National Railway Safety Authority of Spain

# **Annual Report**

### (Article 18 of Directive 49/2004/EC)

# 2010

(Measures taken up to 31 December 2009)





SECRETARÍA DE ESTADO DE PLANIFICACIÓN E INFRAESTRUCTURAS SECRETARÍA GENERAL DE INFRAESTRUCTURAS

DIRECCIÓN GENERAL DE INFRAESTRUCTURAS FERROVIARIAS

National Safety Authority

# Annual Report 2010



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### A.1. CONTENTS OF THE REPORT

This report has been prepared by the Department of Railway Infrastructure of the Ministry of Infrastructure and Transport, which currently acts as the National Safety Authority in Spain, as laid down by the legislation in force.

The report has been drafted pursuant to Article 18 of Directive 2004/49/EC on railway safety:

'Each year the safety authority shall publish an annual report concerning its activities in the preceding year and send it to the Agency by 30 September at the latest. The report shall contain information on:

- (a) the development of railway safety, including an aggregation at Member State level of the CSIs laid down in Annex I;
- (b) important changes in legislation and regulation concerning railway safety;
- c) the development of safety certification and safety authorisation;
- d) results of and experience relating to the supervision of infrastructure managers and railway undertakings.'

The information contained in this report reflects the situation at the end of 2008, i.e. **up to 31 December 2009**.

The report sets out only information relating to the General Interest Rail Network (RFIG)<sup>1</sup> run by the Administrador de Infraestructuras Ferroviarias (ADIF - Railway Infrastructure Manager), and the services and activities provided on that network. The scope of the report excludes:

- a) metros, trams and other light rail systems,
- b) networks whose operation is functionally separate from the RFIG run by the Railway Infrastructure Manager or from the other Spanish railway systems and which are intended only for urban, suburban, local or regional passenger transport services, and railway undertakings which operate only on that type of network,
- c) privately owned railway infrastructure for use exclusively by the owner of the infrastructure for its own freight operations.

The report also excludes the State-owned metre-gauge rail network managed by FEVE (narrow-gauge network) which, although part of the RFIG, is not regarded as covered by Directive 2001/12/EC and, according to Spanish law, requires the approval of a specific set of rules.

<sup>&</sup>lt;sup>1</sup> Defined as per Article 4 of Law 39/2003 of 17 November 2003.



### A.2. Executive summary

This report has been prepared by the '*Dirección General de Infraestructuras Ferroviarias*', within the Ministry of Transport, which is the entity currently in charge of the Spanish National Safety Authority functions, in accordance with the provisions set up in the legislation in force.

Nevertheless, it is a temporary measure. In the 28/2006 Act (State Agencies for the improvement of public services Law, 18 July 2006), there are provisions for setting up the **Land Transport Safety Agency**, which will take over the responsibilities of the National Safety Authority permanently.

For the coming years, the organisational priorities with regard to safety are the consolidation of the National Safety Authority structure, reinforcing its increasing role in the national railway sector and its participation in the various national and international forums.

Other action priorities, for the coming years, are the following:

- From a regulatory point of view, to conclude the process of transposing into national law the Interoperability Directive (2008/57/EC) as well as Directive 2009/149/EC (new Annex I to the Safety Directive).
- Check the procedure followed until now in Spain for the issue of safety certificates and authorisations for full compliance with European regulations.
- Modify the procedures followed for the placing in service of rolling stock.
- Ensure that railway vehicles are properly maintained. This can be achieved through better surveillance of the rolling stock maintenance workshops.
- Carry on with the plans for eliminating or protecting level crossings, as well as the fencing and elimination of unauthorised access points to the track, since they account for the majority of accidents involving rolling stock.
- After an accident, monitor compliance with the safety recommendations of NIB, as well as incorporate the experiences of incidents and accidents into the procedures of the Railway Undertaking.
- Promote the progressive implementation of the Common Safety Methods of risk analysis, through regulatory and dissemination measures.
- Promote a safety culture through active involvement in the various European working groups - particularly in the European Railway Agency - and the dissemination of its results to the national railway sector.

Moreover, regarding accidents, measures must be aimed at achieving a downward and positive trend in relation to the number of accidents and incidents occurring on the national railway network.



### B. OVERVIEW

### **1. INTRODUCTION TO THE REPORT**

As established in Rail Safety Directive 2004/49, the National Safety Authority must annually prepare a report to be forwarded to the European Railway Agency with a view to its:

- use as basic information for the Agency from which to draw up the biannual report on safety;
- publication by the European Agency on its website.

The report is therefore addressed to the various players in the rail sector and to the general public through its dissemination by the European Railway Agency.

In order for the National Safety Authority to produce this report, the abovementioned Directive provides that:

'Each year all infrastructure managers and railway undertakings shall submit to the safety authority before 30 June an annual safety report concerning the preceding calendar year.'

The various players in the national rail sector must therefore provide the information required by Directive 2004/49 in these reports. Since 2008 was the reference year for the national railway undertakings for preparing the first annual safety report (as laid down by Supplementary Provision 1 of Royal Decree 810/2007 of 22 June 2007), the formats of those reports are still at the adjustment stage and some information which is still missing will gradually be completed.

As at 31 December 2008, the applicable Spanish basic legislation was:

- Law 39/2003 (the Rail Sector Act) of 17 November 2003;
- Royal Decree 2387/2004 of 30 December 2004, approving the Rail Sector Regulations, implementing the Act referred to above;
- Royal Decree 810/2007 of 22 June 2007 approving the regulations for the safety of the public rail network.

Under those provisions, the functions of the national safety authority currently fall to the Department of Railway Infrastructure of the Ministry of Infrastructure and Transport.

In addition, when the data were being compiled for the drafting of this report, a number of problems were detected which it is intended to solve in subsequent editions of this document, such as:

• the undertakings providing information in their annual reports are as yet inexperienced (since, as per Royal Decree 810/2007, 2009 is only the second reference year for drafting these documents);



•

the definitions of some indicators are not yet fully consistent (Regulation (EC) 91/2003 and Annex I to Directive 2004/49/EC).

### 2. INFORMATION ON THE STRUCTURE OF THE RAIL SYSTEM (ANNEX A)

### 2.1. THE NETWORK

The Spanish UIC standard and Iberian gauge General Interest Rail Network is run by the public undertaking ADIF (Railway Infrastructure Manager).

**Annex A.1** contains various plans of the network. For more details, please see the **Network Statement** drawn up by ADIF, available on the following website: <u>http://www.adif.es/en\_US/conoceradif/declaracion\_de\_la\_red.shtml</u>

This Statement is the document that ADIF provides to the railway undertakings and other candidates to inform them of the characteristics of the infrastructure and terms for accessing the network, ensuring transparency and non-discriminatory access.

### **2.2.** LIST OF RAILWAY UNDERTAKINGS AND INFRASTRUCTURE MANAGERS

### 2.2.1. Infrastructure manager

• ADIF (Administrador de Infraestructuras Ferroviarias)

### 2.2.2. Railway undertakings

At 31 December 2009 the following undertakings held safety certificates:

- RENFE Operadora
- Continental Rail
- Acciona Rail Services
- Comsa Rail Transport
- Tracción Rail
- English Welsh and Scottish Railway International Ltd. (EWSI)

**Annex A.2** contains the main particulars of those undertakings which operate under the Safety Directive.

As well as these, at the end of 2009, the following undertakings holding railway undertaking licences did not yet have safety certificates (since they had not expressed interest in obtaining them to begin operation or because their applications were being processed):

Activa Rail



- Arcelormittal Siderail
- Logitren Ferroviaria
- FESUR Ferrocarriles del Suroeste



### C. ORGANISATIONAL ASPECTS

### **1. ORGANISATIONAL STRUCTURE - INTRODUCTION**

Within the Government of Spain, the Ministry of Infrastructure and Transport is the department responsible for the rail sector as a whole. Under Rail Sector Act No 39/2003 of 17 November 2003, its main areas of competence are:

- strategic planning of the rail sector, for both infrastructure and the provision of services;
- general organisation and regulation of the rail system, in particular in all matters relating to safety and interoperability and to relations between players in the sector;
- setting targets and supervising the activity of the public railway undertakings, ADIF and RENFE, and their financing arrangements.

