MINISTERIO DE FOMENTO

UNDER-SECRETARIAT

RAIL ACCIDENT
INVESTIGATION COMMISSION

ANNUAL REPORT 2011

On the Investigation of General Interest Rail Network accidents and incidents

Rail Accident Investigation Commission – CIAF. September 2012

Rail Accident Investigation Commission – CIAF.

Under-Secretariat
Ministry of Infrastructure and Transport
Spanish Government

67, Paseo de la Castellana
Madrid 28071
Spain

September 2012

1. INTRODUCTION

1.1. Object and scope

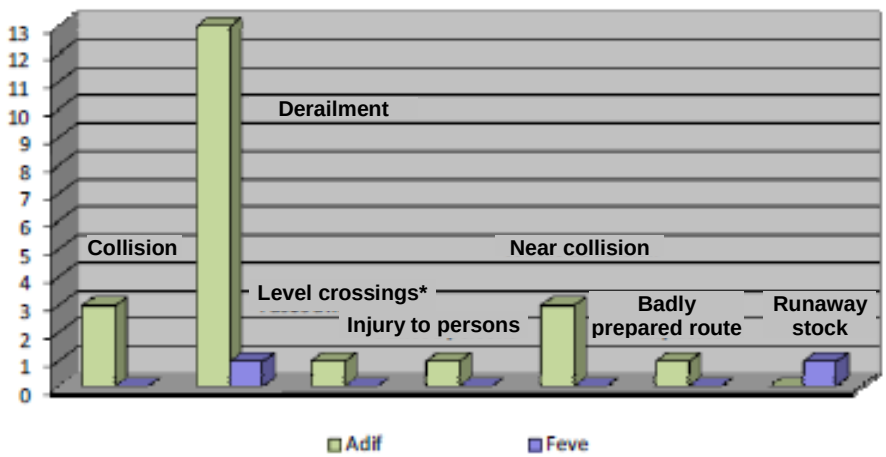
The Rail Accident Investigation Commission (CIAF) is once again submitting its annual report, the fourth since it was set up and the seventh since the European Safety Directive 2004/49/EC created the obligation for each country of producing a report every year summarising the investigations carried out annually by the national investigation body, **a document that is not, under any circumstances, representative of the rail accident rate in our country**.

This report has been drawn up within the deadline – 30 September 2012 – laid down in Article 25 of Royal Decree 810/2007 which transposes the aforementioned directive and summarises, as in previous years, all the technical investigations initiated – and now concluded – by the CIAF concerning rail accidents and incidents taking place on the General Interest Rail Network (RFIG) between 1 January and 31 December 2011 that were notified by the infrastructure administrators (ADIF (Railway Infrastructure Administrator), FEVE (Narrow-gauge Railways), TP Ferro and the Port Authorities) and the railway undertakings.

In 2011 it was considered appropriate to investigate a total of 24 events from the 63 notified, that took place in the RFIG, the cataloguing of which appears in the following table and graph:

Network	Accidents				Incidents			
	Collision	Derailment	Level Crossings *	Injury to persons	Near collision	Badly prepared route	Runaway stock	Total
ADIF	3	13	1	1	3	1	0	22
FEVE	0	1	0	0	0	0	1	2
Total	3	14	1	1	3	1	1	24

* Includes persons run over at level crossings.



1.2. Introduction of Safety Directive 2004/49/EC

In Spain, the legislative transition process, initiated through promulgation of the Railway Sector Act (Law 39/2003 of 17 November 2003, BOE (Official State Gazette) No 276 of 18 November) and the regulation that implements it (Royal Decree 2387/2004 of 30 December 2004, BOE No 315 of 31 December), culminated in the approval of the **Regulation concerning traffic safety on the General Interest Rail Network (Royal Decree 810/2007 of 22 June 2007, published in BOE No 162 of 7 July)**, which transposed Directive 49/2004 on safety on the Community's railways, and revoked the text relating to accident investigation that the abovementioned Railway Sector Regulation contained.

The entry into force of the new safety regulations involved, among other things, the creation of a new investigation body: the Rail Accident Investigation Commission (CIAF), which replaced the Railways Directorate (DGF) in this task.

In November 2009, the Commission of the European Communities published Commission Directive 2009/149/EC amending Directive 2004/49/EC which refers to Common Safety Indicators and common methods for calculating accident costs (published in the OJEC, L313/65). This amends Annex 1 to the Safety Directive and adds an appendix giving definitions for Common Safety Indicators.

This new directive was transposed into our legal system by way of Royal Decree 918/2010 of 16 July, published in BOE No 189 of 5 August, partially amending the current railway safety regulation (Royal Decree 810/2007).

The most recent amendment to the aforementioned regulation took place with the publication of **Royal Decree 641/2011, of 9 May, published in BOE No 111 of 10 May.** This royal decree introduces the provisions of **Directive 2008/110/EC of the European Parliament and of the Council** amending Directive 2004/49/EC in certain aspects, including safety certificates and their scope, and is expanded with regard to vehicle maintenance.

1.3. Rationale and objectives of accident and incident investigation

The purpose of rail accident and incident investigation is to determine the causes of these and the circumstances in which they have occurred, with the aim of avoiding them in future by making appropriate recommendations to reduce risks in rail transport.

This investigation does not, under any circumstances, seek to determine culpability or liability and is irrespective of any judicial investigation, as stated in Directive 2004/49/EC and Article 21(6) of the Traffic Safety Regulation.

The investigation of relevant railway events (serious accident, accident and incident) gives rise to the production of a technical report which contains data relating to the event, the investigations undertaken, the conclusions and, where appropriate, the recommendations made.

The CIAF, in its fourth year of responsibility for rail accident investigation, and continuing with the trend of the past two years, has focused its investigations on the events – accidents and incidents – the causes of which relate more to the railways *per se* than to the behaviour of third parties not connected with railway activity.

1.4. CIAF activities

1.4.1. Plenary meetings

In 2011 the CIAF Plenary Meeting was held once a month, except for August (holiday period). At these meetings it is decided which events, in addition to the most serious, are investigated out of all those that have been notified to the CIAF in the period between two Plenary Meetings and, additionally, the technical investigators raise their technical reports of the investigated events to be approved by the Plenary Meeting, if necessary, and the latter makes appropriate recommendations for preventing any recurrence of the event. Subsequently they are passed on to the interested parties as well as being made public.

The decisions taken by the Plenary Meeting, except for approval of the final report which takes place by resolution, are expressed through agreements that are passed on to their intended recipients (infrastructure managers, railway undertakings, National Safety Authority and other undertakings or bodies). In 2011, the Plenary Meeting issued 24 resolutions and 67 agreements.

1.4.2. Attendance at meetings of the European Railway Agency (ERA)

As part of the network of national investigation bodies (NIB) the CIAF attends periodic meetings – generally three times a year – held in the Agency's offices in the French cities of Lille and Valenciennes.

This group, formed by the investigation bodies of the Member States of the European Union, through meetings and the work that it carries out, provides encouragement and guidance for the investigation of rail accidents and incidents to be carried out as homogeneously as possible. Additionally, it guides its members so that the criteria established by the Safety Directive are applied by all using uniform principles.

The group also serves as a forum for sharing information and experiences between the European investigation bodies.

In 2011 the CIAF, represented by its Secretary, attended three meetings (in February, May and October). In addition, the Commission has a presence in several working groups developing various topics of interest.

1.4.3. Preliminary Examinations

Since the start of its activity, this Commission has adopted various approaches regarding the decision to investigate a railway event. In the first phase, events were investigated according to their seriousness, concentrating efforts on those accidents that had resulted in at least one fatality.

With the experience gained the criterion was modified, investigating those events from which lessons could be drawn for improving rail safety, irrespective of whether there had been any victims.

Nevertheless, there are cases in which the initial data complicate decision-making as to whether or not to investigate an event, and knowing in advance whether its investigation may give rise to contributions to safety.

Accordingly, for examining the apparent causes of an event in greater depth, in 2010 the CIAF in some cases began performing a preliminary analysis of the main aspects and circumstances of the event, called a Preliminary Examination.

These preliminary examinations are carried out by the Secretariat of the CIAF and presented to the Plenary Meeting as a basis for taking the decision whether or not to investigate a particular event. That is why they are not as exhaustive as the final reports of accidents and incidents that are investigated, but they give an in-depth overview of the fundamental aspects without making recommendations.

In 2011 seven preliminary examinations were made, all relating to people being run over when crossing at unauthorised places, four of them on railway premises and the rest on open track. In none of these events was it decided to proceed with a formal investigation.

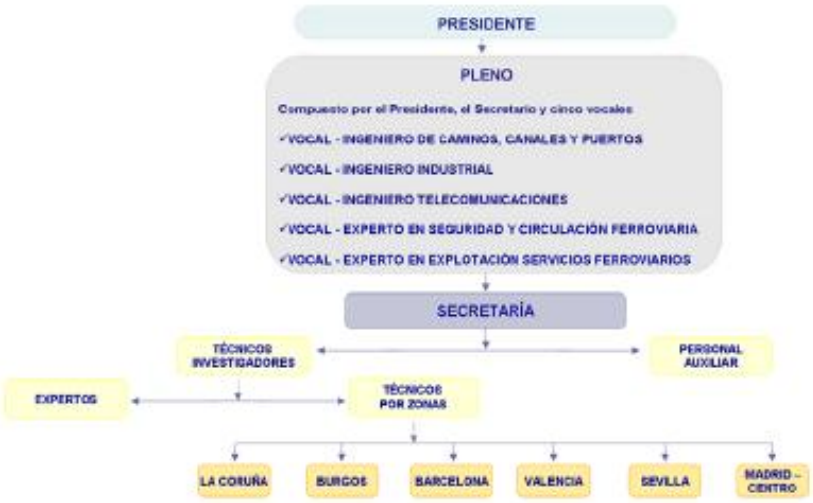
NET-WORK	OPERATOR	FILE No	DATE	MUNICIPALITY	PROVINCE	LINE	K.P.	FATALITIES	SERIOUS INJURIES	MINOR INJURIES	EVENT CLASSIFICATION	TYPE	VEHICLE/ PEDESTRIAN	PLACE	STATUS
FEVE	FEVE	0005/11	25/02/11	Llanes	Asturias	21 Oviedo-Santander	436,885		1	1	ACCIDENT	LEVEL CROSSINGS	PERSON	TRACK	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0011/11	12/03/11	Valencia (Valencia Fuente de San Luis)	Valencia	600 Valencia-San Vicente de Calders	3,053	1			ACCIDENT	INJURY TO PERSONS CAUSED BY ROLLING STOCK	PERSON	TRACK	NOT INVESTIGATED
FEVE	FEVE	0019/11	02/05/11	Colloto	Asturias	21 Oviedo-Santander	321,326	1			ACCIDENT	LEVEL CROSSINGS	PERSON	STATION	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0022/11	19/05/11	Callosa de Segura	Alicante	336 El Reguerón-Alacant Terminal	44.326	1			ACCIDENT	LEVEL CROSSINGS	PERSON	TRACK	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0029/11	18/06/11	Monte la Reina (Toro)	Zamora	820 Zamora-Medina del Campo	68,049	1	2		ACCIDENT	LEVEL CROSSINGS	MOTOR VEHICLE	SIDING	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0046/11	10/10/11	Cinco Casas	Ciudad Real	400 Alcázar de San Juan-Cádiz		1			ACCIDENT	INJURY TO PERSONS CAUSED BY ROLLING STOCK	PERSON	STATION	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0052/11	10/11/11	Avilés (La Rocica)	Asturias	144 Villabona de Asturias-San Juan de Nieva	15,285	1			ACCIDENT	INJURY TO PERSONS CAUSED BY ROLLING STOCK	PERSON	HALT (UNSTAFFED STATION)	NOT INVESTIGATED

2. ORGANISATION OF THE RAIL ACCIDENT INVESTIGATION COMMISSION

The CIAF, set up on 11 December 2007, is a specialised collegiate body comprising the Chairman, the Plenary Meeting and the Secretariat.

The Plenary Meeting, in its turn, is composed of the Chairman, five Members and the Secretary.

In 2011, the CIAF was attached to the Ministry of Infrastructure and Transport through the General Secretariat for Transport.



Translation

PRESIDENTE	CHAIRMAN
PLENO	PLENARY MEETING
Compuesto por el Presidente,, el Secretario y cinco vocales	Composed of the Chairman, the Secretary and five members
VOCAL - INGENIERO DE CAMINOS, CANALES Y PUERTOS	MEMBER – ENGINEER FOR ROADS, CANALS AND PORTS
VOCAL - INGENIERO INDUSTRIAL	MEMBER – INDUSTRIAL ENGINEER
VOCAL - INGENIERO TELECOMUNICACIONES	MEMBER – TELECOMMUNICATIONS ENGINEER
VOCAL - EXPERTO EN SEGURIDAD Y CIRCULACIÓN FERROVIARIA	MEMBER – EXPERT IN RAIL SAFETY AND TRAFFIC
VOCAL - EXPERTO EN EXPLOTACIÓN SERVICIOS FERROVIARIOS	MEMBER – EXPERT IN RAIL SERVICES OPERATION
SECRETARÍA	SECRETARIAT
TÉCNICOS INVESTIGADORES	INVESTIGATIVE TECHNICIANS
PERSONAL AUXILIAR	AUXILIARY STAFF
EXPERTOS	EXPERTS
TÉCNICOS POR ZONAS	TECHNICIANS BY AREA

LA CORUÑA [CORUNNA] **BURGOS** **BARCELONA** **VALENCIA** **SEVILLE** **MADRID-CENTRE**

The Commission relies on two investigative technicians, attached to the Secretariat, who are responsible for carrying out investigations and producing the corresponding reports, with the cooperation of a team made up of safety managers from the companies involved in the investigated event.

The CIAF also has the support of a territorial network of technicians who, by way of an agreement, are provided by Ineco, a transport engineering consultancy. These technicians are permanently on call but are not exclusively assigned to the task.

In order to carry out its work, the Commission has drawn up specific rules which serve as the basis for establishing types and separate stages in the investigation of an event.

3. APPLICABLE LEGISLATION FOR THE INVESTIGATIVE PROCESS

The CIAF, after the initial phase in which it provisionally agreed to maintain the Circular Orders that until then had given details of the investigative process, produced and approved, in the first few months of its operation, the following Circular Orders: **Circular Order 1/2008 'Procedures for technical investigation of rail accidents falling to the Rail Accident Investigation Commission' and Circular Order 2/2008 'Notification of rail incidents and suicides'** which laid down the basic guidelines to be followed by the CIAF in the investigation of railway events of interest.

