

# BEA-TT

Land Transport Accident Investigation Bureau



Ressources, territoires, habitats et logement  
Énergie et climat Développement durable  
Prévention des risques Infrastructures, transports et mer

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# ***ACTIVITY REPORT***

***2009***

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**French Departmental Council for the  
Environment and Sustainable Development**

**French Land Transport Accident  
Investigation Bureau**

# **ACTIVITY REPORT**

## **2009**

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## **Glossary**

- **CMVOA**: French Ministerial Unit for Operational Monitoring and Alerts
- **CGEDD**: French Departmental Council for the Environment and Sustainable Development
- **CNO**: French National Operations Centre
- **COGIC**: French Operational Centre for Inter-ministerial Crisis Management
- **DGITM**: French Directorate-General for Infrastructure, Transport and the Sea
- **DSCR**: French Road Safety and Traffic Directorate
- **DTT**: French Land Transport Directorate (integrated in the DGITM when it was created)
- **EF**: Rail Operator
- **EPSF**: French Railway Safety Authority
- **GI**: Manager of Infrastructure
- **HGV**: Heavy goods vehicle
- **LC**: Level crossing
- **STRMTG**: Cableways and Guided Transport Technical Service
- **TDS**: Transport of Dangerous goods
- **LV**: Light Vehicle



## **Review of 2009**

The production of technical investigations into accidents and incidents, which is the main activity of the Land Transport Accident Investigation Bureau (BEA-TT), continued in 2009 at a steady rate: 15 investigation reports were published, the same number as in 2008, after a continuous rise in previous years.

Amongst these reports, 3 concern particularly serious accidents which provoked a reaction in public opinion and the media:

- the railway collision at Zoufftgen in October 2006, in which 6 people died and which led to large-scale investigations in France and Luxembourg;
- in March 2009, a group of supporters were hit by an RER B commuter train after a match at the Stade de France, and 2 people died;
- in July 2007, a Polish bus fell down the descent at Laffrey, killing 26 pilgrims.

These 15 investigation reports were published on the BEA-TT website, on which 69 investigation reports, and 5 study reports, were available for consultation by the end of 2009. In 2009 the site was visited by 26 822 internet users, as opposed to 22 507 in 2008; 20% of the connections are from abroad, from about one hundred different countries.

During 2009, 12 new investigations were started, including the RER B accident at the Stade de France mentioned above, and the derailment of the RER C at Choisy-le-Roi following the parapet of a bridge being hit by a motorist, causing very serious damage.

The investigations which have been carried out confirm the importance of close international cooperation between the investigating bodies. It is clear that, amongst the most serious road and rail accidents which the BEA-TT has had to investigate, more than half concern transport operators established outside France.

In such cases the BEA-TT endeavours to work together with its foreign counterparts, when they exist.

This condition is generally fulfilled in the rail sector where European Directive 2004/49 on railway safety has made these investigation bodies mandatory, and requires their cooperation.

To that end, in 2009 the BEA-TT concluded a cooperation protocol with its British counterpart (the RAIB – Rail Accident Investigation Branch) which sets out procedures allowing a cooperative investigation to be started quickly in the event of an accident in the Channel Tunnel. This protocol was applied for the fire on a shuttle in the Tunnel in September 2008; it was used as a model for the cooperation established with the Luxembourg investigation body (the AET – Administration of Technical Investigations) for the investigation into the collision at Zoufftgen, and with the German investigation body (the EUB – Central Office for Accident Investigation) for the investigation into the rail accident in the tunnel at Livernant in May 2009.

For serious accidents involving coaches, however, which generally involve foreign carriers, the absence of road accident investigation bodies in the States concerned unfortunately restricts the possible investigations.

In the international sector, the BEA-TT has also continued its participation in the meetings of the network of rail investigation bodies led by the European Railway Agency. In 2009, it also intervened in the Ukraine, as part of the Franco-Ukrainian twinning operation on road safety.

The regulatory framework of the BEA-TT's activities remained stable in 2009.

The main change in progress consisted of setting up the monitoring of the implementation of the BEA-TT's recommendations by the recipients to whom they are addressed. This monitoring within the period is separate from the collection by the BEA-TT of the intentions to implement the recommendations by their recipients, which they notify within three months.

In the railway sector, the monitoring of recommendations sent to the operators has been carried out since 2008 by the EPSF, as laid down by the European directive 2004/49 on Railway Safety, which assigned this task to the national safety authority.

For the other railway recommendations, as well as for the four other modes of land transport dealt with by the BEA-TT, this monitoring has been taken on by the DGITM. This work, taken on for the recommendations made up to the end of 2009, will be published on the BEA-TT website.

Furthermore, in 2009 the BEA-TT undertook a 'Quality' approach, to define and formalise its objectives and working methods more effectively. It organised a seminar on quality in September 2009, with the active participation of the partner organisations already involved in a similar approach: BEAmer, BEA (civil aviation), STRMTG. The prime objective relates to the production of a standard for the organisation of technical investigations.

Staff numbers in the BEA-TT remained stable in 2009 with 12 permanent employees, i.e. 2 senior managers, 7 investigators, and 3 clerks. Two additional posts, authorised in 2010, are still to be filled; this reinforcement should enable a higher workload to be dealt with (21 investigations in progress at the end of 2009) and also to continue to allow the target set by the European directive on rail safety, of one year, to be met.

Apart from its permanent investigators, the BEA-TT has also called in a dozen investigators in 2010 commissioned for the requirements of a particular investigation, most being recruited within the CGEDD, BEAmer or specialised technical departments.

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The BEA-TT also relies on many outside partners for assistance with its technical investigations, accident monitoring and feedback: investigators and legal authorities, central and decentralised State services, local authorities, managers of infrastructures and transport companies.

I would like to offer once again all those who work for the prevention of accidents and transport safety my sincerest and warmest thanks.

A handwritten signature in black ink, consisting of a stylized 'K' followed by a horizontal stroke and a small flourish.

Jean Gérard Koenig

Director of the BEA-TT

## **1 - Remit and organisation of the BEA-TT**

### **1.1 - The reasons behind technical accident investigations**

With their human cost and occasionally spectacular or tragic nature, transport accidents remind us that men, materials and organisations remain fallible despite advances in safety.

Serious or complex accidents and incidents call for specific preventive action in the form of a technical investigation aiming to determine the circumstances and causes of the event, and then to devise useful preventive recommendations as soon as possible in order to prevent reoccurrence.

Such a technical investigation must remain wholly separate from the legal investigation, whose objectives (establishment of liability) and constraints (in particular, timeframes) are not the same.

To undertake their work effectively, technical investigators must have access to all useful data, evidence and information, even when covered by investigative secrecy or professional confidentiality. These privileges must therefore be prescribed by law.

Finally, the need to mobilise highly qualified and independent investigators at short notice, to take records, and to make best use of the lessons learned has led these investigations to be entrusted to a permanent and specialised body.

### **1.2 - The main stages in the creation of the BEA-TT**

In France, the first technical investigation bodies to be created were in the air (BEA in 1946 for civil aviation) and maritime (BEAmer in 1997) transport sectors.

Not before 2004 was an equivalent structure implemented for land transport. In the event of a serious accident, as in the Gare de Lyon station in Paris in 1988 (56 fatalities) or the Mont Blanc Tunnel in 1999 (39 fatalities), the French Minister of Transport formed an “ad hoc” investigating committee drawing from the CGPC (as of 2009 the CGEDD).

In the light of its experiences, it appeared necessary to implement a body for land transport which was similar to those for air and maritime travel with adapted legislative status.

It was the law of 3 January 2002<sup>1</sup>, which was adopted in the aftermath of the tragic fire in the Mont Blanc Tunnel, in which 39 people lost their lives on 24 March 1999, which gave this legislative basis to technical investigations in the field of land transport. It made provision for these investigations to be conducted by a permanent and specialised body, which would be given access to all the data useful to the investigation, even those covered by investigative secrecy, medical confidentiality or professional confidentiality.

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<sup>1</sup> Law 2002-3 of 3 January 2002 in relation to the safety of transport infrastructures and systems and to investigations following transport accidents.

The law also established the principles of independence of these investigators and publication of the final report.

Decree no. 2004-85 of 26 January 2004, published in application of this law, officially created the BEA-TT (French Land Transport Accident Investigation Bureau) and defined the remits and operating conditions described below.

### **1.3 - Remits and methods of intervention**

The BEA-TT is a service with nationwide authority reporting to the Vice Chairman of the CGEDD; this position does not comprise any hierarchical authority that may undermine the independence of the investigations by the BEA-TT.

The main remit of the BEA-TT is to conduct technical investigations into serious land transport accidents and certain other accidents or incidents. However, it also aims to encourage the dissemination of facts and findings from previous accidents, and can undertake studies or research into past experiences and accident analysis.

Its area of intervention covers rail transport, urban guided transport (underground, tramway), cableways, road transport (particularly heavy goods vehicles and public transport by coach or bus), and waterways, each of these sectors having its own regulations and economic, technical, professional or even cultural logic.