Further information about its competences and structure can be found at: <u>www.fomento.es</u>

Within the Ministry of Infrastructure and Transport, the **Department of Railway Infrastructure** is responsible for exercising powers in relation to railways.

Among its other functions, the Department of Railway Infrastructure is temporarily responsible for carrying out the functions covered by this report. Specifically, under Royal Decree 1476/2004, it has been allocated the following functions:

- (e) drawing up draft general provisions relating to railways and coordination with other government bodies and public entities on rail matters;
- (f) regulating, organising and inspecting rail transport, in accordance with the legislation in force, and monitoring the management contract with RENFE and FEVE.

**Annex B.1** contains an organisational chart of the Department of Railway Infrastructure.

Those powers are exercised on a transitional basis by the Department of Railway Infrastructure while the Land Transport Safety Agency, which will take on the role of the National Safety Authority, is being set up.

It has approximately 260 members of staff (counting all of the Department's staff, including those whose functions are unrelated to the National Safety Authority).

Furthermore, for activities related to the functions performed by the National Safety Authority, an additional 30 members of staff from other undertakings and organisations provide support to the Department of Railway Infrastructure.



### 2. RELATIONSHIP BETWEEN THE NATIONAL SAFETY AUTHORITY AND OTHER NATIONAL BODIES

In 2009, in addition to the Department of Railway Infrastructure, the main players in the rail system were:

### Administrador de Infraestructuras Ferroviarias (ADIF)

ADIF was established by the Rail Sector Act, Law 39/2003 of 17 November 2003. The statutes of ADIF were laid down in Royal Decree No 2395/2004 of 30 December 2004. It began operation on 1 January 2005. ADIF is a public enterprise, with managerial autonomy within the limits laid down by its governing regulations and is part of the Ministry of Infrastructure and Transport. It has its own legal personality, full capacity to work for the achievement of its ends, and its own assets. Its principal purpose is to manage and construct railway infrastructure.

ADIF runs the general interest rail network (RFIG), with the exception of the FEVE network. As well as managing that railway infrastructure (operation and maintenance), it is responsible for the construction of any lines commissioned by the State, funded either from its own resources, for lines it owns, or out of the State budget, where State-owned.

Further information about its competences and structure can be found at: <u>www.adif.es</u>

### RENFE-Operadora

The present undertaking RENFE-Operadora was established by the Rail Sector Act, Law 39/2003 of 17 November 2003, as a public enterprise. RENFE's articles of association were established in Royal Decree 2396/2004 of 30 December 2004. It began operation on 1 January 2005.

RENFE-Operadora was created by splitting off business units providing rail services and other commercial activities from the former railway undertaking.

RENFE-Operadora is a public enterprise, with managerial autonomy within the limits laid down by its governing regulations and is attached to the Ministry of Infrastructure and Transport. It has its own legal personality, full capacity to work for the achievement of its ends, and its own assets. Its purpose is to provide passenger and freight rail services and other complementary services or activities.

Further information about its competences and structure can be found at: <u>www.renfe.es</u>

### Other operators

As a result of liberalisation of the freight transport sector new operators are gradually joining the rail sector. Between 2006 and 2008, in addition to RENFE-Operadora, five undertakings obtained the requisite safety certificate. No further safety certificates were issued to railway undertakings in 2009.



### Department of Land Transport

This department reports on railway matters to the Ministry of Infrastructure and Transport, via the State Secretariat for Transport, and is responsible for issuing licences to railway undertakings.

### Rail Regulation Committee

This is the rail sector regulator. It is a collegiate body reporting to the Under-Secretariat of the Ministry of Infrastructure and Transport<sup>2</sup>. It is composed of officials from the Ministry of Infrastructure and Transport and its principal mission is:

- to ensure plurality in the supply of rail services;
- to guarantee equal access to the market for all operators;
- to resolve disputes between ADIF and the railway undertakings.

Further information about its competences and structure can be found at:

http://www.fomento.es/MFOM/LANG\_CASTELLANO/DIRECCIONES\_GENER ALES/ORGANOS\_COLEGIADOS/CRF/

### Rail Accident Investigation Commission

The Rail Accident Investigation Commission (CIAF) was established in 2007, attached to the Ministry of Infrastructure and Transport<sup>2</sup>, but independent of the National Safety Authority, of ADIF and of the operators, as set out in Royal Decree 810/2007, and complies fully with the provisions of Directive 2004/49.

**Annex B.2** contains an organisational chart setting out the relationships between the main players in the system.

<sup>&</sup>lt;sup>2</sup> As laid down by Royal Decree 1037/2009 of 29 June 2009, amending and establishing the basic organisational structure of the Ministry of Infrastructure and Transport, this body was attached to the Ministry of Infrastructure and Transport, under its Under-Secretariat.



### D. EVOLUTION OF RAILWAY SAFETY

### **1.** INITIATIVES TO MAINTAIN/IMPROVE SAFETY

#### **1.1. GENERAL SAFETY IMPROVEMENT POLICIES**

The reference framework for infrastructure and transport in Spain is the **Strategic Infrastructure and Transport Plan (PEIT)**, approved by the Government on 15 July 2005.

Its basic targets expressly include improving the already high levels of railway transport safety, paying particular attention to eliminating and improving the safety of level crossings.

In accordance with the PEIT objectives, the **main safety measures of the Ministry of Infrastructure and Transport** during 2009 have been a continuation of the medium-term activities initiated in previous years:

- 2005-2012 Level Crossings Safety Plan, with planned investment of EUR 1 080 million aimed at:
  - eliminating more than 50 % of the 3 764 public crossings in operation (including in the FEVE network, not covered by this report);
  - improving the protection system of the remaining crossings.
- 2006-2010 ADIF Strategic Plan, which has a safety objective of reducing the rate of train accidents attributable to infrastructure by 60 % in relation to the annual average of the preceding administration.

In order to achieve this target the **Programme of Measures to Improve the Safety and Functionality of the Network** is being implemented which, in the timeframe of the Strategic Plan, has planned investment of EUR 638 million.

- Introduction of the ASFA Digital system, after approval was given for prototype tests on 2 500 km and a contract was awarded for the manufacture, supply and assembly of 2 650 sets of equipment.
- 2006-2010 RENFE-Operadora Strategic Safety Plan, intended to reduce the acceptable rate of risk (TRA) to 0.030 accidents/million train-kilometres as compared with 0.075 in 2005 (under the previous administration the average was 0.78). Planned investment is EUR 291 million.

### **1.2.** OTHER MEASURES TO IMPROVE SAFETY

In addition to implementing the main strategies referred to in the preceding section, other specific measures were taken during 2009, focused on solving particular problems arising from accident rates and the investigation of events



which have occurred.

### 1.2.1. Measures taken by the Railway Infrastructure Manager (ADIF)

 ANNUAL SAFETY PLAN, 2009. The plan aims to achieve a continuous improvement in safety levels on the general interest railway network and is the most important proactive tool in ADIF's safety system.

The annual plan's main objectives for 2009 were:

- To reduce accidents and incidents.
- $\circ~$  To carry out each year in chronological order the measures of the ADIF Strategic Plan.
- To have all departments of the undertaking commit to a gradual reduction in the rate of accidents and incidents.
- To detect and correct infringements of the regulations, incorrect procedures, unsafe practices and shortcomings in the state of the installations.
- To establish an annual accident rate index to quantify the objective, laid down in the Strategic Plan, of a continuous improvement in safety levels on the RFIG administered by ADIF.