Subsequently, it published the document **Technical investigation procedure for rail accidents and incidents**, in October 2008, which sets out basic procedures and defines the process for the investigation of rail accidents and incidents. This procedure revoked Circular Order 1/2008, except for accidents to persons caused by rolling stock in motion (unless they occurred at level crossings).

Finally, in May 2009, the Commission completed the procedures for investigation with the publication of the **Procedure for the technical investigation of accidents to persons caused by rolling stock in motion**, thereby totally revoking Circular Order 1/2008.

In 2011 there was no legislation in addition to the above.

4. ACCIDENT AND INCIDENT INVESTIGATION

4.1. Classification of events

The investigation of rail accidents and incidents carried out by the CIAF is based on the definitions of accident, serious accident and incident and on the provisions of Article 21.3 of the **Regulation concerning traffic safety on the General Interest Rail Network (Royal Decree 810/2007 of 22 June)**. These definitions are as follows:

*'**Accident**: 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.'*

*'**Serious accident**: any 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 effect on railway safety regulation or the management of safety; extensive damage means damage that can be immediately assessed by the investigating body to cost at least EUR 2 million in total.'*

*'**Incident**: any occurrence, other than accident or serious accident, associated with the operation of trains or rolling stock and affecting traffic safety.'*

***Article 21.3**: 'In reaching a decision to investigate rail accidents not classed as serious and rail incidents, the Rail Accident Investigation Commission shall assess the following circumstances:*

a) The importance of the accident or incident;

b) Whether it forms part of a series of accidents or incidents with repercussions for the system as a whole;

c) The repercussions for the safety of rail traffic;

d) Requests from the Rail Infrastructure Administrator, the railway undertakings or the Ministry of Infrastructure and Transport.'

Following the principle of improving the safety of the rail system, the CIAF undertakes the investigation of other events (accidents and incidents), in addition to the serious accidents that it is obliged to cover, whose analysis may have a bearing on such improvement.

Accordingly, **by continuing with the criterion established by the Commission in 2009, in 2011 none of the fatal accidents that occurred on the RFIG was investigated whose cause was obviously due to the reckless behaviour of third persons. Conversely, other non-fatal accidents and incidents were analysed, on the assumption that their study may provide lessons in helping to reduce accidents**, such events being mainly determined as collisions, derailments and near collisions.

4.2. Investigated events on the General Interest Rail Network: investigations carried out

4.2.1. Distribution by type

In 2011 a total of 24 events were investigated that occurred in the RFIG and whose classification by type and by manager is shown in the following table:

Network	Accidents				Incidents			
	Collision	Derailment	Level Crossings *	Injury to persons	Near collision	Badly prepared route	Runaway stock	Total
ADIF	3	13	1	1	3	1	0	22
FEVE	0	1	0	0	0	0	1	2
Total	**3**	**14**	**1**	**1**	**3**	**1**	**1**	**24**

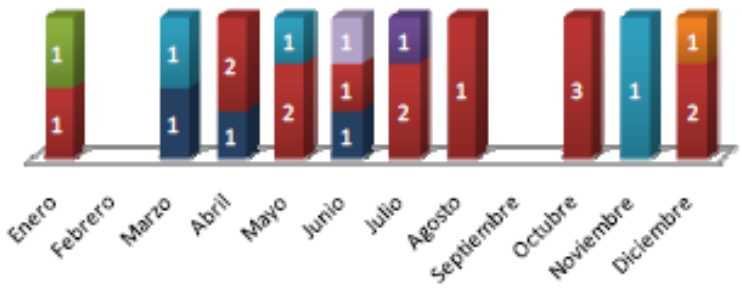
Of the events investigated, the highest percentage corresponds to derailment accidents (58%), followed by collision accidents and near collision incidents, each representing 13%. In 92% (22) of the events investigated the determining factors were related to the railway system.

4.2.2. Monthly distribution

The monthly average for events covered by an investigation was 2.

MONTHLY DISTRIBUTION OF INVESTIGATED ACCIDENTS AND INCIDENTS

	Accident				Incident			
MONTH / TYPE	Collision	Derailment	Level Crossings	Injury to persons	Near collision	Badly prepared route	Runaway stock	Total
January		1	1					2
February								0
March	1				1			2
April	1	2						3
May		2			1			3
June	1	1					1	3
July		2		1				3
August		1						1
September								0
October		3						3
November					1			1
December		2				1		3
Total	**3**	**14**	**1**	**1**	**3**	**1**	**1**	**24**



Enero	January
Febrero	February
Marzo	March
Abril	April
Mayo	May
Junio	June
Julio	July
Agosto	August
Septiembre	September
Octubre	October
Noviembre	November
Diciembre	December

Collision
Personal injury
Runaway stock

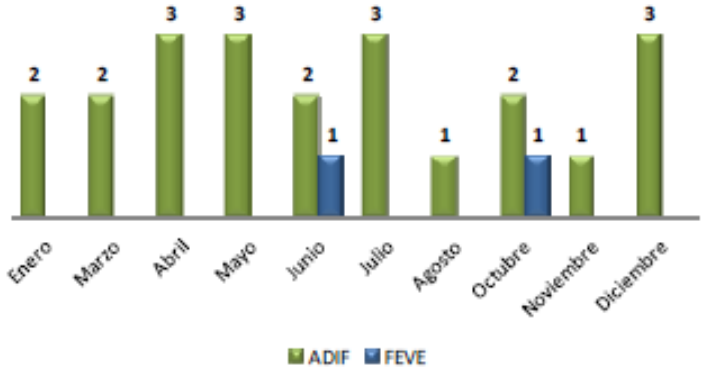
Derailment
Near collision

Level crossings
Badly prepared route

4.2.3. Distribution by network

Broken down by rail network, of the 63 events notified (50 accidents, 6 incidents and 7 suicides), 24 were investigated: 22 occurred on the rail network managed by ADIF (18 accidents and 4 incidents) and 2 on the network managed by FEVE (one accident and one incident).

The graph shows the monthly distribution of investigated accidents and incidents in the financial year 2011, grouped according to the rail infrastructure administrators who manage the rail network.



Enero	January
Marzo	March
Abril	April
Mayo	May
Junio	June
Julio	July
Agosto	August
Octubre	October
Noviembre	November
Diciembre	December

4.2.4. Accident rate of investigated events

Of the total investigated accidents and incidents there were 22 victims, only one of which was fatal and the rest were minor injuries, being concentrated in four events.

This table shows the distribution, according to network and classification of the event.

			ADIF			FEVE					
Classification	Type	Number of events	Fatalities	Serious Injuries	Minor Injuries	Fatalities	Serious Injuries	Minor Injuries	Total F	Total SI	Total MI
Accident	Collision (obstacle)	2							0	0	0
	Collision (trains)	1			18				0	0	18
	Derailment	14			1				0	0	1
	Level Crossings	1			2				0	0	2
	Injury to persons by rolling stock	1	1						1	0	0
ACCIDENT Total		**19**	**1**	**0**	**21**	**0**	**0**	**0**	**1**	**0**	**21**
Incident	Near collision	3							0	0	0
	Badly prepared route	1							0	0	0
	Runaway stock	1							0	0	0
INCIDENT Total		**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GENERAL Total		**24**	**1**	**0**	**21**	**0**	**0**	**0**	**1**	**0**	**21**

The only fatality (4%) was the result of someone being run over on open track. With regard to minor injuries, 18 (82%) were involved in a collision, 2 (10%) were persons injured in their vehicle while crossing a level crossing and one (4%) was a passenger on a train that was derailed.

4.2.5. Average time for production of reports

The following table shows the time - in months - that has elapsed since the event occurred until the final report on it is approved.

The average has been 9 months: of the investigations carried out, 58% were performed in a shorter period and 38% required a longer period.

	Accident				Incident			
MONTHS / TYPE	Collision	Derailment	Level Crossings	Injury to persons	Near collision	Badly prepared route	Runaway stock	Total
6		1			1			2
7	1	2				1	1	5
8	1	4	1		1			7
9		1						1
10		4						4
11	1	1		1				3
14		1			1			2
Total	**3**	**14**	**1**	**1**	**3**	**1**	**1**	**24**
Average	**8.67**	**9.29**	**8**	**11**	**9.33**	**7**	**7**	**9.29**

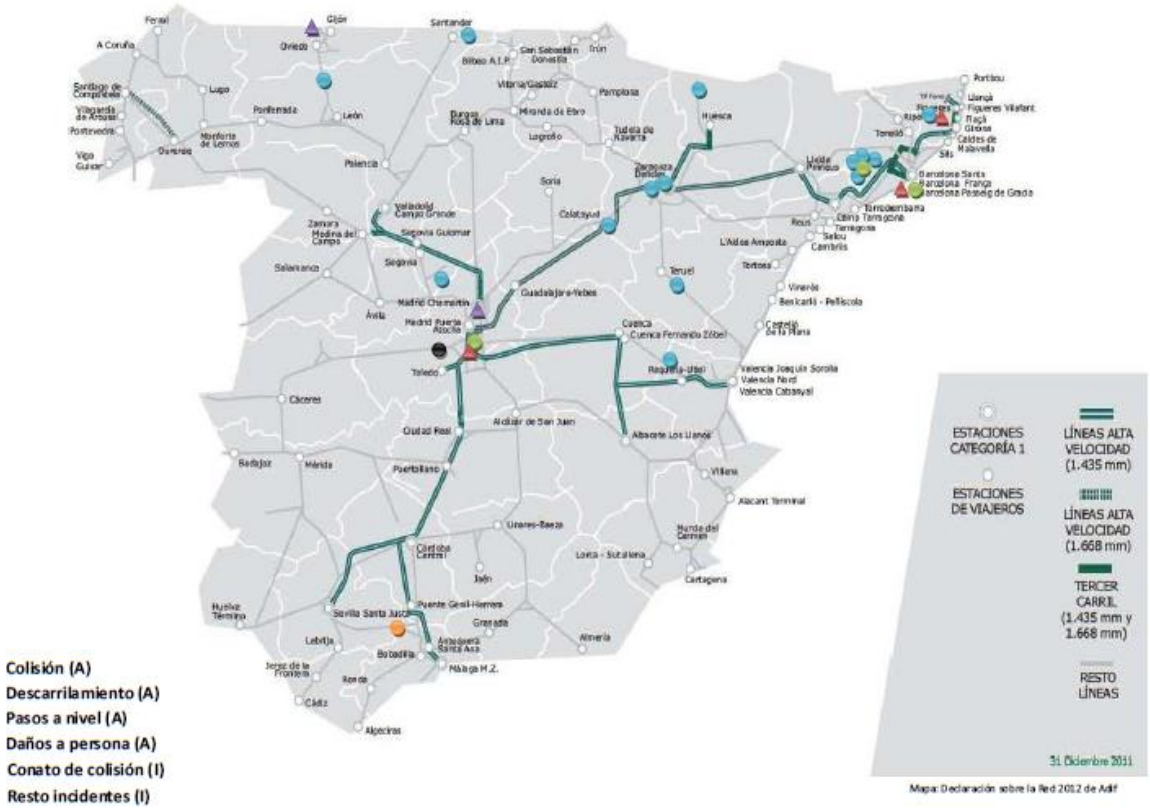
4.2.6. List of investigated events

The following table summarises, by file number, the main details of each of the events that have been investigated. All investigations started in 2011 have already been completed.

Also attached is a chart with their geographical distribution: of the 24 incidents investigated, the Barcelona area alone had 29% (seven events), with nine events being the total number (38%) in Catalonia. Another five events (21%) occurred in Aragon, four (17%) in Madrid, and one in each of the Autonomous Communities of Andalusia, Valencia, Castile - La Mancha, Castile and Leon, the Principality of Asturias and Cantabria.