The decision to open technical investigations is made by the Director of the BEA-TT. In the rail sector, investigations into the serious accidents designated by the European Rail Safety Directive 2004/49 are mandatory. In other rail-related cases, the Director of the BEA-TT decides on the appropriateness of the investigation. For non-rail modes of land transport, the decision of the Director of the BEA-TT is taken at the request, or with the agreement, of the French Minister of Transport.

Each investigation must examine the event from numerous angles including infrastructure, operations, rolling stock, staff training, medical aspects, regulations, etc.

Such a wide range of investigations to be conducted leads the BEA-TT to identify and mobilise all the skills and abilities required by each case.

Following the investigations or studies, the BEA-TT makes its reports public on its website <http://www.bea-tt.developpement-durable.gouv.fr/> .

The safety recommendations that it makes are sent to the relevant recipients, which in turn inform the BEA-TT of the resulting actions that they intend to take. The BEA-TT may make its recommendations and the recipients' responses public, but it is not responsible for monitoring or inspecting their implementation.

### **1.4 - Transposition of the Rail Safety Directive**

In the rail sector, European directive 2004/49 specifies the role of the various parties, particularly that of accident and incident investigation bodies.

In France, this body is the BEA-TT, and the transposition of the directive to it began in 2006. It largely concerns three points:

- granting the Director of the BEA-TT decision-making power over the opening of rail investigations, which previously fell to the French Minister of Transport,
- reporting to the BEA-TT, via the infrastructure manager and railway companies, accidents and incidents in which its involvement may be sought, and
- monitoring the effective implementation of the recommendations made by the BEA-TT, to be undertaken by the national safety authority (in France, the EPSF).

On the first point, the transposition was completed with the publication of law 2006-10 of 5 January 2006 (Art. 18) and of decree 2006-1279 of 19 October 2006 (Art. 65).

On the second point, the obligation to report accidents and incidents is laid down in the aforementioned decree.

On the third point, the transposition is still in progress. The EPSF assumed responsibility for these activities in 2008.

## **1.5 - Organisation and resources**

The BEA-TT is organised around its main remit, namely conducting technical investigations into accidents and incidents. To do so, it calls upon three categories of contributors:

- firstly, its own permanent investigators,
- secondly, temporary investigators, who are commissioned for the needs of an investigation by the Director of the BEA-TT and enjoy the legal status of technical investigators; they may be the active or retired employees of a transport company, infrastructure manager, or civil service body with inspection or control assignments,
- finally, experts designated to respond to specific issues.

Furthermore, the BEA-TT can, under the terms of its founding decree, call on all the competent State services in its field: this is notably the case for monitoring and reporting accidents.

In practical terms, permanent investigators organise the investigations, where appropriate with the support of temporary investigators and experts selected to provide the range of external skills and abilities which have been deemed necessary for each investigation.

On 1st January 2010, the authorised workforce of the BEA-TT was 13 employees: 2 senior managers, 7 permanent investigators, 3 clerks and 1 vacancy for an investigator. Two doctors from the General Transport Labour Inspectorate were also seconded to it to deal with medical aspects.

In addition, 10 commissioned non-permanent investigators contributed to the work of the BEA-TT in 2009.

Its operating budget totalled approximately €375 000 in 2009.

## **1.6 - Monitoring and reporting accidents and incidents**

To track safety-related events, the BEA-TT receives two types of information:

- firstly, direct accident reports from the managers and operators concerned; and
- secondly, the daily reports produced and circulated by major operators, the emergency services, or the crisis management service.

Direct reports cover only part of the operators concerned. From 2005 onwards, the corresponding procedures were established with the SNCF and the RATP in addition to the constabulary and police for accidents involving public transport or dangerous goods. They remain to be extended to the other transport networks referred to in the decree founding the BEA-TT, particularly provincial urban transport systems.

The daily reports currently have four sources:

- the French National Centre for Traffic Information;
- the SNCF: daily listing of the CNO
- the French Ministry of the Interior (Civil Defence - COGIC), and
- the French Ministry of Ecology, Energy, Sustainable Development and the Sea (report of the CMVOA and press review).

On the basis of this information, which may be supplemented by an evaluative

investigation, the BEA-TT selects for which accidents and incidents a technical investigation appears useful.



## **2 - Investigations conducted in 2009: Overview**

### **2.1 - Investigations conducted in 2009**

Fifteen investigations were completed in 2009 with the publication of the report and recommendations of the BEA-TT. These accidents led to 45 fatalities, the majority of which occurred as the result of road accidents.

Seven of these investigations concerned rail transports, including three collisions on level crossings; five others centred on road accidents, and three on inland waterways accidents. They are outlined in the chapters below.

### **2.2 - Causal factors identified**

**The human factor** was the immediate cause of accident in ten cases (inattention, failure to respect the regulations or procedures, lack of checks, inappropriate driving or inadequate reaction). It played an aggravating role in four cases (inappropriate reaction, lack of training or information, failure to respect the regulations, seatbelts not worn).

**Vehicle-related factors** were a principal cause of the accident in five cases (poor condition of the vehicle or of one of its parts, insufficient ergonomics, lack of protection) and were aggravating factors in four cases (lack of detection or alert system, unsuitable internal arrangement and quality of materials, flawed ergonomics, lack of safety belts).

**Infrastructure** was an aggravating factor in three cases (insufficient protection of access prohibited to the public, lack of rescue arrangements in a dangerous descent, difficult geometry of a level crossing).

**Organisational or regulatory factors** were also highlighted, particularly in nine cases in which they contributed to the accident (organisation of work not rigorous, insufficient or lack of controls, lack of or poor quality of documentation, unclear regulations).

### **2.3 - Recommendations made**

Following these 15 investigations, 89 recommendations (47 for railways, 26 for roads and 16 for inland waterways) were made. As some of them were sent with the same wording to several recipients, this corresponds to 119 recommendations (69 for railways, 28 for road transport and 22 for inland waterways transport).

#### **The recipients**

The 119 recommendations put forward can be broken down as follows:

- 42 to infrastructure managers,
- 47 to regulatory or supervisory authorities (central government departments or decentralised services);
- 4 to the transport organising authorities;
- 12 to transport (or manufacturing) companies;



- 10 to professional associations or organisations;
- 4 to other recipients (study body and manager of public access building).

## **2.4 - Action planned by the recipients**

The decree of 26 January 2004 states that the recipients of recommendations must make the resulting action that they intend to take and, where appropriate, the timeframe required for their implementation known to the Director of the BEA-TT within a deadline that is in principle set at ninety days. This response is normally made public, as are the recommendations themselves.

Of the 119 recommendations put forward to the recipients:

- in 59 cases, the recommendation was accepted and its implementation confirmed, occasionally subject to a deadline or financing,
- in 7 cases, the recommendation was not accepted or met with strong reservations,
- in 33 cases, no response was given to the recommendation
- the remaining 20 recommendations were sent to a foreign body (Société Nationale des Chemins de Fer Luxembourgeois – Luxembourg State Railways) which is not subject to the French regulations on technical investigations.

## **2.5 - Follow-up to implementation of recommendations**

It should be noted that the BEA-TT has no authority to check on the action actually taken to implement the recommendations at a later stage.

The follow-up to this implementation, apart from simply gathering together the intentions of the recipients as carried out by the BEA-TT, must therefore be carried out by an external authority.

As regards the main parties in the rail sector, this monitoring is carried out by the EPSF, in accordance with European Directive 2004/49 which assigns this role to the national rail safety authority.

For the other recipients of recommendations, and in particular for the other modes of transport dealt with by the BEA-TT, the follow-up to the implementation of the recommendations is carried out (as from 2009) by the DGITM, the Directorate-General in the Ministry of Transport.

The overview of this monitoring is shown in paragraph 3.4 below for recommendations made in 2009 or previously, with regard to rail and guided transport, and for cableways. For the other modes of transport (roads, inland waterways), it will be published at a later date.

## **2.6 - Investigations undertaken in 2009**

The BEA-TT opened 12 investigations in 2009, as listed in Appendix 4.

These 12 investigations concerned:

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- for the **railway and guided transport sector**, 8 events including 1 passenger accident, 2 derailments, 5 collisions (2 HGV on level crossings, 1 agricultural vehicle off level crossing, 1 LV against a tramway and 1 collision of trains in a tunnel)
- for **roads**, 4 accidents, including 2 collisions of HGVs involving a coach in the first, and the transport of dangerous goods in the second, 1 pileup and 1 collision after crossing the central reservation.

Since 2002 (start of the creation process of the BEA-TT) 90 investigations had been undertaken by end of 2009 (see Appendix 4). They can be categorised into the various modes of land transport as follows:

Rail transport:	39 (including 12 accidents on level crossings)
Guided transport:	5
Cableways:	2
Road transport:	31 (excluding accidents on level crossings)
Waterways:	13

It may be noted that the two main areas are rail and road accidents, waterways concern a not insignificant number of passenger boats. However, this breakdown by mode of transport has no statistical significance on accident rates, the thresholds for undertaking an investigation being very different from one mode to another.