The level of compliance with all the measures provided for in the Annual Safety Plan 2009 was practically 100 %, and the accident rate was reduced to less than the targets set.

### 1.2.2. Measures taken by the railway undertakings

Generally speaking, the railway undertakings in Spain approach safety through:

- having the undertaking's management bodies approve their safety policy;
- a strategic traffic safety plan, aimed at continuously reducing risk levels;
- an annual traffic safety plan, which basically determines the annual operational inspection targets, i.e. the frequency and number of inspections to be carried out:
  - o safety inspections, safety checks and safety monitoring;
  - $\circ\;$  checks of consumption of alcohol and psychoactive substances, and drug abuse;
  - o inspections and audits of vehicles.

More specifically, the main operator in Spain, Renfe-Operadora, took the following measures over the reporting period:



### 1.2.2.1. Renfe – Operadora

- TARGETS SET BY THE MANAGEMENT CONTRACT, 2006-2010. Renfe-Operadora achieved the Acceptable Rate of Risk (TRA) laid down in the Renfe-State management contract 2006-2010. For 2009, the TRA was set at 0.030 train accidents per million train-kilometres and the result achieved was 0.022.
- STRATEGIC SAFETY PLAN. This rolling strategic plan has a four-year span and contains a set of measures designed to continuously reduce risk levels, addressing issues such as modernising on-board safety installations, improving rolling-stock equipment, updating training plans and reviewing and improving internal management systems.

Operational objectives have been set for each strategic line to reduce the number of accidents and incidents caused by human or technical error, by introducing new technologies enabling the risk of accidents to be eliminated or reduced, particularly in the context of the driving of rail vehicles.

Listed below are the operational objectives which were all achieved in full.

- improved risk management;
- reduced risk of accidents to persons involving passengers boarding and alighting; door automation plan;
- o modernisation of safety recorders as per technical specifications;
- o improved management of risks due to driver error;
- development of ITMS computer application on the Asegura platform;
- development of inspection system;
- review of safety management system;
- reduction of technical equipment failures;
- differentiated monthly statistical monitoring of `safe kilometres', passing signals and equipment problems.
  - The automatic driving system has been installed on 224 trains which covered 36-13 million train-km.
- o progress with the safety culture.



### 2. TREND ANALYSIS GIVING DETAILED DATA

This report sets out statistics for significant accidents<sup>3</sup> occurring on the General Interest Rail Network run by the Railway Infrastructure Manager ADIF during 2009. A series of graphs have been prepared representing the trend for each of the Common Safety Indicators, using the criteria and formats supplied by the European Railway Agency.

Annex C gives a breakdown of the statistics.

In 2009, 167 accidents occurred compared with 205 the previous year, a reduction of 18.5 %. The accident rate (number of accidents per million train-kilometres) was 0.89, less than the figure for the preceding year of 1.06, representing a fall of 16.04 %.



The following series of graphs illustrates the trend of the accident rate in recent years on the general interest railway network (RFIG) managed by the Railway Infrastructure Manager, ADIF.

The first graph shows a **downward trend in the total number of accidents in recent years**, the total having fallen by 113 between 2005 and 2009 (i.e. a change of some 40 %).

The trend of total **significant and serious accidents** in 2009 has levelled out in the past three years, and is clearly falling for both types of accidents (reaching minimum values for 2009):

<sup>&</sup>lt;sup>3</sup> Accident [as defined by Directive 2004/49]: 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.

**Significant accident** [as defined by Directive 2009/149/EC]: 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.

**Serious accident** [as defined by Directive 2004/49]: any train collision or derailment of trains, resulting in the death of at least one person or serious injuries to five or more persons or extensive damage to rolling stock, the infrastructure or the environment, and any other similar accident with an obvious impact on railway safety regulation or the management of safety; 'extensive damage' means damage that can immediately be assessed by the investigating body to cost at least EUR 2 million in total.





Accidents 
 Significant accidents 
 Serious Accidents

By type of accident over the period 2006-2009, we observe a reduction in the number of <u>derailments</u>, <u>accidents at level crossings</u> and <u>accidents to persons</u>. This was not the case with the number of <u>collisions</u>, which fell in 2007, but then rose again in the subsequent years.





■ Derailments ■ Collisions ■ To persons ■ At level crossings • Other

The third graph shows the number of **significant accidents broken down by type of accident**. By way of a general conclusion, no steady trend can be observed for any type of accident.

Note that the number of <u>accidents to persons</u> has fallen considerably in the past two years. However, accidents at <u>level crossings</u> have held steady. <u>Derailments</u> fell by more than 50 % last year and <u>collisions</u> are not following any trend, with the number increasing slightly from 2005 to 2009.





The graph below shows the number of **fatalities** between 2005 and 2009. Although there was a somewhat higher peak in 2007, the number of fatalities has fallen considerably and there is a clear downward trend. There was a 47 % drop in the number of fatalities between 2005 and 2009.

A similar trend can be observed in the case of **serious injuries**, with a peak in 2006. There has been a 58.5 % reduction in the number of serious injuries since 2005.



Fatalities Serious injuries

Below is a breakdown of the number of fatalities by type of accident.

The graph shows a clear reduction in the number of <u>accidents to persons</u>; a maximum of cases occurred in 2007.

No clear trend is apparent for accidents at <u>level crossings</u>, as the figures fluctuate in consecutive years.

It can also be seen that, in some years, there were isolated incidents where there were victims of rail <u>collisions</u>, showing that it is not a common accident type.

Note that there were seven victims of <u>derailments</u> in 2006, but these can be considered to be isolated incidents since there were no fatalities for this category of accident in any other year.





Finally, the graph below compares the various **accident precursors** observed in recent years. The graph illustrates that there is no clear trend in the different types of precursor. We would point out that there were hardly any <u>broken axles and/or</u> <u>wheels</u>, only two such incidents occurring over the period 2006-2009.

Although the graph apparently shows a considerable increase in the number of <u>track failures</u> (almost doubling in 2009) and <u>broken rails</u>, this does not reflect a real increase in such incidents nor worse system safety, but rather the imposition of a more restrictive criterion for assessing them, with the specific intention of stepping up monitoring and improving the safety of the system.









### **3. RESULTS OF SAFETY RECOMMENDATIONS**

The investigation of accidents and incidents occurring on the network is a fundamental tool in detecting and preventing risk. That investigation must include accidents or accident precursors which, although without serious personal or financial repercussions, display particular characteristics such as recurring in time or in a geographical area or the fact that their causes may be attributable to railway management.

For every accident investigated a report is therefore drafted ascertaining the causes and making specific recommendations with a view to improving railway facilities, seeking possible guidelines for the conduct of the persons involved and, in short, preventing it from recurring.

In 2009 the Accident Investigation Commission investigated a total of 33 accidents and 10 serious incidents on the entire national network, 8 of which were classified as accidents to persons, 16 as level-crossing accidents, 5 as derailments, 4 as collisions, 2 as near-collisions 7 as passing a signal (resulting in five near-collisions) and 1 broken axle.

Of the above-mentioned totals, in 2009, a total of 27 accidents and 7 serious incidents were investigated within the General Interest Rail Network run by the Railway Infrastructure Manager (ADIF), to which this report relates, according to the definition given in the Safety Directive (2004/49/EC). Of those, 8 were classified as accidents to persons, 12 as level-crossing accidents, 4 as derailments, 3 as collisions, 2 as near-collisions and 5 as signals passed.

A highly significant feature of the accident rate in Spain is that a high proportion of accidents are not caused solely by railway operation; they result from the actions of third parties (level-crossing users or third parties improperly accessing railway facilities).

Set out below in summary form are the **most important safety recommendations** issued as a result of the investigation of those occurrences.