NET-WORK	OPERATOR	FILE No	DATE	MUNICIPALITY	PROVINCE	LINE	K.P.	FATAL-ITIES	SERIOUS INJURIES	MINOR INJURIES	EVENT CLASSIFICATION	TYPE	VEHICLE/ PEDESTRIAN	PLACE	RECOM-MENDA-TIONS
ADIF	RENFE OPERADORA	0003/11	16/01/11	Aguadulce	Seville	422 Br. Utrera-Fuente Piedra	87,782		2	ACCIDENT	LEVEL CROSSING	MOTOR VEHICLE	TRACK	CLOSED	1
ADIF	RENFE OPERADORA	0007/11	04/01/11	Saragossa (Zaragoza-Delicias)	Saragossa	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	306,700			ACCIDENT	DERAILMENT	TRAIN	STATION (GAUGE CHANGER)	CLOSED	2
ADIF	RENFE OPERADORA	0012/11	16/03/11	Olesa de Montserrat	Barcelona	220 Lleida Pirineus-L'Hospitalet de Llobregat	323,320			ACCIDENT	COLLISION (OBSTACLE)	TRAIN	TRACK	CLOSED	0
ADIF	RENFE OPERADORA	0015/11	07/03/11	Flaçà	Gerona	270 Sagrera-Cerbere Branch	224,794			INCIDENT	NEAR COLLISION	TRAIN	STATION	CLOSED	2
ADIF	RENFE OPERADORA	0017/11	23/04/11	Bellvitge	Barcelona	200 Madrid-Barcelona	675,220			ACCIDENT	DERAILMENT	TRAIN	TRACK	CLOSED	3
ADIF	RENFE OPERADORA	0018/11	28/04/11	Barcelona (El Clot-Arago)	Barcelona	262 Barcelona-Sagrera - Clot Br.	110,000		18	ACCIDENT	COLLISION (TRAINS)	TRAIN	TRACK	CLOSED	0
ADIF	RENFE OPERADORA	0023/11	16/05/11	Madrid (Los Gavilanes)	Madrid	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	12,379			INCIDENT	NEAR COLLISION	TRAIN	STATION	CLOSED	1
ADIF	RENFE OPERADORA	0024/11	30/05/11	Calatayud	Saragossa	AV50 [HS line] Puerta Madrid Atocha - ADIF-TP Ferro Boundary	224,556			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	2
ADIF	RENFE OPERADORA	0025/11	05/04/11	Rubi	Barcelona	246 Castellbisbal-Mollet Sant Fost	6,707			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	2
FEVE	FEVE	0026/11	01/06/11	Corvera de Asturias (Trasona)	Asturias	11 Ferrol-Gijón	27,510			INCIDENT	RUNAWAY STOCK	TRAIN	STATION	CLOSED	3
ADIF	RENFE OPERADORA	0028/11	10/06/11	Madrid (Atocha)	Madrid	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	11,100			ACCIDENT	COLLISION (OBSTACLE)	TRAIN	TRACK	CLOSED	1
ADIF	RENFE OPERADORA	0031/11	24/05/11	Villamanín	León	130 Venta de Baños-Gijón	45,104			ACCIDENT	DERAILMENT	TRAIN	TRACK	CLOSED	1
ADIF	RENFE OPERADORA	0032/11	30/06/11	Navacerrada	Madrid	116 Los Cotos-Cercedilla	7,165			ACCIDENT	DERAILMENT	TRAIN	TRACK	CLOSED	1
ADIF	RENFE OPERADORA	0036/11	20/07/11	Bargas (Villaluenga-Yuncler)	Toledo	500 Planetario-Valencia de Alcántara Br.	66,480	1		ACCIDENT	INJURY TO PERSONS CAUSED BY ROLLING STOCK	OPERATOR	TRACK	CLOSED	3
ADIF	RENFE OPERADORA	0040/11	27/08/11	Granollers (Granollers Centre)	Barcelona	270 Sagrera-Cerbere Branch	134,932			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	1
ADIF	RENFE OPERADORA	0043/11	11/07/11	Villanúa	Huesca	204 Huesca-Canfranc	11,800			ACCIDENT	DERAILMENT	TRAIN	TRACK	CLOSED	0
ADIF	LOGITREN	0044/11	13/07/11	Caparrates	Teruel	610 Sagunto-Teruel Br.	137,810			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	1
ADIF	RENFE OPERADORA	0047/11	12/10/11	Vilamalla	Gerona	270 Sagrera-Cerbere Branch	241,083		1	ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	3
ADIF	RENFE OPERADORA	0049/11	26/10/11	Sant Pol de Mar	Barcelona	276 Mafanet-Massanes-Barcelona-Sagrera	44,703			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	0
FEVE	FEVE	0050/11	27/10/11	The Shipyard (Astillero)	Cantabria	24 Santander-Bilbao	540,782			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	1
ADIF	RENFE OPERADORA	0051/11	05/11/11	Barcelona (Sagrera Br.)	Barcelona	268 Arago Br.-Sagrera Br	110,311			INCIDENT	NEAR COLLISION	TRAIN (EMPTY STOCK)	STATION	CLOSED	0
ADIF	RENFE OPERADORA	0061/11	19/12/11	Madrid (Chamartín)	Madrid	900 Madrid Chamartín-Madrid Atocha				INCIDENT	BADLY PREPARED ROUTE	TRAIN	TRACK (TUNNEL)	CLOSED	1
ADIF	RENFE OPERADORA	0062/11	15/12/11	Valencia (Valencia Sant Isidre)	Valencia	310 Aranjuez-Valencia	84,565			ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	0
ADIF	RENFE OPERADORA	0063/11	27/12/11	Saragossa (Zaragoza-Delicias)	Saragossa	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	337,395			ACCIDENT	DERAILMENT	TRAIN	STATION (GAUGE CHANGER)	CLOSED	1

ACCIDENTS – INCIDENTS INVESTIGATED 2011



Mapa: Declaración sobre la Red 2012 de Adif

Colisión (A) Descarrilamiento (A) Pasos a nivel (A) Daños a persona (A) Conato de colisión (I) Resto incidentes (I)	Collision (A) Derailment (A) Level crossings (A) Injury to persons (A) Near collision (I) Other incidents (I)
ESTACIONES CATEGORÍA 1	CATEGORY 1 STATIONS
ESTACIONES DE VIAJEROS	PASSENGER STATIONS
LÍNEAS ALTA VELOCIDAD	HIGH SPEED LINES
LÍNEAS ALTA VELOCIDAD	HIGH SPEED LINES
TERCER CARRIL	THIRD RAIL
RESTO LÍNEAS	OTHER LINES
31 Diciembre 2011	31 December 2011
Mapa: Declaraciùon sobre la Red 2012 de Adif	Map: ADIF Network Declaration 2012

4.3. Analysis by type

4.3.1. Serious accidents

No serious accident occurred in 2011 according to the definition laid down in the RD 810/2007, and therefore there was no investigation.

4.3.2. Accidents

4.3.2.1. Collision

In 2011 three accidents due to collision were investigated: two against objects on the line (one due to landslide and another due to nearby works) and one between trains (due to railway staff not complying with regulations).

		TYPE	NO OF FILE	LINE	PROVINCE	KP
ACCIDENT	ADIF	COLLISION (OBSTACLE)	0012/11	220 Lleida Pirineus-L'Hospitalet de Llobregat	Barcelona	323 320
			0028/11	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	Madrid	11 100
		COLLISION (TRAINS)	0018/11	262 Barcelona-Sagrera – Clot Br.	Barcelona	110 000

These events caused 18 minor injuries (all from the event with file number 18/11) and the cause of all of them is attributable to the railway system. Their investigation gave rise to one recommendation.

4.3.2.2. Derailment

In 2011, 14 derailment accidents were investigated, all but one of which occurred in the network managed by ADIF.

		TYPE	No of FILE	LINE	PROVINCE	KP
ACCIDENT	ADIF	DERAILMENT	0007/11	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	Saragossa	306 700
			0017/11	200 Madrid-Barcelona	Barcelona	675 220
			0024/11	AV50 [HS line] Madrid Puerta Atocha - ADIF-TP Ferro Boundary	Saragossa	224 556
			0025/11	246 Castellbisbal-Mollet Sant Fost	Barcelona	6 707
			0031/11	130 Venta de Baños-Gijón	León	45 104
			0032/11	116 Los Cotos-Cercedilla	Madrid	7 165
			0040/11	270 Sagrera-Cerbere Branch	Barcelona	134 932
			0043/11	204 Huesca-Canfranc Br.	Huesca	11 800
			0044/11	610 Sagunto-Teruel Br.	Teruel	137 810
			0047/11	270 Sagrera-Cerbere Branch	Gerona	241 083
			0049/11	276 Maçanet-Massanes-Barcelona- Sagrera	Barcelona	44 703
			0062/11	310 Aranjuez-Valencia	Valencia	84 565
			0063/11	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	Saragossa	337 395
	FEVE		0050/11	24 Santander-Bilbao	Cantabria	540 782

The cause of all of them is attributable to the railway, having caused one minor injury. Their investigation gave rise to drawing up 18 recommendations.

4.3.2.3. Level-crossing accidents

Provisions for level crossings are set out in the *Ministerial 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.*

In the General Interest Rail Network, as at 31December 2011, the number of level crossings is given in the following table according to their type:

	ADIF	%	FEVE	%	Total	%
Class A: Protected only by fixed signals	1 082	44.36	650	65.99	1 732	50.58
Class B: Protected by light and sound signals	449	18.41	83	8.43	532	15.54
Class C: Protected by half-barriers, double half-barriers or barriers	464	19.02	180	18.27	644	18.81
Class D: Protected by a system of safety notices	17	0.70		0.00	17	0.50
Class E: Protected by crossing keeper	1	0.04	4	0.41	5	0.15
Class F: Exclusive to pedestrians or pedestrians and livestock	67	2.75	68	6.90	135	3.94
Class P: Private	359	14.72		0.00	359	10.48
Total	**2 439**	**100**	**985**	**100**	**3 424**	**100**

In 2011 only one accident was investigated at a level crossing.

		TYPE	PROTECTION CLASS	No of FILE	LINE	PROVINCE	KP
ACCIDENT	**ADIF**	LEVEL CROSSINGS	A	0003/11	422 Utrera-Fuente Piedra Br.	Seville	87 782

The accident occurred on 16 January when a passenger train crashed into a road vehicle crossing the class A level crossing located at Kilometre 87+782 of branch line 422, Utrera to Fuente de Piedra, in the municipal district of Aguadulce, (Seville). As a result, the driver, the only occupant of the road vehicle, and a train passenger were slightly injured. Its analysis gave rise to one recommendation.

4.3.2.4. Injury to persons caused by rolling stock in motion

In 2011 only one accident was investigated due to a person being struck by rolling stock on the network managed by ADIF.

Excluded from this classification are persons struck at level crossings (who are included under the type 'Level-crossing accidents'), as well as suicides which, in any case, are not subject to investigation as they are not considered to be accidents.

		TYPE	No of FILE	LINE	PROVINCE	KP
ACCIDENT	ADIF	INJURY TO PERSONS CAUSED BY ROLLING STOCK	0036/11	500 Planetario-Valencia de Alcántara Br.	Toledo	66 480

The accident occurred on 20 July when a passenger train fatally struck an operator of a company contracted by ADIF who was working on the deck of a bridge over the River Guadarrama, on the way between Villaluenga-Yuncler and Villamiel de Toledo (Toledo).

The cause of this accident lay in non-compliance with the regulatory standards for this type of work. Thus, the origin of the event derived from a deficiency in the railway system, and gave rise to the issue of three recommendations.

4.3.2.5. Fire

No accidents caused by fire were investigated in 2011.

4.3.2.6. Other accidents

No other type of accident was investigated in 2011.

4.3.3. Incidents

In 2011 five incidents were investigated: three near-collisions, one of runaway stock and one of a badly prepared route. All but one took place in a station.

The CIAF decided to investigate all the incidents reported (6) except one in view of the fact that these events, if they had occurred in other circumstances, could have triggered an accident or serious accident.

The causes of all the incidents had their origin in the railway and logically no personal injury occurred. Their investigation gave rise to drawing up seven recommendations.

		TYPE	No of FILE	LINE	PROVINCE	KP
INCIDENT	ADIF	NEAR COLLISION	0015/11	270 Sagrera-Cerbere Branch	Gerona	224 794
			0023/11	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	Madrid	12 379
			0051/11	268 Arago Br.-Sagrera Br.	Barcelona	110 311
		BADLY PREPARED ROUTE	0061/11	900 Madrid Chamartín-Madrid Atocha	Madrid	
	FEVE	RUNAWAY STOCK	0026/11	11 Ferrol-Gijón	Asturias	27 510

5. CAUSES OF INVESTIGATED EVENTS

The following table groups the causes of investigated events by classification of the event, rail network and type. In addition, it shows the victims (fatalities and seriously injured) attributable to each of the two causal classifications: railway or third parties.

ATTRIBUTED CAUSE	CLASSIFICATION	NET-WORK	TYPE	CAUSE	TOTAL EVENTS	TOTAL VICTIMS (FATALITIES + SERIOUSLY INJURED)
RAILWAY	ACCIDENT	ADIF	Collision (object)	INFRASTRUCTURE FAILURE: Cutting landslide	1	0
				HUMAN ERROR: Failure to comply with safety conditions specified in the works authorisation	1	0
			Collision (trains)	HUMAN ERROR: Failure to comply with regulations	1	0
			Derailment	FAILURE OF ROLLING STOCK: Failure in the gauge changing devices	2	0
				FAILURE OF ROLLING STOCK: Broken axle	1	0
				FAILURE OF ROLLING STOCK: Detachment of the ASFA support bar	1	0
				INFRASTRUCTURE FAILURE: Improper operation of switching points	1	0
				INFRASTRUCTURE FAILURE: Lack of ballast	1	0
				INFRASTRUCTURE FAILURE: Poor condition of the sleepers, wood, fasteners and ballast	1	0
				INFRASTRUCTURE FAILURE: Poor condition of switches and crossings	1	0
				FAILURE OF INFRASTRUCTURE AND ROLLING STOCK: Twisting. Poor stowage of load	1	0
				INFRASTRUCTURE AND HUMAN FAILURE: Technical failure. Failure to comply with regulations	1	0
				HUMAN ERROR: Failure to comply with regulations	3	0
			Injury to persons caused by rolling stock	HUMAN ERROR: Failure to comply with regulations	1	1
		FEVE	Derailment	HUMAN ERROR: Failure to comply with regulations	1	0
	INCIDENT	ADIF	Near collision	HUMAN, INFRASTRUCTURE AND ROLLING STOCK FAILURE: Failure to comply with regulations. Anomalous operation of the ASFA	1	0
				HUMAN ERROR: Failure to comply with regulations	2	0
			Badly prepared route	HUMAN ERROR: Error in carrying out the work	1	0
		FEVE	Runaway stock	HUMAN ERROR: Failure to comply with regulations	1	0
TOTAL RAILWAY					**23**	**1**
THIRD PARTIES	**ACCIDENT**	**ADIF**	Level Crossings	HUMAN ERROR: The victim did not make sure of the arrival of the train	1	0
THIRD PARTIES TOTAL					**1**	**0**
GENERAL TOTAL					**24**	**1**

Of the total investigated events (accidents and incidents), the railway system is the origin of 96% (23 out of 24) and of 90% of the victims produced – fatalities and slightly injured – (20 out of 22). The only one of the events investigated whose cause is attributable to third parties is the level crossing accident that caused two minor injuries.

58% of the events (fourteen out of the total) were due to human error (92% by train staff and 8% by others) this being the sole cause in twelve of them and in the other two being combined with failure of the Infrastructure and/or of the rolling stock.

The ten remaining events (42%) were due to failures in the infrastructure and/or the rolling stock.

6. COMPARATIVE ANALYSIS

The tables below set out the data for the total number of investigated events (accidents and incidents), the victims produced by them (fatalities + serious and minor injuries) and the recommendations made in each of the final reports to which the investigation gave rise and which, since 2006, the Ministry of Infrastructure and Transport has carried out, in accordance with the provisions in the Rail Sector Act and Regulations (January 2005) and subsequently in the Traffic Safety Regulations (September 2007).

