



# **ANNUAL REPORT 2013**

On the investigation of General Interest Rail Network Accidents and Incidents





Rail Accident Investigation Commission - CIAF, June 2014

Rail Accident Investigation Commission – CIAF

Under-Secretariat Ministry of Infrastructure and Transport Spanish Government

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NIPO: 161-14-089-2 June 2014

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# 1. INTRODUCTION

#### 1.1 Object and scope

The Rail Accident Investigation Commission (CIAF) is submitting its annual report (the sixth since it was set up and the ninth since the European Safety Directive 49/2004/EC created it) fulfilling 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.

Nevertheless, the report that is now being published has two main features: firstly it covers the technical investigation carried out by the Commission into the most serious rail accident to have taken place in Spain in recent decades, namely the derailment that took place on 24 July 2013 in the vicinity of Santiago de Compostela station (A Coruña).

Secondly, considering the entry into force in March 2014 of Law 1/2014 of 28 February, on the protection of part-time workers and other urgent measures on economic and social order, this document has been drawn up within the deadline laid down in Article 2 amending The Railway Sector Act (Law 39/2003) by introducing into the latter Additional provision eleven which provides that: '*The Commission, within the first six months of the year, will draw up a report covering the investigations performed during the previous year, the safety recommendations published, and the information received on the implementation status of measures adopted in accordance with the recommendations issued previously. The report will be submitted annually to the Ministry of Infrastructure and Transport for forwarding to the competent Commissions of the Congress of Deputies and the Senate.*'

This new deadline means that this report firstly provides details of the technical investigations into reported events occurring on the General Interest Rail Network (RFIG) in 2013 which the CIAF decided to investigate (23) and, secondly, presents a summary (conclusions and recommendations) of the investigation of these events, already completed as at 30 June 2014 (9). As regards events occurring in earlier years, the investigations into these have been completed and are covered by previously published reports. So, during 2013 the investigation was closed on 16 of the 23 events from 2012 investigated by the CIAF and covered by the 2012 annual report, published in September 2013.

On the other hand, in respect of 2013 there were 74 events reported by the infrastructure managers (Adif, TPFerro and Port Authorities) and the railway undertakings and taking place on the RFIG, with it being

decided to investigate 23 of these and draw up 3 preliminary examinations.

#### **1.2** Legislation affecting the work of the Rail Accident Investigation Commission

In Spain, the legislative transition process, initiated through promulgation of the Railway Sector Act (Law39/2003 of 17 November, BOE (Official State Gazette) No 276 of 18 November) and the regulation that implemented it (Royal Decree 2387/2004 of 30 December, BOE No 315 of 31 December), culminated in the approval of the Regulations concerning traffic safety on the General Interest Rail Network (Royal Decree 810/2007 of 22 June, published in BOE No 162 of 7 July), which transposed Directive 49/2004/EC on safety on the Community's railways, and revoked the text relating to accident investigation that the aforementioned Railway Sector Regulations 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 Department of Railways (DGF) in this task.

In November 2009, the Commission of the European Communities published Commission Directive 149/2009/EC amending Directive 49/2004/EC as regards Common Safety Indicators and common methods to calculate 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.

These regulations were amended in part by Royal Decree 918/2010 of 16 July and Royal Decree 641/2011 of 9 May.

Likewise, Royal Decree-law 22/2012 of 20 July, adopting measures on rail infrastructures and services, inter alia, amended the Railway Sector Act, and featured the abolition of the Public Business Entity Ferrocarriles Españoles de Vía Estrecha (FEVE) with the distribution of its assets and staff between Adif and Renfe Operadora from 1 January 2013. Since this date Adif has been managing the metre gauge network (RAM) and Renfe Operadora delivers the services on this network (SAM).

Finally, Law 1/2014, of 28 February, on reform of infrastructures and transport, and other economic measures, inter alia, amended the Railway Sector Act, introducing Additional provision eleven, on the composition, functioning and legal framework of the Rail Accident Investigation Commission, with the Congress of Deputies now being involved in appointment of its chairman and its members. Furthermore, these appointments will be for a term of six years and cannot be renewed.

#### 1.3 Rationale and objectives of accident and incident investigation

On the basis of Article 21 *et seq.* of the Regulations concerning traffic safety on the RFIG (Royal Decree 810/2007), the purpose of rail accident and incident investigation is to determine the causes of these accidents and incidents and the circumstances in which they occur, with the aim of preventing them in future by making appropriate safety recommendations, where necessary, thereby reducing risks in rail transport.

# This investigation does not under any circumstances seek to determine culpability or liability and is irrespective of any judicial investigation.

When the CIAF commenced its work as the rail accident and incident investigation body, and according to the classification of these events provided for up until then by the Spanish legislation, it continued to investigate those accidents causing at least one fatality.

Nevertheless, on the basis of experience gained and by application of the new definitions of accidents and incidents contained in the Safety Regulations, the Commission has been developing its rationale for deciding which railway events are investigated, leaving aside those from which it is not possible to learn lessons for improving railway safety, irrespective of accident rate. This is the case with many accidents where reckless behaviour by third parties is the cause.

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 sixth year of responsibility for rail accident investigation and continuing with the trend of recent years, has focused its investigations on the events (accidents and incidents) whose causes originate in railway aspects.

### 1.4 CIAF activities

#### 1.4.1. Plenary meetings

Two extraordinary CIAF plenary meetings were held in 2013, in addition to the normal monthly meetings (except during the August holiday period), as a result of the serious accident by derailment which occurred on 24 July in Santiago de Compostela (A Coruña): one on 25 July and the other on 13 August.

At the monthly meetings it is decided which other events are investigated, in addition to the most serious, out

of all those reported to the CIAF, or of which it is aware, in the period between two consecutive Plenary Meetings. In addition, the technical investigators raise their technical reports on the investigated events for the Plenary Meeting to approve them, if necessary, and make appropriate recommendations, with the aim of proposing solutions that prevent the event from reoccurring. After their approval, in addition to being made public, the final report is sent to the parties concerned.

At these sessions the preparation of so-called 'preliminary examinations' is also decided in order to ascertain whether or not the event is investigated.

In addition to **resolutions**, approving the final reports, the Plenary Meeting adopts **agreements** both for initiating investigation, as appropriate, into events and for raising issues related to railway safety, which are aimed at stakeholders in the sector (infrastructure managers, railway undertakings, the national safety authority, other bodies, and so on).

In 2013, the Plenary Meeting issued 81 agreements and 25 resolutions. All the agreements related to decisions on whether or not to investigate events, with 8 of these occurring in 2012 and 72 in 2013; the remaining agreement was the one passed to the Department of Railways on two preliminary recommendations that the CIAF made immediately after the serious accident by derailment that occurred on 24 July 2013 in Santiago de Compostela.

As regards resolutions, 16 relate to events that took place in 2012 and 9 to events that took place in 2013 (up until June 2014).

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

As part of the network of National Investigation Bodies (NIB) of the Member States of the European Union, the Commission attends periodic meetings – generally three times a year – held in the Agency's offices in the French cities of Lille and Valenciennes. It also occasionally attends other meetings or working groups that the network considers it appropriate to arrange.

This network, through meetings and the work that it carries out, fosters the investigation of rail accidents and incidents in the most standardised manner possible. Additionally, it provides guidance to its members to ensure that the criteria laid down by Safety Directive 2004/49/EC are applied by all member countries based on standard principles.

The group also serves as a forum for sharing information and good practice between the European Investigation Bodies.

During 2013 the CIAF, represented by its secretary, attended three meetings (in March, June and November). Staff representing the CIAF also took part in single-issue sessions on the fourth rail package (in which amendments were proposed to, amongst other legislation, the Safety Directive) and on the human factor.

# 2. ORGANISATION OF THE RAIL ACCIDENT INVESTIGATION COMMISSION

The CIAF, set up on 11 December 2007, is a specialised collegiate body attached to the Ministry of Infrastructure and Transport through its Under-Secretariat, and comprises the Chairman, the Plenary Meeting and the Secretariat.

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

Up to March 2012, the CIAF was attached to the Ministry of Infrastructure and Transport through the General Secretariat for Transport, and then to the Under-Secretariat.



PRESIDENTE	CHAIRMAN
PLENO	PLENARY MEETING
Compuesto por el Presidente, el Secretario y cinco vocales	Composed of the Chairman, the Secretary and five members
✓ VOCAL – EXPERTO EN INFRAESTRUCTURA FERROVIARIA	✓MEMBER – EXPERT ON RAILWAY INFRASTRUCTURE
✓ VOCAL – EXPERTO EN MATERIAL RODANTE FERROVARIO	✓MEMBER – EXPERT ON RAILWAY ROLLING STOCK
✓ VOCAL – EXPERTO EN SEÑALIZACION Y COMUNICACIOES FERROVIARIAS	✓ MEMBER – EXPERT ON RAILWAY SIGNALLING AND COMMUNICATIONS
✓VOCAL – EXPERTO EN SEGURIDAD Y CIRCULACIÓN FERROVIARIA	✓MEMBER – EXPERT ON RAIL SAFETY AND TRAFFIC
✓VOCAL – EXPERTO EN EXPLOTACIÓN SERVICIOS FERROVIARIOS	✓ MEMBER – EXPERT ON RAIL SERVICES OPERATION
SECRETARÍA	SECRETARIAT
TÉCNICOS INVESTIGADORES	INVESTIGATIVE TECHNICIANS
PERSONAL AUXILIAR	AUXILIARY STAFF

EXPERTOS	EXPERTS
TECNICOS POR ZONAS	TECHNICIANS BY AREA
LA CORUÑA	CORUNNA
BURGOS	BURGOS
BARCELONA	BARCELONA
VALENCIA	VALENCIA
SEVILLA	SEVILLE
MADRID-CENTRO	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 the infrastructure manager's safety managers and the undertakings involved in the investigated event.

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

# 3. APPLICABLE LEGISLATION FOR THE INVESTIGATIVE PROCESS

In carrying out its work, the Commission relies on specific legislation, in force in 2013, which serves as a basis for establishing the type and the various stages in the investigation of an event.

Hence the Commission has drawn up the document entitled 'Technical investigation procedure for rail accidents and incidents', published in October 2008, which sets out the basic procedures and defines the process for the investigation of rail accidents and incidents. It is applicable to all events except for injuries to persons caused by rolling stock in motion (unless they occurred at level crossings).

Finally, in May 2009, the Commission completed the guidelines for investigation with the publication of the 'Procedure for the technical investigation of accidents to persons caused by rolling stock in motion'.

In 2013 no legislation was established 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 contained in Article 2 and on the provisions of Article 21(3) of the **Regulations 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 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 an accident or a serious accident, associated with the use and operation of trains or rolling stock and affecting the safety of traffic.'

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) Its repercussions for the safety of rail traffic.