- Recommendations regarding accidents to persons:
  - Study of track fencing to prevent people crossing at places where they are unauthorised to do so, thus eliminating 'black-spot' crossings or ensuring that authorised crossings are properly maintained.
  - Conduct a study on the situation at stations and halts with a risk analysis of the various types of safety devices, to avoid persons being knocked down in stations.
- Recommendations regarding level-crossing accidents:
  - Improve access to level crossings and install the signage provided for by section 2.1.2. of Article 9 of the Order of 2 August 2001 on the elimination and protection of level crossings.



Bring road signs into line with the provisions of the Order of 2 August 2001 implementing Article 235 of the Regulation of the Law governing land transport, regarding the elimination and protection of level crossings.

- Recommendations regarding derailments:
  - Foster the training of traffic managers to plan routes with remote operation of points without track-occupied detection.
  - Step up maintenance plans in localised infrastructure areas where there are systematic problems with track parameters, thereby ensuring that the required tolerances are complied with.
  - Carry out specific training campaigns on the setting of routes in partial interlocks by means of Bouré locks, with remote lever operation of points. Basically for new operators with no experience of such installations.
- Recommendation regarding **collisions**:
  - Draw attention to the application of the existing safety management measures, emphasising the training aspect in strict compliance with the General Traffic Regulations, the influence of psychological factors on driving and testing of driver aptitude.
  - Pay special attention to cuttings at particular points on the network, where any instability could endanger rail traffic:
    - 1. Special surveillance of the infrastructure from trains and on foot, planning of exploratory runs with locomotives and setting of temporary speed limits in risk situations.
    - 2. Construction of protection structures consisting essentially of the installation of mesh, anchors, slurry walls, rockfill, retaining walls and tunnel extensions.
    - 3. Study of stability of embankments on sections regarded as critical.
    - 4. Systematic annual investment in this specific issue.
- Recommendation regarding incidents investigated and classified as near-collisions:
  - Introduce a procedure to check that drivers and any accompanying crew of works trains comply with current staff requirements.
  - Consider the possibility of amending the regulations to enable track equipment not fitted with ASFA or safety recorder, when running on track with open traffic, either to be hauled by traction units fitted with those systems or to run protected by occupation blocking.
  - Improve training for traffic managers in unusual traffic conditions.



- Recommendations regarding incidents investigated and classed as **signals passed**:
  - Revise the retraining programmes for drivers, focusing especially on risky behaviour and attitudes.
  - Check that the communications systems between drivers and the CTC are working properly and ensure perfect communication and understanding between them.
  - Conduct an audit to assess the level of compliance with the established procedures for recording communications (written telephone messages).
  - Insist on strict compliance with the rules for operational communications, and on paying due attention to driving, especially in abnormal conditions.
  - Insist on the application of the existing safety management measures, emphasising the training aspect in strict compliance with the General Traffic Regulations, the influence of psychological factors on driving and testing of driver aptitude.
  - At stations where there is a distribution of responsibilities for basic traffic tasks, draw up a special order defining the precise tasks of each staff member and the relationship between them.
  - Make an analysis of the quality of traffic managers' initial training and retraining, specifically regarding traffic management in unusual conditions. Depending on the results, determine the action required to improve this aspect.
  - The various departments involved in carrying out the work of replacing electrical points by electronic ones and changing block signalling for automatic two-way blocking will have to devise a common operating procedure to ensure proper coordination of the activities to be carried out and the chain of transmission of orders between the staff member responsible for communication with the traffic manager and works teams.
  - Those responsible for carrying out the works must step up their efforts to alert all those taking part in the work to the importance of knowing the full content and scope of the tasks assigned to them. They are also to give each member of the teams for which they are responsible clear and relevant instructions and ensure that they have understood them fully.
- Recommendations regarding the incident investigated and classified as a broken axle (this incident took place on the General Interest Rail Network administered by FEVE, and would therefore be beyond the scope of the Railway Safety Directive 2004/49/EC):
  - Establish a system to ensure adequate traceability of operations carried out on axles.
  - Include in the standard procedure an ultrasound inspection for locating



cracks that is more feasible than those laid down in the maintenance plan of each of the series of rolling stock. Follow-up of results.

- Lay down quality control instructions in the procedures for fitting axles.



### E. MAIN CHANGES IN THE LEGISLATION AND RULES

In 2009, Spain published Technical Approval Specifications (TAS) for rolling stock relating to five subsystems: wagons, self-propelled units, auxiliary rolling stock, coaches and locomotives.

These TASs are regarded as a transposition into the national legal system of the Technical Interoperability Specifications (TISs) covering those subsystems, also including specific cases and open issues.

- RESOLUTION OF 10 JULY 2009, OF THE DEPARTMENT OF RAILWAY INFRASTRUCTURE, APPROVING THE 'TECHNICAL APPROVAL SPECIFICATION FOR RAILWAY ROLLING STOCK: WAGONS'
- RESOLUTION OF 10 JULY 2009, OF THE DEPARTMENT OF RAILWAY INFRASTRUCTURE, APPROVING THE 'TECHNICAL APPROVAL SPECIFICATION FOR RAILWAY ROLLING STOCK: SELF-PROPELLED UNITS'
- RESOLUTION OF 10 JULY 2009, OF THE DEPARTMENT OF RAILWAY INFRASTRUCTURE, APPROVING THE 'TECHNICAL APPROVAL SPECIFICATION FOR RAILWAY ROLLING STOCK: AUXILIARY ROLLING STOCK'
- RESOLUTION OF 10 JULY 2009, OF THE DEPARTMENT OF RAILWAY INFRASTRUCTURE, APPROVING THE 'TECHNICAL APPROVAL SPECIFICATION FOR RAILWAY ROLLING STOCK: COACHES'
- RESOLUTION OF 10 JULY 2009, OF THE DEPARTMENT OF RAILWAY INFRASTRUCTURE, APPROVING THE 'TECHNICAL APPROVAL SPECIFICATION FOR RAILWAY ROLLING STOCK: LOCOMOTIVES'

In addition, corrections were published to errors in the amendments to the Regulation on the Transport of Dangerous Goods by Rail (published in the Official State Gazette of 20 to 26 August 1986), (RID 2009).

• **RID** 2009, published in the Official State Gazette of 14 August 2009.

Details of the above legislation can be found at Annex D.



### F. EVOLUTION OF SAFETY CERTIFICATION AND AUTHORISATION

### 1. SPANISH PROVISIONS ON THE ISSUANCE OF SAFETY CERTIFICATES AND AUTHORISATIONS UNDER DIRECTIVE 2004/49/EC

Until 7 September 2007 it was the Rail Sector Act, Law 39/2003, which required railway undertakings to have **SAFETY CERTIFICATES** prior to providing the service.

From that date Royal Decree 810/2007 has been in force, and provides in Title II:

'Title II, on safety authorisation and safety certificates, lays down the requirements and conditions for the grant, maintenance, suspension and revocation of those documents.'

Since the entry into force of Royal Decree 810/2007, which transposes the Safety Directive, Directive 2004/49/EC, into Spanish law, safety certificates have therefore been issued in accordance with Article 10 of that Directive.

On that basis, **during 2009 eight extensions of safety certificates** were issued to the following railway undertakings (see section F.3 of this report for more details):

- EWSI;
- Comsa Rail Transport;
- Tracción Rail;
- Continental Rail.

With regard to the Infrastructure Manager's obligation to have a **SAFETY AUTHORISATION**, in 2009, since the implementation of Royal Decree 810/2007, Transitional Provision One of that Decree has applied:

'From entry into force of this Royal Decree the Railway Infrastructure Manager shall, for the purposes of performing its functions, be treated as having the safety authorisation referred to in Article 9 of the Rules on Traffic Safety in the General Interest Rail Network.