INVESTIGATED EVENTS 2006-2011

	YEAR	2006			2007			2008			2009			2010			2011			GENERAL TOTAL
	TYPE NETWORK	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	
SERIOUS ACCIDENT	Collision			**0**			**0**	2		**2**			**0**	1		**1**			**0**	**3**
ACCIDENT	Collision	2		**2**			**0**		1	**1**	4	1	**5**	1		**1**	3		**3**	**12**
	Derailment	1		**1**		1	**1**	2		**2**	3	1	**4**	6	2	**8**	13	1	**14**	**30**
	Level Crossings	14		**14**	16	4	**20**	14		**14**	12	4	**16**	4	3	**7**	1		**1**	**72**
	Injury to persons	36	1	**37**	43	3	**46**	33	2	**35**	8		**8**	4		**4**	1		**1**	**131**
INCIDENT	Near collision			**0**			**0**	2	1	**3**	7	2	**9**	6	1	**7**	3		**3**	**22**
	Broken axle			**0**			**0**			**0**		1	**1**			**0**			**0**	**1**
	Badly prepared route			**0**			**0**			**0**			**0**			**0**	1		**1**	**1**
	Runaway stock			**0**			**0**			**0**			**0**			**0**		1	**1**	**1**
	Total	**53**	**1**	**54**	**59**	**8**	**67**	**53**	**4**	**57**	**34**	**9**	**43**	**22**	**6**	**28**	**22**	**2**	24	**273**

VICTIMS OF INVESTIGATED EVENTS 2006-2011 (FATALITIES AND SERIOUSLY INJURED)

	YEAR	Fatal	2006			2007			2008			2009			2010			2011			GENERAL TOTAL
	TYPE NETWORK	S. Injured	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	
SERIOUS ACCIDENT	Collision	Fatal			**0**			**0**	2		**2**			**0**	1		**1**			**0**	**3**
		S. Injured			**0**			**0**			**0**			**0**			**0**			**0**	**0**
ACCIDENT	Collision	Fatal	2		**2**			**0**			**0**			**0**	1		**1**			**0**	**3**
		S. Injured			**0**			**0**			**0**			**0**			**0**			**0**	**0**
	Derailment	Fatal	7		**7**			**0**			**0**			**0**			**0**			**0**	**7**
		S. Injured	6		**6**			**0**			**0**			**0**			**0**			**0**	**6**
	Level Crossings	Fatal	16		**16**	19	4	**23**	15		**15**	12	4	**16**	5	3	**8**			**0**	**78**
		S. Injured			**0**	3		**3**			**0**		1	**1**	1		**1**			**0**	**5**
	Injury to persons	Fatal	38	1	**39**	46	3	**49**	33	2	**35**	8		**8**	14		**14**	1		**1**	**146**
		S. Injured	2		**2**			**0**	1		**1**			**0**	10		**10**			**0**	**13**
	Total		*71*	1	**72**	68	7	**75**	51	2	**53**	20	5	**25**	32	3	**35**	1	0	**1**	**261**

RECOMMENDATIONS 2006-2011

	YEAR	2006			2007			2008			2009			2010			2011			GENERAL TOTAL
	TYPE / NETWORK	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	ADIF	FEVE	TOTAL	
SERIOUS ACCIDENT	Collision			0			**0**	1		**1**			**0**	3		**3**			**0**	**4**
ACCIDENT	Collision	2		2			**0**		1	**1**	6	1	**7**	1		**1**	1		**1**	**12**
	Derailment	1		4		8	**8**	5		**5**	4	1	**5**	18	3	**21**	17	1	**18**	**61**
	Level Crossings	14		14	26	12	**38**	7		**7**	2		2	7	6	**13**	1		**1**	**75**
	Injury to persons			0			**0**	19	5	**24**	5		**5**	4		**4**	3		**3**	**36**
INCIDENT	Near collision			0			**0**	8		**8**	14	4	**3**	1	2	**3**	3		**3**	**32**
	Broken axle			0			**0**			**0**		3	**0**			**0**			**0**	**3**
	Badly prepared route			0			**0**			**0**			**0**			**0**		3	**3**	**3**
	Runaway stock			0			**0**			**0**			**0**			**0**	1		**1**	**1**
	Total	**20**	0	**20**	**26**	**20**	**46**	**40**	**6**	**46**	**31**	**9**	**40**	**34**	**11**	45	**26**	**4**	**30**	**227**

As can be seen in the above tables, the number of events investigated in 2011 was lower. This reduction is the result of applying the criterion that the CIAF has used since 2009 for deciding on the investigation of an event, as mentioned in section 1.4.3.

No comparison can be made regarding victims, since only one fatal accident was investigated in 2011.

The total number of recommendations made in 2011 is down on previous years although the number of investigations carried out has been adjusted.

Note the upward trend of making recommendations regarding derailments and near collisions, consistent with the type of the events investigated.

7. REPORTING AND RECOMMENDATIONS

7.1. Reports on 2011 accidents and incidents and recommendations

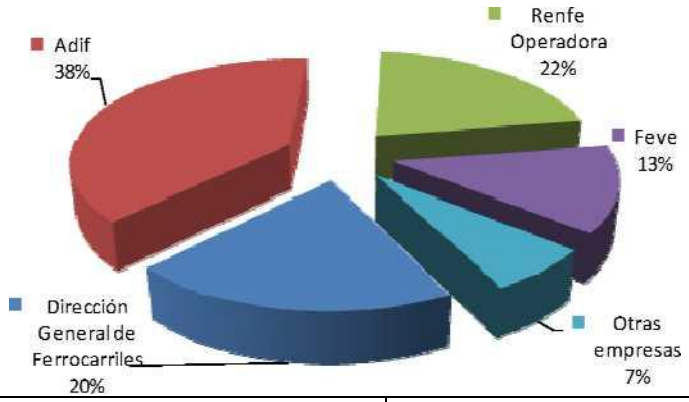
The investigation of rail accidents and incidents is justified by the contribution that it may make to the improvement of rail safety, by reducing the risks that may cause accidents and incidents in future, by way of conclusions and, where appropriate, safety recommendations that the Commission makes public in the final report.

This final report is forwarded to the National Safety Authority (the former Department of Railway Infrastructure - DGIF and the current Railways Directorate - DGF) and the European Railway Agency (ERA), in addition to the entities affected.

Of the 24 investigations launched on events occurring on the RFIG in 2011, on publication of this report, all were completed and in 18 of them the published final report contained recommendations.

In total, the Commission made 30 recommendations, which gives rise to an average of 1.25 recommendations per investigated event, significantly higher than that of previous years.

The graph shows the distribution of recommendations by final recipient.



Adif	ADIF
Renfe Operadora	RENFE Operadora
Feve	FEVE
Otras empresas	Other companies
Dirección General de Ferrocarriles	Railways Directorate

Below is a summary with the basic data of all the investigations carried out and the recommendations made in 2011.

File	Date	Line	Administrator	Operator	Type of event
0003/11	16/01/10	422 Utrera – Fuente de Piedra Br.	ADIF	RENFE Operadora	**Level Crossings**

Medium-distance passenger train 13943 hit a road vehicle encroaching on the Class A level crossing, located at KP 87+782, between the stations of Osuna and Pedrera, in the municipal district of Aguadulce (Seville). As a result of the accident, the driver, the sole occupant of the road vehicle, and a train passenger were slightly injured.

The accident arose from encroachment on the rail track by the road vehicle crossing the level crossing when train 13943 passed by.

Number of recommendations	Final recipient of recommendations
1	Department of Railway Infrastructure (DGIF)

03/11-1 To adapt the level crossing to the specifications in the Ministerial Order of 02/08/2001: either providing it with Class B protection, due to its traffic moment exceeding 1 000, or removing it, causing its concentration at the level crossing at KP 86 +900, the two being located less than 1 000 metres apart.

File	Date	Line	Administrator	Operator	Type of event
0007/11	04/01/11	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	ADIF	RENFE Operadora	**Derailment**

Long-distance passenger train 621, on passing through the Zaragoza Delicias gauge changer was derailed on its right-hand wheel of the second axle of the first bogie of the train set, in the direction of travel, due to defects in the fastening screws of the support for the locking lever that releases the locking mechanism of the gauge changing wheel.

The derailment was caused by failure of the gauge changing devices of the derailed wheel, belonging to the second axle of the first bogie in the direction of travel, due to defects in the support fastening screws of the locking lever that releases the gauge changing locking mechanism.

Number of recommendations	Final recipient of recommendations
2	1: RENFE Operadora 2: CAF

07/11-1 To modify the support screw fastening system of the gauge changing locking mechanism of the BRAVA axles by adding a 'stop plate' to units of the S121 fleet, which at the date of this report have not yet been modified.

07/11-2 To study, design and implement a system to ensure the fastening of the support screws of the gauge changing locking mechanism of the BRAVA axle on newly manufactured axles.

File	Date	Line	Administrator	Operator	Type of event
0012/11	16/03/11	220 Lleida Pirineus - L'Hospitalet de Llobregat	ADIF	RENFE Operadora	**Collision (Obstacle)**
Suburban passenger train 25267 collided with obstacles on the rail track – earth and rock – at KP 323+320, on open track, between the halts of Olesa de Montserrat and Vacarisses Torreblanca (Barcelona). The collision caused the derailment of all the axles of the head TU [head of train unit], slightly injuring the driver and ten passengers.					
The accident had its origin in the collision of train 25267 with obstacles – earth and rock – present on the rail track, derived from a landslip.					
Number of recommendations			**Final recipient of recommendations**		
0					
12/11-0 The measures adopted being considered adequate, no recommendations made.					

File	Date	Line	Administrator	Operator	Type of event
0015/11	07/03/11	270 Sagrera-Cerbere Branch	ADIF	RENFE Operadora	**Near collision**
In Flaçà Station (Gerona), at the level of approach signal E'2 (Cerbere side), a near collision occurred between long-distance passenger train 212 and goods train 93580, both belonging to the railway undertaking RENFE Operadora, when the first train improperly passed approach signal E'2 located at KP 224+794, indicating a stop signal.					
The incident was caused by passenger train 212 improperly passing incoming approach signal E'2, indicating stop, due to failure to comply with the orders given by the signal to the train driving staff. Malfunctioning of the ASFA system should be mentioned as a contributing factor.					
Number of recommendations			**Final recipient of recommendations**		
2			1: ADIF 2: RENFE Operadora		
15/11-1 Supervision of the behaviour of the ASFA balise at the base of signal 2268 (prior to the Flaçà approach signal E'2) with the object of detecting any malfunctions thereof. **15/11-2** Monitoring the behaviour of the ASFA equipment on board train 212, with the object of detecting whether it is operating correctly.					

File	Date	Line	Administrator	Operator	Type of event
0017/11	23/04/11	200 Madrid-Barcelona	ADIF	RENFE Operadora	**Derailment**

Medium-distance passenger train 15400 was derailed on the last bogie in the direction of travel, at KP 675+220, between the stations of Bellvitge-Aguja 674+835 and Barcelona Sants (Barcelona). No personal injuries occurred.

The accident occurred due to breakage of the last axle of the train set in the direction of travel, caused by the existence of a crack in the traction zone of the driving axle, most likely produced by an electric arc, generated by malfunctioning of the earth connection.

Number of recommendations	Final recipient of recommendations
3	1: RENFE Operadora

17/11-1 To incorporate the new procedure for inspecting the earth connections and the axle contact zone into the 440-470 stock maintenance plan.

17/11-2 To analyse which other type of rolling stock is liable to undergo deterioration in their axles due to earth connection malfunctioning, incorporating similar measures into their maintenance plan.

17/11-3 To consider the inclusion of ultrasonic inspection in some intermediate servicing between Rs (general overhaul) in the 440-470 stock maintenance plan.

File	Date	Line	Administrator	Operator	Type of event
0018/11	28/04/11	262 Barcelona-Sagrera Clot Br.	ADIF	RENFE Operadora	**Collision (Trains)**

At KP 110+000, at the halt of El Clot-Aragó, a rear-end collision occurred between suburban passenger train 28913 and train 37507 (empty stock of train 00476) when the first train passed permissive signal 1095, which showed stop.

The accident originated in failure to comply with the orders given by the signals to the driving staff, on not running at sight in accordance with regulations.

Number of recommendations	Final recipient of recommendations
0	

18/11-0 As the measures adopted were considered adequate, no recommendations were made.

File	Date	Line	Administrator	Operator	Type of event
0023/11	16/05/11	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	ADIF	RENFE Operadora	**Near collision**

A near collision occurred at the Station of Los Gavilanes (Madrid) between passenger trains 5180 and 8182 when the former improperly passed entry signal E022, located at KP 12+379, ordering a stop.

The incident was caused by High Speed Train 5180 improperly passing entry signal E022, ordering a stop, due to failure to comply with the orders given by the signal to the driving staff. The non-operation of the automatic control locking system (LZB) and the ASFA Digital system should be mentioned as a contributing factor.

Number of recommendations	Final recipient of recommendations
1	ADIF and RENFE Operadora

23/11-1 To implement the necessary measures for communications with driving cab staff to take place in accordance with regulations, in order to avoid possible distractions, especially when running in worsened conditions.

File	Date	Line	Administrator	Operator	Type of event
0024/11	30/05/11	AV50 [HS line] Madrid Puerta Atocha – ADIF-TPFerro Boundary	ADIF	RENFE Operadora	**Derailment**

The derailment of medium-distance passenger train 8476 occurred at KP 224+556, at the entrance to the station of Calatayud, Saragossa side. The four axles of the first coach of the train set were derailed, in the direction of travel. There were no personal injuries as a result of the derailment.

The accident stemmed from a technical failure of the facilities, on switching points S1 CAL 2 not operating appropriately.

Number of recommendations	Final recipient of recommendations
2	Railways Directorate (DGF)

24/11-1 To establish clear and logical action guidelines for traffic and driving staff, in cases of overrunning signals with an order for checking switches and crossings, adapting the rules to the new (high speed) technologies.

24/11-2 To analyse the feasibility of enhancing the content of training programmes for obtaining driving licences in terms of technical knowledge on high speed switches and crossings and especially switching points.

File	Date	Line	Administrator	Operator	Type of event
0025/11	05/04/11	246 Castellbisbal-Mollet Sant Fost	ADIF	RENFE Operadora	**Derailment**

Goods train 91103 improperly passed signal S1/1 and was subsequently derailed at the station of Rubí (Barcelona).

The accident stemmed from train 91103 improperly passing Rubí station exit signal S1/1, indicating stop, through failure to comply with the orders given by the signal to the train driving staff. As a result of the signal overrun, the train entered gauge changer CH6 which was not set for the UIC width, losing continuity on the left rail (in the direction of travel of the train), causing the derailment.

Number of recommendations	Final recipient of recommendations
2	ADIF

25/11-1 To explore the possibility of improving the visibility of Rubí station exit signal S1/1.

25/11-2 To explore the possibility of including conditions in the operating program of the Rubí station interlock, in the gauge changers and other switches and crossings such that, in establishing routes, account is taken of the orientation of these switches and crossings, when they follow a signal and may be affected by a possible overrun of that signal.

