	No of fires in rolling stock	No of other accidents
Variable code							
1.3a Number of passengers							

Variable code							
1.3b Relative no of passengers							

Variable code							
1.3c No of passengers							

Variable code							
1.3a No of employees, including contractors							

Variable code							
1.3b Relative no of employees, including contractors							

Variable code							
1.3a No of level crossing users							

Variable code							
1.3b Relative no of level crossing users							

Variable code							
1.3a No of unauthorised persons on railway							

premises							

Variable code							
1.3b Relative no of unauthorised persons on railway premises							

Variable code							
1.3a Others							

Variable code							
1.3a Relative no of 'others'							

2. Indicators relating to incidents and accidents
2.1a. Total number of incidents and near-misses, and breakdown by type
2.1b. Total number of incidents and near-misses, and breakdown by type, per million train kilometres

	Total no of incidents and near-misses	No of broken rails	No of track buckles	No of wrong-side signalling failures	No of signals passed indicating their most restrictive aspect	No of broken wheels in rolling stock in operation	No of axle failures in rolling stock in operation
Variable code							
2.1a Number of accidents							

Variable code							
2.1b Relative no of accidents							

European Railway Agency
Agence Ferroviaire Européenne

País de reporte: Portugal Ano de reporte: 2006

Directiva da Segurança 2004/49/EC - Anexo 1: ICS´s

3. Indicadores relativos às consequências de acidentes

3.1a. Custos totais em euros de todos os acidentes

3.1b. Custo total dos acidentes em euros, por milhão de comboios.quilómetro

3.2a. Número total de horas perdidas pelo pessoal e empreiteiros como consequência de acidentes

3.2b. Número relativo de horas perdidas pelo pessoal e empreiteiros como consequência de acidentes

	Custo total de todos os acidentes	Custo das mortes	Custo dos ferimentos	Custo da substituição ou reparação de material circulante ou infra-estrutura danificados	Custo dos atrasos, perturbações e rencaminhamento do tráfego, incluindo despesas suplementares com pessoal e lucros cessantes
Código da variável	C00	C01	C02	C03	C04
3.1a. Custo (em€)	52114413,4	47240490	3934062	não disponive	939861,37

Código da variável	C10	C11	C12	C13	C14
3.1b. Custo relativo (em€)	1,33E+06	1,20E+06	1,00E+05	#VALOR!	2,39E+04

	Número total de horas perdidas pelo pessoal e empreiteiros como consequência de acidentes
Código da variável	W00
3.2a. Número total de horas de trabalho	não disponivel

Código da variável	W10
3.2b. Número relativo de horas de trabalho	#VALOR!

4. Indicadores relativos à segurança técnica da infra-estrutura e sua implementação

	% de linhas com sistemas de Protecção Automática de Comboios (ATP) em	% de ck realizados utilizando sistemas ATP operacionais	Número total de PN	Número de PN por quilómetro de via	% de PN com protecção automática ou manual
Código da variável	T01	T02	T03	T04	T05
4. Número	50,33%	90,00%	1297	3,69E-01	39,32%

5. Indicadores relativos à gestão da segurança

Auditorias internas efectuadas pelo gestor da infra-estrutura e empresas de transporte ferroviária, tal como estabelecido na documentação do sistema de gestão da segurança

	Número total de auditorias internas realizadas	% de auditorias realizadas em relação às requeridas ou planeadas
Código da variável	A01	A02
5. Número	2	100,00%

---

6. Dados de referência

	Nº de comboios.quilómetros	Nº de passageiros.quilómetro	Nº de km de via	Nº total de horas trabalhadas
Código da variável	R01	R02	R03	R04
6. Número	39,264	3,876	3512,7	16238611

Key to above table:
European Railway Agency Reporting country: Portugal Reporting year: 2006

Safety Directive 2004/49/EC – Annex 1: CSIs

3. Indicators relating to the consequences of accidents
3.1a Total costs in euros of all accidents
3.1b. Total cost of accidents in euros, per million train kilometres
3.2a. Total number of hours lost by personnel and contractors as a result of accidents
3.2b. Relative number of hours lost by personnel and contractors as a result of accidents

	Total cost of all accidents	Cost of persons killed	Cost of persons injured	Cost of replacing or repairing damaged rolling stock or infrastructure	Cost of delays, disruptions to and rerouting of traffic, including additional expenditure on personnel and loss of profit
Variable code					
3.1a Cost (EUR)				Not available	

Variable code					
3.1a Relative cost (EUR)				#VALUE!	