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

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

# 4.2.1. Distribution by network and type

Of the 74 events reported in 2013 (59 accidents: one of these serious, 10 incidents and 5 suicides), it was decided to investigate 23: 18 occurring on the railway network managed by Adif (12 accidents and 6 incidents) and 5 on the metre gauge network – the former Feve, now managed by Adif - (3 accidents and 2 incidents), representing 78% and 22% respectively.



Incidente	Incident
Accidente	Accident
Adif 6 12	Adif 6 12
Adif (red ancho métrico-RAM) 2 3	Adif (metre gauge network - RAM) 2 3

The classification by type and network is shown in the following table and chart:

	Serious accidents		Accidents			Incidents			
	Derailment Collisi		Derailment	Personal injury	Near collision	Badly prepared route	Loss of door	Total	Total (%)
Adif	1	3	7	1	4	1	1	18	78
Adif (metre gauge network - RAM)	0	1	2	0	2	0	0	5	22
Total	1	4	9	1	6	1	1	23	100

Of these events, 44% of the total are accidents by derailment, followed by near collision incidents (26%) and accidents due to collision (17%). The remaining accidents and incidents investigated account for 13% of the total.





Adif (red ancho métrico - RAM)

Descarrilamiento (AG)	Derailment (Serious accident)
Colisión	Collision
Descarrilamiento	Derailment
Daños a persona	Personal injury
Conato colisión	Near collision
Itinerario mal dispuesto	Badly prepared route
Pérdida puerta	Loss of door
Adif	Adif
Adif (red ancho métrico – RAM)	Adif (metre gauge network – RAM)

Of those events where the investigation had been concluded by 30 June 2014 (9, including that of the serious accident by derailment in Santiago de Compostela) in 78% (7) aspects relating to the railway system were decisive, which conclusion, although the remaining investigations in progress (14) have not been completed and following an initial analysis of these, can be extrapolated to these events, given their type (none of them was attributable to the actions of third parties). Thus, in 91% of the events (21) the cause was the railway system.

# 4.2.2. Monthly distribution

The average number of events investigated each month was 2 and follows the trend of the most recent reports.

# MONTHLY DISTRIBUTION OF ACCIDENTS AND INCIDENTS INVESTIGATED

		Accidents*			Incident		
TY MONTH	PE Collision	Derailment	Personal injury	Near collision	Badly prepared route	Loss of door	Total
January		2					2
February	2	1					3
March		1		1			2
April	1		1			1	3
Мау		2					2
June		1			1		2
July		1		1			2
August		1		1			2
September	1			2			3
October		1		1			2
November							0
December							0
Total	4	10	1	6	1	1	23

\*Including the only serious accident that occurred in 2013



Enero	January
Febrero	February
Marzo	March
Abril	April
Мауо	Мау
Junio	June
Julio	July
Agosto	August
Septiembre	September
Octubre	October
Noviembre	November

Diciembre	December
Colisión	Collision
Daños a persona	Personal injury
Itinerario mal dispuesto	Badly prepared route
Descarrilamiento	Derailment
Conato de colisión	Near collision
Pérdida de puerta	Loss of door

# 4.2.3. Accident rate of 2013 events it was decided to investigate

In the total events (accidents and incidents) reported in 2013 that underwent investigation there were 81 fatalities, 73 serious injuries and 104 minor injuries. The reason these figures are so high is the serious accident by derailment that occurred on 24 July 2013 (see section 4.3.1).

Of this total number, only one of the fatalities occurred in an accident due to a person being stuck by rolling stock in motion (section 4.3.2.4) with 25 minor injuries occurring in three collisions (section 4.3.2.1).

The following table gives the distribution, by network and event classification:

	Adif			Adif (RA	M)						
Classification	Туре	Number of events	Fatality	Serious injury	Minor injury	Fatality	Serious injury	Minor injury	Total fatalities	Total serious injuries	Total minor injuries
Serious accident	Derailment	1	80	73*	79*				80	73	79
Accident	Collision (trains)	3			14			7	0	0	21
	Collision (obstacle)	1			1				0	0	1
	Derailment	9			3				0	0	3
	Personal injury	1	1						1	0	0
ACCIDENT	total	15	81	73	97	0	0	7	81	73	104
	Near collision	6							0	0	0
Incident	Badly prepared route	1							0	0	0
	Loss of door	1							0	0	0
INCIDENT total 8		0	0	0	0	0	0	0	0	0	
GENERAL total 23		23	81	73	97	0	0	7	81	73	104

\* Not final figures

# 4.2.4. Average time for production of reports

The following table shows the time, in months, that elapsed from when the event occurred until the final report on its investigation was approved. There were only nine events where the investigation was complete by 30 June 2014.

The major effort put into investigating the serious accident by derailment which occurred in Santiago de Compostela meant that there were delays in the investigation of the other events.

	Accident			Incident			
TYPE MONTHS	Collision	Derailment	Personal injury	Near collision	Badly prepared route	Loss of door	Total
8	2						2
9		1					1
10		1	1				2
11	1						1
12							0
15		1					1
16		1					1
17		1					1
Total	3	5	1	0	0	0	9
Average	10	13	10	0	0	0	12

The average is 12 months. 66% of the conducted investigations were carried out in less time.

# 4.2.5. Investigated events

#### 4.2.5.1. Preliminary examinations

To assist in decision-making, in 2010 the CIAF, in some cases, began making a preliminary analysis of the main aspects and circumstances of certain events. This analysis, known as a Preliminary Examination, is carried out for the purposes of looking into the triggering circumstances and assessing if a study will bring improvements to rail safety.

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

Three preliminary examinations were made of events occurring in 2013. Only one of these resulted in a

corresponding formal investigation (file No 0016/13). The remaining two events subject to a preliminary examination were related to the behaviour of third parties on railway premises: both at stations, one on a crossing between platforms and the other in an area where it is prohibited to cross the lines.

The following table shows the main data identifying each of the three events subject to a preliminary examination.

NET- WORK	OPERATOR	FILE No	DATE	MUNICIPAL- ITY	PROVINCE	LINE	K.P.	FATAL- ITIES	SERIOUS INJURIES	MINOR INJURIES	EVENT CLASSIFICA- TION	TYPE	VEHICLE/ PEDESTRIAN	PLACE	STATUS
ADIF	ADIF	0016/13	27/02/2013	Las Rozas de Madrid	Madrid	910 Madrid- Atocha- Pinar de Las Rozas	15,600			4	ACCIDENT	COLLISION	RAIL MACHINERY	TRACK	INVESTIGATED
ADIF	RENFE OPERADORA	0057/13	22/08/2013	Balenyá	Barcelona	222 Barcelona- Montcada JctLa Tour de Carol	58,145	1			ACCIDENT	PERSONAL INJURY CAUSED BY ROLLING STOCK	PERSON	STATION	NOT INVESTIGATED
ADIF	RENFE OPERADORA	0058/13	24/08/2013	Ascó	Tarragona	210 Miraflores- Tarragona	18,500	1			ACCIDENT	PERSONAL INJURY CAUSED BY ROLLING STOCK	PERSON	STATION	NOT INVESTIGATED

# 4.2.5.2. Formal investigations

The following table shows the main data identifying each of the events reported in 2013 which it was decided to investigate, ordered by file number.

A map is also attached of the geographical distribution showing their dispersal. Note that five events occurred in Castilla y León and the others in Catalonia.

NET- WORK	OPERATOR	FILE No	DATE	MUNICIPAL- ITY	PROVINCE	LINE	K.P.	FATAL- ITIES	SERIO US INJURI ES	MINO R INJURI ES	EVENT CLASSIFICA- TION	ТҮРЕ	VEHICLE/ PEDESTRIA N	PLACE	STATUS	RECOMM END- ATIONS
ADIF	RENFE OPERADORA	0001/13	09/01/2013	Villafranca de Córdoba	Córdoba	400 Alcázar de San Juan- Cádiz	415,900				ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	1
ADIF (RAM)	RENFE OPERADORA (SAM)	0012/13	31/01/2013	Val de San Vicente	Cantabria	770 Valdecilla La Marga- Oviedo	457,381				ACCIDENT	DERAILMENT	TRAIN	HALT	CLOSED	2
ADIF (RAM)	RENFE OPERADORA (SAM)	0013/13	10/02/2013	Camargo	Cantabria	780 Bilbao La Concordia- Santander	537,005				ACCIDENT	DERAILMENT	TRAIN	STATION	CLOSED	2
ADIF	RENFE OPERADORA	0015/13	26/02/2013	Coslada	Madrid	930 Madrid Atocha-San Fernando de Henares	16,100			1	ACCIDENT	COLLISION (OBSTACLE)	MOTOR VEHICLE	TRACK	CLOSED	2
ADIF	ADIF	0016/13	27/02/2013	Las Rozas de Madrid	Madrid	910 Madrid-Atocha-Pinar de Las Rozas	15,600			4	ACCIDENT	COLLISION (TRAINS)	RAIL MACHINER Y	TRACK	CLOSED	1
ADIF	RENFE I NTEGRIA	0018/13	07/03/2013	Viana de Cega	Valladolid	100 Madrid-Hendaya	235,587				INCIDENT	NEAR COLLISION	EMPTY ROLLING STOCK	SIDING	OPEN	
ADIF	RENFE OPERADORA	0027/13	07/04/2013	Almodóvar del Campo	Ciudad Real	AV 010 Madrid Puerta de Atocha - Sevilla Santa Justa	257,000				INCIDENT	LOSS OF DOOR	TRAIN	TRACK	OPEN	
ADIF	RENFE OPERADORA	0033/13	20/04/2013	Anoeta	Guipúzcoa	100 Madrid-Hendaya	600,148	1			ACCIDENT	PERSONAL INJURY	PERSON	HALT	CLOSED	1
ADIF (RAM)	RENFE OPERADORA (SAM)	0035/13	28/04/2013	Vegaquemad a	León	790 Aranguren-Asunción Universidad	26,700			7	ACCIDENT	COLLISION (TRAINS)	TRAIN	TRACK	CLOSED	1
ADIF	VÍAS Y CONSTRUCCIO NES	0036/13	26/03/2013	Urda	Toledo	AV 010 Madrid Puerta de Atocha - Sevilla Santa Justa	122,450				ACCIDENT	DERAILMENT	RAIL MACHINER Y	TRACK	CLOSED	1
ADIF	RENFE OPERADORA	0042/13	26/05/2013	Sevilla	Sevilla	400 Alcázar de San Juan- Cádiz	570,300				ACCIDENT	DERAILMENT	EMPTY ROLLING STOCK	STATION	OPEN	
ADIF	RENFE OPERADORA	0043/13	04/06/2013	Martorell	Barcelona	240 San Vicente de Calders- L'Hospitalet de Llobregat	64,073				INCIDENT	BADLY PREPARED ROUTE	TRAIN	TRACK	OPEN	
ADIF	RENFE OPERADORA	0044/13	06/06/2013	Zaragoza	Zaragoza	AV 060 Jct. Gauge changer Zaragoza- Delicias – Gauge changer Zaragoza-Delicias	305,745				ACCIDENT	DERAILMENT	TRAIN	STATION	OPEN	
ADIF	RENFE OPERADORA	0048/13	20/05/2013	Almendralejo	Badajoz	516 Mérida-Los Rosales	26,200				ACCIDENT	DERAILMENT	TRAIN	TRACK	OPEN	
ADIF	RENFE OPERADORA	0052/13	11/07/2013	Lleida	Lérida	200 Madrid-Barcelona	183,728				INCIDENT	NEAR COLLISION	TRAIN	STATION	OPEN	
ADIF	RENFE OPERADORA	0054/13	24/07/2013	Santiago de Compostela	La Coruña	AV 082 Jct. A Grandeira AgKm 85,0-Jct. Coto da Torre	84,413	80	73	79	SERIOUS ACCIDENT	DERAILMENT	TRAIN	TRACK	CLOSED	9
ADIF	RENFE OPERADORA	0056/13	14/08/2013	Medinaceli	Soria	200 Madrid-Barcelona	157,520				INCIDENT	NEAR COLLISION	TRAIN	STATION	OPEN	
ADIF (RAM)	RENFE OPERADORA (SAM)	0060/13	05/09/2013	Boo de Piélagos	Cantabria	770 Valdecilla La Marga- Oviedo	519,295				INCIDENT	NEAR COLLISION	TRAIN	TRACK	OPEN	
ADIF	ADIF	0062/13	12/08/2013	Salomó	Tarragona	200 Madrid-Barcelona	18,850				ACCIDENT	DERAILMENT	ELECTRIFI CATION WAGON	TRACK	OPEN	
ADIF	RENFE OPERADORA	0064/13	20/09/2013	Barcelona	Barcelona	220 Lleida Pirineus- L'Hospitalet de Llobregat	369,700			10	ACCIDENT	COLLISION (TRAINS)	TRAIN	STATION	OPEN	
ADIF	RENFE OPERADORA	0066/13	26/09/2013	Río Duero	Valladolid	AV 080 Madrid Chamartín- Valladolid Campo Grande	168,867				INCIDENT	NEAR COLLISION	TRAIN	TWO-WAY WORKING TRACK	OPEN	
ADIF (RAM)	RENFE OPERADORA (SAM)	0068/13	27/10/2013	Zalla	Vizcaya	790 Aranguren-Asunción Universidad	2,185				INCIDENT	NEAR COLLISION	TRAIN	STATION	OPEN	
ADIF	RENFE OPERADORA	0069/13	27/10/2013	Sant Andreu Arenal	Barcelona	220 Lleida Pirineus- L'Hospitalet de Llobregat	361,098			3	ACCIDENT	DERAILMENT	TRAIN	STATION	OPEN	