File	Date	Line	Administrator	Operator	Type of event
0026/11	01/06/11	11 Ferrol-Gijón	FEVE	FEVE	**Runaway stock**

Eight empty cable drum wagons ran away from train 9203 at the station of Trasona (Asturias) after they were uncoupled from the two locomotives, in the station siding. The cut-out section (8 cars) began sliding along due to the gradient, entering the main line. It finally stopped as the declivity of the line changed, which became horizontal at the stopping point, and after drifting 1 380 metres away.

The incident occurred due to railway staff failing to comply with regulations. First, the driver and the station engineer did not correctly perform the braking of the train and subsequent cutting out of the stock, giving rise to sliding. Secondly, the traffic manager did not change the position of the points causing the cut-out section to enter the main line.

Number of recommendations	Final recipient of recommendations
3	FEVE

26/11-1 To emphasise to all staff involved in train movements the importance of compliance with the regulations, with regard to performing coupling and uncoupling operations.

26/11-2 To examine the utility of placing slope indicators showing the gradient of the line, at the station of Trasona and at other stations with similar characteristics.

26/11-3 Given the characteristics of the Trasona station (steep gradients, shunting for goods and commuter traffic flow), and as stipulated in Article 6/12/00 of the RCT [Rail Traffic Regulations], to examine the utility of documenting shunting operations by means of standing instructions at this station.

File	Date	Line	Administrator	Operator	Type of event
0028/11	10/06/11	AV10 [HS line] Madrid Atocha-Sevilla Santa Justa	ADIF	RENFE Operadora	**Collision (Obstacle)**

At KP 11+100, at the entrance of the Perales tunnel (Madrid), passenger train 2071 hit a metal pipe crossing over the tracks, on deviating from the pipe jacking that was being carried out for burying a power line.

The accident originated from work affecting the underground crossing of the rail bed being carried out at the same time as trains were running, and failure to comply with the safety conditions stipulated in the authorisation for such work.

Number of recommendations	Final recipient of recommendations
1	ADIF

28/11-1 In all works authorisations that contain special requirements regarding actions that, somehow, could affect the safe movement of trains, a section is to be included that clearly establishes that the special requirements are addressed in the initial health and safety coordination meeting (which takes place before the start of the works).

The representatives of the infrastructure manager at that meeting will read the special requirements contained in the authorisation and they will be discussed by those present, so as to clarify their scope and any possible doubts that such requirements might raise. All meeting attendees, and especially the representatives of the party executing the work (project management, works management, etc.) must acknowledge their cognisance of these and this should be recorded in the minutes of the aforementioned meeting, which will be signed by all the attendees.

File	Date	Line	Administrator	Operator	Type of event
0031/11	24/05/11	130 Venta de Baños Gijón	ADIF	RENFE Operadora	**Derailment**

Goods train ER201 was derailed on open track, at KP 45+104, between the stations of Santa Lucia and Villamanín. The wagons running in 4th and 6th to 18th place, in the direction of travel of the train, were derailed. There were no personal injuries as a result of the derailment.

The accident was due to an infrastructure failure, as a result of lack of ballast in the derailment area, due to planned maintenance work not being completed, which allowed the passing of traffic to displace the track, causing its misalignment and the resulting derailment. Also, the person in charge of the work handed over the track to the head of the CTC under normal conditions, without pointing out the deficiency.

Number of recommendations	Final recipient of recommendations
1	Railways Directorate (DGF)

31/11-1 Given the scattered regulations, to assess the utility of drawing up a standard on conditions for handing over track after completing work on it, both under normal and degraded conditions.

File	Date	Line	Administrator	Operator	Type of event
0032/11	30/06/11	116 Los Cotos-Cercedilla	ADIF	RENFE Operadora	**Derailment**
Passenger train 21907 was derailed at KP 7+165, between the stations of Siete Picos and Puerto de Navacerrada. The four bogies of the train set were derailed. In order to assess the situation train S1 was sent, of the same company and composition, the first bogie of this also being derailed at KP 7+150. There were no personal injuries as a result of the derailments.					
The accident had its origin in the technical failure of the infrastructure as a result of the wooden sleepers, fasteners and ballast being in poor condition.					
Number of recommendations			**Final recipient of recommendations**		
1			ADIF		
32/11-1 To examine the feasibility of replacing the entire stretch of wooden sleepers with others made of concrete or, failing this, replacing those in poor condition with others of the same material.					

File	Date	Line	Administrator	Operator	Type of event
0036/11	20/07/11	500 Planetario-Valencia de Alcántara Br.	ADIF	RENFE Operadora	**Injury to persons**
At KP 66+480, medium-distance train 17016 ran over an ADIF contracting company's operator working on the deck of a bridge over the River Guadarrama, on the way between Villaluenga-Yuncler and Villamiel de Toledo. The person died as a result of the accident.					
The accident was caused by the operator being within the track gauge when train 17016 passed by, due to failure to comply with the regulatory standards for this type of work.					
Number of recommendations			**Final recipient of recommendations**		
3			ADIF		
36/11-1 The weekly work log must contain the specific activities to be carried out and the machinery planned to be used, as well as access to it. **36/11-2** To examine the feasibility of increasing inspections of track work by the staff responsible for safety. **36/11-3** To stress the regulatory aspects of track work in the training of those in charge of works.					

File	Date	Line	Administrator	Operator	Type of event
0040/11	27/08/11	270 Sagrera-Cerbere Branch	ADIF	RENFE Operadora	**Derailment**
Suburban passenger train 28480 improperly overran exit signal S2/7-9 located at KP 134+932, at the station of Granollers-Centre, subsequently hitting protection device C-23 and the two bogies of the first coach of the train set were derailed.					
The accident was caused by passenger train 28480 improperly passing exit signal S2/7-9, ordering a stop, due to failure to comply with the orders given by the signal to the driving staff.					
Number of recommendations			**Final recipient of recommendations**		
1			ADIF		
40/11-1 To examine the feasibility of including track 7 and the routes to and from it with traffic line processing in the Granollers-Centre station interlocking.					

File	Date	Line	Administrator	Operator	Type of event
0043/11	11/07/11	204 Huesca-Canfranc Br.	ADIF	RENFE Operadora	**Derailment**
Goods train 54583 was derailed at KP 11+800, on the way between Jaca and Canfranc. The train, composed of 14 wagons loaded with maize, was derailed inside tunnel No 6 'the Snail' [*'el Caracol'*], running derailed for approximately one kilometre until it stopped outside the tunnel, leaving the entire train set outside. The train was split into two parts (between the 5th and 6th wagons) some 50 metres apart, leaving the wagons occupying the 5th, 6th and 7th positions, in the direction of travel, overturned.					
The accident originated from the failure of the infrastructure, as a result of the poor general condition of all its component elements (sleepers, excessive wear of rails, deterioration in the fastenings and the contamination of the ballast), giving rise to out-of-tolerance values for both cambers and twists and alternating gauge widening and narrowing on the track.					
Number of recommendations			**Final recipient of recommendations**		
0					
43/11-0 As the measures adopted were considered adequate, no recommendations were made.					

File	Date	Line	Administrator	Operator	Type of event
0044/11	13/07/11	610 Sagunto-Teruel Br.	ADIF	Logitren	**Derailment**

Goods train 97845, composed of one locomotive 335 and 28 wagons (MC and MMC platforms) loaded with containers, was derailed on open track, at KP 137+810, between the stations of Teruel and Caparrates. The derailment began in the right wheel of the first axle of the 9th wagon, in the direction of travel, which ran derailed for 3.29 kilometres, until it hit points crossing A2 of the station of Caparrates, where the switch broke, and the 7th, 8th, 9th and 10th wagons were derailed. There were no personal injuries as a result of the derailment.

The accident arose from a confluence of events that caused the lifting and subsequent derailment of the right wheel of the first axle of the wagon that occupied the ninth position. On the one hand, the state of the track displayed marked twisting and potholes. On the other hand there were indications of inadequate stowage of the load. Moreover, unfavourable conditions existed in the track layout, such as a radius of 300 metres and a ramp of 21.5 thousandths.

Number of recommendations	Final recipient of recommendations
1	Ben Trade Cables Ibérica, S.A.

44/11-1 To strictly enforce the '*Container Load Technical Instruction*' drawn up by Ben Trade Cables Ibérica S.A. itself.

File	Date	Line	Administrator	Operator	Type of event
0047/11	12/10/11	270 Sagrera-Cerbere Branch	ADIF	RENFE Operadora	**Derailment**

Medium-distance passenger train 15837, of conventional gauge, was derailed at the station of Vilamalla. The first two axles of the first bogie and a wheel of the second bogie were derailed. The derailment occurred at switch No 5 which was in the wrong position for the conventional gauge. One passenger was slightly injured.

The accident was triggered when a technical failure of the facilities was not properly managed by the staff concerned; first by the traffic manager, on authorising passing on a non-existent route, and secondly by the driving staff, on travelling on a stretch of line where there was total suspension for the rolling stock that they were driving.

Number of recommendations	Final recipient of recommendations
3	1 and 2: Railways Directorate (DGF) 3: ADIF

47/11-1 The recommendation made in file 24/11 is repeated: To establish clear and logical action guidelines for traffic and driving staff, in cases of overrunning signals with an order for checking switches and crossings, adapting the rules to the new technologies.

47/11-2 The recommendation made in file 24/11 is repeated: To examine the feasibility of enhancing the content of training programmes for obtaining driving licences and retraining in terms of technical knowledge on switches and crossings and especially switching points, when they coincide with an interlock with different gauges.

47/11-3 To assess the utility of intensifying the training of traffic managers who manage lines equipped with a third rail, with regard to the knowledge of facilities for which they are responsible and in compliance with Notice No 43 of the ADIF Department of Traffic Safety (DSC).

File	Date	Line	Administrator	Operator	Type of event
0049/11	26/10/11	276 Maçanet-Massanes-Barcelona-Sagrera	ADIF	RENFE Operadora	**Derailment**

At the station of Sant Pol de Mar (Barcelona), located at KP 44+ 979, a near collision occurred between suburban passenger trains 25736 and 25639, when the former improperly overran exit signal S2/1, indicating stop, causing the ASFA Digital system to act in emergency and stop the train. Subsequently this same train backed up, without authorisation, and was derailed at switch number 1 that it had previously run through, on the route being set to track 2 for train 25639.

The derailment had its origin in the unauthorised reversing of train 25736 over switch No 1, previously run through after improperly overrunning exit signal S2/1, showing a stop, due to failure to comply with the orders given by the signals to the driving personnel.

Number of recommendations	Final recipient of recommendations
0	

49/11-0 The measures adopted being considered adequate, no recommendations were made.

File	Date	Line	Administrator	Operator	Type of event
0050/11	27/10/11	24 Santander-Bilbao	FEVE	FEVE	**Derailment**

At the station of Astillero (Cantabria), passenger train 6803 improperly overran exit signal S1/1L, running through switch number 2 and derailing the second axle of the first bogie of the leading vehicle. No fatalities or injuries occurred.

The accident was caused by passenger train 6803 improperly overrunning exit signal S1/1L, indicating stop, due to failure to comply with the orders given by the signals to the driving staff.

Number of recommendations	Final recipient of recommendations
1	FEVE

50/11-1 In the training given to driving staff, to stress attitudes and behaviours that are a source of risk for traffic movement, emphasising strict compliance with FEVE's Rail Traffic Regulations.

File	Date	Line	Administrator	Operator	Type of event
0051/11	05/11/11	268 Arago Br - Sagrera Br.	ADIF	RENFE Operadora	**Near collision**
At the Sagrera Branch Station, passenger train 37537, empty stock from train 874, improperly overran entry signal 1107, which was indicating stop. A near collision situation occurred with train 274 which had taken up a route to Barcelona Marina.					
The incident stemmed from train 37537 (empty stock of train 874) improperly overrunning signal 1107, which ordered stop, due to failure to comply with the orders given by the signal to the driving staff.					
Number of recommendations			**Final recipient of recommendations**		
0					
51/11-0 The measures adopted being considered adequate, no recommendations were made.					

File	Date	Line	Administrator	Operator	Type of event
0061/11	19/12/11	900 Madrid Chamartín- Madrid Atocha	ADIF	RENFE Operadora	**Badly prepared route**
At the station of Madrid Chamartín (Túnel de Sol) an exit route was set for train 20204 from line 4 over line II with signal S2/4 ordering a free line. The driver on approaching switch 27 realised it was the wrong direction and stopped the train without running through the points. Later, at 06:05, the problem recurred for the exit of suburban passenger train 20004 and, at 06:14, for the entry of passenger train 20207.					
The accident was caused by human error, the connectors receiving and transmitting information from the motors of points No 9 and No 27 being incorrectly connected to each other at the interlocking points control module, so that checking and controlling switch 9 in the interlock corresponded in the field to switch 27 and vice versa. This meant that correctly established routes in the CTC conflicted with each other on the ground. An underlying cause was not testing consistency on the ground after completion of the work. A contributory cause was the absence of labels on the connectors, the lack of an individualised connection and of a different cable length for each connector.					
Number of recommendations			**Final recipient of recommendations**		
1			ADIF		
61/11-1 That the training session and refresher course given to the Chamartin manager be extended to those responsible for work on the rest of the network.					

File	Date	Line	Administrator	Operator	Type of event
0062/11	15/12/11	310 Aranjuez-Valencia	ADIF	RENFE Operadora	**Derailment**
Commuter train 24406 was derailed at the entrance to the station of Valencia Sant Isidre, as a result of having run over the ASFA sensor support bar that had previously become detached from the previous train set (train 24403). No one was injured in the accident.					
The accident stemmed from a technical failure of the equipment, when the ASFA sensor support bar of railcar 592069 on train 24403 became detached on open track, causing train 24406 that came along next, to be derailed.					
Number of recommendations			**Final recipient of recommendations**		
0					
62/11-0 As the measures adopted were considered adequate, no recommendations were made.					

File	Date	Line	Administrator	Operator	Type of event
0063/11	27/12/11	AV60 [HS line] Zaragoza-Delicias Br. Changer – Zaragoza-Delicias Changer	ADIF	RENFE Operadora	**Derailment**
Long-distance passenger train 533 was derailed on making its way through the gauge changer of Zaragoza Delicias. The right wheel was derailed on the second axle of the first bogie in the second coach of the train set, in the direction of travel.					
The derailment was caused by failure in the gauge changing system of the right wheel on the second axle of the first bogie in the second coach of the train set, in the direction of travel, due to the locking/unlocking system mechanism of the aforementioned wheel being loose, because the screws fastening this mechanism had become unscrewed, one of them disappearing and the other being out of its housing.					
Number of recommendations			**Final recipient of recommendations**		
1			RENFE Operadora		
63/11-1 To set up special monitoring of the gauge changing locking/unlocking mechanism on the BRAVA axles until the planned modification in its fastening (welding) is made.					