	Total no of hours lost by personnel and contractors as a result of accidents
Variable code	
3.2a Total no of working hours	Not available

Variable code	
3.2b Relative no of working hours	# VALUE!

4. Indicators relating to technical safety of infrastructure and its implementation

	% of lines with Automatic Train Protection systems (ATP) in operation	% of tk travelled using operational ATP systems	Total no of LC	No of LC per kilometre of track	% of LC with automatic or manual protection
Variable code					
4. Number					

5. Indicators relating to safety management
Internal audits carried out by the infrastructure manager and railway undertakings, as laid down in safety management system documentation

	Total no of internal audits carried out	% of audits carried out in relation to audits required or planned
Variable code		
5. Number		

6. Reference data

	No of train kilometres	No of passenger kilometres	No of km of track	Total no of hours worked
Variable code				
6. Number				

Portugal

Número de acidentes e CK

	Tipo de acidente							
Ano	Colisões	Descarrilamentos	Acid. em PN	Acid. causados por MC em movimento	Fogos no MC	Outros	Total	CK (em milhões)
2006	3	9	22	55	0	0	89	39
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011								
2012								
2013								
2014								
2015								

Número de acidentes / CK

	Tipo de acidente						
Ano	Colisões	Descarrilamentos	Acid. em PN	Acid. causados por MC em movimento	Fogos no MC	Outros	Total
2006	7,84E-02	2,29E-01	5,80E-01	1,40E+00	0,00E+00	0,00E+00	2,27E+00
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							

Nº de mortos, CK e PK

	Categoria de pessoas							
Ano	Passageiros	Empregados	Utilizadores de PN	Pessoas não autorizadas	Outros	Total	PK (em biliões)	CK (em milhões)
2006	0	1	18	29	5	53	4	39
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011								
2012								
2013								
2014								
2015								

Nº de mortos / CK e PK

	Categoria de pessoas						
Ano	Passageiros	Passageiros	Empregados	Utilizadores de PN	Pessoas não autorizadas	Outros	Total
2006	0,00E+00	0,00E+00	2,55E-02	4,58E-01	7,39E-01	1,27E-01	1,35E+00
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							
	relativo a CK	relativo a PK	relativo a CK	relativo a CK	relativo a CK	relativo a CK	relativo a CK

Nº de feridos, CK e PK

	Categoria de pessoas							
Ano	Passageiros	Empregados	Utilizadores de PN	Pessoas não autorizadas	Outros	Total	PK (em biliões)	CK (em milhões)
2006	8	2	9	10	4	33	4	39
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011								
2012								
2013								
2014								
2015								

Nº de feridos / CK e PK

	Categoria de pessoas						
Ano	Passageiros	Passageiros	Empregados	Utilizadores de PN	Pessoas não autorizadas	Outros	Total
2006	2,04E-01	2,09E+00	5,09E-02	2,29E-01	2,55E-01	1,02E-01	8,40E-01
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							
	relativo a CK	relativo a PK	relativo a CK	relativo a CK	relativo a CK	relativo a CK	relativo a CK

Nº de percursores e CK

	Categoria de percursor							
Ano	Número de carris partidos	Número de deformações na via	Nº de falhas na sinalização lateral	Nº de sinais ultrapassados com perigo	Nº de rodas partidas	Nº de eixos avariados	Total	CK (em milhões)
2006	45	95	0	24	1	3	168	39
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011								
2012								
2013								
2014								
2015								

Nº de precursores / CK

	Categoria de precursor						
Ano	Número de carris partidos	Número de deformações na via	Nº de falhas na sinalização lateral	Nº de sinais ultrapassados com perigo	Nº de rodas partidas	Nº de eixos avariados	Total
2006	1,15E+00	2,42E+00	0,00E+00	6,11E-01	2,55E-02	7,84E-02	4,28E+00
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							

Custo de todos os acidentes, horas

	Tipo de acidente							
Ano	Custo dos mortos em milhões de euros	Custo dos feridos em milhões de euros	Custo da substituição ou reparação de material circulante ou infra-estrutura danificados	Custos dos atrasos, perturbações e reencaminhamento do tráfego, incluindo despesas suplementares com pessoal e lucros cessantes	Total dos custos em milhões de euros	Nº total de horas perdidas pelo pessoal e empreiteiros como consequência de acidentes	Nº total de horas trabalhadas	CK (em milhões)
2006	47240490	3994062	ão disponív	939861	52114413	ão disponív	16239811	39
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011								
2012								
2013								
2014								
2015								