Notwithstanding the foregoing, the Railway Infrastructure Manager shall, within no more than two years from the date of entry into force of this Royal Decree, take the appropriate measures to comply with those rules and to apply formally for the relevant safety authorisation in accordance with the rules, submitting the documents referred to therein'.

In view of the above, in 2009 the Railway Infrastructure Manager, Adif, submitted an application for a safety authorisation to the Department of Railway Infrastructure; the Department had up to four months to issue a decision from the submission of the application, or the required additional documentation, in the records of the relevant decision-making body.

At 31 December 2009, the safety authorisation was still being processed.



### 2. ACCESS TO SPANISH SAFETY RULES AND ALL OTHER RELEVANT NATIONAL LEGISLATION FOR RAILWAY UNDERTAKINGS AND INFRASTRUCTURE MANAGERS

Information about Spanish safety rules and all other related national legislation can be found on the website of the Ministry of Infrastructure and Transport:

http://www.fomento.es/MFOM/LANG\_CASTELLANO/DIRECCIONES\_GENERAL ES/FERROCARRILES/\_INFORMACION/NORMATIVA/

That information can also be found in ADIF's Network Statement, which can be accessed at:

http://www.adif.es/en\_US/conoceradif/declaracion\_de\_la\_red.shtml

The full text of the Spanish safety regulations and laws can also be accessed on the website of the Official State Gazette (BOE), as they are published there before coming into force:

www.boe.es

### **3. PROCEDURAL ASPECTS**

### 3.1. PART A SAFETY CERTIFICATES

No new, updated, amended or extended Part A safety certificates were issued in 2009.



### 3.2. PART B SAFETY CERTIFICATES

The following table sets out some characteristics of the Part B safety certificates issued:

RAILWAY UNDERTAKING	TYPE OF CERTIFICATE	DATE OF	REASONS FOR UPDATE	Fee in Euro
EWSI	Update	30/01/09	Extension of lines	5 000
Comsa Rail Transport	Update	27/02/09	Extension of lines	5 000
Comsa Rail Transport	Update	29/05/09	Extension of lines	5 000
EWSI	Update	24/07/09	Incorporation of dangerous goods service	5 000
Tracción Rail	Update	24/07/09	Extension of lines	5 000
Continental Rail	Update	25/09/09	Extension of lines	5 000
Continental Rail	Update	30/10/09	Extension of lines	5 000
EWSI	Update	30/10/09	Extension of lines	5 000

### **3.3.** SAFETY AUTHORISATIONS

In 2009 the Department of Railway Infrastructure began to process the issue of the **SAFETY AUTHORISATION** for the Railway Infrastructure Manager.



### G. SUPERVISION OF RAILWAY UNDERTAKINGS AND INFRASTRUCTURE MANAGERS

Until now, the NSA has audited and monitored railway undertakings' and infrastructure managers' safety management systems indirectly by these undertakings' inspections of their operations rather than by means of direct audits of the safety management system.

With regard to Part A safety certificates, given that they cover the safety management system, which comprises the company's operating methods, the following investigations were carried out while trains were in operation:

	INSPECTIONS	RAILWAY UNDERTAKINGS						
	Load inspections	1 402						
	Technical inspection of equipment in service	4 695						
	Monitoring of train	13 578						
	Inspection of trains before they go into service	900						
	Inspections of manoeuvres	1 619						
Number of inspections of	Alcohol and drug tests	2 930						
	Driving centres, residences, production and management centres	560						
	INFRASTRUCTURE MANAGE	R:						
	7 351 inspections carried out / 4 180 inspections planned	d.						
	Result: 808 medium- and low-level anomalies <sup>4</sup> detected and corrected, and with the traffic-safety assignment laid down for those levels.							

Inspections for the Part B safety certificate, which deals mainly with the existence of duly qualified staff and authorised rolling stock, are carried out by:

- checking that staff are duly qualified before authorising operations;
- inspecting rolling stock and locomotives.

Some 95% of these inspections are carried out in accordance with the safety plans.

### <sup>4</sup> Anomalies, types and measures:

For the handling, analysis and subsequent action, three types of anomalies have been identified, each level being associated with different measures:

**Medium level:** Anomaly entailing the establishment of immediate restrictions on the infrastructure or stock but allowing traffic to continue running on them subject to immediate repair or overhaul.

Low level: Anomaly not entailing the establishment of immediate restrictions on the infrastructure (speed limits, etc.) or stock.

High level: Anomaly preventing any kind of traffic where it is linked to the infrastructure or the stock.



In any event, in the course of 2009, no significant anomaly arose that could have led to:

- modification, revocation or suspension of or a significant warning under safety certificates;
- complaints by ADIF about operators or vice versa.

### H. <u>REPORT ON THE ADOPTION OF COMMON SAFETY METHODS (CSMs) FOR</u> RISK EVALUATION AND ASSESSMENT

In Spain, on 10 December 2008, the Department of Railway Infrastructure produced an internal legal document based on the document entitled First Set of Common Safety Methods (from the draft versions of Commission Regulation (EC) No 352/2009 which were available at the time):

 Circular Decision (10/2008) on the validation procedure for applications for authorisation of the placing in service of modified rolling stock, in accordance with Order FOM/233/2006 on the conditions for approval of railway rolling stock.

The above-mentioned Decision regulates the procedure for authorising the placing in service of rolling stock which has already been authorised and subsequently modified. This new procedure introduces the most important aspects of CSM risk analysis.

Any changes must be analysed by an independent safety assessment body which, after carrying out the appropriate risk analysis, will reach a conclusion as to whether the change is significant enough to require a new authorisation for placing in service.

Thus, we are gradually implementing Regulation (EC) No 352/2009, which will apply to changes to rolling stock as of July 2010.

We list below several cases of the application of Circular Decision No 10, to serve as experience prior to the introduction of the Common Safety Methods for the evaluation and assessment of risks (changes to rolling stock carried out before the entry into force of Regulation (EC) No 352/2009).

 Vossloh 4000 locomotives (Series 335)
 No of vehicles: 8 Spanish Alteration: Installation of Portuguese safety and radio equipment

The aim of this alteration is to enable the Euro 4000 locomotive (series 335 in Spain) to run in both Spain and Portugal.

To that end, new safety equipment is being installed in locomotives registered in Spain and in Portugal:

- the ASFA system in Portuguese locomotives and the CONVEL system in Spanish locomotives; a 'country switch' is also being installed to select the system corresponding to the network on which it is operating.
- Tren-Tierra [train-to-track] in Portuguese locomotives and Solo Comboio [train only] in Spanish locomotives.



### MC4E wagons

### No of vehicles: 287 Alteration: modification of suspension mounts for load-sensitive valve

The suspension mounts that have traditionally been fitted to non-bogie wagons consist of two deep-drawn plates 6 mm thick welded along their full length to form a caisson.

Over the years, some problems of cracking in the load-sensitive valve suspension mounts have been detected in wagons in service. To prevent this, a slight change in the geometry of the mount has been proposed and adopted, and it is to be monobloc (in a single piece).

### S/104 self-propelled units No of vehicles: Alteration: change of brake linings

The linings of model SP 201/320 brakes are being changed, as they have been replaced by model SP 201/320 SI which are also less noisy.

### S/448 self-propelled units No of vehicles: 27 Alteration: adaptation to carry persons with reduced mobility

The alteration consists of adapting one of the coaches in medium-haul Renfe Series 448 trains for persons with reduced mobility (PRMs).