7.2. Measures adopted as a result of the recommendations made

Royal Decree 810/2007 of 22 June approving the Regulation concerning traffic safety on the General Interest Rail Network states in Article 25 that the annual report of the Rail Accident Investigation Commission (CIAF) must include, in addition to investigations carried out and recommendations made that year (set out in the previous section), any measures which, where appropriate, have been adopted in accordance with the recommendations made previously.

This section therefore includes information received at the CIAF, between the publication of the previous report (September 2011) and the present (September 2012), regarding measures adopted by the final recipient and reported to the Railways Directorate (DGF), and which correspond to recommendations made since the start-up of the CIAF (December 2007).

This information, which is extracted in the tables below has been provided by the DGF which, as the National Railway Safety Authority, is responsible for monitoring the recommendations made by the CIAF, assessing the measures adopted by the final recipients for their implementation, and reporting to this Commission.

Thus, based on the information received, the final recipients have so far conducted actions (adopted measures) for the implementation of 107 of the total recommendations issued by the CIAF since its creation (163), which has led to the DGF considering the degree of compliance of 67 of these as satisfactory, of which 2 are from 2007, 24 from 2008, 14 from 2009, 23 from 2010 and 4 from 2011.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0006/08	**ADIF** **11/07/12** **06/08-1** Elimination of the black-spot crossing that the victim entered.	Work completed on 1 December 2010.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0014/08	**ADIF** **02/06/10** **14/08-1** Since non-compliance with the General Traffic Regulations was not the cause of the accident investigated, it is understood that the adequacy of the standards applicable to the safety of works in the vicinity of the track and the extent to which it is monitored should be analysed by the appropriate body.	This is being studied under ADIF's Occupational Risk Protection.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0015/08	**ADIF** **30/01/12** **15/08-1** To promote public awareness campaigns for the responsible use of railway facilities.	It is considered that ADIF has carried out awareness campaigns.
File	**Final recipient – Communication Date/ Recommendations of the CIAF**	**Measures adopted by the final recipient**
0017/08	**ADIF** **11/07/12** **17/08-1** To strengthen the fencing.	The existing fence is owned by the Villena town council.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0018/08	**ADIF** **30/01/12** **18/08-1** The recommendation for this accident forms part of a general recommendation for the promotion of educational campaigns stressing observance of level crossing signals.	It is considered that ADIF has carried out awareness campaigns.
File	**Final recipient – Communication Date/ Recommendations of the CIAF**	**Measures adopted by the final recipient**
0019/08	**ADIF** **30/01/12** **19/08-1** In this case, a recommendation has to be drawn up of a generic nature for this type of event: to promote educational and public awareness campaigns on the importance of not crossing railway facilities that are not authorised for this.	It is considered that ADIF has carried out awareness campaigns.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0021/08	**ADIF** **11/07/12** **21/08-1** The closure of the level crossing is recommended since it does not comply with the provisions of Article 8(5) of the Rail Sector Act 39/2003 of 17 November: 'closure of level crossings established on private roads when the owners thereof do not properly take care of their conservation, protection and signalling'. Nevertheless, as provided in Circular Resolution 1/2008 of the Railways Directorate, regarding a plan for reviewing the authorisations for individual level crossings on the General Interest Rail Network managed by ADIF, the review plan must include that the Infrastructure Manager has to submit it by 31 December 2009 to said Directorate.	Construction project for removal being drafted.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0023/08	**ADIF** **11/07/12** **23/08-1** Given the numerous accidents that occur in the south of Madrid, is recommended that a study be conducted to detect the existence of possible black spots in the area and remove them if there are any.	Fencing works were carried out around the perimeter of the railway section in 2009.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0026/08	**ADIF** **11/07/12** **26/08-1** Repair of breaks in the fencing allowing people to pass from the mountain side to the sea side on the way from Vilassar to Mataró, especially in the area of the bridge over the Riera de Argentona.	No agreements have been reached with the competent municipal authorities.
	Mataró Town Council **16/12/09** **26/08-2** Given that a problem of urban mobility was encountered between the municipalities of Cabrera de Mar and Mataró (the two municipalities separated by the Riera de Argentona), it is recommended that these bodies consider the possibility of building a footbridge over the Riera, which avoids the use of the railway bridge for pedestrian traffic.	It is only possible to construct a footbridge with the authorisation of the Catalan Water Agency of the Department of Environment of the Generalitat of Catalonia. The current General Plan of the Mataró Town Council finally approved on 03/04/97, does not cover the appropriate qualification for the construction of the pedestrian crossing. The Council has submitted suggestions and modifications to the Urban Master Plan for specifying and delimiting the land reserved for the Orbital Rail Line (LOF) based on technical studies conducted by the Railway Infrastructure agency of Catalonia and suggestions that will increase with the application to construct pedestrian footbridges in the next procedural step that is presented, so that in the overall context of the work, this improvement can be included.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0037/08	**ADIF** **02/06/10** **37/08-1** In view of the accidents listed in section 3.8 of this report (previous occurrences of a similar nature) and bearing in mind that, in most cases, the railway divides the urban areas where it is located, it is recommended that the competent authorities take the necessary measures to improve permeability.	The process outlined in the recommendation is being followed.
0038/08	**ADIF** **02/06/12** **38/08-1** To adopt the necessary measures for drivers to comply with the provisions of the General Traffic Regulations.	The process outlined in the recommendation is being followed.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0040/08	**ADIF** **11/07/12** The Investigating Technician endorses the following recommendations made by ADIF, but qualifies this by saying that the drafting of a common action protocol should form part of the instruction itself. **40/08-1** The instructions published for regulating large-scale works on safety facilities, especially if they have to be compatible with train traffic, must specify clearly who is the 'sole' person responsible, from among the different departments participating in them, for communications with the Traffic Manager, who is ultimately responsible for authorising or suspending the execution of such works, further establishing how this official will inform him regarding the affected safety facilities in each phase and the accompanying limitations so that the Traffic Manager can determine what measures should be taken to ensure traffic safety. **ADIF** **11/07/12** **40/08-2** Due to the large number of people involved in the execution of this type of work the risk of human error is high and may, as has been observed, create situations of danger to traffic safety, especially in the case of automatic blocks, for which reason its implementation must be scheduled in white periods or even when all traffic is withdrawn on the route affected by it, with alternative routes being studied for the trains. In the event that this is not possible, telephone blocking must be set up to ensure that there is just a single train on the route. **ADIF** **11/07/12** **40/08-3** The various departments participating in the execution of the work will have to develop a common action protocol to ensure full coordination of the activities to be performed and the chain for transmitting orders between the contact responsible for communication with the Traffic Manager and the work crews.	All the work instructions are in line with the terms of the recommendation, a study being made prior to carrying out the work on the effects on traffic, the scope of functional relationships and the responsibilities specified in controlling the work in order to determine, in accordance with the provisions of the General Traffic Regulations and other regulations, their inclusion in the action protocols for regulating large-scale works in stations. .

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0041/08	**ADIF**	**11/07/12**	Access control has been installed in the station, which prevents the tracks being used for crossing from one side of the town to the other.
	41/08-1 For the competent authority to study the utility of fencing the area of the station and adopting other measures enabling permeability.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0048/08	**FEVE**	**06/03/12**	Although, for budgetary reasons, FEVE cannot undertake the closure of all the facilities in Pravia (where the incident occurred) given the length of the station perimeter, partial closure of one part of it has been studied. In any case, FEVE considers that the recommendation is a positive step in preventing such accidents (improper railway crossings), especially serious when they occur in stations with several lines and where shunting is carried out.
	48/08-1 For the competent authority to study the relevance of fencing the perimeter of the area.		
	FEVE	**15/12/09**	There are signs warning of the danger of crossing the lines in the immediate area of the passages between platforms, where users are expected to pass. Their installation along the line has not been considered, being of extremely doubtful efficacy.
	48/08-2 To assess the suitability of placing signs warning of the danger of crossing the lines.		
	FEVE	**15/12/09**	There is an overpass in the vicinity of the accident.
	48/08-3 For the competent authority to study the relevance of constructing a crossing at a different level for crossing from one side of the town to the other.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0049/08	**ADIF**	**11/07/12**	The area of the event is uninhabited, with no black-spot crossing and is subject to the high-speed construction works of the Nudo de La Encina section.
	49/08-1 To recommend the study, by the competent authority, of fencing requirements in the area.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0050/08	**ADIF**	**11/07/12**	Strail type crossing installed between platforms and vertical signs set up warning of the danger of crossing the lines. Project in progress for closure of the perimeter around the halt.
	50/08-1 For the competent authority to assess the safety conditions of the level crossing between platforms and accordingly establish the utility of improving the signage, installing protection or constructing a crossing at a different level.		

*52/08 appears on a later page

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0053/08	**Comsa Rail Transport**	**27/03/12**	A document is attached with the vehicle servicing schedule based on the actual data of the previous year's servicing activity. Moreover, ADIF has prepared a Master File in which all maintenance operations (locomotives and wagons) to be carried out, have to be reported. This file contains a maintenance plan approved by ADIF for each vehicle. Any missing information regarding compliance with the Maintenance Plan will mean the temporary suspension of the running permit until the unreported maintenance plan servicing is completed. This file is in the running-in phase with start-up for all purposes in the near future.
	53/08-1 That all vehicles placed in service comply with the scheduling set out in the maintenance plan for the various servicing activities.		
	ADIF	**11/07/12**	Over the years 2009 to 2011 the work of inspecting maintenance centres has been carried out by checking compliance with rolling stock maintenance plans as set out in the Safety Guidelines.
	53/08-2 In addition to checking the compliance of railway rolling stock maintenance plans, as laid down in Article 16 of Order FOM/233/2006 of 31 January, for the approval of rolling stock, a specific campaign of inspections is recommended for examining the degree of compliance with these plans.		
	Erion Maintenance Centre	**28/02/12**	Actions taken: on 9 September 2009, a letter was sent to the Railways Directorate in which Erion announced the corrective actions undertaken for meeting the final recommendations of the report 53/2008. These corrective actions have been implemented by Erion in all the preventive maintenance checks carried out. Results: to date (28/02/12), Erion has carried out 11 preventive maintenance operations on these locomotives, without detecting any problem in the functionality of the system in question. Similarly, there has been no report by the operator of the vehicle relating to any notable difficulty regarding the case involved.
	53/08-3 It must be ensured that the maintenance operations carried out in its workshops comply with the consistency requirements in the maintenance plans.		
	Comsa Rail Transport	**27/03/12**	For the final approval of the Comsa Rail accredited centre, in the definition of the contents of the training course for rail vehicle driving licences a specific section has been included on *'Driving under degraded conditions'*. It is attached to the contents of the 312 locomotive training programme; the theoretical training for each vehicle has a duration of four to six hours, depending on the specific characteristics of each locomotive.
	53/08-4 More intensive driving practice under adverse braking conditions is recommended and better adaptation to actual conditions.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0054/08	**RENFE Operadora**	**12/12/11**	1. Inspection Sheet (code FIN 0000.202.02.MIT) has been prepared and applied since 12/11/08. 2. The Magnetic Particle Inspection Procedure for locomotive wheels (code IU-MT-LOCOMOTORA) prepared and applied since 11/11/08. 3. Technical Circular 050-55.10/01-A approved on 07/05/09. Work Instruction (code ITR.1000.202.01. MIT) prepared and applied as at 28/04/09.
	54/08-1 To establish procedures and inspection sheets for: 1. Checking the existence of lathe notches or clamping marks 2. Magnetoscopic inspection of the affected area, checking that there are no cracks 3. Removal of the aforementioned marks. These procedures will affect all types of wheels that may have been turned on lathes causing the problem.		
	RENFE Operadora	**12/12/11**	On 07/05/10, the 2510.50 series Maintenance Plan was revised, and the inspection procedures and work instructions were included in the maintenance operations affected. On 19/05/10, the maintenance plans of the remaining series affected were revised: PM 2691.50; PM 2697.50; PM 2692.50; PM 2693.50; PM 2698.50; PM 2699.50 and PM 2891.50.
	54/08-2 To establish for each series of vehicles affected a plan of action, indicating in which maintenance operation each procedure will be applied. Introduction of these operations into the maintenance plans.		
	RENFE Operadora 12/12/11		The number of wheels that could be affected was 1 212 wheels mounted on different vehicles (S/251, S 289.1 and S 269). The first round of actions was initiated centred on the bead of the wheels, removing the marks in accordance with the Work Instruction (ITR.1000.202.01 MIT), with the result that 66% of the total wheels were free of marks (through non-generation or removal). For the remaining wheels, 440 wheels that had marks in the radial area which were not removed initially were subjected to a second round of actions carried out by accredited staff of the Technology Development Department. The elimination of all marks and notches on wheels was finally concluded on 30/09/10 last, pursuant to the provisions contained in ITR.1000.202.01.MIT and in Technical Circular 050.55.10/01-A.
	54/08-3 Monitoring the progress of the actions and their outcome in each of the series, keeping track of the results. According to the progress of the actions, and when the disappearance of the problem can be ensured, to subsequently modify the Maintenance Plans, adjusting them to the normal Maintenance Plan for this type of axle.		
	RENFE Operadora	**12/12/11**	The wheel clamping system on the Madrid Central Repair Workshop [TCR - *Taller Central de Reparación*] lathe was modified. It was found that the trace marks generated by the new clamping devices, met the new requirements and quality controls specified in the Work Instruction developed for this purpose (ITR. 1000.202.02.TVI). The Madrid Central Repair Workshop has developed an Inspection Sheet (code FIN.1000.202.02.TVI) for checking the axles on leaving its facilities. The aforementioned Inspection Sheet, indicates the type of marks with which the wheels emerge (in the event that they have them).
	54/08-4 To modify the wheel clamping system in the turning procedure so as to ensure that no notches or marks are produced, with quality control at the exit from the lathe using an inspection sheet checking that the wheels emerge without the aforementioned notches or marks and, if they exist, removing them according to procedure.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0052/08	**Department of Railway Infrastructure**	**11/07/12**	
	52/08-1 To remind the Railways Directorate of the utility of including this level crossing in the Programme for Removing and Improving Level Crossings when budgets allow.		The construction project for removal by ADIF being drafted.