	Tipo de acidente						
Ano	Custo dos mortos em milhões de euros	Custo dos feridos em milhões de euros	Custo da substituição ou reparação de material circulante ou infra-estrutura danificados	Custos dos atrasos, perturbações e reencaminhamento do tráfego, incluindo despesas suplementares com pessoal e lucros cessantes	Total dos custos em milhões de euros	Nº total de horas perdidas pelo pessoal e empreiteiros como consequência de acidentes (em milhões) / Nº total de horas trabalhadas pelo pessoal e empreiteiros (em milhões)	
2006	1,20E+06	1,00E+05	#VALOR!	2,39E+04	1,33E+06	#VALOR!	
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							
	relativo a CK						

Segurança da infra-estrutura e sua implementação, gestão da segurança

	Tipo de acidente						
Ano	% de linhas com sistemas ATP em operação	% de CK utilizando ATP operacional	Nº total de PN	Nº de km de via (km de via múltipla são multiplicados pelo nº de vias)	Nº de PN por km de via	% de PN com protecção automática ou manual	Nº de auditorias realizadas / Nº de auditorias planeadas
2006	50,33%	90,00%	1297	3513	3,69E-01	39,32%	100,00%
2007	0,00%	0,00%	0	0		0,00%	0,00%
2008	0,00%	0,00%	0	0		0,00%	0,00%
2009	0,00%	0,00%	0	0		0,00%	0,00%
2010	0,00%	0,00%	0	0		0,00%	0,00%
2011							
2012							
2013							
2014							
2015							

Ano							
2006							
2007							
2008							
2009							
2010							
2011							
2012							
2013							
2014							
2015							

Key to above tables, left-hand column, followed by right-hand column:

Portugal

Number of accidents and tk

Year	Type of accident							
	Collisions	Derailments	Acc. at LC	Accs. caused by RS in motion	Fires in RS	Others	Total	tk (million)

Number of accidents / tk

Year	Type of accident						
	Collisions	Derailments	Acc. at LC	Accidents caused by RS in motion	Fires in RS	Others	Total

No of persons killed, tk and pk

Year	Category of person							
	Passengers	Employees	LC users	Unauthorised persons	Others	Total	pk (billion)	tk (million)

Number of persons killed / tk and pk

Year	Category of person						
	Passengers	Passengers	Employees	LC users	Unauthorised persons	Others	Total

No of persons injured, tk and pk

Year	Category of person							
	Passengers	Employees	LC users	Unauthorised persons	Others	Total	pk (billion)	tk (million)

No of persons injured / tk and pk

Year	Category of person						
	Passengers	Passengers	Employees	LC users	Unauthorised persons	Others	Total

No of precursors and tk

Year	Category of precursor							
	No of broken rails	No of track buckles	No of wrong-side signalling failures	No of signals passed at danger	No of broken wheels	No of axle failures	Total	tk (million)

No of precursors / tk

Year	Category of precursor						
	No of broken rails	No of track buckles	No of wrong-side signalling failures	No of signals passed at danger	No of broken wheels	No of axle failures	Total

Cost of all accidents, hours

Year	Type of accident							
	Cost of persons killed in million euros	Cost of persons injured in million euros	Cost of replacing or repairing damaged rolling stock or infrastructure	Cost of delays, disruptions to and rerouting of traffic, including additional expenditure on personnel and loss of profit	Total costs in million euros	Total no of hours lost by personnel and contractors as a result of accidents	Total no of hours worked	tk (million)

	Type of accident					
Year	Cost of persons killed in million euros	Cost of persons injured in million euros	Cost of replacing or repairing damaged rolling stock or infrastructure	Cost of delays, disruptions to and rerouting of traffic, including additional expenditure on personnel and loss of profit	Total costs in million euros	Total hours lost by personnel and contractors as a result of accidents (million)/Total no of hours worked by personnel and contractors (million)
	Relative to tk					