### **3 - The investigations conducted: Rail transport**

#### **3.1 - Investigations conducted in 2009**

Seven investigation reports were circulated in 2009 in the rail sector: four reports for railway accidents, three reports for accidents on level crossings:

<b>Date</b>	<b>Accident</b>	<b>Fatalities</b>	<b>Mode<sup>1</sup></b>
11.10.2006	Train collision on the French-Luxembourg border at Zoufftgen	6	RY
26.11.2007	Collision between an RET (Regional Express Train) and an HGV on level crossing no. 11 at St-Médard-sur-Ille	0	LC
19.12.2007	Collision between a TGV and an abnormal load at level crossing 34 at Tossiat	1	LC
26.04.2008	Runaway VEOLIA freight train at Montauban	0	RY
24.06.2008	Fire on Chemin de Fer de Provence railcar at Mézel	0	RY
07.07.2008	Collision between an RET and an HGV on level crossing no. 19 at la Roche-en-Brenil	0	LC
07.03.2009	Group of people hit by an RER B train close to the Stade de France	2	RY

Three of these investigations concern serious accidents as defined by Directive 2004/49/CE on rail safety:

- collision at Zoufftgen (6 fatalities, 1 seriously injured);
- accident on the level crossing at Tossiat (1 fatality);
- pedestrians hit close to the station at La-Plaine – Stade-de-France (2 fatalities, 3 seriously injured).

#### **3.2 - Recommendations made**

Following these seven investigations, 47 recommendations were made. Some of them were sent with the same wording to several recipients, corresponding to 69 recommendations sent.

##### **Type of measures recommended**

The 47 separate recommendations can be broken down by type of measure (account should be taken of their importance, which varies greatly):

- 9 concern the rail infrastructure;
- 5 concern railway vehicles;
- 8 concern the rail operations;
- 3 concern the preparation and driving of the trains;

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<sup>1</sup> RY = Railways ; LC = level crossing

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- 7 concern the management of personnel;
- 6 concern the road infrastructure;
- 4 concern the organisation of road transport;
- 2 concern the security of pedestrian routes;
- 3 concern information to the public (professionals and private individuals).

### **The recipients**

The 69 recommendations put forward can be broken down as follows:

- 38 to the rail infrastructure managers;
- 11 to the rail companies and operators of transport networks;
- 13 to the regulatory or supervisory authorities (central and decentralised government departments);
- 4 to a transport authority;
- 3 to the manager of a public access building (stadium).

### **3.3 - Action planned by the recipients**

The table below shows the action planned by the recipients of the recommendations made in 2009. It is taken from the responses that the recipients of the recommendations must send to the BEA-TT within 90 days.

Investigation	Recommendations				
	Number	Accepted	Not accepted	Unanswered	External recipients
Zoufftgen	31	8	3	0	20 (CFL – Luxembourg State Railways)
St-Médard-sur-Ille	5	5	0	0	
Tossiat	4	2	0	2	
Montauban	4	4	0	0	
Mézel	10	8	2	0	
La Roche-en-Brenil	3	2	0	1	
Stade de France	12	6	1	5	
TOTAL	69	35	6	8	20

Six recommendations were not accepted or were subject to strong reservations by their recipients in their responses to the BEA-TT (these responses are published with the report on the BEA-TT website).

In five cases, the recipients mention the inefficiency or high cost of the measures proposed. In one case, the recipient considers that the recommendation is not within its remit, as it was addressed simultaneously to three other recipients who are in a better position to respond.

The eight unanswered recommendations were sent to administrative departments of the State.

Finally, 20 recommendations concern a recipient not established in France (CFL – Luxembourg State Railways) and not subject to the national regulations on technical investigations.

### **3.4 - Follow-up to implementation of recommendations**

Independently of the collection by the BEA-TT of the intentions expressed by the recipients, the follow-up of the actual implementation of the recommendations made is carried out:

- by the EPSF, French railway safety authority, for rail operators on the national rail network;
- by the DGITM, Directorate-General in the Ministry of Transport, for the other rail recipients as well as for the other modes of land transport.

The overview of this follow-up is presented below for rail transport, as well as for guided transport and cableways; it relates to the recommendations made in 2009 or previously.

#### **Rail transport**

*Follow-up by the EPSF of the recommendations sent to the rail operators in the National Rail Network (rail companies and infrastructure managers)*

Year of publication of report	Number of recommendations sent			
	total	closed		In progress
		carried out	not retained	
2004-2007	30	24		6
2007	19	11		8
2008	21	9		12
2009	24	13	2	9
Total 2004-2009	94	57	2	35

The detail of the follow-up to the recommendations is shown in appendix 5.1; it does not refer to the recommendations for the period 2004-2006 already presented as shown in the BEA-TT 2008 Activity Report.

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The follow-up to the recommendations sent to the rail operators outside the National Rail Network (local railways) will be carried out by the DGITM as from 2010.

*Follow-up by the DGITM to the implementation of the rail recommendations sent to the central and decentralised government departments of the Ministry of Transport.*

Year of publication of report	Number of recommendations sent				
	total	closed		In progress	Outside the scope of the DGITM follow-up
		carried out	not retained		
2004	4	1		2	1
2005	2	2			
2006	7	4			3
2007	3			2	1
2008					
2009	15			7	8
Total 2004-2009	31	7		11	13

In the above table, for the record, the recommendations to other Ministries, local authorities and administrations have been classified as 'outside the scope of the follow-up'.

The detailed overview is given in appendix 5.2.

### **Guided transport and cableways**

*Follow-up by the DGITM of the implementation of the recommendations made between 2005 and 2009 following accidents to guided transport and cableways*

Year of publication of report	Number of recommendations sent			
	total	closed		In progress
		carried out	not retained	
2005	19	12	1	6
2006	11	11		
2008	14	5	2	7
Total 2005-2009	44	28	3	13

The detailed overview is given in appendix 5.3.

## **3.5 - Global summary of investigation reports**

A summary presentation of the investigations with a brief reminder of the recommendations made in each case can be found in Appendix 1.

## **4 - Investigations conducted: road transport**

### **4.1 - Investigations conducted in 2009**

Five investigation reports were circulated in 2009 in the road transport sector in addition to the investigations on the roads aspect of the accidents on level crossings described in the chapter on rail investigations. These investigations concerned the following accidents:

<b>Date</b>	<b>Accident</b>	<b>Fatalities</b>
14.06.2007	Collision between a coach and signalling unit on the A4 motorway at Thillois	2
22.07.2007	Accident to a coach on the RN85 at Notre-Dame-de-Mésage (Laffrey descent)	26
23.02.2008	Fire on a coach on the A43 motorway at Les Marches	0
23.05.2008	Accident to a coach on the A10 motorway at Suèvres	7
12.07.2008	Accident involving a coach on the A6 motorway at Saint-Ambreuil	1

### **4.2 - Recommendations made**

Following these five investigations, 26 separate recommendations were made; some of them were sent with the same wording to several recipients, corresponding to 28 recommendations sent.

#### **Type of measures recommended**

The 26 separate recommendations can be broken down by type of measure as follows:

- 8 concern the design or instructions for use of the vehicles;
- 3 concern the infrastructure arrangements;
- 4 concern the training or awareness of professional drivers;
- 2 concern the organisation of the technical control of the vehicles;
- 2 concern the signing of road works;
- 2 concern the qualifications required for public carriers of passengers;
- 2 concern the on-road checks on vehicles;
- 1 concerns the checks on carriers in the company;
- 1 concerns the reinforcement of sanctions for failure to comply with the prohibition of certain categories of vehicles;
- 1 concerns the use of coaches fitted with seatbelts for the public transport of children.

#### **The recipients**

The 28 recommendations put forward can be broken down by category of recipient as follows:



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- 4 to infrastructure managers or operators;
- 1 to a car manufacturer;
- 18 to the regulatory authorities (central government departments);
- 4 to professional associations;
- 1 to a study body.

#### **4.3 - Action planned by the recipients**

The table below shows the action planned by the recipients of the recommendations.

Investigation	Recommendations			
	Number	Accepted	Not accepted	Unanswered
Thillois	6	6	0	0
Notre-Dame-de-Mésage	12	10	0	2
Les Marches	3	3	0	0
Suèvres	5	0	0	5
Saint-Ambreuil	2	0	0	2
TOTAL	28	19	0	9

No recommendations were rejected by the recipients; however, for nine of them, no response was received.

The monitoring of the actual implementation of these recommendations, dealt with by the DGITM, will be published subsequently.

#### **4.4 - Global summary of investigation reports 2009**

A summary presentation of the investigations with a brief reminder of the recommendations made in each case can be found in Appendix 2.

## **5 - Investigations conducted: transport on inland waterways**

### **5.1 - Investigations conducted in 2009**

Three investigation reports were circulated in 2009 in the inland waterways sector. These investigations concerned the following accidents:

<b>Date</b>	<b>Accident</b>	<b>Fatalities</b>
22.04.2007	Loss of containers by the powered craft Arc en Ciel on the Seine	0
26.05.2007	Accident to passenger boat Bellriva on the Rhine at the Rhinau lock	0
23.05.2008	Collision between the vessels La Saône and Viking Burgundy on the Rhône at Avignon	0

### **5.2 - Recommendations made**

Following these three investigations, 16 separate recommendations were made; some of them were sent with the same wording to several recipients, corresponding to 22 recommendations sent.