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0061/08	**Department of Railway Infrastructure**	**30/01/12**	
	61/08-1 Although the removal of the crossing is planned, until the works begin, it is recommended to the Railways Directorate that, via the appropriate means, it passes on to the Lugo Council the responsibility for adapting the fixed road signs to the provisions of the Order of 2 August 2001 on the removal and protection of level crossings.		Letter sent on 31/03/09 to the Lugo Council. It is included in 'difficult to remove crossings'. ADIF has the project up for tender.

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0066/08	**ADIF**	**11/07/12**	
	66/08-1 In view of the accidents occurring in rail work and given the impact that these have on traffic safety, it is recommended that the Infrastructure Managers of the General Interest Rail Network set up the necessary procedures or analyse them if they exist, both for drawing up health and safety studies and plans for rail work, and for authorising and monitoring this work during its execution, in order that the activity of persons participating in the work takes place with minimal risk to people and rail traffic.		The work safety sections, both of partner companies and ADIF staff, follow the regulations laid down for their activity whenever work of some importance is carried out under the relevant occupational health and safety plans.

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0071/08	**ADIF**	**02/06/10**	
	71/08-1 Since the construction project for removal of this crossing is at the draft stage, action is recommended to speed up its removal.		Construction project for removal being drafted.

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0003/09	**FEVE**	**06/03/12**	Currently driving staff are being given a course entitled '*Review of Traffic Regulations in degraded situations, human factor, quality and work risk prevention*', in which, using driving simulators, special emphasis is placed on actions in degraded conditions, as well as on attitudes and behaviours that have been identified as sources of risk. To date 1 134 hours of training have been given, which means that 23.14% of the workforce has received it, and it is expected that by the end of 2012 the total number of hours provided will come to 2 310 hours, which would mean that 47.14% of the workforce have undergone this type of course.
	03/09-1 To review the driving staff retraining programmes, so as to place special emphasis on attitudes and behaviours that are sources of risk.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0004/09	**ADIF**	**11/07/12**	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.
	04/09-1 Withdrawal of all the signs related to the level crossing that has already been removed.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0005/09	**ADIF**	**11/07/12**	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.
	05/09-1 The study of fencing the line through this area is recommended to prevent people from crossing at places not authorised for this.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0009/09	**FEVE**	**06/03/12**	FEVE's Telecommunications and IT Systems Management has carried out checks on the operation and preventive maintenance of the radio repeaters concerned and the control centre transmitters: - Check on 19/02/11 on the control centre transmitter of El Berrón (used for communications with the trains running on the Oviedo-Infiesto section). - Check on 04/12/11 on the Peña Mayor repeater (used for communications with the trains running on the Oviedo-Infiesto section). In both checks, it was found that the equipment operated without any kind of anomaly preventing its correct operation.
	9/09-1 Check that the communication systems between drivers and Centralised Traffic Control (CTC) are working properly and ensure perfect communication and understanding between them.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0010/09	**ADIF**	**11/07/12**	In 2010 and 2011 preventive maintenance plans were carried out on sections of the Alsasua to Irún line, using the inspection train and track geometry testing, increasing the number of regular operations of these resources.
	10/09-1 To carry out a maintenance campaign on infrastructures with similar characteristics to the place where the accident occurred.		
	ADIF	**11/07/12**	
	10/09-2 To draw up a periodic checking and maintenance plan for infrastructures with similar characteristics to those of the place where the accident occurred.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0011/09	**ADIF**	**11/07/12**	A reminder was issued in a plenary meeting to the whole human resources organisation regarding the prohibition on any worker performing an activity relating to Traffic Safety without the relevant authorisation in force. A centralised database has been set up containing all the necessary information and observations on qualifications and certificates for their management and control. Periodic reports are sent to the organisation on the actual situation of the various qualifications and certificates in advance of expiry. ADIF's newly built work vehicles incorporate monitoring and control equipment in the same conditions as the rest of the fleet running on the General Interest Railway Network, which due to their special characteristics cannot carry it in keeping with the regulations for their service.
	11/09-1 Compliance with Order F0M/2520/2006 of 27 July, laying down the conditions for granting certificates and qualifications permitting the exercise of the functions of railway staff relating to safety, together with the regime of the training centres for such staff and the centres for assessing their medical fitness.		
	ADIF	**11/07/12**	
	11/09-2 To implement a procedure for verifying that the driving and accompanying staff, where appropriate, of ADIF trains meet the requirements of Order FOM/2520/2006 of 27 July.		
	Railways Directorate	**12/05/10**	The Railways Directorate has asked for ADIF's opinion on the implementation of this recommendation.
	11/09-3 To examine the possibility of amending the regulations so that trains with these characteristics (track equipment without the ASFA system or safety recorder) when running on track with open traffic, either have to be towed by tractor units fitted with the aforementioned systems or run protected by occupation blocking.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0012/09	**ADIF**	**11/07/12**	Possible access to the track fenced off, currently section without traffic due to high speed work.
	12/09-1 It is recommended that the utility of fencing the area near the accident be studied.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0013/09	**FEVE**	**06/03/12**	Driving staff are currently being given a course entitled '*Review of Traffic Regulations in degraded situations, human factor, quality and work risk prevention*', in which, using driving simulators, special emphasis is placed on actions in degraded conditions, as well as on attitudes and behaviours that have been identified as sources of risk. To date 1 134 hours of training have been given, which means that 23.14% of the workforce has received it, and it is expected that by the end of 2012 the total number of hours provided will come to 2 310 hours, which would mean that 47.14% of the workforce have undergone this type of course..
	13/09-1 To review the driving staff retraining programmes, so as to place special emphasis on attitudes and behaviours that are sources of risk.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0032/09	**ADIF**	**11/07/12**	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.
	32/09-1 Training for traffic managers must include management under unusual conditions, both in the initial training and in subsequent retraining.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0045/09	**Department of Railway Infrastructure**	**29/02/12**	In the period 2008-2011 ADIF drew up a plan for improving safety at the level crossings of stations and halts, approved by the Presidential Committee on 11 November 2008, according to Internal Instruction D.A. 11 of public sector contract Law 30/2007, which affected the facilities of 26 provinces consisting in the replacement of timbered or asphalted crossings with other Strail types with modular structures of vulcanised rubber of high slip resistance and electrical insulation and high resistance to adverse climates. The implementation of this plan and the improvements at stations and halts of the RFIG in the period 2008-2011 has led to the reduction of accidents by persons being run over in stations by some 50%, falling from 28 events in 2008 to 15 in 2011. Similarly, the ADIF Safety Department has a computer application for monitoring risks related to Traffic Safety called Risk Map, which in one of its sections shows the status of the risk level of being run over at stations and halts.
	45/09-1 To stress the implementation of the general recommendation issued in the document: CIAF, Study on persons being run over on open track, station or halt and level crossing. 2005-2008, November 2009; addressing the situation of persons with reduced mobility. This recommendation states: *'In view of the existing accident rate in stations and halts and the lack of general regulations establishing appropriate safety devices in stations, and given their different types, it would be advantageous for the rail safety authority to explore the possibility of making an inventory of the existing stations and halts on the General Interest Rail Network, including different parameters for performing a risk analysis giving an idea of their dangerous nature. Based on the results a plan of measures to be adopted will be drawn up, which ranks the stations and halts where action must be taken and the different action to be carried out according to their level of risk.'*		

*46/09 appears on a later page

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0050/09	**FEVE**	**06/03/12**	FEVE's Train Manufacturing and Maintenance Management Department has SAP's PM (Plant Maintenance) module as a maintenance management tool. With this application workshop managers and team foremen create and manage work orders, including equipment requisitions, the hours of dedicated staff, information relating to maintenance (km, hours of operation of equipment, running parameters, etc.), outsourcing services, etc. The tasks performed are recorded in this application, and in all work orders and, in the case of fitting processes, the axles on which these operations are performed. These orders are linked to a vehicle or a stock series, a workshop, a work team and finally the operators performing the work; thus achieving full traceability of any actions on any FEVE unit, locomotive or wagon, including their component equipment. In addition to the traceability that is obtained from the computer application, axles and bogies are identified with their components from assembly, for identifying and tracing data if necessary during operation.
		50/09-1 To set up a system for ensuring adequate traceability of the operations performed on axles.	
	FEVE	**06/03/12**	Two types of ultrasonic inspection are carried out on axles at FEVE, the first of which takes place on 'isolated' axles at the time prior to fitting the wheelset (performed on 100% of 'isolated' axles both of driving stock and towed stock and routinely performed for each type of axle design on the areas where cracks are liable to develop) and the second is carried out on the axles fitted on the train or locomotive units.
		50/09-2 To include an ultrasonic inspection for locating cracks in the type of service operation that is more feasible than those set out in the maintenance plan of each of the stock series. Monitoring of results.	
	FEVE	**06/03/12**	To indicate that the operations for fitting any type of axle are governed by the quality control sheets on fitting wheels in which the results of ultrasonic inspection on 'isolated' axles indicate the surface appearance of both wheel and axle, the dimensional inspection of the two, and the fitting distances and pressures. For improving the quality of wheelset fitting and removal, in August 2011 FEVE acquired a new fitting press for its El Berrón workshop, and the Train Manufacturing and Maintenance Management Department has as its objective the renewal of this type of machinery in the rest of the workshops depending on the budget items available in the coming years.
		50/09-3 To draw up Quality Control Instructions on the axle fitting processes.	

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0054/09	**ADIF** **11/07/12** **54/09-1** To step up maintenance plans in localised infrastructure areas where there are systemic problems with track parameters, thereby ensuring that the required tolerances are met.	In 2010 and 2011 preventive maintenance plans were carried out on sections of the Alsasua to Irún line, using the inspection train and track geometry testing, increasing the number of regular operations of these resources.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0057/09	**ADIF** **11/07/12** **57/09-1** To construct adequate fencing in the area for preventing the occurrence of black spot crossings for people.	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.

File	Final recipient – Communication Date/ Recommendations of the CIAF	Measures adopted by the final recipient
0046/09	**ADIF** **11/07/12** **46/09-1** Training for traffic managers must stress the specifics in planning routes with remote operation of switches without track-occupied protection.	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0064/09	**ADIF**	**11/07/12**	Suitable training and retraining measures set out in the recommendation were carried out by the corresponding Conventional Network section within ADIF. A reminder is also issued regarding the obligation to trigger warnings in time and in the manner laid down. All the work instructions are adopted in line with the terms of the recommendation, a study being made prior to carrying out the work on the effects on traffic, the scope of functional relationships and the responsibilities specified in controlling the work in order to determine, in accordance with the provisions of the General Traffic Regulations and other regulations, their inclusion in the action protocols for regulating large-scale work in stations.
	64/09-1 In stations where there is a distribution of responsibilities for basic traffic tasks, an Instruction C will be drawn up precisely defining the duties of each staff member and the relationship between them (Art.311.4).		
	ADIF	**11/07/12**	
	64/09-2 To analyse the quality of the initial training and retraining of traffic managers, specifically regarding traffic management in unusual conditions. Depending on the results, to establish the necessary actions for improving this aspect.		
	ADIF	**11/07/12**	
	64/09-3 The various departments participating in the execution of the work will have to develop a common action protocol to ensure full coordination of the activities to be performed and the chain for transmitting orders between the contact responsible for communication with the Traffic Manager and the work crews.		
	ADIF	**11/07/12**	
	64/09-4 The instructions must specify which facilities are cause for modification and the status of the different phases of the work, notifying the driving staff of those that affect them.		
	ADIF	**11/07/12**	
	64/09-5 Those responsible for carrying out the works must intensify their efforts to convey to all those participating in the work the need for fully comprehending the content and scope of the tasks assigned. In addition, each team member with staff for whom he is responsible, will pass on the relevant instructions clearly and will ensure they have been fully understood.		
	ADIF	**11/07/12**	
	64/09-06 To convey to the Barcelona control centre the need for strict compliance with the provisions in point 5.3. Notification of the accident or incident, second paragraph, of Presidential Circular No 1 of 1 January 2005: 'The Control Centre shall report the incident immediately to those responsible for the various Railway Infrastructure Manager sections'.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0065/09	**FEVE**	**19/10/10**	The monitoring of the infrastructure and the action plan have been reported.
	65/09-1 To monitor the corrective measures put forward and established in the Traffic Safety Committee, on 30 March 2006, with a view to action in areas of the route where the line runs between cuttings, in the province of Asturias, extending this study and actions to other individual points of the network. These measures are: • Special surveillance of the infrastructure from trains and on foot, planning exploratory runs with locomotives and setting temporary speed limits in risk situations. • Construction of protection structures consisting essentially of installing mesh, anchors, screens, rockfill embankments, retaining walls and tunnel extensions. • Study of slope stability in sections regarded as critical. • Systematic annual investment for this specific problem.		