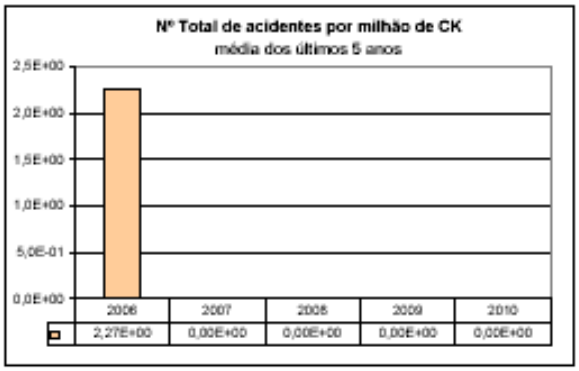
Safety of infrastructure and its implementation, safety management

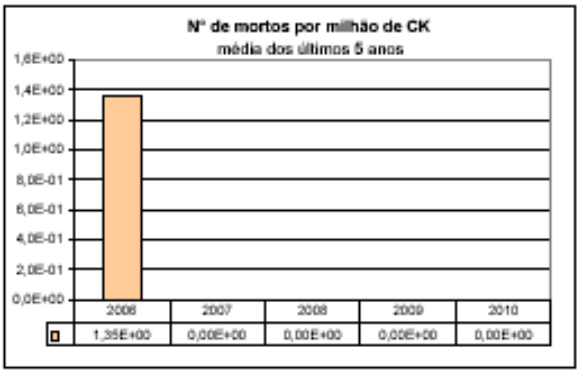
	Type of accident						
Year	% of lines with ATP systems in operation	% of tk using operational ATP	Total no of LC	No of km of track (km of multiple track are multiplied by no of tracks)	No of LC per km of track	% of LC with automatic or manual protection	No of audits carried out / no of audits planned

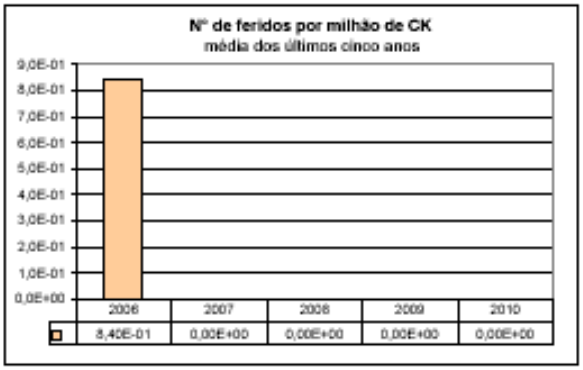
Year							

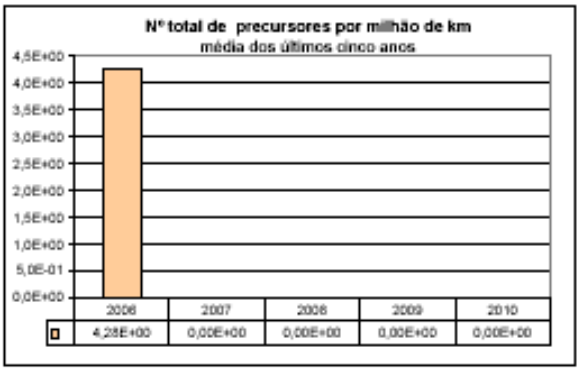
C.1. Dados dos Indicadores Comuns de Segurança (ICS)

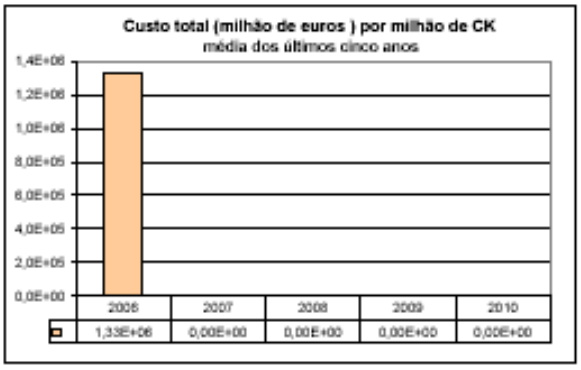
Apreciação geral do desempenho











relatório 2007: valores relativos a 2006
relatório de 2008: valores relativos à media entre 2006 e 2007
relatório de 2009: valores relativos à media entre 2006, 2007 e 2008
relatório de 2010: valores relativos à media entre 2006, 2007, 2008 e 2009

Key to above graphs:

C.1. Common Safety Indicators (CSIs) data

General performance assessment

Total no of accidents per million tk
average over last 5 years

No of persons injured per million tk
average over last 5 years

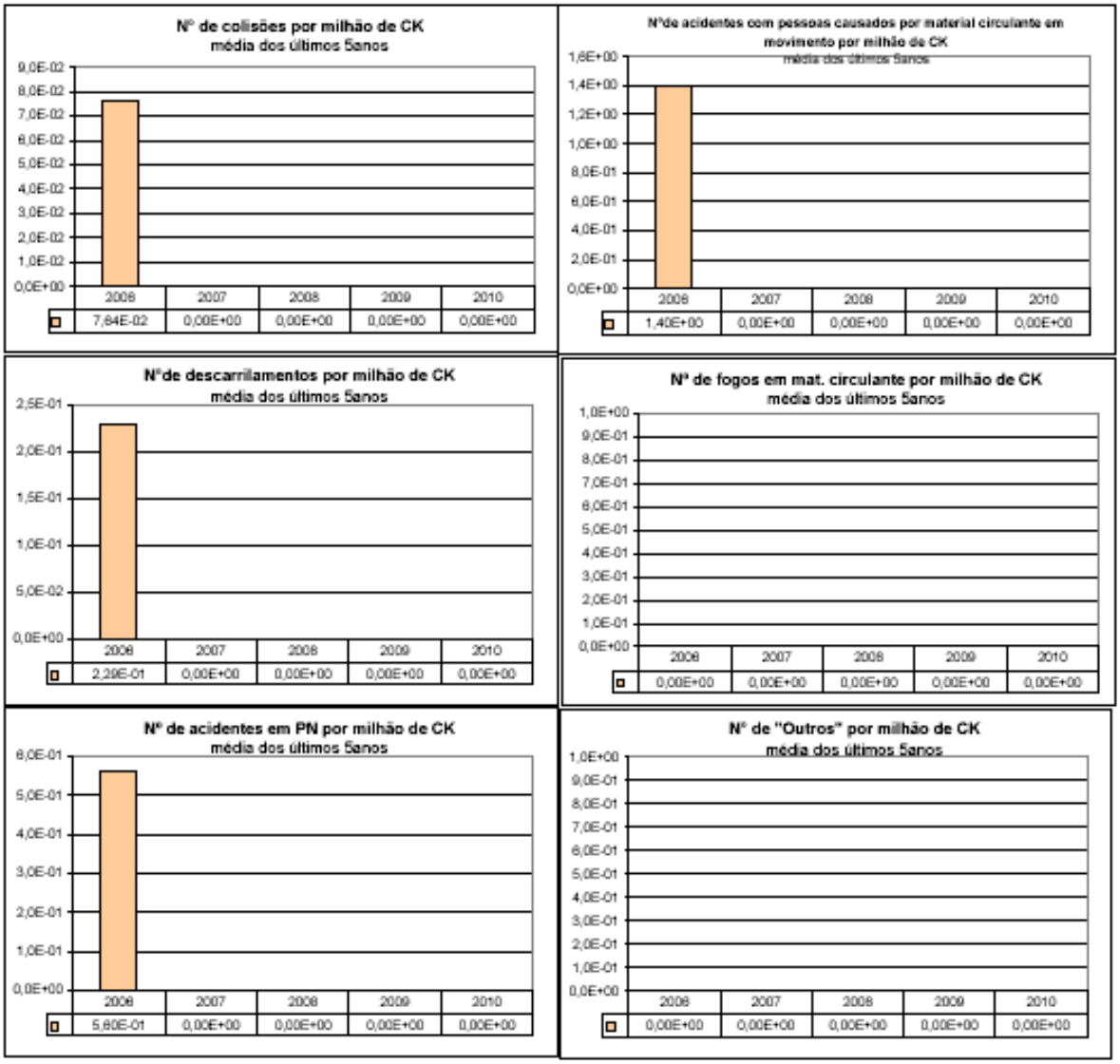
Total cost (million euros) per million tk
average over last 5 years

Total no of persons killed per million tk
average over last 5 years

Total no of precursors per million km
average over last 5 years

2007 report: figures for 2006
2008 report: figures for average between 2006 and 2007
2009 report: figures for average between 2006, 2007 and 2008
2010 report: figures for average between 2006, 2007, 2008 and 2009

Acidentes desagregados por categoria



relatório 2007: valores relativos a 2006
relatório de 2008: valores relativos à media entre 2006 e 2007
relatório de 2009: valores relativos à media entre 2006, 2007 e 2008
relatório de 2010: valores relativos à media entre 2006, 2007, 2008 e 2009