#### **Type of measures recommended**

The 16 separate recommendations can be broken down by type of measure as follows:

- 5 concern the qualification and training of the crew;
- 1 concerns the facilities of river ports;
- 3 concern the control of shipping;
- 5 concern the rules of inland navigation;
- 2 concern the sharing of information and feedback between European countries.

#### **The recipients**

The 22 recommendations put forward can be broken down by category of recipient as follows:

- 12 to the regulatory authorities (central government departments);
- 4 to the supervisory authorities (decentralised navigation services);
- 6 to professional organisations (owners, shippers, managers of inland ports).

### **5.3 - Action planned by the recipients**

The table below shows the action planned by the recipients of the recommendations.

Investigation	Recommendations			
	Number	Accepted	Not accepted	Unanswered
Arc en Ciel	11	2	1	8
Bellriva	5	0	0	5
Saône and Viking Burgundy	6	3	0	3
TOTAL	22	5	1	16

One recommendation was rejected by its recipient; however for 16 recommendations sent principally to a State department, no response was received.

The monitoring of the implementation of these recommendations, dealt with by the DGITM, will be published subsequently.

### **5.4 - Global summary of investigation reports 2009**

A summary presentation of the investigations with a brief reminder of the recommendations made in each case can be found in Appendix 3.

## **APPENDICES**

Appendix 1: Rail transport: global summary of investigation reports

Appendix 2: Road transport: global summary of investigation reports

Appendix 3: Transport on inland waterways: global summary of investigation reports

Appendix 4: Investigations into accidents and incidents since 2002

Appendix 5: Follow-up to the implementation of the BEA-TT recommendations in the railway sector

Appendix 5-1: Rail transport: recommendations monitored by the EPSF

Appendix 5-2: Rail transport: recommendations monitored by the DGITM

Appendix 5-3: Guided transport and cableways: recommendations monitored by the DGITM

Appendix 6: BEA-TT organisation chart as at 1 January 2010

Appendix 7: Legislation governing the BEA-TT



## **Appendix 1: Rail transport: global summary of investigation reports**

- Collision between a freight train and an RET on 16 October 2006, at Zoufftgen
- Collision between an RET and an HGV on 26 November 2007, at Saint-Médard-sur-Ille
- Collision between a TGV and an abnormal load on 19 December 2007, at Tossiat
- Brake failure on a freight train on 26 April 2008, at Montauban
- Fire on a train at Pignes on 24 June 2008, at Mézel
- Collision between an RET and an HGV on 7 July 2008, at la Roche-en-Brenil
- Pedestrians hit by an RER B commuter train on 7 March 2009, at the Stade de France



## **Train collision that occurred on 11 October 2006 on the French/Luxembourg border at Zoufftgen**



On Wednesday 11 October 2006, extensive track works on the French network required one of the two tracks of the Thionville-Bettembourg section of international line to be neutralised from 8h50 to 16h30. Consequently, trains in both directions were using the other track under the Wrong-track Working Fixed Equipment (WWFE) system.

While an SNCF freight train was travelling on this track from Thionville to Bettembourg, a Regional Express Train (RET) was travelling in the opposite direction on the same track via Bettembourg station.

These two trains collided head on at around 11h44, on French territory at about ten metres from the border, near Distance Marker (DM) 203.700 (Commune of Zoufftgen).

As a result of this accident, six people died, one was seriously injured and fifteen others had minor injuries.

The first of the three carriages of the Luxembourg RET was totally destroyed; the other two were badly damaged. The French locomotive of the freight train was totally destroyed and the first eight wagons were totally destroyed or badly damaged.

The technical investigation was carried out in cooperation by the BEA-TT and the Luxembourg investigation body (EEAI, now AET).

The direct and immediate cause of the accident was human error: the Traffic Controller of the Bettembourg Central Control Post mistakenly issued the driver of the RET an order to pass through the 'danger' signal protecting the section of track on which the freight train was travelling.

The other causes and factors that contributed (or could have contributed) to this accident can be classified into four groups:

- direct causal factors relating to mistakenly issuing the pass-through order, and which concern the Bettembourg Central Control Post (CCP): the incorrect staff handover



procedure just before the accident, the high frequency of signal faults, the poor ergonomics of the available documentation, and the ergonomics of the Visual Control Panel which could be improved;

- direct causal factors relating to the failure of attempts to rectify the situation: incorrectly pressing the radio warning button (or failing to press this button), delay in implementing the traction power cut-off procedure, failing to transmit the warning to the Thionville Control Post, and the limited capacity of the telephone system at the Bettembourg CCP;
- underlying causes regarding staff skills: insufficient knowledge by the CCP staff of the procedures to be followed, particularly for issuing pass-through orders or for handling emergency situations, and the absence of practical training in emergency procedures;
- organisational causes regarding the Safety Management System and the regulatory framework of Luxembourg Railways (CFL): unrealistic division of tasks between the Bettembourg CCP staff, lack of encouragement to gain experience and laissez-faire approach to monitoring staff and implementing management control.

Furthermore, the investigation highlighted several factors that, although they did not play a part in the development of the accident, would have compromised the effectiveness of any attempts to rectify the situation that should normally have been made: the hidden fault on the ground-train radio at the Bettembourg CCP, the fault on the ground-train radio of the freight train, the lack of continuous radio warning transfer near the border, and the lack of a direct connection between the Bettembourg CCP and the East-France Substation Unit.

This investigation makes twenty-two recommendations. They relate to preventive actions focused on the following objectives:

- to remind staff finding themselves in the position of issuing an order to pass through a signal set at 'danger' that they must not do so until they are sure that the reason for the signal remaining in 'danger' position is really the consequence of a fault in the equipment;
- to take the necessary steps to reduce the number of faults in the signalling equipment;
- to provide documents to help in the decision-making process;
- to improve the legibility of the Visual Control Panel at the Bettembourg CCP;
- to re-train the Bettembourg CCP staff;
- to review the consistency of the safety regulations at CFL and the role of the traffic controllers;
- to improve the reliability of the communication and warning equipment and procedures, particularly the cross-border aspects;
- to ensure that the systems made available to the staff work properly;
- to improve the protocol for staff handover and its implementation;
- to train staff in the emergency procedures that are most likely to occur;
- to review the experience feedback scheme;
- to ensure that checking and monitoring of staff by the management is as thorough as possible.

**Collision between an RET and an HGV  
that occurred on 26 November 2007  
on level crossing no. 11 at Saint-Médard-sur-Ille (35)**



On Monday 26 November 2007, at around 17.00, a lorry loaded with gravel travelling on departmental road (DR) No. 106 was hit by a Regional Express Train (RET) on the Rennes/Saint Malo route, at level crossing (LC) no. 11 at Saint-Médard-sur-Ille (Département of Ille-et-Vilaine).

Forty people were injured, all passengers on the train, 22 of whom were hospitalised.

The direct and immediate cause of the accident was that the lorry slowed down and then stopped on the LC as its way was blocked by the half-barrier in the opposite direction.

Five other causal factors played or could have played a role in this accident:

- the inappropriate reaction of the driver who tried to raise the half-barrier that was blocking his way, while the imminent arrival of the train meant that it had to be broken and the tracks had to be cleared;
- the difficult geometry of the LC which forced heavy goods vehicles, which are numerous on this route, to travel in the middle of the carriageway and made it difficult for them to pass one another;
- a contraflow operation was set up across the LC that could lead to a number of risks (crossing half-barriers in the wrong direction, confusion of signals);
- the simultaneous presentation at the LC of two vehicles travelling in opposite directions, while each driver could think he was travelling one way in the contraflow operation;

- the absence of detection of the risk presented by this contraflow operation, mainly due to the lack of consultation with the regional Level Crossing expert by those responsible for the site at the station at Saint-Médard-sur-Ille.

The injuries to the train passengers were due to their being thrown against the internal fittings and particularly against the seats.

The analysis of the factors contributing to the accident led to three recommendations being made relating to the arrangement and operation of an LC, the treatment by the rail operator of the risks presented by works carried out close to one of these structures, and the technical rules for setting up contraflow operations.

In addition, this report provides an opportunity to ask the public authorities to raise the awareness of users as regards level crossings, to extend the distribution of the Setra (Road and Motorway Technical Studies Department) documents on works close to LCs, beyond road contractors alone, and to encourage discussion at European level on reducing the aggressive effects of train seats in the event of an impact.

## **Collision between a TGV and an abnormal load that occurred on 19 December 2007 on level crossing no. 34 at Tossiat (01)**



On Wednesday 19 December 2007 at 09.15, TGV train n° 6561 collided with an abnormal load which was stopped on level crossing 34, situated at the intersection of DR (Departmental road) 64 (route to Certines) at Tossiat (01) with the MACON – AMBERIEU railway line. The lorry driver was killed, some of the passengers on the train and the train driver had minor injuries, and very considerable material damage was caused.

The two direct causes of this accident are:

- a poor assessment of the gauge of the abnormal load and the effect of the variation in height which was caused by the hump in the road. This led to the rear end of the trailer being caught at the entrance gantry to the LC;
- inadequate reaction by those in charge of the load, who had stopped it on the tracks to lower the load while there was nothing to prevent them from clearing the tracks, and who stopped there for almost five minutes, without thinking of alerting SNCF using the telephone at the level crossing.