The alteration is to be made in the driving trailer, where an area (approx.. 5 m long) will be adapted for persons with reduced mobility

The alteration covers the following aspects:

- A lift system: consisting of a platform lift to enable PRMs to board and alight from the train. Two platforms will be fitted to each coach, one on each side.
- Access doors: Owing to the design of the lift system, the door opening needs to be enlarged, so new access doors will be fitted.
- PRM WC module: The existing WC module will be removed from the trains and a new one will be fitted that complies with the latest regulations regarding accessibility and interoperability for persons of reduced mobility.
- PRM area: A PRM area will be set up in the passenger compartment including two specific areas for PRMs and one priority seat.
- Structural alteration of access door opening: As mentioned above, the door opening has to be widened.
- Moving the ASFA: Since the door has to be widened to fit a platform lift, the ASFA cabinet (currently located in the corner of the door frame) needs to be moved. But since it is being moved towards the cab (where the ASFA wiring goes) there is no need to alter the wiring.



#### S/594 self-propelled units No of vehicles: 23 Alteration: adaptation to carry persons with reduced mobility

The alteration consists of adapting one of the coaches in medium-distance Renfe Series 594 trains for persons with reduced mobility (PRMs).

Although trains in this series are composed of two coaches (M1 and M2), the alteration is to be made to M1 only, where an area (approx. 10 m long) will be adapted for persons with reduced mobility.

The alteration covers the following aspects:

- A lift system: consisting of a platform lift to enable PRMs to board and alight from the train. Two platforms will be fitted to each coach, one on each side.
- PRM WC module: The existing WC module will be removed from the trains and a new one will be fitted that complies with the latest regulations regarding accessibility and interoperability for persons of reduced mobility.
- PRM area: A PRM area will be set up in the passenger compartment including two specific areas for PRMs and one priority seat.

### S/598 self-propelled units No of vehicles: 21 Alteration: adaptation to carry persons with reduced mobility

The alteration consists of adapting one of the coaches in medium-distance Renfe Series 598 trains for persons with reduced mobility (PRMs).

Although trains in this series are composed of three coaches (M1, trailer and M2), the alteration is to be made to M1 only, where an area (approx. 11 m long) will be adapted for persons with reduced mobility.

The alteration covers the following aspects:

- A lift system: consisting of a platform lift to enable PRMs to board and alight from the train. Two platforms will be fitted to each coach, one on each side.
- PRM WC module: The existing WC module will be removed from the trains and a new one will be fitted that complies with the latest regulations regarding accessibility and interoperability for persons of reduced mobility.
- PRM area: A PRM area will be set up in the passenger compartment including two specific areas for PRMs and one priority seat.

### S/102 self-propelled units

No of vehicles: -

### Alteration: change of wheel supplier.

The wheels of the Series 102, hitherto supplied by Valdunes, are now to be supplied by CAF.

- S/449 self-propelled units
  No of vehicles: Alteration: modification of braking and anti-blocking brake control software.
- S/599 self-propelled units
  No of vehicles: Alteration: modification of COSMOS software.



### I. <u>CONCLUSIONS OF THE NSA – PRIORITIES</u>

During 2009, as in previous years, the duties of the Spanish National Safety Authority were carried out by the Department of Railway Infrastructure. That task is transitional since the Act on State Agencies for the Improvement of Public Services, Law No 28/2006 of 18 July 2006, provides for the creation of the Land Safety Agency, set up to be the definitive National Safety Authority.

The organisational priorities in relation to safety for the coming years are to consolidate the structure of the National Safety Authority, reinforcing its growing role in the national rail sector and its involvement in various national and international forums.

Other priorities for action over the coming years are as follows:

- From the regulatory viewpoint, to complete the process of transposing into national law the Interoperability Directive (2008/57/EC) and Directive 2009/149/EC (new Annex I to the Safety Directive).
- To review the procedure so far followed in Spain for the issue of safety certificates and authorisations, with a view to bringing it into line with European regulations.
- To change the procedures followed for placing rolling stock into service.
- To ensure that railway vehicles are maintained properly. This can be achieved by monitoring rolling stock maintenance workshops more closely.
- To proceed with plans to eliminate or protect level crossings and fencing as well as plans to eliminate unauthorised track access points, since they are responsible for the majority of accidents involving rolling stock.
- To monitor compliance with the CIAF safety recommendations after accidents, and ensure that experiences of incidents and accidents are taken into account in the procedures of the railway undertakings.
- To promote the progressive implementation of the Common Safety Methods of risk analysis, through regulatory and dissemination measures.
- To promote a safety culture through active involvement in the various European Working Groups particularly in the European Railway Agency and the dissemination of its results to the national railway sector.

At the same time, in relation to accident rates, measures must be directed at promoting consolidation of a downward, and therefore positive, trend in the number of accidents and incidents occurring on the General Interest Rail Network.



### J. SOURCES OF INFORMATION

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- [4] 'Annual Report of Rail Accidents on the General Interest Rail Network, 2009' Department of Traffic Safety, Adif.
- [5] '2009 Annual Report on Traffic Safety' Department of Traffic Safety, RENFE-Operadora.
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- [8] 'Annual Report 2009' Comsa Rail Transport, S.A.
- [9] *'Annual Safety Report 2009'* Tracción Rail, S.A.
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- [11] 'Strategic Infrastructure and Transport Plan' (PEIT) Ministry of Infrastructure and Transport approved by the Government on 15 July 2005.
- [12] *Royal Decree 810/2007* of 22 June 2007 approving the regulations for the safety of traffic on the General Interest Rail Network.

Websites consulted:

- [13] <u>www.fomento.es</u>
- [14] www.adif.es
- [15] <u>www.acciona.es</u>
- [16] www.comsa.com
- [17] <u>www.continentalrail.es</u>
- [18] <u>www.renfe.es</u>
- [19] <u>www.azvi.es/ferroviario.php</u>
- [20] www.eurocargorail.com

In addition to the foregoing references, further information supplied by the various rail operators and by the railway infrastructure manager was used in writing this report.



- K. <u>Annexes</u>
- ANNEX A: INFORMATION ON THE RAILWAY STRUCTURE
- ANNEX B: ORGANISATIONAL CHART OF THE NATIONAL SAFETY AUTHORITY
- ANNEX C: CSI DATA DEFINITIONS USED
- **ANNEX D:** SIGNIFICANT CHANGES TO LEGISLATION AND REGULATIONS
- ANNEX E: TRENDS IN SAFETY CERTIFICATION AND AUTHORISATION NUMERICAL DATA



### **ANNEX A: Information on the railway structure**



### **ANNEX A.1: Network plans**



#### **DISTANCES IN KILOMETRES**









TYPES OF ELECTRIFICATION, ELECTRIFIED LINES









TRACK GAUGE AND SWITCHING SYSTEMS





## ANNEX A.2: List of infrastructure managers and railway undertakings with safety certificates



### A.2.1. Infrastructure manager

Name	Address	Website / Link to network statement	Safety authorisation (number / date)	Date of commencement of trading	Total track length/gauge	Length of electrified track / network voltage	Total length of double/single track	Total length of high-speed line	ATP equipment used	Number of level crossings	Number of signals
ADIF	C/ Sor Ángela de la Cruz, 3 <u>28020 Madrid</u> Spain	<u>www.adif.es</u>	Not available in 2009	01/01/2005	1 584km/1 435mm 11 730km/1 668mm 18 km /1 000mm 22 km/ mixed <b>13 354 km total</b>	8 088.9 km electrified	8 735.7 km single track 4 618.1 km double track	1 605.8 km	ertms Asfa LZB Atp-ebicab GSMR	2 561	[No data]