Key to above graphs:

Accidents broken down by category

No of collisions per million tk
average over last 5 years

No of accidents to persons caused by rolling stock in motion per million tk
average over last 5 years

No of derailments per million tk
average over last 5 years

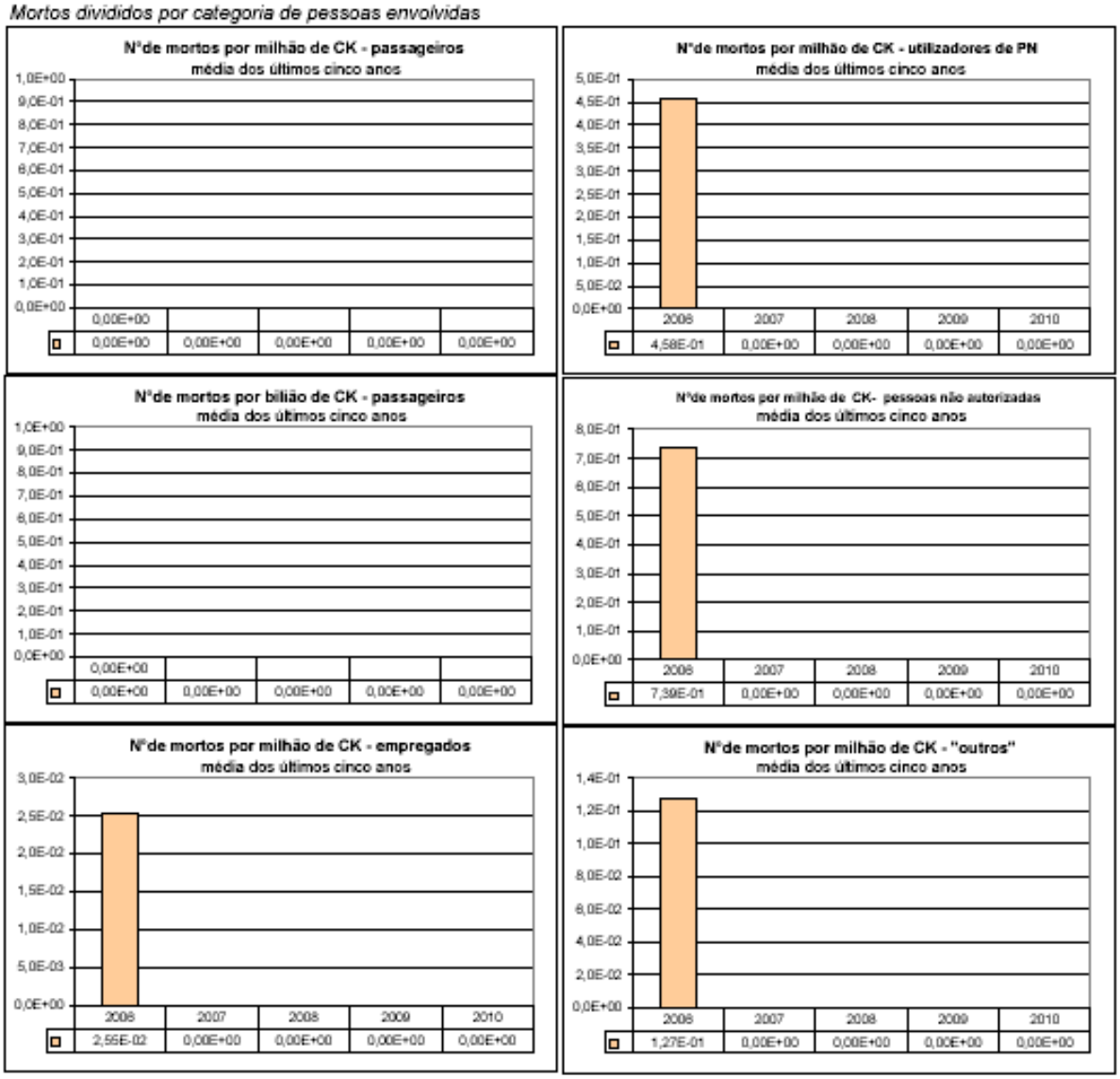
No of fires in rolling stock per million tk
average over last 5 years