# **ACCIDENTS AND INCIDENTS FOR INVESTIGATION 2013**



Mapa: Declaración sobre la Red 2014 de Adif

Colisión (A)	Collision (A)
Descarrilamiento (A)	Derailment (A)
Daños a personas (A)	Personal injury (A)
Conato de collision (I)	Near collision (I)
Resto incidentes (I)	Other incidents (I)
Estaciones categoría 1	Category 1 stations
Estaciones de Viajeros	Passenger stations
Núcleos de Cercanías	Commuter centres

# 4.3. Analysis by type

# 4.3.1. Serious accident

The 2013 year saw the serious accident by derailment that took place on 24 July in the vicinity of Santiago de Compostela station (A Coruña) on the network operated by Adif. The accident resulted in a total of 80 deaths and many injuries, both major and minor.

On 30 June 2014, the technical investigation into this accident was concluded, attributing the cause to the excess speed at which the train was travelling because the driver had not applied the brake properly.

		TYPE	FILE No	LINE	PROVINCE	KP
SERIOUS ACCIDENT	ADIF	DERAILMENT	0054/13	AV 080 Jct. A Grandeira AgKm 85,0- Jct. Coto da Torre	A Coruña	84,413

A summary of this follows with basic data, the conclusion and the recommendations made.

File No	Date	Line	Manager	Operator	Place					
0054/13	24/07/2013	AV 080 Jct. A Grandeira AgKm 85,0-Jct. Coto da Torre	Adif	Renfe Operadora	Open track					
	The events occurred on 24 July 2013 at 20:41 hours, at KP 84+413 of line 082 Coto da Torre junction - A Grandeira junction, 85.0 km points, in the vicinity of Santiago de Compostela station. Alvia long-distance passenger train 150/151 belonging to Renfe Operadora, stock S-730, comprising 13 vehicles, coming from Madrid-Chamartín and bound for Ferrol (A Coruña), after making a commercial stop at Ourense station, changed driver and continued on its route along line 082 (known as the Ourense – Santiago line) departing Ourense four minutes late.									
Summonu	The train covered the first 78 km of the line at a speed of approximately 200 km/h, with the ASFA Digital system in operation, passing all the signals in its path at 'line clear'.									
Summary.	Approximately 6 000 m (KP 78+280) before the start of the entry curve to the A Grandeira junction (located at KP 84+228, and with a speed of travel limited to 80 km/h), the driver answered a service call on the company mobile from the train guard (conductor).									
	The convoy continued to travel on track 1 passing advanced warning signal E'7 (KP 80+619) for the A Grandeira junction, which, having established it was travelling by direct route, indicated 'line clear', at a speed of approximately 200 km/h with the driver continuing his telephone conversation with the conductor, which probably meant that his attention was diverted and he did not apply the brake at the correct time to make the prescribed speed for the curve of 402 m radius located from KP 84+228.									
	When much closer to entry signal E7 for this junction (KP 84+176), which also indicated 'line clear', the last sound of the telephone conversation was recorded (a hundred seconds had passed since it began) and it was then that application of the emergency brake occurred when it was passing this signal at 195 km/h.									
	Train 150/151 was already very close to the start of the curve (KP 84+228), derailing on it 185 metres from its start, at KP 84+413, while travelling at 179 km/h.									
	The thirteen cars in the train set were derailed, leaving track 1 on which they were travelling. The first three were separated from the following two by some 10 m and these from the remainder by a further 30 m. The technical end car (TEC) at the rear caught fire									

	and one of the cars in the final group (the eighth) was thrown over the embankment onto an adjacent road.
	The two main tracks on line 082 were held up at the A Grandeira junction. Similarly, a third line running next to the above at this point and belonging to line 822 (Zamora - A Coruña) was also considered out of service in order to facilitate auxiliary and repair work, even though it was not affected by the accident.
	Material damage, chiefly to rolling stock, was considerable, and track 2 was not re-opened to traffic until 26 July and track 1 until 29 July.
	80 fatalities and many injuries of varying severity were caused.
Conclusion:	The cause of the accident was excessive speed of the train (it was travelling at 179 km/h) on the entry curve to the A Grandeira junction (Angrois curve, limited to 80 km/h), due to the driver not following the prescriptions of the timetable of train 150/151 and the table of maximum speeds for line 082.
	A contributing cause can be identified as the lack of attention of the driver in answering a service telephone call from the train itself, made by the conductor, causing him to not apply the brake properly to reduce the speed prior to entering this curve.

Final recipient	Recommendation							
Adif	54/13-1 To regulate that all speed reductions from a certain range are signalled							
Aui	on the track with fixed speed limitation signals.							
	54/13-2 For these situations (significant reductions in speed), to manage the							
	progressive installation of beacons that can assist with controlling the speed of							
Adif	the trains, such that they can be braked in the event that they may exceed the							
	maximum permitted speed for entry to the next section. To this end, to boost the							
	necessary technological developments of the ASFA Digital system.							
	54/13-3.1 To strengthen the procedures laid down in the Renfe Operadora Safety							
Ponto Onoradoro	Management System in order that safety-related failings detected at any level are							
Refile Operadora	fed back through the established operational channels for analysis and							
	consideration, thereby ensuring effective preventive management.							
Department of Railways	54/13-3.2 The National Railway Safety Authority to ensure that recommendation							
(DGF)	54/13-3.1 is extended to the other railway undertakings.							
	54/13-4 The National Railway Safety Authority (NSA) shall analyse restoring the							
Department of Railways	Joint Committees for the safety of rail traffic where risk situations arising from							
(DGF)	driving-vehicle-track interaction could be assessed, which will be attended by							
	representatives of Adif and the railway undertakings and supervised by the NSA.							
	54/13-5 During the process of putting into service new railway lines and							
	alternative routes, to include a specific risk analysis which includes the							
	identification and management of the possible dangers resulting from the							
Department of Delivery	interaction between the various subsystems, under normal and degraded							
	operating conditions, and the link between these and driving and traffic staff							
	involved when a train travels from the start to the end of the line or alternative							
	route, and the connection to the existing network. To assess the viability of							
	implementing this at the various phases of construction also.							
	Where justified, to endorse the use of such a risk analysis for lines in service.							
	54/13-6 To implement in the general regulations and pass on to the railway							
Department of Railways	undertakings for them to include in their safety management systems the							
(DGF)	provisions necessary for communications with the driver in his cab to be made							
	safely in order to avoid any distractions.							
	54/13-7.1 To promote the progressive implementation of an audio recording							
Renfe Operadora	system in driver's cabs. To look into the possibility of also having a video							
	recording system.							
Department of Railways	54/13-7.2 The National Railway Safety Authority to ensure that recommendation							
(DGF)	54/13-7.1 is extended to the other railway undertakings.							

# 4.3.2. Accident

#### 4.3.2.1. Collision

It was decided to investigate four collision accidents that occurred in 2013: three by trains (front to end) and one against an obstacle (a road vehicle fell from an overpass and was left suspended on the catenary). One of the collisions occurred in a station and the others on the open track. Only one of these took place on the metre gauge network (previously managed by Feve).

The four collisions caused a total of 25 minor injuries to persons, mostly passengers.

As at 30 June 2014, the technical investigation of these accidents had been concluded for all except one case (file No 0064/13), although the investigation to date allows the cause to be determined.

In three of these cases the cause is attributable to the railway system (all due to non-compliance with regulations or procedures). The fourth and last of these (file 0015/13) was caused by a failure by third parties unconnected with the railway.

	NETWORK	TYPE	FILE No	LINE	PROVINCE	KP
	ADIF		0016/13	910 Madrid-Atocha-Pinar de Las Rozas	Madrid	15,600
ACCIDENT		COLLISION (TRAINS)	0064/13	220 Lleida Pirineus- L'Hospitalet de Llobregat	Barcelona	369,700
	ADIF (RAM)		0035/13	790 Aranguren-Asunción Universidad	León	26,700
	ADIF	COLLISION (OBSTACLE)	0015/13	930 Madrid Atocha-San Fernando de Henares	Madrid	16,100

The three events for which the investigation has been completed have resulted in four recommendations representing 23% of the total made to date.

A summary is given below of each of these accidents, with their basic data and, where the investigation has been concluded, the conclusion and the recommendations made.