### A.2.2. Railway undertakings

Name	Address	Website	Safety certificate 2001/14/EC (Number / date)	Safety certificate A-B 2004/49/EC (Number / date)	Date of commence-m ent of trading	Type of traffic (freight, etc.)	Number of locomotives	Number of train sets/ suburban train set elements	Number of coaches/ wagons	Number of drivers/safety personnel	Volume of passenger transport	Volume of freight transport
RENFE Operadora	Avenida Pío XII s/n, <u>28036 Madrid.</u> Spain.	www.renfe.es	30/06/2006	-	1/01/2005	Passengers Freight	495	1.226	Coaches 1.253 Wagons: 13.218	Drivers: 4.788 Safety personnel: 180	million	16.6 million tonnes
Continental Rail	Avda América, 2-17B <u>28028 Madrid</u> Spain	www.continen talrail.es	-	30/10/2009 (extension)	15/02/2007	Freight	6	-	wagons:	Drivers:22	-	255 749 tonnes
Acciona Rail Services	Avda. de Suiza 18-20 <u>28820 Coslada</u> (Madrid)	www.acciona.	26/12/2006	-	28/01/2007	Freight	2	-	32 wagons:	Drivers: 4 Safety personnel: 1	-	280 000 tonnes

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	Spain	<u>es</u>										
Comsa Rail Transport	C/ Viriato, 47 <u>08014 Barcelona</u> _Spain	www.comsa.c om	-	26/09/2008 (extension)	15/01/2008	Freight	6	-	70 wagons:	Drivers: 36 Safety personnel: 2	-	-
Tracción Rail	C/ Almendralejo, 5 <u>41019 Sevilla</u> Spain	www.azvi.es/f erroviario.php	-	24/07/2009 (extension)	23/04/2008	Freight	2	-	-	Drivers: 12 Safety personnel: 1	-	-
EWSI	P <sup>o</sup> Castellana, 95 – Pl. 15 – T Europa <u>28046 Madrid</u> Spain	www.eurocarg orail.com	-	30/10/2009 (extension)	01/10/2008	Freight	5	-	90 wagons:	Drivers: 23 Safety personnel: 2	-	-



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

### **B.1. Diagram: Internal organisation**





### **B.2. Diagram: Relationships with other national bodies**







### ANNEX C: CSI data – Definitions used

### C.1. CSI DATA

### **OVERVIEW OF RESULTS**





Total costs in MLN €/(MLN Train*Km)													
1,05+00	,0E+00 last 5 years average												
9,05-01 -													
8,0E-01 -													
7,05-01 -													
6,0E-01 -													
5,05-01 -													
4,05-01 -													
3,05-01 -													
2,05-01 -													
1,05-01 -													
0,0E+00 -	2006	2007	2008	2009	2010								
	0.005.00	0.005-00	0.005.00	0.005.00	0.005.00								
	0,000000	0,005400	0,00E400	0,006400	0,000400								







### ACCIDENTS, BY TYPE

	N℃ollisions/(MLN Train*Km) last 5 years average												
9,05-03 -			-										
8,05-03 -													
7,05-03 -													
6,05-03 -													
5,05-03													
4,05-03 -			_										
3,05-03 -													
2,05-03 -													
1,05-03													
0.0E+00 -													
	2006	2007	2008		2009		2010						
	0,00E+00	0,00E+00	6,23E-0	3	8,53E-0	3	0,00E+00						



	NLevel crossing accidents/(MLN Train*Km)											Km)	
9,05-02	9,0E-02 last 5 years average												
8,0E-02 ·	┣											-	
7,0E-02 ·	┣					⊢			⊢				
6,0E-02	-		<u> </u>			⊢			⊢				
5,0E-02 -	$\vdash$		<u> </u>								<u> </u>		
4,0E-02 ·	┣		<u> </u>			⊢			⊢				
3,0E-02			L			⊢			⊢				
2,05-02	┣		<u> </u>			⊢			⊢				
1,05-02	┣		<u> </u>			⊢			⊢				
0,0E+00				_									
-	2006 2007					2008				2009		2010	
	6,17E-02 7,48E-02				12	7	795-0	12	8	8,41E-02 0,00E+00			

3,05-01 -	N*Accidents to persons caused by RS in motion/(MLN Train*Km) last 5 years average											
2,55-01 -		- <b>-</b>										
2,05-01 -	_    -	_										
1,55-01 -					_							
1,05-01 -												
5,0E-02 -												
0.05+00 -												
0,02.00	2006	2007		2008	2009	2010						
	2,425-01	2,675-0	1 2	,45E-01	2,185-01	1 0,00E+00						

	N'Fires in RS/(MLN Train*Km)													
1,0E+00 -	10 last 5 years average													
9,05-01 -														
8,0E-01 -														
7,05-01 -														
6,05-01 -														
5,05-01 -														
4,05-01 -														
3,05-01 -														
2,05-01 -														
1,05-01 -														
0,0E+00 -														
	2006	2007	2008	2009	2010									
	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00									





### FATALITIES, BY CATEGORY OF PERSONS INVOLVED







	NFatalities/(MLN Train*Km)												
9,05-02 -	5-02 last 5 years average												
8,05-02 -		last o years average											
7,05-02 -						⊢			<u> </u>				
6,05-02 -													
5,05-02 -													
4,05-02 -													
3,05-02 -													
2.05-02 -													
1.05-02 -													
0.05+00 -	0.05400												
0,02.00	2006 2007 2008 2009 2010												
	6,645-02 7			,72E-0	72E-02 7,48E-02			7,80E-02		2	0,00E+00		

NFatalities/(MLN Train*Km) category of person: Unauthorised persons													
1,02-01 -	last 5 years average												
1,45-01 -				_		$\vdash$	_		1				
1,25-01 -			-			-			⊢	_		<u> </u>	
1,05-01 -												⊢	
8,05-02 -												⊢	
6,05-02 -												⊢	
4,05-02 -									_			⊢	
2,05-02 -												⊢	
0.05+00													
0,02100	2006 2007 2008 2009 2010												
	1	,42E-0	1	1	,47E-0	1	1	,34E-(	01	1	,215-0	)1	0,00E+00





### **INJURIES, BY CATEGORY OF PERSONS INVOLVED**







	Ninjures/(MLN Train*Km)							
1,65-02	last 5 years average							
1,45-02 -			,					
1,25-02 -				_				
1,05-02 -		_    -		_				
8,05-03 -		-	-	-   -				
6,05-03 -								
4,05-03 -		_	_	_				
2.05-03 -								
0.05+00 -								
0,02100	2006	2007	2008	2009	2010			
	4,74E-03	1,175-02	1,095-02	1,345-02	0,00E+00			

Ninjures/(MLN Train*Km) 6,05-02 category of person: Unauthorised persons last 5 years average													
5,05-02 -	H		-	_		1	-		$\vdash$				
4,05-02 -	$\square$			_		_			_			$\vdash$	
3,05-02 -	$\square$			_		⊢			$\vdash$				
2,05-02 -	$\square$												
1,05-02 -													
0.0E+00 -													
	2006 2007 2008 2009 2010												
	5,	225-0	2	- 4,	,68E-0	12	5	14E-	02	- 4	,63E-0	2	0,00E+00





### ACCIDENT PRECURSORS

















### TOTAL COST OF ACCIDENTS, NUMBER OF HOURS LOST BY PERSONNEL AND CONTRACTORS AS A RESULT OF ACCIDENTS

Costs of deaths in MLN €/(MLN Train*Km)							
1,0E+00		last	o years ave	age			
9,05-01 -							
8,05-01 -							
7,05-01 -							
6,0E-01 -							
5,0E-01 -							
4,05-01 -							
3,05-01 -							
2,05-01 -							
1,05-01 -							
0,0E+00 -							
	2006	2007	2008	2009	2010		
	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00		

	Costs of injuries in MLN €/(MLN Train*Km)								
1,0E4	-00		last	5 years aver	age				
9,0E-	01 -								
8,0E-	- 01								
7,0E-	-01 -								
6,0E	-01								
5,0E-	-01 -								
4,0E-	01 -								
3,0E	-01								
2,05	-01 -								
1,05	01 -								
0.054	<u>.</u>				_				
0,001		2006	2007	2008	2009	2010			
		0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00			