No of accidents at LC per million tk
average over last 5 years

No of 'Others' per million tk
average over last 5 years

2007 report: figures for 2006
2008 report: figures for average between 2006 and 2007
2009 report: figures for average between 2006, 2007 and 2008
2010 report: figures for average between 2006, 2007, 2008 and 2009

Mortos divididos por categoria de pessoas envolvidas



relatório 2007: valores relativos a 2006.
relatório de 2008: valores relativos à media entre 2006 e 2007
relatório de 2009: valores relativos à media entre 2006, 2007 e 2008
relatório de 2010: valores relativos à media entre 2006, 2007, 2008 e 2009

Key to above graphs:

Persons killed by category of persons involved

No of persons killed per million tk - passengers
average over last 5 years

No of persons killed per million tk - LC users
average over last 5 years

No of persons killed per billion tk - passengers
average over last 5 years

No of persons killed per million tk - unauthorised persons
average over last 5 years

No of persons killed per million tk – employees
average over last 5 years

No of persons killed per million tk – 'Others'
average over last 5 years

2007 report: figures for 2006
2008 report: figures for average between 2006 and 2007
2009 report: figures for average between 2006, 2007 and 2008
2010 report: figures for average between 2006, 2007, 2008 and 2009

ANNEX D

RELEVANT AMENDMENTS TO LEGISLATION AND REGULATIONS

National legislation	Legal reference	Date of entry into force	Reason for introduction	Description
Legislation on the national safety authority	Decree-Law No 210/2006 of 27 October	27.10.2006	To restructure public administration	Defines the organisation of the MOPTC and establishes the IMTT
Legislation on bodies notified, assessors, third parties for registration, examinations, etc.	Decree-Law No 189/2006 of 22 September	22.09.2006	To update Decree-Law No 322/2000 of 19 December	Establishes the first amendment to Decree-Law No 322/2000 of 19 December, which introduces the legal system on the designation and professional qualifications of safety advisers for the transport of dangerous goods by road, rail or inland waterway
	DGTTF Order No 23721/2006	30.10.2006	To update requirements under ADR/RPE 2005 and to clarify and enhance procedures	Establishes the requirements to be met by training organisations, training courses, knowledge assessment and certification of safety advisers and drivers of dangerous goods
National Railway Safety Rules				
Rules on national safety methods and objectives	–	–	–	–
Rules laying down requirements for safety management systems and safety certification of railway undertakings	–	–	–	–

Rules laying down requirements for safety management systems and safety authorisation of the infrastructure manager	-	-	-	-
Rules laying down requirements for owners of wagons	-	-	-	-
Rules laying down requirements for wagon maintenance workshops	-	-	-	-
Rules laying down requirements for authorisation to bring into service and maintain rolling stock or modified stock, including rules for operators to exchange rolling stock, registration systems and requirements for test procedures	-	-	-	-
General traffic rules for the rail network, including rules	Addendum 37 to General Safety Regulation II (Signals) Addendum 21 to General Safety Regulation III (Movement of Trains) Addendum 22 to General Safety Regulation III (Movement of Trains)	10.04.2006 21.08.2006 17.11.2006	To improve the visibility of trains for trackside workers and LC users To facilitate and reinforce the security of safety communications To optimise the infrastructure manager's response to accidents and incidents	Establishes the obligation for all trains to travel with headlights on during the day Introduces the use of a computer application in recording and transmitting telephone communications (telephoned telegrams) Strengthens procedures to be adopted by the traffic management body of the PCL [local control post], in the

on signalling and traffic procedures	Addendum 121 to General Signalling Instruction 7 (Automatic Level Crossings)	16.12.2006	To improve safety at LC	event of abnormality or accident Regulates commencement of operation of the system to detect obstacles at level crossings
	Supplementary Signalling Instruction 20/06 (Movement of Traction Units)	13.06.2006	To improve and standardise train traffic conditions	Establishes the obligation for the traction units of goods and passenger trains to be equipped with ground-train radio and automatic speed control systems (CONVEL)
	Addendum 17 to General Safety Regulation V (Train Braking)	01.04.2006	To prevent derailments caused by braking	Alters the procedure for controlling the brakes of goods trains which include empty wagons mixed with loaded wagons.
Rules laying down requirements for internal operating rules (company rules) that must be established by the infrastructure manager and operators.	-	-	-	-
Rules relating to requirements for personnel carrying out safety-related activities, including selection criteria, physical aptitude and training and	-	-	-	-

professional certification				
Rules relating to the investigation of accidents and incidents, including recommendations	INTF instruction	23.03.2006	Lack of regulations on the recording of incident and accident data	Introduces procedures concerning operating in the event of an accident, serious accident or incident likely to lead to the opening of an enquiry.
Rules laying down requirements for national safety indicators, including how to collect and analyse such indicators	-	-	-	-
Rules laying down requirements for authorisation to put infrastructure into service (lines, bridges, tunnels, power, ATC, radio, signalling, interlocks, level crossings, platforms, etc.)	-	-	-	-