File	Date	Line	Manager	Operator	Place
0016/13	27/02/2013	910 Madrid- Atocha- Pinar de Las Rozas	Adif	Adif	Open track
Summary:	Madrid Chamartíu replacement and weekly logs for activities train T1 KP 18+100 train Train T3 was car track car, a spo planned work, the completion of the tower and the pla the safety air in performing the co Train T3 started arriving there stop in the work area ( After being author (KP 19+800), the (16/80‰] allowed After travelling s causing 4 minor in	ad track platform (Source A ad track platform (Source A h, between the Pittis electrification work works and extrao was sent from the T3 was sent from the T3 was sent from the T3 was sent from the rying the machiner ol carrier platform a tower was uncou work a proper che tform had been clo nakes of the towe pupling correctly. its journey to Pina pped, because the KP 18+100). prised to return, ar a tower released find it to move toward ome 3 400 metres njuries.	On open track, s and Pinar de las k was being carried rdinary works, res Pinar de las Rozas he same station. y for performing the and a self-propel pled to allow it to w eck was not made t sed correctly and, a er were connected r de las Rozas staff contractor's staff re and when train T3 w rom the platform a s Pitis station, with s the tower collide	at KP 15+600 of lin Rozas stations, Ma d out by Adif contrepectively. For the s station, and for the s station, and for the e electrification wo led tower. Before york as an indepen- hat the towbar cou according to the rep d without opening tion (KP 20+400) a emembered that a was between signa- and the strong gra- the emergency bra- d with train T1. T	ne 100 Hendaya - adrid province, rail actors, under the rail replacement e electrification at rk, consisting of a commencing the dent machine. On pling between the port from Elecnor, the valves and and shortly before tool had been left als E7 and S2-10 dient of the track ake not operating. The latter derailed
Conclusion:	The cause of the the platform bein	accident was hum g towed by the tra	an error, because ick car and the em	the tower was inco nergency brake hos	rrectly coupled to ses had not been
Final recipient			Recommendation		
	16/13-1 The per	son in charge of	works at Adif to n	nake sure and rec	uire that, among
Adif	contract staff perf rolling stock is op	forming maintenand erated correctly to	ce work, there is so allow safe circulatic	meone responsible on.	for checking that

File	Date	Line	Manager	Operator	Place			
0064/13	20/09/2013	220 Lleida Pirineus- L'Hospitalet de Llobregat	Adif	Renfe Operatora	Station			
Summary:	A commuter train collision with ano which was parked station on line 20 Ten of the 24 per services at the so	renje 1						
Conclusion:	Event still at investigation stage							

File	Date	Line	Manager	Operator	Place
0035/13	28/04/201 3	790 Aranguren- Asunción Universidad	Adif (RAM)	Renfe Operadora (SAM)	Open track
Summary:	Between halts, at Universida gauge net owned by comprising rear, wat (KP 20+94 2901 repo The drive station an After mak Valdepiéla emergenc make and remain ha touch with head engi which dev 2901. The driver recommer 2901 deco the incline absence o	the Otero and KP 26+700 ad (León) to A twork (formerly the Renfe O g railcar 2905 a s travelling to the Renfe O g railcar 2905 a s travelling to the control g alted at KP 25+ o the control cer ine driver, who the rices to operate r did not perform need travel from pupled. The latt of braking.	La Mata de la of line 790 L ranguren, part Feve), passeng peradora rail co at the head and owards La Ve o the timetable iesel motor stopp nits during the ourney seven m iled commercial o halts the tra n resumed its jo y stop 20 secor 504. The driver ntre which told h told the driver when of the cab of railed er began to drift ructure at that p	Riba (León) a Asunción of the metre er train 7601 ompany, and 2901 at the ecilla station and with unit bed). stop at this inutes late. stops at the in made an urney only to nds later and was then in im to call the hat to do and <i>r</i> ing of railcar properly and car 2905 with away due to point and the	

	Railcar 2905 came to a halt at KP 26+700 through application of the emergency brake by the dead man system and at this point the collision occurred between the two railcars. As a result of the event, seven minor injuries were caused.						
	The accident was caused by human error of the driver who did not correctly follow the sequence of operations for braked towing of railcar 2901, in accordance with the Driver's Basic Handbook.						
Conclusion:	<ul> <li>Contributing causes were as follows:</li> <li>The partial braking test was not performed, in breach of Article 4.04.05 of Annex IX to the Rail Traffic Regulations.</li> <li>The train was not observed when travelling on open track to see if it was travelling complete, in breach of Article 9.03.00 of Annex IX to the Rail Traffic Regulations.</li> </ul>						
Final recipient	Recommendation						
Renfe Operadora	<b>35/13-1</b> During initial and ongoing training of drivers, to perform simulations of operations with rolling stock in incident or fault situations, to check awareness of the actions prior to any movement of rolling stock and that the technical regulations on rolling stock and traffic are strictly applied.						

File	Date	Line	Manager	Operator	Place
0015/13	26/02/2013	930 Madrid Atocha-San Fernando de Henares	Adif	Renfe Operadora	Open track



Summary:	At KP 16+100 on line 930 Madrid-Atocha Cercanías at San Fernando de Henares, between San Fernando de Henares and Coslada stations, in the province of Madrid, commuter train 21626 owned by Renfe Operadora was travelling on track II between Coslada and San Fernando de Henares stations and, as it was approaching the overpass at KP 16+100 of the line, the driver noticed that there was a road vehicle that had fallen towards the track from this overpass, and had become suspended from the catenary of track II in the space between the tracks. The train came to a halt, without colliding with the vehicle and the driver informed the control centre.
	For its part, train 21809 was travelling between San Fernando de Henares and Coslada on track I, but the control centre was not able to advise the driver in time, so that the latter, upon becoming aware of the vehicle suspended on the catenary, applied the emergency brake and before coming to a halt the train hit the road vehicle side-on. The latter was not dislodged or dragged along. The driver of the road vehicle received minor injuries.
Conclusion:	The accident occurred due to encroachment of the track gauge by the road vehicle when it left a road overpass.
Final recipient	Recommendation
Adif	<b>15/13-1</b> To look into the possibility of requiring overpass construction projects to apply the current <i>'Circular Order 23/2008 on criteria for the application of metal railings on roads'</i> , from the Directorate General of Roads at the Ministry of Infrastructure and Transport.
Adif	<b>15/13-2</b> To look into the possibility of installing detectors of objects falling onto the line, linking these to the railway signalling, in cases where it is advisable due to the road and rail traffic and the existing installations make it viable.

#### 4.3.2.2. Derailment

The decision was made to investigate nine derailment accidents that occurred during 2013, two of which took place on the metre gauge network (previously managed by Feve). Six occurred at a station and the remainder on open track (three of which involved work machinery).

Only one of these (file 0069/13) resulted in personal injury (three passengers with minor injuries).

As at 30 June 2014, the technical investigation of these accidents had been concluded for four and the cause of all of them was attributable to the railway system (one due to rolling stock failure, one due to infrastructure failure and two due to human error: non-compliance with regulations and procedure). The investigation of these four accidents resulted in five recommendations representing 30% of the total made to date.

	NETWORK	TYPE	FILE N°	LINE	PROVINCE	KP
			0001/13	400 Alcázar de San Juan-Cádiz	Córdoba	415,900
		DERAILMENT	0036/13	AV 010 Madrid Puerta de Atocha - Sevilla Santa Justa	Toledo	122,450
			0042/13	400 Alcázar de San Juan-Cádiz	Seville	570,300
	ADIF		0044/13	AV 060 Jct. Gauge changer Zaragoza-Delicias - Gauge changer Zaragoza-Delicias	Zaragoza	305,745
ACCIDENT			0048/13	516 Mérida-Los Rosales	Badajoz	26,200
			0062/13	200 Madrid-Barcelona	Tarragona	18,850
			0069/13	220 Lleida Pirineus-L'Hospitalet de Llobregat	Barcelona	361,098
			0012/13	770 Valdecilla La Marga-Oviedo	Cantabria	457,381
	ADIF (RAM)		0013/13	780 Bilbao La Concordia-Santander	Cantabria	537,005

A summary is given below of each of these accidents, with their basic data and, where the investigation has been concluded, the conclusion and the recommendations made.

File	Date	Line	Manager	Operator	Place
0001/13	09/01/2013	400 Alcázar de San Juan-Cádiz	Adif	Renfe Operadora	Station
Summary	station (Alcázar or train 13096 owner bound for Córdob of CTC [Centrali intending to allow attempted to esta train 695. After a then decided to e track 3 for train 695 Train 13096 cam Villafranca de Cón via telephone mo verification of the the track correctly travel) which was bogie of the train emergency brake the area of the po main line. The train a result of this der	e San Juan side) do by the Renfe C a Central, was prep sed Traffic Contra train 13096 to cro blish the route of number of attempts stablish a route of bish the route of number of attempts stablish a route of coupled bish a route of bish the route of number of attempts stablish a route of the stablish a route of bish the route of stablish a route of the stablish a route of	At the en on line 400 Alcáza operadora railway o paring to enter Villa ol] at the Auxiliar oss train 695 from entry to track 2 for s, point No 2 could entry to track 2 for s, point No 2 could entry to track 1 fo e signal 4154 (whi zar de San Juan sig of this signal with s started running, w e switch tongue (on locked, to open ca he point, travelling he driver. Bogies th t, while the rest of the metres derailed. No	trance to the Villaf ar de San Juan – undertaking, origina franca de Córdoba y Control Centre Málaga to Barcelo train 13096 and e not confirm both po r train 13096 and a ch indicated stop) de). The driver rece the requirements vith the first bogie e the right-hand side ausing the derailme at 20 km/h. A few pree and four remain b personal injuries	ranca de Córdoba Cádiz, passenger ating in Jaén and station. The head of Córdoba was ona. To do this he entry to track 1 for positions and it was a route of entry to past the entry to sived authorisation for shunting and entering track 1 on a in the direction of ent of the second seconds later the ned on the rails in ed derailed on the were sustained as
Conclusion:	The derailment of disconnection of point No 2, when the switch tongue locked, so that, as the derailment of	the control bar of the locking pin of (on the right-han the first bogie in the second bogie.	ult of a technical f the electrical points the operating rod d side in the direct the train set passed	ault in the installa s actuator from the coupling bolt snap tion of travel) to be d over it, the tongue	tions, due to the e operating rod of ped. This caused e coupled but not e opened causing
Final recipient	Recommendation				
Adif	<b>01/13-1</b> During m are checked using the visual inspect pins from their s frequency of the material and the c	aintenance operat g document PEISC ion performed on eating and checki operation would b perating conditions	ions of the clampin )02F01.R06, to incl the pins. This oper ng their mechanic be defined as a fu s.	ng locks, the charac lude an operation t ration would consis al condition and fo unction of the char	cteristics of which that complements t of removing the or corrosion. The racteristics of the

File	Date	Line	Manager	Operator	Place			
0036/13	26/03/2013	AV 010 Madrid Puerta de Atocha-Sevilla Santa Justa	Adif	Vías y Construcciones	Open track			
Summary	The events occurred on 26 March 2013, at 01:00 hours at KP 122+450 on line 010 Madrid Puerta de Atocha to Seville Santa Justa, between Urda and Malagón stations, Toledo province. The maintenance train comprising tamper, profiling machine and stabiliser departed from the maintenance base at Mora, located at KP 89+500 on that line, travelled through Urda station (KP 119+700) and then shortly afterwards, at KP 122+450 on track II, the profiling machine derailed when a driving shaft snapped. The train travelled under blocked track arrangements to complete the tamping work. The profiling machine, owned by the undertaking Vías y Construcciones, remained displaced on the outside of track II, with I remaining clear.							
Conclusion	The derailment of profiling machine	occurred due to a was caused by a c	rolling stock fault yclical loading proc	t. The snapped dri ess.	ving shaft of the			
Final recipient	Recommendation							
Department of Railways (DGF)	<b>36/13-1</b> The DG avoiding deteriorative thereof' to the recommended that recommendation	F having sent it ation of axles mound undertakings owr at the DGF urge the in the instructions f	s Technical recon nted on rolling stoc ning and maintair ese undertakings to for maintenance of	nmendation 2/2014 k during operation hing heavy track introduce the applie wheelsets to ensure	: 'Guidelines for and maintenance machinery, it is cable parts of that e compliance.			