Several causal factors also contributed to this accident:

- the late notification of the final destination of the loads when they were already en route, so the carrier could not study the final route or request the required authorisation;
- failure to request authorisation for this final route, which did not allow the planning department to issue the appropriate instructions;
- lack of contact with SNCF regarding the crossing of the LC, which would have allowed a favourable time slot to be indicated and the crossing to be protected;

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- lack of rigour in preparing the journey by the carrier, who did not sufficiently monitor the organisation of its crew on the ground; this crew was also disorganised by the departure that same morning of the most experienced driver;
- lack of knowledge by the crew on the ground of how level crossings function and the risks of stopping on them.

The analysis of the circumstances which led to this accident showed three areas requiring preventive measures:

- compliance with the regulatory obligations applying to abnormal loads;
- methods of organising abnormal loads and study of the routes;
- the training and experience of those driving the loads.

The BEA-TT made four recommendations on these different points concerning the reinforcement of the control/sanction of offences, the traceability of itineraries of category 3 abnormal loads, the improvement of methods of organising crews on the ground with the aim of better anticipation and greater control of their actions and finally, the establishment of a specific training module for drivers of abnormal loads.



## **Runaway VEOLIA freight train that occurred on 26 April 2008 at Montauban (82)**



On Saturday 26 April 2008, at 06.36, freight train 467 473, belonging to the Railway Company Veolia Cargo France, travelling from Bordeaux-Bassens to Bouspens, made an emergency stop in Montauban station without respecting the signals protecting the merge points of the Brive-Toulouse and Agen-Toulouse lines, despite applying the brakes. Between the acknowledgement of the emergency braking after the warning announcing the stop signal and the actual stopping point of the train, the distance travelled by the train was approximately 3 300 metres.

There were no human injuries or material damage, thanks to the rapid reaction of the points man at Montauban and the absence of traffic on the merge point and on the track occupied by train 467 473.

This incident could have become a serious accident under slightly different circumstances.

The immediate cause of this incident is that train 467 473 was sent out even though the braking capacity of the set of wagons had been neutralised. Two human errors caused this runaway train situation:

- after completing the final brake test with a positive result, the general compressed air pipe of the brake was closed to complete the preparation of the locomotives, and was not re-opened before the train departed;
- the train departed without the brake continuity test being carried out.

This situation continued although it could normally have been detected by the driver when the journey began, on two occasions, but this did not happen.

Two organisational causes contributed to these faults in applying safety instructions: the lack of precision of the work programme for the formation of the train and insufficient management and contractual control.

Four recommendations were made in the report on the control of professional practices and the organisation of the preparation of the trains:

- draw up 'vehicle rosters' setting out explicitly the current preparation of the locomotives;
- check on the accuracy of the train composition abstract;
- systematic practice of a 'braking efficiency test on the line' after the train departs;
- implementation of more efficient management control on the operators working on the formation of the trains and on driving.

## **Fire on a railcar belonging to Chemins de Fer de Provence that occurred on 24 June 2008 at Mézel (04)**



The Nice-Digne line, called 'Chemins de Fer de Provence' (Provence Railways) is operated by the Compagnie Ferroviaire du Sud de la France (CFSF - South of France Railway Company). On Tuesday 24 June 2008, at around 12.09, train no. 3 travelling from Nice to Digne caught fire at DM (Distance Marker) 140.950 in the commune of Mézel (Alpes de Haute-Provence). This passenger train was made up of a set comprising a rail car and a pilot trailer.

The fire began in the rail car, which was in the rear position, A passenger, concerned at the smoke coming into the passenger area, pulled the alarm signal and caused the train to stop on the line.

Rail staff evacuated the train, which was mainly carrying a group of elderly people. Despite the intervention of the driver and assistance, fire entirely engulfed the rail car. Only two people had minor injuries. The superstructure of the rail car was destroyed.

The probable immediate cause appeared to be damage to the insulation of an electrical power cable charging the battery, in the cabinet, enabling a leakage current to be established between the conductor and the metal mass of the floor and causing the insulation of the bundle of cables to heat up and then ignite.

Two causal factors could have contributed to the fire:



- Lack of protection of cables in the cabinet, particularly in the vulnerable area where the bundle of cables enters the cabinet (electrical cabinet) which exposed the insulation to the risk of damage;
- cleaning using a high pressure jet from below the cabinet, where the cables re-enter the electrical cabinet which was done that same morning and which, if it was not done carefully, could lead to a concentration of combustible polluting materials in the area where the cable was damaged.

An aggravating factor was that they kept the diesel engine running while trying to extinguish the fire at the start, which meant that the generator continued to supply the battery charge circuit at a high current level, thus contributing to the failure of these efforts.

The report made six recommendations.

Three recommendations concern the rolling stock. They relate to the upgrading of the electrical wiring, its mechanical protection and a check on its insulation.

The three other recommendations concern the organisation of assistance and the functioning of the ground-train radio.

## **Collision between an RET and an HGV that occurred on 7 July 2008 on level crossing no. 19 at La Roche-en-Brenil (21)**



On Monday 7 July 2008, at 10.12, a Regional Express Train (RET) on the Autun/Avallon link hit a lorry loaded with a bituminous mix on level crossing no. 19, without barriers, at La Roche-en-Brenil (Côte-d'Or).

This lorry was going to the site of an industrial area situated immediately adjacent to the level crossing.

Six people were slightly injured, all passengers on the train.

The direct and immediate cause of this accident is the fact that the driver of the lorry entered the level crossing without complying with the stop signal.

Three factors may have played a role in this accident:

- the absence of a sufficient prior examination of the safety of traffic on the level crossing during the works phase, which did not enable suitable measures to be decided with the rail operator to ensure safety during that phase;
- failure by the rail operator to react sufficiently, given the conditions of road use of the LC which were incompatible with safety and should have led him to consult the SNCF LC expert;
- the absence of the definition of a final management plan for the level crossing and its calendar for completion, which did not facilitate the anticipation of the safety problems that would occur during the works phase.

Two recommendations were made on the basis of the analysis of these factors:

- the first reminding rail operators of the action to be taken when they know of significant changes to road traffic on a level crossing;
- the second to make the local State planning services aware of the need to inform communes and the Prefect when the issue of a planning authorisation requires a safety arrangement which is not laid down in the authorisation.

*Apart from these recommendations, this report provides an opportunity to ask the public authorities to raise the awareness of users as regards the precautions required when crossing level crossings, and to extend the distribution of the information note from Setra on road works close to level crossings to all contractors and clients who carry out works that may affect the safety of a level crossing.*

**Group of persons hit by an RER B commuter train  
on 7 March 2009  
close to the Stade de France (93)**



On Saturday 7 March 2009, at around 23.25, a group of 12 persons walking on the rail tracks near the station of La Plaine Stade de France was hit by an RER B train travelling on track 1 bis in the direction of Mitry-Claye station.

These people belonged to a group of supporters from Nord-Pas de Calais who had come to watch a Lille-Lyon football match at the Stade de France and were trying to reach their coach parked in a car park around 600 m from the stadium.

Two people were killed in this accident, three were seriously injured, and one had minor injuries.

The direct and immediate cause of the accident is the entry of the group of supporters on to railway land which was not open to the public.

Four causal factors led to this intrusion:

- the disorientation of the supporters on the route back to their coaches, as the itinerary they had planned was barred;
- the pressure of time, linked to the timetables set out for the coaches to depart;
- the protection of the service access to the rail bridge, which proved to be insufficient;
- the absence of a perception of danger on the railways on the part of the persons concerned.

Seven recommendations were made on the basis of the analysis of these factors:

- one recommendation relating to the control of the movements of spectators between the Stade de France and the areas where the coaches are parked;
- one recommendation on the timetables for returning to the coaches;
- three recommendations concerning the closures of railway land and the indicators as regards their access;
- two recommendations relating to the identification and security of installations at risk situated close to major stadia and other areas of mass attendance.

## **Appendix 2: Road transport: global summary of investigation reports**

- Collision between a coach and a signalling unit on 14 June, at Thillois
- Accident involving a Polish coach on 22 July 2007, at Notre-Dame-de-Mésage
- Fire on a coach on 23 February 2008, at Les Marches
- Accident involving a coach on 23 May 2008, at Suèvres
- Accident involving a coach on 12 July 2008, at Saint-Ambreuil



**Collision between a coach and a signalling unit  
that occurred on 14 June 2007  
on the A4 motorway at Thillois (51)**



On Thursday 14 June 2007 at around 08.45, a coach registered in Luxembourg, travelling on the A4 motorway in the Strasbourg-Paris direction, hit a mobile signalling trailer unit (FLR – Fleche Lumineuse de Rabattement – Illuminated Arrow Signal) on a site operated by SANEF, the motorway operating company, in the commune of Thillois close to Rheims (51).

The coach then hit the lorry towing this trailer and stopped. In the impact, all of the front right hand side of the passenger compartment of the coach was smashed in.

The final toll for this accident was 3 fatalities, 3 people were seriously injured and 22 had minor injuries.

The direct cause of the accident is the inattention by the driver of the coach who took his eyes off the road to turn a switch on the audio/video system.