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0068/09	**ADIF**	**11/07/12**	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.
	68/09-1 To carry out specific training campaigns on the setting of routes in this type of interlock, essentially for new staff members without experience in these facilities.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0069/09	**ADIF**	**11/07/12**	Recommendation implemented by the Department of Operations and Engineering of the ADIF Conventional Network.
	69/09-1 That the Department of Railway Infrastructures and ADIF analyse the feasibility of increasing the pace of dealing with cuttings at risk.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0006/10	**ADIF**	**11/07/12**	All the changes indicated both in procedure and in gauge changing equipment pointed out in the CIAF report's recommendations to ADIF have been made.
	06/10-1 To study and update the transfer procedure via changers, including the latest modifications made, ensuring that the functions of the operators of the facility and of the accompanying crew of the train in cases of extraordinary circumstances (e.g. presence of snow or ice) are clearly defined.		
	ADIF	**11/07/12**	
	06/10-2 System of detecting permanently activated locks, with indication of lack of power. The starting switches will be sealed off and the system disconnected.		
	ADIF	**11/07/12**	
	06/10-3 To duplicate the system of detecting an open lock, and improving the protection of the microswitches to prevent sporadic operations that activate this system and which do not correspond to actual incidents.		
	ADIF	**11/07/12**	
	06/10-4 To study the possibility of fitting an indicating system for the driver so that, in the event that there is a problem in the changeover process, he stops the train.		
	ADIF	**11/07/12**	
	06/10-5 To explore the possibility of installing a warning system for when the wheel does not move, by breakage of a pneumatic glass pipe or by a mechanical pedal, transmitting a warning for braking the train.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0008/10	**ADIF**	**11/07/12**	Corrective/preventive/improvement measures have been adopted in the track superstructure of the station in question, working on the track equipment, switches and crossings of this station. The two recommendations made by the CIAF will also be taken into account by the Operations and Engineering Section of the ADIF Conventional Network, in line with the requirements in this regard, both in procedure MIN-PE-IV-012 'Inspection of the Infrastructure and Track' of 07/03/11, and in NAV standard 7-4-1.1 on '*Surveillance operations in surveys on foot*'.
	08/10-1 To examine the feasibility of shortening the time intervals between maintenance operations on infrastructure elements similar to those involved in this accident; i.e. subjected to severe stresses or of the same type.		
	ADIF	**11/07/12**	
	08/10-2 To examine the feasibility of increasing inspections on foot of infrastructure elements with conditions similar to those of the station of Pinar de Las Rozas.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0014/10	**ADIF**	**11/07/12**	All the recommendations made to ADIF were implemented in 2011, an action procedure having been established for placing safety facilities in service covering all the points indicated in the recommendations and which are mandatory for all actors involved in carrying out this type of operation affecting Traffic Safety facilities (interlocks, signalling, etc.)
	14/10-1 Insist on training courses aimed at employees of companies involved in carrying out track work to stress where it is clearly important to strictly follow the chain of command and the importance of complying with orders to the letter when working on the line (or in its vicinity) when there is traffic at the same time as the work is in progress.		
	ADIF	**11/07/12**	
	14/10-2 Making inspections aimed at neutralising non-compliance with the standards laid down for carrying out work.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0017/10	**Villaquilambre Town Council**	**08/03/12**	The municipal works department has proceeded to paint the halt sign marking, as well as the cross and the letters P.N. [stopping point]. It has also set up two mirrors.
	17/10-1 To adapt the road signs for the stopping point in accordance with the Ministerial Order of 2 August 2001, paying special attention to the continuous transverse marking indicating the vehicle stopping point (M- 4.1).		
	FEVE	**28/09/11**	The removal of the level crossing is planned.
	17/10-2 To adapt the conditions of the level crossing to the specification in the Ministerial Order of 2 August 2001. Either changing the type of protection from A to B, or modifying real visibility distances in keeping with speed set in the stretch, or reducing the speed of the stretch adapting it to the characteristics of the level crossing.		

<table>
<tr><th>File</th><th>Final recipient – Communication Date/ Recommendations of the CIAF</th><th>Measures adopted by the final recipient</th></tr>
<tr><td rowspan="4">0018/10</td><td>ADIF 25/11/11</td><td rowspan="3">In 2011, the Conventional Network Department of Operations and Engineering, assisted by the corresponding section of the ADIF Traffic Safety Department, implemented all of the points in recommendations 18/10-1 and 18/10- 2 (made to ADIF), an action procedure having been established for commissioning safety facilities covering all the issues in the recommendations and binding upon all parties involved in carrying out such operations affecting traffic safety facilities (interlocks, signalling, etc.)</td></tr>
<tr><td>18/10-1 In carrying out work on interlocks or blocking systems, a system will be set up for analysing and assessing the safety actions of the installation company, in accordance with the standard UNE-EN 50126 and the project safety plan and its additional protocols. (Safety Case of the installation).</td></tr>
<tr><td>ADIF 25/11/11</td></tr>
<tr><td>18/10-2 When this work may affect the operation of the regulating safety facilities (signals, balises, switches and crossings, etc.), the following measures must be taken:
-Interruption in traffic or, failing this, the establishment of an alternative blocking system that ensures traffic safety.
-When the work has been completed, and before allowing normal running, a field check will be made that all the safety facilities (signals, balises, switches and crossings, etc.) are as planned.
-These terms are to be included in the corresponding instruction, specifying:
-The activities to be carried out, those responsible for them and the necessary safety conditions.
-The traffic closure periods during testing.
-The (consistency) checks to be made in temporary situations arising from the period when interlocking is down, to make them compatible with traffic.
All of the above will be as a result of a documented risk analysis to be carried out jointly with the installation company.</td></tr>
<tr><td>Thales 12/12/11</td><td>List of internal documents describing the additional actions undertaken in order to improve safety in field activities prior to the installation and commissioning of railway signalling facilities: 7AA-00001-0031-ASZZD Field Safety Procedure. Ed. 01RL of 7/11/11, 6AD-00001-0001-TQZZD 'Field Safety' briefing of 10/11/11, 7AA-00002-0001-PTZZD Field safety procedure checklist.</td></tr>
<tr><td>18/10-3 A review should be made of the processes of the company's Safety Management/Quality system, relating to safety facilities, both new and modified, and in cases of rail traffic maintenance, in order to avoid similar situations to those of the event. In these cases the roles and responsibilities of the company's head of commissioning should be clarified, as an expert on the technical risks arising from these situations.
The company's safety teams should check that the activities for verifying/validating systems or subsystems to be installed, or the modification of existing ones, are effectively carried out. Furthermore, this safety team must approve field activities prior to commissioning.
A documentary record must be kept of all the foregoing (safety case) before the commissioning of the facility is authorised, whether it is new or a modification of an existing one. All the details are set out for the specific project concerned.</td></tr>
</table>

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0020/10	**ADIF**	**11/07/12**	ADIF's Logistics Services Departments have conducted training and special awareness sessions among all terminal and station operating staff, both from the point of view of traffic safety and prevention of occupational risks.
	20/10-1 To stress, through training aimed at both driving and shunting staff, strict compliance with the standards set out in the General Traffic Regulations and in ADIF's prevention operating procedure POP/20.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0028/10	**FEVE**	**28/09/11**	The FEVE Goods and Passenger Management Departments are taking random weekly readings of the tractive stock safety recorders in the various depots, together with monitoring speeding using STACrail (a traffic support system).
	28/10-1 To set up a survey programme with periodic readings of safety recorders, in order to check whether the behaviour of drivers complies with the regulations.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0038/10	**FEVE**	**28/09/11**	The FEVE Goods and Passenger Management Departments are taking random weekly readings of the tractive stock safety recorders in the various depots, together with monitoring speeding using STACrail (a traffic support system).
	38/10-1 To set up a survey programme with periodic readings of safety recorders, in order to check whether the behaviour of drivers complies with the regulations.		
	FEVE	**28/09/11**	FEVE's Investment, Infrastructure Maintenance and Systems Management Department carries out two rail inspections a year on all lines. The parameters relating to track geometry, rail profile and the overhead contact line are examined. In cases where standards are not met, action is taken to correct them. The inspections form the basis for designing the maintenance plan.
	38/10-2 To perform a track inspection of the Ferrol-Pravia section, checking that the parameters meet FEVE's NFI track standard 002 'geometric parameters'. To check that section speeds and permanent speed limits are consistent with the inspected parameters.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0049/10	**ADIF**	**16/11/11**	ADIF's Conventional Network Department of Engineering and Operations will include the relevant risk analysis in their requests for authorisation to the Department of Railway Infrastructure, according to the characteristics of the facility.
	49/10-1 When requesting authorisation from the DGIF for establishing a temporary crossing for works, an analysis of the crossing's risks will be attached, according to the characteristics and needs of the work, the characteristics of the traffic and of the management of the line where it is intended to place this crossing.		
	ADIF	**16/11/11**	ADIF's Conventional Network Department of Operations and Engineering, assisted by the corresponding section of the Department of Traffic Safety, draws up the Instructions that govern the processes for opening and closing this type of temporary level crossing, specifying the coordinating telephone calls needed between the traffic manager and the safety official responsible for the temporary level crossing, in order to ensure the traceability and specification of the responsibilities of both officials and to have the necessary technical instrumentation for recording and logging all the processes.
	49/10-3 To introduce the technical means for recording the conversations between the traffic managers and the safety officials responsible for temporary works crossings.		
	ADIF	**16/11/11**	These issues are fully covered in the accident investigation procedures under the ADIF Safety Department's Safety Management System. Accordingly, all the regional accident investigation teams are notified of compliance with the time and form of the procedures laid down for carrying out breathalyser and drug tests.
	49/10-4 A reminder is issued on the obligation of carrying out tests for alcohol consumption and drugs on all those who have been involved in an accident.		
	ADIF	**16/11/11**	The inspection plans and safety audits of ADIF's Department of Traffic Safety include scheduled visits to this type of temporary level crossing, under an amendment to the inspection guide for the *Traffic Operations Inspection Procedure* [*Procedimiento de Inspección de Operaciones de Circulación*] in a separate entry, as a single paragraph, on the inspection of the operating characteristics of temporary level crossings.
	49/10-5 The safety plans should include routine visits to temporary works crossings by safety staff, for verifying the correct application of the relevant instruction.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0050/10	**Zalla Town Council**	**11/10/11**	The relevant signs have been added to the level crossing and the road markings have been modified to comply with this Ministerial Order.
	50/10-1 To adapt the road signs for the level crossing pursuant to the Ministerial Order of 2 August 2001.		
	FEVE	**28/09/11**	FEVE's Investment, Infrastructure Maintenance and Systems Management Department has undertaken what was recommended by the CIAF, by adding signs, removing a half-barrier and replacing bells.
	50/10-2 To add signs for the crossing in the area where it joins the exit from the halt platform.		
	FEVE	**28/09/11**	
	50/10-3 To remove the half-barrier, which is unnecessary in view of the direction of the road traffic.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0056/10	**FEVE**	**28/09/11**	FEVE's Traffic Capacity and Safety Management Department gave 1 214 courses, entailing 8 498 hours, to a total of 146 Traffic Managers in 2010. This involved both new training and refresher courses.
	56/10-1 To emphasise strict application of FEVE's Rail Traffic Regulations by the staff responsible for traffic, mainly in degraded situations due to breakdowns in safety systems controlling the movement of trains.		
	FEVE	**28/09/11**	The syllabus for entry to the position of Traffic Manager includes 28 practical hours devoted to regulating traffic in challenging situations. In 2011 and 2012 it is planned to give 1 680 sessions of 7 hours.
	56/10-2 Training and retraining programmes for traffic staff must include traffic practice in degraded situations.		

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0063/10	**ADIF**	**03/10/11**	Meetings have been held jointly with the traffic management sections and stock and facilities departments of the Department of Traffic Safety to try to introduce a connecting interface between all the detection equipment of a given line, studies being in an initial phase given the different technologies of the existing equipment.
	63/10-1 To study the possibility of introducing automatic systems into hot axle detection equipment for monitoring hazardous temperature variations when the axles pass through them, setting up correlated and computerised chains in real time for tracking between successive detectors on the same line.		
	RENFE Operadora	**07/10/11**	The study was made of the consistency of the NTMs and MMCs used in the maintenance of axle boxes and wagon bearings. As a result of the study, RENFE has agreed to introduce the following measures, with their corresponding milestones: -To update NTM 800.302.00 within a period of three months. -To update, within a period of three months, supporting documentation for the service operation according to the analysis carried out. -To update, within a period of one year, the axle box section of all the wagon maintenance plans, in line with the previous points.
	63/10-2 To conduct a consistency study of the NTMs and MMCs including axle box and bearing maintenance, modifying them if necessary.		
	RENFE Operadora	**07/10/11**	Audits have been conducted, in accordance with the current standards, at three maintenance centres: Córdoba on 19/07/11; León on 22/09/11 and Miranda de Ebro on 27/09/11. These audits have yielded two types of deviations: 1. Deviations inherent to points that are capable of improvement in the NTMs. These deviations are not critical and will disappear after the NTMs are updated. 2. Deviations due to non-conformities which must be remedied. For checking the correction of these deviations, a new audit will be conducted within a period of six months.
	63/10-3 To conduct audits verifying compliance with the NTMs affecting the overhaul of axle boxes and bearings 800.302.01 and 800.302.00.		
	Railways Directorate	**21/09/11**	A discussion has begun among the group of experts and their conclusions will be reported later.
	63/10-4 To study the utility of making modifications to the existing regulations on the management of alarms that occur in hot axle detection equipment.		
	ADIF	**03/10/11**	All the regional accident investigation teams have been reminded of compliance with breathalyser and drug tests.
	63/10-5 To stress the need for breathalyser and drug tests on all staff involved in the accident.		

File	Final recipient – Communication Date/ Recommendations of the CIAF		Measures adopted by the final recipient
0064/10	**Fuentes de Oñoro Town Council**	**29/02/12**	The Council will adapt the road signs for the level crossing pursuant to the provisions of the Ministerial Order of 2 August 2011 (P-8 sign - Level crossing without barriers).
	64/10-1 To adapt the road signs for the level crossing pursuant to the Ministerial Order of 2 August 2001.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0007/11	**RENFE Operadora**	**12/12/11**	In compliance with the recommendation the support screw fastening system of the gauge changing locking mechanism of the BRAVA axles was modified, adding a safety stop plate, which was installed on 22/09/2011 on all units in service of the series 120, 12.050 and 121.
	07/11-1 To modify the support screw fastening system of the gauge changing locking mechanism of the BRAVA axles by adding a 'stop plate' to units of the S121 fleet, which at the date of this report have not yet been modified.		
File	**Final recipient – Communication Date/ Recommendations of the CIAF**		**Measures adopted by the final recipient**
0017/11	**RENFE Operadora**	**27/02/12**	NTM 4000.225.01 has been modified to specify dismantling of the earth, checking the sliding of the brush-housing, the height of the springs under free load, cleaning this area and the axle ring, indicating how it must be cleaned (sandpaper, solvents, etc.). The Stock Maintenance Plan of series 440 and 470 has also been amended, as well as Inspection Sheet FIN.4000.225.01 MIT. This procedure changes to being carried out every second Special Service.
	17/11-1 To incorporate the new procedure for inspecting the earth connections and the axle contact zone into the 440-470 stock maintenance plan.		
	RENFE Operadora	**27/02/12**	A study of the whole fleet was carried out. This study concludes that vehicles of the series 446 and 448 may be affected by the failure referred to. For this reason, the series 446 NTM has been modified and its Maintenance Plan is being revised. The same applies to series 448. This recommendation will remain open until the maintenance plans for both series have been modified.
	17/11-2 To analyse which other type of rolling stock is liable to undergo deterioration in its axles due to earth connection malfunctioning, incorporating similar measures into its maintenance plan.		
	RENFE Operadora	**27/02/12**	The Maintenance Plans of the 440 and 470 series have included that they are to be inspected by ultrasound, with a straight probe, every second Special Service (*Intervención Especial* - EI), and according to the procedure issued by CAF.
	17/11-3 To consider the inclusion of ultrasonic inspection in some intermediate servicing between Rs (general overhaul) in the 440-470 stock maintenance plan.		