File	Date	Line	Manager	Operator	Place		
0042/13	26/05/2013	400 Alcázar de San Juan-Cádiz	Adif	Renfe Operadora	Station		
An out of service long-distance passenger train owned by Renfe Operadora, performing a shunting operation from the Technical Processing Centre (CTT) to track 10 of Seville Santa Justa station, on line 400 Alcázar de San Juan - Cádiz, partially derailed and encroached on the gauge of another long-distance passenger train owned by the same company by colliding front to end with the latter which was departing from track 7 at this station. No personal injuries were sustained.							
Conclusion:	The event is still	in the investigation phas	e.				

File	Date	Line	Manager	Operator	Place		
0044/13	06/06/2013	AV 060 Gauge changer junction Zaragoza-Delicias - Gauge changer Zaragoza- Delicias	Adif	Renfe Operadora	Station (gauge changer)		
	1						
Summary:	A long-distance passenger train owned by Renfe Operadora, performing a gauge change operation at Zaragoza-Delicias station (Zaragoza), partially derailed at KP 305+745 on high-speed line 060 Gauge changer junction Zaragoza-Delicias - Gauge changer Zaragoza-Delicias. The event occurred due to a defect in the rolling stock during the process of changing to the conventional gauge.						
Conclusion:	The event is still	in the investigation phas	e.				

File	Date Line		Manager	Operator	Place		
0048/13	20/05/2013	516 Mérida-Los Rosales	Adif	Renfe Operadora	Open track		
Summary:	A dangerous go KP 25+564 of lin siding (Badajoz).	oods train owned by R e 516 Mérida - Los Ros	enfe Operadora ales, between Al	partially derailed mendralejo station	d on open track, at n and the Calamonte		
	No personal injuries were sustained.						
Conclusion:	The event is still	in the investigation phas	e.				

File	Date	Date Line		Operator	Place			
0062/13	12/08/2013	200 Madrid-Barcelona	Adif	Adif	Open track			
Summary:	An electrification wagon owned by Adif derailed at KP 18+850 of line 200 Madrid - Barcelon between Salomó station and the Vilabella halt (Tarragona).							
	No personal inju	ries were sustained.						
Conclusion:	The event is still	in the investigation phase	е.					

File	Date Line		Manager Operato		Place		
0069/13	27/10/2013	220 Lleida Pirineus- L'Hospitalet de Llobregat	Adif	Renfe Operadora	Station		
A commuter train owned by Renfe Operadora (Rodalies), entering Sant Andreu Arenal station (Barcelona) derailed the final coach of the train set. Three passengers sustained minor injuries.							
Conclusion:	The event is still	in the investigation phas	e.				

File	Date	Line	Manager	Operator	Place		
0012/13	31/01/2013	770 Valdecilla la Marga- Oviedo	Adif (RAM)	Renfe Operadora (SAM)	Halt		
Summary:	y: The events occurred on 31 January 2013, at 15:36 hours, between Unquera and Pesués stations (Cantabria) on line 770 Valdecilla - La Marga at Oviedo on the metre gauge network (formerly Feve). Goods train 9565 owned by the Renfe Operadora railway undertaking and comprising two locomotives and 14 wagons, originating from El Berrón and bound for Aritz, was travelling at excess speed (>50 Km/h). At KP 457+381 (near to the CA-181 highway underpass), between Unquera and Pesués stations, when taking a left-hand curve with a radius of approximately 110 metres, in the direction of travel, the wagons in positions 1 to 11 derailed, with the two locomotives at the head and the three wagons at the rear remaining on the rails.						
Conclusion:	The derailment of 61 km/h when he	ccurred due to hun should not have ex	nan error by the dr ceeded the permit	iver travelling at ar ted speed limit of 4	n excess speed of 0 Km/h.		
Final recipient	Recommendation						
Renfe Operadora	<b>12/13-1</b> Reiterate establishing a s maximum speeds	<b>12/13-1</b> Reiterate recommendation No 1 made in file 28/2012: analyse the feasibility of establishing a systematic procedure for monitoring and assessing compliance with maximum speeds by driving staff.					
Renfe Operadora	<b>12/13-2</b> Reiterate compliance with network.	e recommendatior the maintenance	n No2 issued in cycles of rolling s	file 74/2012: perf tock assigned to	orm an audit of the metre gauge		

File	Date	Line	Manager	Operator	Place			
0013/13	10/02/2013	780 Bilbao La Concordia- Santander	Adif (RAM)	Renfe Operadora (SAM)	Station			
	The events occu	urred on 10 Fe	bruary 2013 at 05:43 hours, o	n track 1 A at Ma	liaño station, on			
Summary	line 780 Santander - Bilbao La Concordia of the metre gauge network of Adif (RAM, formerly Feve). Goods train 9681 owned by the Renfe Operadora railway undertaking originating in Santander and bound for Aranguren, and comprising two locomotives and 20 wagons, the first seven of which were carrying coils of steel in closed containers, and the next seven aluminium bars, with the final six being empty, was travelling normally.							
	The train was preparing to pass straight through Maliaño station (Cantabria), and encountered the sequence of signals E'1, EI and S1/1A (advanced warning, entry and exit) indicating 'line clear'. On reaching KP 537+005 located above track 1A, the course of which follows a curve to the right according to the direction of travel and has a radius of 305 metres, wagon eight in the train set derailed.							
	The driver became aware of a drop in pressure in the automatic brake pipe (ABP), as a result of the operation of the derailment detector installed in bogie 2 of wagon eight, and applied the service brake, stopping the train. He then found that the wagons in positions 7, 8, 9, 10 and 11 had derailed and overturned to the right, in the direction of travel of the train and across track 2A. No injuries or fatalities occurred.							
Conclusion:	The derailment eight, which cau the wagon which	occurred as a sed the load t started the de	a consequence of inadequate to shift sideways and, as a co erailment.	stowage of the operation of the operatio	cargo in wagon s, to destabilise			
	A contributing ca few metres befo	ause can be c re the point of	onsidered to be the existence derailment.	of a minor twist i	in the track of a			
Final recipient			Recommendation					
Department of Railways (DGF)	<b>13/13-1</b> To include IG-66 as a mandatory standard to be applied within the metre gauge network (RAM) as soon as possible							
Department of Railways (DGF)	<b>13/13-2</b> To incorregulations on a	orporate as so uthorisation of	oon as possible within the n loaders set out in Order FOM	netre gauge netw /2872/2010 of 5 N	vork (RAM) the lovember.			

The number of level crossings on the General Interest Rail Network, as at 31 December 2013, is shown in the following table according to their type:

	Adif	%	Adif (RAM)	%	Total	%
Class A: Protected only by fixed signals	1 058	44.74	630	65.28	1 688	50.69
Class B: Protected by light and sound signals	441	18.65	85	8.81	526	15.80
Class C: Protected with half-	445	18.82	179	18.55	624	18.74
barriers, double half-barriers or barriers						
Class D: Protected by a system of safety notices	17	0.72	0	0.00	17	0.51
Class E: Protected by crossing keeper	0	0.00	4	0.41	4	0.12
Class F: Exclusive to pedestrians or pedestrians and livestock	62	2.62	67	6.94	129	3.87
Class P: Private	342	14.46	0	0.00	342	10.27
Total	2.365	100	965	100	3.330	100

Of the ten reported level crossing accidents in 2013, one of which was considered to be a suicide, seven resulted in fatalities. Given the characteristics and circumstances surrounding all of these, none was the subject of investigation by the Commission, since the behaviour of third parties was decisive.

Of these accidents, six occurred at Class C level crossings, three at Class B crossings and one at Class A.

# 4.3.2.4. Injury to persons caused by rolling stock in motion

It was decided to investigate one accident due to a person being struck by rolling stock in motion that occurred in 2013. The event occurred at the crossing between platforms at the Anoeta halt (Guipúzcoa) and resulted in a fatality.

As at 30 June 2014, the technical investigation of this accident had concluded. It was caused by the victim crossing the tracks and not noticing that the train was coming.

		TYPE	FILE No	LINE	PROVINCE	KP
ACCIDENT	ADIF	PERSONAL INJURIES	0033/13	100 Madrid-Hendaya	Guipúzcoa	600,148

A summary is given below of this accident, with its basic data, the conclusion and the recommendations made

File	Date	Line	Manager	Operator	Place				
0033/13	20/04/2013	100 Madrid- Hendaya	Adif	Renfe Operadora	Halt				
Summary:	At the Anoeta hal of Guipúzcoa, co travelling normall there.	t (KP 600+200) on ommuter train 2688 y on track 2 toward	line 100 Hendaya 38, originating from rds the Anoeta ha	- Madrid- Chamart n Irún and bound lit for a scheduled	ín, in the province for Brinkola, was commercial stop				
	At the same time, for Irún, was trav with a passing thr	e same time, long-distance passenger train 535, originating from Barcelona and bound ún, was travelling normally, in the opposite direction, on track 1, towards that halt and a passing through direct route.							
	Train 26888 stopped at the platform on track 2 and after completing the boarding and alighting of passengers resumed running. Once the rear of the train had passed the crossing between platforms joining tracks 1 and 2, a person crossed over this and was hit from the right by train 535.								
	The person died a	as a result of being	hit by the rolling sto	ock.					