Two other factors also played a role:

- The lack of prior familiarisation by the driver of a coach model that was new to him,
- the arrangement of the controls on the audio/video system of the coach was not ergonomic.

Furthermore, as the signalling of the motorway works was not very legible in the particular context, it could also have contributed to the accident.

The investigation report analysed four aspects:

- The organisation of the journey,
- The layout of the controls in the coach,
- The behaviour of the driver,
- The signalling of the motorway works site.

As a result of the analysis, five recommendations were made, one concerning the organisation of journeys by coach, two concerning controls in vehicles, and two others concerning the signalling of works sites using the FLR (illuminated arrow signal).



## **Accident involving a coach that occurred on 22 July 2007 on RN85 at Notre-Dame-de-Mésage (38)**



On Sunday 22 July 2007, at around 9.20, the brakes failed on a coach transporting Polish pilgrims travelling on Route Nationale n°85 (A-road), known as the 'Route Napoléon'; it left the road at the bottom of the Laffrey descent, at Notre-Dame-de-Mésage, and crashed down into the bridge over the river La Romanche and caught fire.

This accident caused the deaths of 26 people including the driver; 24 others were hospitalised, 12 of whom were treated as absolute emergencies.

The two direct immediate causes of the accident are, firstly, the poor condition of the brakes on the coach, and secondly, inappropriate driving: travelling on a descent prohibited to coaches at excessive speed and inappropriate use of the braking system.

Three other factors are likely to have played a role in this accident or to have influenced its severity:

- the absence of sufficient alert to the malfunctioning of the brake disks and speed reduction system of the vehicle, which would have allowed the driver to stop the vehicle before the braking system failed totally;
- the use of the GPS navigation system whose displayed itinerary included the Laffrey descent;
- the absence of rescue facilities in the descent which would have reduced the severity of the accident.

As a result of the analysis of the causes and factors of the accident, 11 recommendations were made:

- 4 concern the signs and system of control/sanction;
- 3 concern the training and awareness of drivers of HGVs to travelling in sections of road with steep gradients;
- 2 concern the vehicles, particularly alerts to show problems with the braking system;
- 1 concerns 'GPS' navigation systems;
- 1 concerns the facilities of a rescue infrastructure.

Furthermore, this report provides an opportunity to point out again the need for a points system to be included in European discussions on the cross-border application of the control-sanction, and for high-quality training of all European drivers in the maintenance of their coaches.

**Fire on a coach that  
occurred on 23 February 2008  
on the A43 motorway at Les Marches (73)**



On Saturday 23 February 2008 at around 21.45, a coach registered in Belgium, travelling on the A43 motorway in the direction of Chambéry, caught fire shortly before arriving at the toll barrier at Chignin, in the commune of Les Marches (Savoie).

It was a double-decker bus with 91 seats (including driver and guide) carrying 50 passengers and 2 drivers.

There were no victims in the fire, but the coach and baggage were entirely destroyed.

The direct causes of this fire were:

- the disengagement between the coach's heating system and its exhaust pipe, caused by the rear overhang of the coach catching on the carriageway that morning during a delicate manoeuvre. The exhaust gases at high temperature (>320°C) then came into contact with greasy residues and fuel, impregnated in the surfaces of the heating compartment and caused them to ignite;
- the failure to check sufficiently the condition of the parts affected by the overhang being caught, before the next long distance part of the journey.

In addition, the following factors aggravated the risk presented by this fire:

- the absence of an automatic fire detection system;
- the vulnerability of coaches to fire (flammability of the materials, general layout);
- only one staircase to evacuate the upper deck.

The report made three recommendations concerning fire detection and automatic extinguishing equipment in vehicles transporting the public, the fire resistance of the materials used in the manufacture of the vehicles and the access from the upper deck for double decker vehicles.

**Accident involving a coach  
that occurred on 23 May 2008  
on the A10 motorway at Suèvres (41)**



On Friday 23 May 2008 at around 02.35, a coach with 30 passengers and 2 drivers and pulling a trailer, was travelling at about 95 km/h on the A10 motorway in the commune of Suèvres (Loir-et-Cher), from Tiznit (Morocco), from where it had set out on 21 May at 06.00 for Les Mureaux (Yvelines), the head office of the operating company.

It suddenly swerved to the right, hit and damaged the metal crash barrier, straddled a 15 m long concrete barrier and ended up embedded in a bridge pier at DM (Distance Marker) 140.658.

Despite the fact that major rescue resources were mobilised very rapidly, the accident caused the deaths of 7 occupants, and 19 others were injured, 14 seriously.

The direct immediate cause of this accident was that the front right tyre burst, due to the cumulative effect of travelling for a long period on tyres that were too soft (probably due to overloading and/or under-inflation); the consequences of this (damage to the ply of the tyres) could have been accelerated by the excessive wear of the tyre linked to a fault in the balancing of the front axle (and previously by the advanced state of damage of the steering ball joint).

The determining organisational cause was the chronic tendency to commit offences on the part of the company, particularly in areas likely to have a serious effect on transport safety (non-compliance with the drivers' working conditions; excessive speed; overloading; poor condition of tyres, failure to maintain vehicle).



The results of the analysis led to an examination of five areas where preventive recommendations should be made:

- regulations relating to tyres and their control procedures;
- the conditions for exercising the profession of public transport carrier and their control and sanction procedures;
- the co-ordination of the control services in terms of passenger transport by road and in particular making information available;
- passengers in coaches to wear seat belts;
- protective devices near bridge piers.

Five recommendations were made concerning public transport by road, in the three first areas mentioned above; they aim to make controls more efficient, provide more effective regulation of the conditions for carrying out the profession and improve the coordination of the administrative services.

## **Accident involving a coach that occurred on 12 July 2008 on the A6 motorway at Saint-Ambreuil (71)**



On Saturday 12 July 2008, shortly before 09.00, a coach transporting twenty-four young footballers aged between eight and eleven, and the six adults accompanying them, travelling on the A6 motorway towards Paris, overturned on the motorway at Saint-Ambreuil, after several impacts involving the coach and two light vehicles which were overtaking it.

The accident resulted in one fatality, nine people were seriously injured and twelve had minor injuries.

The direct causes of the accident were:

- inattention or hypo-vigilance (falling asleep at the wheel) leading to a departure from the trajectory and the initial impact between the coach and one of the cars involved;
- insufficient distance between the light vehicles involved, related to driving in convoy.

The fact that the passengers in the coach were not wearing seatbelts, which aggravated the outcome of the accident as several of those dead or seriously injured were thrown from the vehicle, is linked to two factors:

- the absence of a seat belt on most of the seats in the coach;
- failure to wear seatbelts by the passengers occupying the seats which were fitted with them.

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Following this accident, the Secretary of State for Transport set out two measures concerning the broadening of the prohibition to operate child transport on 'black' days and the identification of passengers on coaches.

The BEA-TT made two recommendations concerning:

- private coaches used to transport children to be fitted with seatbelts;
- information to drivers on the particular risks of driving in convoy on the motorway.



### **Appendix 3: Transport on inland waterways: global summary of investigation reports**

- Loss of container by the powered craft Arc en Ciel on the Seine
- Accident to passenger boat Bellriva at the Rhinau lock
- Collision of two passenger boats at Avignon



## **Loss of containers by the powered craft Arc en Ciel that occurred on 22 April 2007 on the Seine**



On 22 April 2007, at around 10.30, the powered craft Arc en Ciel which was travelling on the Seine after loading containers, on 20 April at Gennevilliers, with a destination of Le Havre, lost 30 containers immediately downstream of Saint-Pierre-du-Vauvray close to Herqueville.

Shortly after the exit of the lock of Notre-Dame de la Garenne, at the beginning of a sharp bend to the right, the boat listed heavily to port. It was at that moment that some of the containers on the deck fell into the water.

Because of the danger due to the presence of drifting containers and others foundering, the Seine Navigation Service prohibited navigation between the locks of Notre-Dame de la Garenne and d'Amfreville. Navigation was not re-established until 29 April 2007

The boat, which only sustained limited damage, was able to moor at the pontoon at Herqueville.

There were no victims and no pollution.

The accident was the direct consequence of the instability of the Arc en Ciel, due to the weight and arrangement of its load.

The failure to check the stability of the boat before it got under way also appears to be a direct cause of the accident .

The failure to carry out checks appears to be linked to three factors:

- the absence of a regulatory requirement to make such a check, except for the part of the trip in the maritime waters of the Seine, in a form that was not clear in any case;
- the lack of training of the boat master on aspects relating to stability;
- the absence of documentation on board on a method of checking the stability in a form that the boat master could understand.

Two factors contributed to the instability caused by the loading:

- the unsuitable nature of the software used by the owner to check the loading plan;
- the lack of checking and sanction in the event of loading not being in compliance with the loading plan or a significant difference between the weight of the container loaded and the information given by the loader.

Seven preventive recommendations were made following the technical investigation concerning four groups of factors that were identified:

- the regulations concerning the stability of loads on boats and checks to be made to ensure that these regulations are applied, with three recommendations;
- the training of staff operating boats so that they take into account the stability regulations, with one recommendation;
- the operation of the logistics chain and knowledge of the characteristics of the containers, by all those involved in transport and handling, with two recommendations;
- feedback, in cooperation with other European countries, with one recommendation.