ANNEX E

DEVELOPMENT OF SAFETY CERTIFICATION AND AUTHORISATION

E.1 – Safety certification under Directive 2001/14/EC

Table E.1.1		
No of safety certificates issued under Directive 2001/14/EC to:	Undertakings licensed in Portugal	–
	Undertakings licensed in another Member State	–

Table E.1.2		Accepted*	Rejected*	Pending*
No of applications for safety certificates submitted under Directive 2001/14/EC by:	Undertakings licensed in Portugal	–	–	1
	Undertakings licensed in another Member State	–	–	–

NB (*) – Accepted: application accepted and certificate already issued
Rejected: application rejected and certificate not issued
Pending: application being examined, certificate not yet issued (at 31.12.2006)

E.2 – Safety certificates under Directive 2004/49/EC

Table E.2.1		New	Amended/Revised	Renewed
No of safety certificates – **Part A** issued to:	Undertakings licensed in Portugal	–	–	–
	Undertakings licensed in another Member State	–	–	–

Table E.2.2		New	Amended/Revised	Renewed
No of Safety Certificates – **Part B** issued to:	Undertakings licensed in Portugal	–	–	–
	Undertakings licensed in another Member State	–	–	–

Table E.2.3			Accepted*	Rejected*	Pending*
No of applications for Safety Certificates – **Part A** submitted by:	Undertakings licensed in Portugal	New Certificates	–	–	–
		Amendment/revision of Certificates	–	–	–
		Renewal of Certificates	–	–	–
	Undertakings licensed in another Member State	New Certificates	–	–	–
		Amendment/revision of Certificates	–	–	–
		Renewal of Certificates	–	–	–

Table E.2.4			Accepted*	Rejected*	Pending*
No of applications for Safety Certificates – **Part B** submitted by:	Undertakings licensed in Portugal	New Certificates	–	–	–
		Amendment/revision of Certificates	–	–	–
		Renewal of Certificates	–	–	–
	Undertakings licensed in another Member State	New Certificates	–	–	–
		Amendment/revision of Certificates	–	–	–
		Renewal of Certificates	–	–	–

NB (*) – Accepted: application accepted and certificate already issued
Rejected: application rejected and certificate not issued
Pending: application being examined, certificate not yet issued (at 31.12.2006)

E.2.5 – List of countries in which undertakings which applied for the Safety Certificate – Part B, obtained the Safety Certificate – Part A:

Not applicable – no applications for a Safety Certificate – Part B were submitted in 2006.

E.3 – Safety authorisation under Directive 2004/49/EC

Table E.3.1	New	Amended/Revised	Renewed
No of safety authorisations issued to infrastructure management undertakings	–	–	–
	–	–	–

Table E.3.2		Accepted*	Rejected*	Pending*
No of applications for safety authorisation submitted by infrastructure management undertakings	New authorisations	–	–	–
	Amendment/revision of authorisations	–	–	–
	Renewal of authorisations	–	–	–

NB (*) – Accepted: application accepted and certificate already issued
Rejected: application rejected and certificate not issued
Pending: application being examined, certificate not yet issued (at 31.12.2006)

E.4 – Safety Certificates – Part A: procedures

		New	Amended/Revised	Renewed
Average time for issuing a Safety Certificate – Part A, after receipt of all necessary documentation	Undertakings licensed in Portugal	–	–	–
	Undertakings licensed in another Member State	–	–	–

E.5 – Safety Certificates – Part B: procedures

		New	Amended/Revised	Renewed
Average time for issuing a Safety Certificate – Part B, after receipt of all necessary documentation	Undertakings licensed in Portugal	–	–	–
	Undertakings licensed in another Member State	–	–	–

E.6 – Safety authorisation: procedures

	New	Amended/Revised	Renewed
Average time for issuing a Safety Authorisation, after receipt of all necessary documentation	–	–	–