Conclusion:	The accident was caused by the victim encroaching on the track gauge when crossing between platforms and not noticing that the train was coming.
Final recipient	Recommendation
Department of Railways (DGF)	<b>33/13-1</b> The recommendation made in file number 0045/2009 is reiterated: 'Insist on the implementation of the general recommendation issued in the document: CIAF, Study on people being knocked down on open track, at stations or halts and level crossings. Years 2005 – 2008, November 2009, taking into account the situation of persons with limited mobility. This recommendation states as follows: 'In view of the accident rate at stations and halts and the absence of general regulations establishing relevant safety devices at stations, and given the varying nature of these, it would be appropriate for the railway safety authority to look into the possibility of carrying out an inventory of stations and halts on the General Interest Rail Network, to include various parameters, with the aim of performing a risk analysis to provide an idea of how dangerous these are. On the basis of the results a plan would be drawn up of the measures to be adopted, prioritising the stations and halts where action is needed and the various activities to be performed as a function of the level of risk.'

# 4.3.2.5. Fire

No fire-related accidents were investigated in 2013, with just one being reported.

### 4.3.2.6. Other accidents

No accident other than the types indicated above was investigated in 2013.

# 4.3.3. Incident

It was decided to investigate eight incidents occurring during 2013: six near collisions, one badly prepared route and one loss of door. All the near collisions were caused by an unauthorised signal overrun and all but one occurred on railway premises. The two remaining incidents, occurred on open track.

As at 30 June 2014, the technical investigation had not been concluded for any of the events.

		TYPE	FILE No	LINE	PROVINCE	KP
			0018/13	100 Madrid-Hendaya	Valladolid	235,587
		NEAR COLLISION	0052/13	200 Madrid-Barcelona	Lérida	183,728
ADIF	ADIF		0056/13	200 Madrid-Barcelona	Soria	157,520
			0066/13	AV 080 Madrid Chamartín- Valladolid Campo Grande	Valladolid	168,867
INCIDENT	ADIF (RAM)	BADLY PREPARED ROUTE	0043/13	240 San Vicente de Calders- L'Hospitalet de Llobregat	Barcelona	64,073
		LOSS OF DOOR	0027/13	AV 010 Madrid Puerta de Atocha - Sevilla Santa Justa	Ciudad Real	257,000
		NEAR COLLISION	0060/13	770 Valdecilla La Marga- Oviedo	Cantabria	519,295
			0068/13	790 Aranguren-Asunción Universidad	Vizcaya	2,185

A summary is given below of each of these incidents, with their basic data.

File	Date	Line	Manager	Operator	Place				
0018/13	07/03/2013	100 Madrid- Hendaya	Adif	Renfe	Siding				
Summary: Empty rolling stock belonging to Renfe Operadora improperly overran entry signal E2, located at KP 235+587 on line 100 Madrid - Hendaya, at Viana station (Valladolid), causing a near collision. No damage to rolling stock or personal injury was caused.									
Conclusion:	The event is still in the investigation phase.								

File	Date	Line	Manager	Operator	Place			
0052/13	11/07/2013	200 Madrid- Barcelona	Adif	Renfe Operadora	Station			
Summary:	A goods train owned by Renfe Operadora improperly overran exit signal S2/4A at Lleida-Pirineus station on line 200 Madrid-Barcelona, in the municipality of Lérida. This overrun caused a near collision situation.							
	No personal injuries were sustained.							
Conclusion:	The event is still in the investigation phase.							

File	Date	Line	Manager	Operator	Place			
0056/13	14/08/2013	200 Madrid- Barcelona	Adif	Renfe Operadora	Station			
A goods train owned by Renfe Operadora improperly overran exit signal S1/1, located at KP 157+520 on line 200 Madrid - Barcelona, at Torralba station, in the municipality of Medinaceli (Soria). This overrun caused a near-collision situation. No personal injuries were sustained.								
Conclusion:	I:       The event is still in the investigation phase.							

File	Date	Line	Manager	Operator	Place		
0066/13	26/09/2013	AV 080 Madrid Chamartín-Valladolid Campo Grande	Adif	Renfe Operadora	Two-way working track		
A long-distance passenger train owned by Renfe Operadora improperly overran signalE1, located at KP 167+867 on line 80 Madrid Chamartín - Valladolid Campo Grande, on the Ríc Duero premises (Valladolid). This overrun caused a near-collision situation. No personal injuries were sustained.							
Conclusion:	The event is still	in the investigation phas	е.				

File	Date	Line	Manager	Operator	Place	
0043/13	04/06/2013	240 San Vicente de Calders-L'Hospitalet de Llobregat	Adif	Renfe Operadora	Open track	
A goods train owned by Renfe Operadora was incorrectly authorised to travel, on track II between Sant Sadurní and Martorell (Barcelona) on line 240 San Vicente de Calders- L'Hospitalet de Llobregat, when special occupation blocking was in place for ditch cleaning work to be carried out.						
Conclusion:	The event is still	in the investigation phas	e.			

File	Date	Line	Manager	Operator	Place			
0027/13	07/04/2013	AV 010 Madrid Puerta de Atocha - Sevilla Santa Justa	Adif	Renfe Operadora	Open track			
Summary:	One of the doors of a long-distance passenger train owned by Renfe Operadora detached itself at KP 247+500 of the high-speed Madrid Atocha - Sevilla Santa Justa line, as it was travelling through the Venta de la Inés tunnel, in the municipality of Almodóvar del Campo (Ciudad Real). Simultaneously the detached door was hit by another passenger train owned by the same company travelling in the opposite direction.							
Conclusion:	The event is still	in the investigation phase	е.					

File	Date	Line	Manager	Operator	Place		
0060/13	05/09/2013	770 Valdecilla La Marga-Oviedo	Adif (RAM)	Renfe Operadora (SAM)	Open track		
A commuter train owned by Renfe Operadora stopped at blocking signal B5192, located at KP 519+295 on metre gauge line 770 Valdecilla La Marga - Oviedo, between the Boo de Piélagos and Mortera (Cantabria) halts. The signal, which was indicating stop, due to a <i>shumi</i> fault, changed to 'line clear' meaning that the train resumed travel causing a near-collision situation.							
	· · · · · · · · · · · · · · · · · · ·						
Conclusion:	The event is still	in the investigation phas	e.				

File	Date	Line	Manager	Operator	Place		
0068/13	27/10/2013	790 Aranguren- Asunción Universidad	Adif (RAM)	Renfe Operadora (SAM)	Station		
A commuter train owned by Renfe Operadora overran exit signal S2/2 at Zalla station (Vizcaya) located at KP 2+185 on metre gauge line 790 Aranguren-Asunción Universidad, which was indicating stop. This overrun caused a near-collision situation. No personal injuries were sustained.							
Conclusion:	The event is still in the investigation phase.						

# 5. CAUSES OF INVESTIGATED EVENTS

The following table groups together, for those investigated (9) as at 30 June 2014, the causes thereof according to one of the causal classifications: railway or third parties.

The data are broken down by classification of the event, rail network and type. Victims are also included (fatalities, serious injuries and minor injuries).

ATTRIB- UTED CAUSE	CLASSIFIC ATION	NET- WORK	ТҮРЕ	CAUSE	TOTAL EVENTS	TOTAL VICTIMS (FA+SI+MI)
	SERIOUS ACCIDENT	ADIF	Derailment	HUMAN ERROR: Excess speed. Lack of attention.	1	232
			Collision (trains)	HUMAN ERROR: Incorrect operations.	1	4
		ADIF	Derailment	INFRASTRUCTURE FAILURE: Electrically operated points failure. Snapping of coupling rod locking pin.	1	0
RAILWAY				FAILURE OF ROLLING STOCK: Snapping of driving shaft.	1	0
	NOOIDENT	ADIF	Collision (trains)	HUMAN ERROR: Towing operations not performed properly.	1	7
	(RAM		Derailment	HUMAN ERROR: Failure to comply with regulations.	1	0
			Doramitoria	HUMAN ERROR: Inadequate stowage of cargo.	1	0
TOTAL RA	ILWAY				7	243
THIRD			Collision (object)	INFRASTRUCTURE FAILURE: The railing did not restrain the road vehicle.	1	1
PARTIES	ACCIDENT	ADIF	Personal injuries	HUMAN ERROR: The victim used the crossing between platforms inappropriately. The victim did not check whether a train was coming.	1	1
THIRD PAP	RTIES TOTAI	L			2	2
GENERAL	TOTAL				9	245

# 6. COMPARATIVE ANALYSIS

The tables below show the data on the total number of events investigated (accidents and incidents), the victims (fatalities, serious and minor injuries) and the recommendations made in each of the final reports that resulted from investigation over the last five years.

As can be seen in the first table, the number of events investigated during 2013, as well as their type, show that the CIAF continues to apply the approach which, since 2009, has been used to decide on the investigation of an event: the recommendations that may be issued for the improvement of railway safety.

Thus, collisions, derailments and near collisions are the types of events that have been investigated most, since normally their cause has its origin in the rail system and not in the behaviour of third parties.

As regards the accident rate, this has increased substantially over previous years due, as has already been mentioned in other sections, to the Santiago de Compostela accident on 24 July 2013 (file 0054/13).

There were 20 recommendations made in respect of the 9 events investigated as at 30 June 2014. The recommendations as a result of derailment account for 75% (15) and those as a result of collisions (between trains and with obstacles) account for 20% (4).

	YEAR		2009			2010		2011				2012			2013		
	TYPE NETWORK	ADIF	FEVE	TOTAL	GENERAL TOTAL												
SERIOUS	Collision				1		1										1
ACCIDENT	Derailment			0			0			0			0	1		1	1
	Collision	4	1	5	1		1	3		3	3	2	5	3	1	4	18
	Derailment	3	1	4	6	2	8	13	1	14	6	2	8	7	2	9	43
ACCIDENT	Level crossings	12	4	16	4	3	7	1		1	1		1				25
	Personal injury	8		8	4		4	1		1				1		1	14
	Near collision	7	2	9	6	1	7	3		3	4	1	5	4	2	6	30
	Runaway stock								1	1		1	1				2
INCIDENT	Badly prepared route							1		1				1		1	2
	Loss of door													1		1	1
	Signal overrun										1	1	2				2
	Snapped shaft		1	1							1		1				2
	Total	34	9	43	21	6	28	22	2	24	16	7	23	18	5	23	141

# **INVESTIGATED EVENTS 2009-2013**

	YEAR			2009			2010			2011			2012			2013*	:	CENEDAL
	NETWORK TYPE	FA/SI/MI	ADIF	FEVE	TOTA L	ADIF	ADI F (RA	TOTA L	TOTAL									
		FA			0	1		1			0			0			0	1
	Collision	SI			0			0			0			0			0	0
SERIOUS	Comsion	мі			0			0			0			0			0	0
ACCIDENT		FA			0			0			0			0	80		80	80
	Derailment	SI			0			0			0			0	73		73	73
	Deruiment	мі			0			0			0			0	79		79	79
		FA			0	1		1			0			0			0	1
	Collision	SI			0			0			0	1		1			0	1
		мі			0			0	18		18	37	9	46	15	7	22	86
		FA			0			0			0			0			0	0
	Derailment	SI			0			0			0			0			0	0
	Deruiment	мі			0			0	1		1			0	3		3	4
ACCIDENT		FA	12	4	16	5	3	8			0			0			0	24
	Level crossings	SI		1	1	1		1			0			0			0	2
		мі	2		2			0	2		2	1		1			0	5
Personal in		FA	8		8	14		14	1		1			0	1		1	24
	Personal injury	SI			0	10		10			0			0			0	10
	e e e e e e e e e e e e e e e e e e e	МІ			0	12		12			0			0			0	12
		FA	20	4	24	21	3	24	1	0	1	0	0	0	81	0	81	130
	Total	SI	0	1	1	11	0	11	0	0	0	1	0	1	73	0	73	86
	MI	2	0	2	12	0	12	21	0	21	38	9	47	97	7	104	186	