## **Accident to the passenger boat Bellriva that occurred on 26 May 2007 on the Rhine at the Rhinau lock (67)**



On 26 May 2007 at around 08.30, the passenger boat Bellriva, flying the German flag, which was cruising on the Rhine, an international waterway, with 174 passengers on board and 34 crew, hit the wall under the upstream gate of the small chamber of the Rhinau lock on French territory (Bas-Rhin).

Twenty-two passengers were injured in the accident. Twelve were taken to the hospitals in Strasbourg and Sélestat.

Substantial damage was caused to the boat and to a lesser extent to the chamber of the lock. The operation of the lock had to be stopped for several days, so that temporary repairs could be made.

The boat was able to travel to a yard in Cologne for repairs.

The following became apparent from an analysis of the facts, interviews and evidence:

- the direct cause of the accident was the lack of control of the boat commands by the boat master, who did not transfer the commands correctly to the remote position and was thus in this remote position with inoperative commands;
- the absence of any check by the owner that the newly appointed boat master had acquired a sufficient level of knowledge of the boat also constitutes a cause of the accident.

Two other factors may have contributed to this accident:

- flawed ergonomics of the wheel house;
- lack of organisation of feedback on accidents occurring on international waterways such as the Rhine, which meant that previous similar incidents were not usually taken into account.

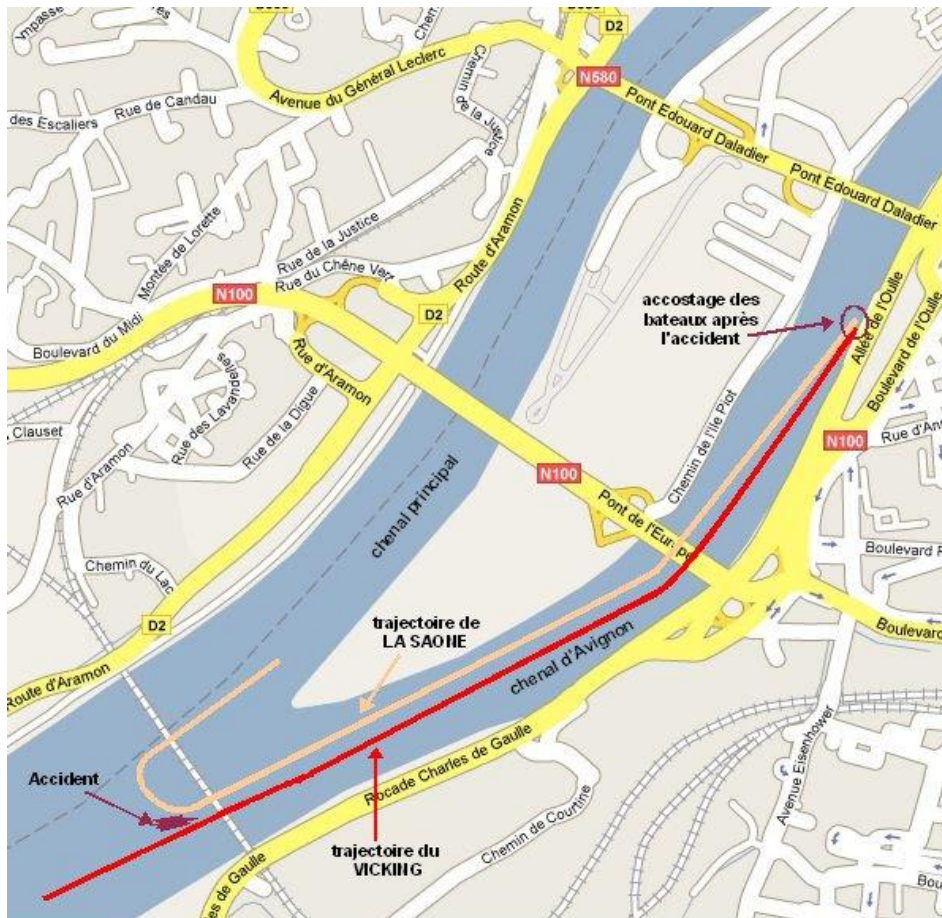
Four recommendations were made following the analysis of the causes of the accident and the associated factors to prevent similar accidents from occurring. They relate to the following:

- knowledge by the boat master of the boat and commands (two recommendations);
- actions taken by the crew and navigation parameters to be recorded;
- feedback on accidents and incidents involving navigation on the Rhine.

Depending on their nature, these recommendations were sent to the DGITM, (in France in charge of waterway regulations), to VNF, manager of the infrastructures of waterways, or to the French (CAF) or European (UENF) professional owners' organisations.



## Collision of the passenger boats La Saône and Viking Burgundy that occurred on 23 May 2008 on the Rhône at Avignon (84)



French	English
accostage des bateaux après l'accident	berthing of boats after accident
trajectoire de LA SAONE	trajectory of LA SAONE
trajectoire du VIKING	trajectory of the VIKING
accident	accident
chenal principal	principal channel
chenal d'Avignon	Avignon channel

### KEY

On 23 May 2008, at 22.00, the river passenger boat LA SAONE, which belongs to the Compagnie des Grands Bateaux de Provence, making its usual trip between Villeneuve-lès-Avignon and Avignon, with 77 passengers and 2 crew on board, collided with a river cruise ship the VIKING BURGUNDY, which was returning from Arles and going towards Avignon, with 136 passengers and 35 crew on board.

The impact caused material damage, mainly on the VIKING BURGUNDY. The two boats were able to reach the nearest quay on their own.

Sixteen people suffered minor injuries, only two of whom required hospitalization for one day for additional tests.

After an inspection by experts, both boats were authorised to resume their activity, LA SAONE without any major work, and the VIKING BURGUNDY with two cabins unavailable and closed until the end of the season.

There was no interruption to navigation.

The main cause of the accident was the lack of communication between the two boats, as the boat master of LA SAONE omitted to signal his turning manoeuvre.

This communication could have taken the form of a sound signal or a communication by VHF. The regulations on this boat-to-boat communication should be noted and their correct application should be monitored.

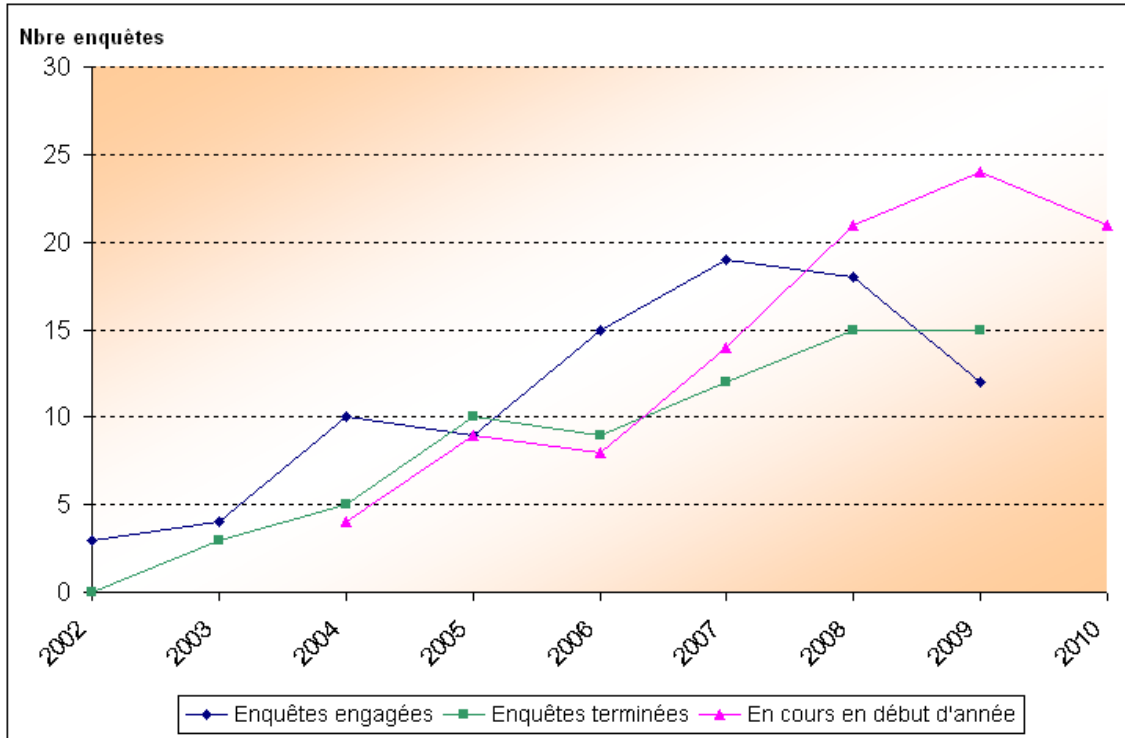
Five recommendations were made following the investigation:

- two concern the application of the rules of the road,
- two concern the communications to be established between boats during crossings and manoeuvres;
- another concerns the procedures for intervention by the emergency services in the event of an accident and prevention exercises.