1,0E+00 -	Costs of i stock a	replacement and railway last	nt or repair (installation Train*Km) 5 years ave	ofdamage nsin MLN€ rage	d rolling /(MLN
3,0E-01 -					
,05-01 -					
.0E-01 -					
0E+00 -					
	2006	2007	2008	2009	2010
	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Costs of delays, disturbances and re-routing of traffic, including extra costs for staff and loss of future revenue in MLN €/(MLN Train\*Km) last 5 years average 8,05:01 4,05:01

2008

0,00E+00

2009

0,00E+00

2010

0,00E+00

Nof working hours (MLN) of staff and contractors lost as a consequence of accidents/Nof working hours (MLN) of staff and contractors last 5 years average								
80,00% -								
60,00% -								
40,00% -								
20,00% -								
0.00% -								
-,	2006	2007	2008	2009	2010			
	0,00%	0,00%	0,00%	0,00%	0,00%			

2006

0,00E+00

2007

0,00E+00



### TECHNICAL SAFETY OF INFRASTRUCTURE AND INFRASTRUCTURE EXECUTION; SAFETY MANAGEMENT



















### C.2. DEFINITIONS USED IN THIS ANNUAL REPORT

During the period covered by this report (2009), Directive 2009/149/EC was published, approving the new amended Annex I to Directive 2004/49/EC as regards Common Safety Indicators and common methods to calculate accident costs.

Accordingly, the Common Safety Indicators will be notified in two different ways:

- As laid down by **DIRECTIVE 2004/49/EC** 

The data of indicators for 2006, 2007, and 2008 of 2009 will be issued in the format laid down by that legislation, so as to be able to produce the comparative graphs appearing in Annex C.1 to this report.

### - As laid down by DIRECTIVE 2009/149/EC

For the period covered by this report, i.e. 2009, the indicators will also be notified in accordance with these definitions, so that the Common Safety Indicators can be adapted to those required by this new Annex I.

Furthermore, an error was detected when compiling the data on Automatic Train Protection (ATP), so the corrected data for recent years are given below:

2006:	T01: 85.55%	T02: Not available
2007:	T01: 86.56%	T02: Not available
2008:	T01: 87.03%	T02: Not available
2009:	T01: 87.37%	T02: 96.37%

#### C.2.2. NATIONAL DEFINITIONS

There follow a series of comments on the Common Safety Indicator data provided:

- Only significant accidents, as defined in Directive 2009/149/EC, occurring on the General Interest Rail Network (RFIG) run by the Railway Infrastructure Manager (ADIF) have been included.
- The 'Other persons' category, as defined in Regulation (EC) No 91/2003, has been broken down into the following groups:
  - o level-crossing users,
  - o unauthorised persons,
  - other persons.



### ANNEX D: Significant changes to legislation and regulations

	Legal reference	Date of entry into force of the provision	Reason for adoption (state whether it is a new provision or an amendment of an existing provision)	Description
General national rail safety legislation				
Legislation on the national safety authority				
Legislation on notified bodies and evaluating registration, examination, etc. bodies				
National rail safety regulations				
Regulations on national safety targets and methods				
Regulations on the requirements applicable to safety management systems and to the safety certification of railway undertakings				
Regulations on the requirements applicable to safety management systems and to safety authorisation of infrastructure managers				
Regulations on the requirements applicable to wagon keepers				
Regulations on the requirements applicable to maintenance workshops				
Regulations concerning requirements for the authorisation of placing in service and maintenance of new and substantially altered rolling stock, including rules for exchange of rolling stock between railway undertakings, registration systems and requirements on testing procedures.	TASs for railway rolling stock - Locomotives - Wagons - Self-propelled units - Coaches - Auxiliary rolling stock	13/02/2011 14/02/2011 15/02/2011 17/02/2011 19/02/2011	New provisions	Transposition into national law of the Technical Specifications for Interoperability of rolling stock
Common operating regulations of the railway network, including rules relating to signalling and traffic management procedures				
Regulations on the requirements applicable to any internal operating rules (company rules) that must be adopted by infrastructure managers and railway undertakings.				



	Legal reference	Date of entry into force of the provision	Reason for adoption (state whether it is a new provision or an amendment of an existing provision)	Description
Regulations on the requirements applicable to staff carrying out safety-critical tasks, including selection criteria, medical fitness and vocational training and certification.				
Regulations relating to the investigation of accidents and incidents, including the making of recommendations.				
Regulations on the requirements applicable to national safety indicators, including the requirements relating to the method of gathering and analysing indicators.				
Regulations on the requirements applicable to authorisation for putting infrastructure into service (tracks, bridges, tunnels, energy supply, automatic train protection, radio, signalling, interlocking, level crossings, platforms etc.).				



### ANNEX E: Evolution of safety certification and authorisation

### E.1. Safety Certificates pursuant to Directive 2001/14/EC

Number of safety certificates issued to licensed railway	In the Member State of the undertaking	0
undertakings pursuant to Directive 2001/14/EC in 2009	In a different Member State	0

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

		New	Updated or amended	Renewed
E.2.1. Number of valid Part A safety	in the Member State	-	-	-
registered railway undertakings	in a different Member State	-	-	-

		New	Updated or amended	Renewed
E.2.2. Number of valid Part B safety certificates issued in 2009 to registered railway undertakings	in the Member State	-	5	-
	in a different Member State	-	3	-

			Α	R	Р
E.2.3. Number of valid Part A safety certificates submitted in 2009 by registered railway undertakings		new certificates			-
	in the Member State relating to	updated / amended certificates	-	-	-
		renewed certificates	-	•	-
	in a different Member State relating to	new certificates	-	-	-
		updated / amended certificates	-	-	-
		renewed certificates	-	-	-



			Α	R	Р
		new certificates	-	-	-
E.2.4. Number of valid Part B safety certificates submitted in 2009 by registered railway undertakings in a different Member State relating to	updated / amended certificates	5	-	-	
		renewed certificates	-	-	-
		new certificates	-	-	-
	in a different Member State relating to	updated / amended certificates		-	-
		renewed certificates	-	-	-

- A = Application approved, certificate already issued
- R = Application rejected, no certificate issued
- P = Case pending, no certificate issued to date

### E.2.5. List of countries in which railway undertakings applying for a Part B safety certificate in the Member State have already obtained their Part A safety certificate

The only railway undertaking to apply for a part B safety certificate in Spain was 'English Welsh and Scottish Railway International Limited', from the **United Kingdom**.

### E.3. Safety authorisations under Directive 2004/49/EC

	New	Updated or amended	Renewed
E.3.1. Number of valid safety authorisations issued in 2009 to infrastructure managers registered in the Member State	-	-	-

		Α	R	Р
E.3.2. Number of applications for safety	new authorisations	-	-	1
authorisations submitted in 2009 by infrastructure managers registered in the	updated / amended authorisations	-	-	-
Member State	renewed authorisations	-	-	-

A = Application approved, certificate already issued

R = Application rejected, no certificate issued

P = Case pending, no certificate issued to date

### E.4. Procedural aspects – Part A Safety Certificates

		New	Updated or amended	Renewed
Average time in 2009 between receipt of an application and final issue of a Part A safety	licence issued by the Member State	-	-	-
undertakings, once all necessary information has been received	licence issued by a different Member State	-	-	-



### E.5. Procedural aspects – Part B Safety Certificates

		New	Updated or amended	Renewed
Average time in 2009 between receipt of an application and final issue of a Part B safety	licence issued by the Member State	-	5 months	-
undertakings, once all necessary information has been received	licence issued by a different Member State	-	5 months	-

### E.6. Procedural aspects – Safety authorisations

		New	Updated or amended	Renewed
Average time in 2009 between I receipt of an application and I final issue of a safety	licence issued by the Member State	-	5 months	-
authorisation to infrastructure managers, once all necessary information has been received	licence issued by a different Member State	-	-	-