# VICTIMS OF INVESTIGATED EVENTS 2009-2013 (FATALITIES, SERIOUS AND MINOR INJURIES)

\*Includes the victims of the accident on 24 July at Santiago de Compostela

# **RECOMMENDATIONS MADE 2009-2013**

	YEAR		2009			2010			2011			2012			2013*	:	GENER
	NETWORK	ADIF	FEVE	TOTAL	ADIF	ADIF (RAM)	TOTAL	AL TOTAL									
	ТҮРЕ																
SERIOUS	Collision			0	3		3			0			0			0	3
ACCIDENT	Derailment			0			0			0			0	9		9	9
	Collision	6	1	7	1		1	1		1	6	1	7	3	1	4	20
	Derailment	3	1	4	18	3	21	17	1	18	13	3	16	2	4	6	65
ACCIDENT	Level crossings	2		2	7	6	13	1		1	2		2			0	18
	Personal injury	5		5	4		4	3		3			0	1		1	13
	Near collision	14	4	18	1	2	3	3		3		1	1			0	25
	Runaway stock			0			0	1		1		3	3			0	4
	Badly			0			0		3	3			0			0	3
INCIDENT	Loos of door			0			0			0			0			0	0
	Signal overrun			0			0			0	1	2	3			0	3
	Snapped shaft		3	3			0			0	1		1			0	4
	Total	30	9	39	34	11	45	26	4	30	23	10	33	15	5	20	167

\*Recommendations made up until 30 June 2014

# 7. **RECOMMENDATIONS**

# 7.1. Recommendations made in 2013

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.

Following publication this final report is forwarded to the National Safety Authority (Department of Railways - DGF) and the European Railway Agency (ERA) in addition to the bodies affected.

Of the 23 investigations initiated on events in the RFIG in 2013, and reported to the Commission, nine had been completed as at 30 June 2014 and for all of these (five derailments, one of these serious, three collisions and one person hit by rolling stock in motion at a station) the published final report contains recommendations.

The total number of recommendations made to date is 20, making an average of 2.2 recommendations per event. This average, as an extrapolation of results and not definitive since not all investigations have been closed, is almost one point higher than the average for the previous year of 1.43.

The final recipients and the number of these 20 recommendations intended for each are as follows: the Department of Railways (9), Adif (6) and Renfe Operadora (5).



Renfe Operadora 25%	Renfe Operadora 25%
Dirección General de Ferrocarriles 45%	Department of Railways 45%
Adif 30%	Adif 30%

#### 7.2. Measures adopted as a result of the recommendations made

Royal Decree 810/2007 of 22 June approving the Regulations concerning traffic safety on the General Interest Rail Network specifies 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 previous sections), 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 2013) and the present one (June 2014), regarding measures adopted by the final recipient and reported to the Department of Railways (DGF), and which correspond to recommendations made since the start-up of the CIAF (December 2007).

This information, which is listed 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 185 of all of the recommendations issued by the CIAF since its creation (214), which has led to the DGF considering the degree of compliance of 162 of these as satisfactory, of which 2 are from 2007, 39 from 2008, 36 from 2009, 45 from 2010, 24 from 2011 and 16 from 2012.

**54/08-5** All the above actions must be notified to railway undertakings whose wheels may have been turned on lathes producing grooves and marks and these undertakings must introduce similar activities into their maintenance plans. A check will also be made that the turning of the wheels by the manufacturing undertakings does not produce these defects.

Final recipient	Adif / Maintenance Centres					
Measures adopted by the final recipient:	Communication date: 14/03/2014					
Technical recommendation 2/2014 of the Department of Railways on guidelines to avoid the deterioration of						
axles mounted on rolling stock during operation and ma	intenance thereof (28 February 2014).					

#### File: 0044/10

#### **CIAF** recommendation:

44/10-1 To bring the road signs at the level crossing into line with the Ministerial Order of 2 August 2001.

Final recipient	Municipal Council (Cabezón de la Sal)
Measures adopted by the final recipient:	Communication date: 02/12/2013
The Council is opposed to this and believes that it is no	ot under an obligation to install any kind of signage over

and above that installed by the railway body.

# File: 0047/10

#### **CIAF recommendation:**

47/10-1 To complete the vertical signage on the roads leading to the level crossing to bring it into line with the

Order of 2 August 2001, on the removal and protection of level crossings.

Final recipient	Department of the Environment
Measures adopted by the final recipient:	Communication date: 13/12/2013
There is sufficient signage at the crossing concerned to	believe that the safety of users of the livestock route is

assured and as a result provision of additional signage is not under consideration unless evidence to the contrary can be provided.

# File: 0003/11

#### **CIAF** recommendation:

**03/11-1** To bring the level crossing into line with the Ministerial Order of 2/8/2001: either by providing it with class B protection, given that it has at the moment in excess of 1 000; or by removing it and merging with the level crossing at KP 86+900, given that the two are less than 1 000 metres apart.

Final recipient	Department of Railways (DGF)
Measures adopted by the final recipient:	Communication date: 24/02/2014

Adif, ordered by the DGF to offer a response, submitted a summary report on the action to be taken to improve the protection of, or remove, the level crossing at KP 87,872 on the Utrera-Fuentepiedra branch line. This report stresses that:

'(...) given the high cost of the solution involving removal suggested by the livestock routes management body (more than one million euros) and given the current lack of available budget to undertake this, the option has been taken to protect the crossing in accordance with the regulations. A speed limit is therefore planned by the Level Crossing Protection Management, and this was agreed and approved by the Southern Traffic Section Management which in September gave notice that this has no effect on the capacity of the section of line.

In November [2013] the Level Crossing Protection Management drew up the scheme for protection of this level crossing, at a cost of € 172 689.12 (excluding VAT). It will be implemented when budgetary availability and the prioritisation of other activities on the conventional network allow.

Finally, to report that the Ministry of Infrastructure and Transport has not issued specific instructions to perform any of the described activities (either removal or increasing protection).'

#### File: 0015/11

**CIAF** recommendation:

15/11-2 To monitor the performance of the ASFA equipment on-board train 212, to see if it is working properly.

Final recipient	Renfe Operadora					
Measures adopted by the final recipient:	Communication date: 11/01/2013					
The motor vehicle involved in the event, UT 449024, had not logged any faults in the ASFA recording prior						
the date of the event. Subsequently it has operated without abnormality.						

On 5 May 2010 an anomaly was logged consisting of failure to load the ASFA digital display. The cause of the fault was located in the PSU which was corrected by replacing the display. An analysis was made of all

recordings from 22 February 2011, a date prior to the event, until 16 March 2011 with no anomaly being found in these records.

On 15 May 2011 the beacon detection and processing was checked at the San Andrés Condal workshop and found to be in order. On 5, 9, 11 and 13 July 2013 monitoring in the cab of this vehicle was performed to check the recording, in particular when passing the beacon for signal 2268, with the on-board ASFA equipment working correctly.

On 31 July 2013 further operational tests were performed on the ASFA equipment in the two cabs of vehicle 449024, at the San Andrés Condal Workshop, checking that all the ASFA signals in both cabs were correct, in accordance with Technical Maintenance Specification 4491.114.10 on checks of on-board ASFA equipment.

# File: 0024/11

### CIAF recommendation:

**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 technologies (high speed).

#### CIAF recommendation:

**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 especially switching points.

Final recipient	Department of Railways (DGF)
Measures adopted by the final recipient:	Communication date: 27/05/2014
Technical recommendation 4/2014 of the Department c	of Railways on action by traffic and driving staff in cases

of signal overruns with an order to check the switches and crossings (27 May 2014).

**26/11-1** To insist on all staff involved in train movements complying with the regulations, with regard to performing coupling and uncoupling operations.

Final recipient	Feve (Adif-RAM / Renfe Operadora – SAM <sup>1</sup> )
Measures adopted by the final recipient (Adif -	Communication date: 27/05/2014
RAM):	

Traffic Section staff were instructed by their managers. However, shunting at this Trasona station is performed by staff from the Renfe Operadora undertaking, Metre Gauge Services.

Measures adopted by the final recipient (Renfe Communication date: 11/12/2013

### **Operadora - SAM):**

From 1 January 2013, following the entry into force of Royal Decree-law 22/2012, Renfe applied the provisions in its Safety Management System in respect of training programmes and audits on the Metre Gauge Network (RAM).

Two training courses have been delivered aimed at staff involved in performing shunting operations, both driving staff and specialists at stations performing coupling and uncoupling operations on vehicles on the Metre Gauge Network (RAM), with particular emphasis on operations performed in stations with ramps or gradients.

In addition, by 15 November 2013, 201 actions had been taken involving monitoring and inspection of the performance of shunting operations at all RAM goods terminals to check proper compliance with the regulations. The results of these checks were satisfactory.

<sup>&</sup>lt;sup>1</sup> RAM and SAM: metre gauge network and service. Since 1 January 2013 Feve no longer exists. The infrastructure is therefore handled by Adif and service provision by Renfe Operadora.

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

Final recipient	Feve (Adif - RAM)	
Measures adopted by the final recipient (Adif -	Communication date: 21/04/2014	
RAM):		
It was planned to install three slope indicators showing	the gradient of the tracks at the station of Trasona. The	
indicators were installed at the end of December 2013.		
CIAF recommendation:		
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.		
Final recipient	Feve (Adif - RAM)	
Measures adopted by the final reginiant (Adif	Communication data: 21/04/2014	
measures adopted by the final recipient (Adif -	Communication date: 21/04/2014	
RAM):		
Standing Instruction Series C at the station of Trasona, published as CSC No 94/2013 GATR, dated 10-12-		
2013 has been updated. This indicates tracks with a gradient in excess of 3 % and the direction of this.		

# File: 0047/11

# CIAF recommendation:

**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.

Final recipient	Department of Railways (DGF)
Measures adopted by the final recipient:	Communication date: 27/05/2014
Technical recommendation 4/2014 of the Department of Railways on action by traffic and driving staff in cases	
of signal overruns with an order for checking the switches and crossings (27 May 2014).	

**47/11-2** The recommendation made in file 24/11 is repeated: To analyse 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.

Final recipient	Department of Railways (DGF)
	bepartment of Kaliways (Bor)
Measures adopted by the final recipient:	Communication date: 27/05/2014
Technical recommendation 4/2014 of the Department of Railways on action by traffic and driving staff in cases	
of signal overruns with an order for checking the switches and crossings (27 May 2014).	

### File: 0051/12

### CIAF recommendation:

**51/12-1** To draw up specific regulations for acting in the case of repairing a wheelset without the axle box cover, specifying the checks and measurements to be made on bearings and axle, together with an inspection sheet to be completed on the operations carried out in the light of the results. These regulations could be incorporated into the current Technical Standard for Maintaining Wheelsets.

Final recipient	Renfe Operadora
Measures adopted by the final recipient:	Communication date: 12/11/2013
A Technical Work Instruction has been drawn up entitle	ed 'Procedures for working on wheelset affected by an
incident in service' (ITR.1000.202.03.MIT) approved	on 1 August 2013, establishing the procedures for

working on wheelset.

### CIAF recommendation:

**51/12-2** To stress to driving staff on refresher courses the desirability of checking that the trainground settings and channel when travelling match those assigned.

Final recipient	Renfe Operadora
Measures adopted by the final recipient:	Communication date: 12/11/2013
This action was already being taken in all retraining of driving staff delivered prior to this event. Independently	
of the above, a general communication was sent to a	all the Technical Trainers at the Technical Vocational

School as a reminder to comply with this specific action. Monitoring of compliance with this second recommendation showed a 100% compliance rate.

# Measures adopted by the Department of Railways | Communication date: 30/05/2014

# - DGF (supplementary):

In order to enhance compliance with recommendations 51/12-1 and 51/12-2 and extend these to the rest of the sector, the DGF has published technical recommendations 1/2014 and 3/2014:

- Technical recommendation 1/2014 of the DGF to driving and training centre staff concerning checking the radio telephone system (January 2014).
- Technical recommendation 3/2014 of the DGF concerning the identification of defects and breakdowns in rolling stock and subsequent action (30 May 2014).

### CIAF recommendation:

**51/12-3** Recommendation No 4 made in file 63/2010 is repeated: To study the suitability of making changes to the existing regulations on the management of alarms that occur in hot axle detector equipment.

Final recipient	Department of Railways (DGF)
Measures adopted by the final recipient:	Communication date: 04/07/2013
The DGF has fostered the setting up of a joint working group with Adif to deal with recommendation 63/10-1.	

# File: 0064/12

# CIAF recommendation:

**64/12-1** Considering the measures adopted to be adequate, it is recommended that the feasibility is analysed of extending these to vehicles with similar circumstances.

Final recipient	Department of Railways (DGF)
Measures adopted by the final recipient:	Communication date: 13/03/2014
Technical recommendation 2/2014 of the Department	t of Railways on guidelines to avoid the deterioration of

axles mounted on rolling stock during operation and maintenance thereof (28 February 2014).

# File: 0074/12

#### CIAF recommendation:

**74/12-1** To analyse the content of the maintenance plans applicable to all units with similar characteristics to those involved in the incident to which this report relates, especially in relation to individual maintenance operations and checking that these have been performed correctly.

Final recipient	Feve (Renfe Operadora-SAM)
Measures adopted by the final recipient (Renfe	Communication date: 11/12/2013
Operadora - SAM):	

The Advisory Committee of Renfe has approved the budget for contracting for the modification of the current parking brake system on series 3300 and 3500, through the incorporation of a spring brake. The budget approved includes the technical design and implementation of that modification.

In addition, the maintenance content for the parking brake of these vehicles has been modified. These modifications have been included in the Maintenance Plan, in force since 29 April 2013.

#### CIAF recommendation:

**74/12-2:** To perform an audit on compliance of the maintenance cycles for vehicles assigned to Metre Gauge Services (RAM).

Final recipient	Feve (Renfe Operadora-SAM)
Measures adopted by the final recipient (Ren	feCommunication date: 11/12/2013
Operadora - SAM):	
On 2 October 2013, an audit was performed on this c	ycle compliance in the El Berrón Maintenance Workshop
and, on 3 October 2013, another audit was performed	I at the Santander Maintenance Workshop. The results of
both audits show that up until 2012 the maintenance	cycles applied by the defunct Feve were according to the
time elapsed between interventions. With effect fro	om 2013 the Renfe criteria have been applied, which
establish maintenance cycles according to the kilome	tres between interventions. It is envisaged that control of
compliance with the new cycles will be exercised w	vith the help of the 'MÁXIMO' programme from Integria
which is connected to COPÉRNICO de Viajeros [Pas	sengers] and with SACIM de Mercancías [Goods], which
applications prevent the movement of vehicles on whi	ch interventions are outstanding.

**74/12-3** To provide the necessary measures for ensuring safety faced with the risk of rolling stock drifting in stations with characteristics similar to those of Laviana (start and/or end of travel and/or sloping in the parking area in the direction of the main line).

Final recipient	Feve (Adif - RAM)	
Measures adopted by the final recipient (Adif -	Communication date: 21/01/2014	
RAM):		
The Infrastructure Section Management has drawn up	a scheme for 'Modification of the level on tracks 1 and	
2, between KP 49/571 and 49/666. Station of Laviana. Gijón-Laviana line', to prevent drifting of rolling stock,		
and this is currently at the tendering stage.		
Measures adopted by the final recipient (Adif -	Communication date: 09/05/2014	
RAM):		
At stations in which the rolling stock stays overnight and	where there is a track incline, the risk of drifting is	

controlled by orientation of the stabling tracks towards buffer stops or by the use of wheel chocks. At stations

or on tracks where currently it is not possible to take these measures, the risk is controlled or mitigated by

prohibiting the parking of rolling stock. In the event of parking being required due to a case of force majeure,

the parking brake has to be maintained and manual wheel chocks used.

#### File: 0077/12

#### CIAF recommendation:

**77/12-1** To intensify monitoring of the track in the area of the accident until the implementation of the planned works.

Final recipient	Adif
Measures adopted by the final recipient:	Communication date: 02/12/2013

The following measures have been taken since the date of the accident:

- Establishing a temporary speed limit of 30 km/h in the accident zone.
- Performing the monitoring in-situ established for this project in the annual schedule of the Subdirectorate of Operations North.
- Performing the monitoring in the cab established for this project in the annual schedule of the

Subdirectorate of Operations North. Up until 30/09/13, 15 journeys of this type had been performed.

- The work on maintenance *per se* of the track considered necessary during this period since the accident.

And to reinforce the above and until the planned corrective action is taken:

- Weekly inspections by Infrastructure and Track staff at this point, to check that the track has at least the minimum geometric parameters necessary for traffic safety.

### File: 0012/13

### CIAF recommendation:

**12/13-1** Recommendation No 1 made in file 28/2012 is reiterated: analyse the feasibility of establishing a systematic procedure for monitoring and assessing compliance with maximum speeds by driving staff.

Final recipient	Renfe Operadora (SAM)
Measures adopted by the final recipient:	Communication date: 05/02/2014

Starting on 1 January 2013, Renfe has been working on implementing the protocol laid down in the Safety Management System on prevention and safety for events caused by human error in driving; in this specific case the following Safety Management System documents apply: General Inspection Procedure, Circular Decision No 1, Specific Procedure for Testing Safety Recorders.

In 2013, as part of its annual Safety Plan, Renfe scheduled specific inspection activities on RAM services and with the same criterion as for other Renfe staff, including checks on speed logs, in the course of which each driver was checked at least once. Monitoring in the cab and inspection of shunting operations were also scheduled.

As of 31 December 2013, within the RAM area of Renfe the following had been performed: 461 speed log checks; 268 cab-monitoring inspections; 140 shunting inspections; 12 specific excess speed surveys, by means of analysis prompted by the vehicle safety logs, to determine that deviations detected were corrected; 25 specific monitoring inspections of drivers from the Valmaseda bases (passengers and goods), emphasising the importance of keeping to the speed indicated in the timetable of the train.

12/13-2 Recommendation No 2 issued in file 74/2012 is reiterated: to perform an audit of compliance with the

maintenance cycles of rolling stock assigned to the Metre Gauge Network.

Final recipient	Renfe Operadora (SAM)
Measures adopted by the final recipient:	Communication date: 05/02/2014

On 2 October 2013, an audit was performed on compliance with these cycles at the El Berrón Maintenance Workshop and, on 3 October 2013, another audit was performed at the Santander Maintenance Workshop. The results of these two audits revealed a number of Non Conformities due to non-compliance with the maintenance cycles implemented at Feve up until 2012. The measures established for correcting these included the following:

-Scheduling of the maintenance interventions so that they are performed in average cycles and not maximum cycles.

-Immobilisation of a vehicle upon reaching 95% of the period corresponding to the next maximum cycle if the intervention has not taken place.

-Adaptation of the 'SAP\_Taller' computerised maintenance application in order to allow it to interface with the Viajeros [Passengers] and Mercancías [Goods] computerised applications and in this way automatically prevent allocation to operation of vehicles outside of a cycle.

The year 2013 has already seen an improvement in the stability of maintenance cycles, time- and/or kilometrebased, according to the intervention concerned.

#### File: 0015/13

### CIAF recommendation:

15/13-1 To look into the possibility of requiring overpass construction projects to apply the current 'Circular

Order 23/2008 on criteria for the application of metal railings on roads', from the Directorate General of Roads

at the Ministry of Infrastructure and Transport.

Final recipient	Adif
Measures adopted by the final recipient:	Communication date: 21/03/2014

Adif is submitting a document, from which the following is an extract: 'We believe it is appropriate for this recommendation to be looked into and, as necessary, implemented by the technical services of the maintenance and construction sections, of both the Conventional and the High-speed Networks.'

# CIAF recommendation:

**15/13-2** To look into the possibility of installing detectors of objects falling onto the track linked to the railway signalling, in cases where it is advisable due to the road and rail traffic and the existing installations make it viable.

Final recipient	Adif

# Measures adopted by the final recipient: Communication date: 21/03/2014

Adif is submitting a document, from which the following is an extract: 'We currently have detectors for objects falling onto the tracks of high-speed lines, installed on overpasses and above the entrances to tunnels. With the exception of two detectors that are associated with signals and interlocking, in the others the information provided by the detection equipment is sent to the Control Centre, where the information is managed and the corresponding notification sent to drivers in accordance with the regulatory provisions (Experimental Standing Instruction No 86, General Traffic Regulations and NEC). The possibility under consideration calls for an innovation strategy for generating immediate and automatic protection on the track, both on high-speed lines and the conventional network, for those routes with high traffic frequencies, both rail and road, and that require notification on the track with the utmost speed.'

## File: 0016/13

#### CIAF recommendation:

**16/13-1** The person in charge of works at Adif must make sure and require that, among contract staff performing maintenance work, there is someone responsible for checking that rolling stock is operated correctly to allow safe circulation.

Final recipient	Adif	
Measures adopted by the final recipient:	Communication date: 20/02/2014	
Adif has argued against the appropriateness of applying	g the recommendation systematically to those in charge	
of works. Nevertheless, it has envisaged developing a series of measures to increase the level of control of		
safety conditions for on-track work.		