## Appendix 4: Investigations into accidents and incidents since 2002

Before the creation of the BEA-TT (26 January 2004), the data set out below concerns investigations undertaken by the CGPC prior to the creation of the investigation body, following the law of 3 January 2002 concerning, in particular, post-accident investigations.



\* ou sa préfiguration mise en place de 2002 à janvier 2004

FRENCH	ENGLISH
Nbre d'enquêtes	Number of investigations
Enquêtes engagées	Investigations undertaken
Enquêtes terminées	Investigations completed
En cours en début d'année	In progress at the beginning of the year
*ou sa préfiguration mise en place de 2002 à janvier 2004	*or prior to its creation from 2002 to January 2004

<b>Année</b>	<b>En cours en début d'année</b>	<b>Enquêtes engagées</b>	<b>Enquêtes terminées</b>
2002		3	0
2003		4	3
2004	4	10	5
2005	9	9	10
2006	8	15	9*
2007	14	19	12
2008	21	18	15
2009	24	12	15
2010	21		

*\* non compris l'enquête Fréjus, qui a donné lieu à un rapport provisoire en 2006 et a été clôturée par un rapport complémentaire en 2008*

<b>Year</b>	<b>In progress at the beginning of the year</b>	<b>Investigations undertaken</b>	<b>Investigations completed</b>
2002		3	0
2003		4	3
2004	4	10	5
2005	9	9	10
2006	8	15	9*
2007	14	19	12
2008	21	18	15
2009	24	12	15
2010	21		

\* not including the Fréjus investigation, which resulted in a preliminary report in 2006 and ended with a complementary report in 2008

**List of investigations undertaken since 2002**

<b>Date</b>	<b>Accident</b>	<b>Fatalities</b>	<b>Mode*</b>
05.11.2002	Pile-up on the A10 at Coulombiers (86)	8	R
06.11.2002	Fire in a coach on the Paris-Munich train at Nancy (54)	12	RY
2002	TVR Nancy and Caen	0	GT
27.01.2003	Collision of train at La Biogna (06)	2	RY
17.05.2003	Accident involving a coach on the A6 at Dardilly (69)	28	R
20.09.2003	Incident on the RER D at Villeneuve Triage (92)	0	RY
18.11.2003	Collision of an HGV involving a TMD, RN 165 at Nivillac (56)	2	R
18.01.2004	Train of barges at La Voulte sur Rhône (07)	1	W
15.02.2004	Moving snow pavement at Val Cenis (73)	1	C
05.04.2004	Railway collision at Saint-Romain-en-Gier (69)	0	RY
17.04.2004	Electrocution on a catenary at Saint Nazaire (44)	1	RY
22.06.2004	Coach on the RN10 at Ligugé (86)	11	R
28.07.2004	The 'Santina' in the lock at Blénod lès Pont à Mousson (54)	0	W
26.08.2004	The 'Foehn' at Nogent sur Seine (10)	0	W
29.08.2004	Pile up with coach on the A63 at Belin-Béliet (33)	8	R
30.08.2004	Overtaking of trams in Rouen (76)	0	GT
24.11.2004	Collision between a corail train and an articulated truck at Millau (12)	0	LC
15.01.2005	Coach on the RN 7 at Saint Martin d'Estréaux (42)	0	R
16.02.2005	Collision of two TER (Regional Express Trains) at Longueville (77)	0	RY
19.04.2005	HGV on RD8 at Saint Nicolas du Tertre (56)	2	R
25.04.2005	Coach on the A13 at Bouafle (78)	3	R
27.05.2005	Railway collision at Francardo (02)	0	RY
04.06.2005	Fire on an HGV in the Frejus tunnel (73)	2	R
09.06.2005	Accident on the LC at St-Laurent-Blangy (62)	0	LC
06.08.2005	Fire on metro rakes in the Simplon station (75)	0	GT
August 2005	Fires on buses on the GNV at Nancy and Montbéliard	0	R

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\* RY=Railway; R=Road; GT=Guided Transport; LC=Level Crossing; C=Cableway; W=Waterway

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20.01.2006	Accident involving a coach on the RD35 at Arles (13)	1	R
01.02.2006	Pile up on the A25 at Météren (59)	2	R
25.02.2006	Derailment of a train at Saint-Flour (15)	0	RY
28.03.2006	The cruiser 'Camargue' at Le Pont de la Voulte (07)	0	W
26.05.2006	Collision of a car and HGV RN 134 at Ogeu-les-Bains (64)	5	R
13.06.2006	Derailment of a train at la Ferté-sur-Chiers (08)	0	RY
28.06.2006	Virtual collision in the station at Tencin-Theys (38)	0	RY
24.07.2006	Derailment of a works train at Culoz (73)	0	RY
24.07.2006	Collision involving 2 HGV & a camper van on RN10 at Reignac (16)	5	R
07.08.2006	Accident involving a tanker lorry on the A55 at Châteauneuf-les-Martigues (13)	1	R
05.09.2006	Accident involving a coach on the A1 at Brasseuse (60)	4	R
08.08.2006	The river boat 'Provence' at Gervans (26)	0	W
11.10.2006	Collision involving a freight train and a RET at Zoufftgen (57)	6	RY
18.10.2006	Collision involving a RET and an abnormal load at Domène (38)	0	R
10.11.2006	Accident involving a passenger in the station at Chaville (92)	1	RY

	Derailment of a maintenance vehicle in the station at Carcassonne (11)	0	RY
01.03.2007	Accident involving a passenger in the station at Villeneuve-Triage (94)	1	RY
13.03.2007	Collision between an HGV and a school bus at Angliers (89)	1	R
04.04.2007	Crane on boat catching on to a high voltage power line on the Rhone at Pierre-Bénite (69)	0	W
05.04.2007	Train hitting a buffer in Paris-Est station (75)	0	RY
22.04.2007	Self-propelled barge lost its load on the Seine at Porte-Joie (27)	0	W
26.05.2007	Accident involving a cruiser in the lock at Rhinau (67)	0	W
04.06.2007	Collision involving a tram and a car at Saint-Herblain (44)	1	GT
14.06.2007	Collision involving a coach and a SANEF vehicle at Thillois (52)	2	R
11.07.2007	The vessel 'Natissa' ran aground near Chasse-sur-Rhône (69)	0	W
22.07.2007	Accident involving a coach at Notre-Dame-de-Mésage (38)	26	R
08.08.2007	Accident involving a coach at Ghyvelde (59)	3	R
13.08.2007	Train hit a buffer in the station at Versailles (78)	0	RY
14.08.2007	Accident involving a bus in Paris 19th (75)	0	R
09.11.2007	Derailment of a train at Pertuis (84)	0	RY
21.11.2007	Head-on collision between 2 trains at Barchetta (2B)	0	RY
26.11.2007	Collision between a train and an HGV on the LC at St-Médard-sur-Ille (35)	0	LC
03.12.2007	Collision between and train and a car on the LC at Cadaujac (33)	3	LC
19.12.2007	Collision between a train and an abnormal load on the LC at Tossiat (01)	1	LC

	Accident involving a school bus on the RD765 at Esquibien (29)	0	R
25.01.2008	Collision between a train and a car on the LC at Neufchâteau (88)	4	LC
19.01.2008	The vessel CARINA ran aground on the Saône at Trévoux (01)	0	W
23.02.2008	Fire on a coach on the A43 at Les Marches (73)	0	R
26.02.2008	SNCF employee hit on the LC at Bayard (52)	1	LC

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01.03.2008	Passenger fell out of a cable car at Chamonix (74)	1	C
24.03.2008	Collision between a minibus and cars on the A9 at Gigean (34)	7	R
26.04.2008	Brake failure of a freight train at Montauban (82)	0	RY
23.05.2008	Accident involving a coach on the A10 at Suèvres (41)	7	R
23.05.2008	Collision involving two passenger boats on the Rhone at Avignon (84)	0	W
02.06.2008	Collision between a train and a school bus on the LC at Allinges (74)	7	LC
24.06.2008	Fire on a train travelling from Pignes to Mézel (04)	0	RY
07.07.2008	Collision between a train and an HGV on the LC at la Roche-en-Brénil (21)	0	LC
12.07.2008	Collision between a coach and an LV on the A6 at Saint-Ambreuil (71)	1	R
11.09.2008	Fire on a Eurotunnel freight shuttle in the Channel Tunnel	0	RY
13.09.2008	A tourist launch overturned after a collision with a 'bateau-mouche' on the Seine in Paris	1	W
19.10.2008	Pile up on the A4 at Courcelles-Chaussy (57)	1	R
18.11.2008	TGV bridge hit by the NATISSA at Mornas (84)	0	W

03.02.2009	Collision between a coach and a RET on an LC at Nevers (58)	0	LC
05.03.2009	Collision between a coach and an HGV on the A9 at Pollestres (66)	0	R
07.03.2009	Pedestrians hit by RER B at the Stade de France (93)	2	RY
08.04.2009	Collision between 2 HGV carrying dangerous goods on the A49 at St-Quentin-sur-Isère (38)	0	R
20.05.2009	Collision of 2 freight trains in the tunnel at Livernant (16)	0	RY
03.07.2009	Collision between a train and an agricultural trailer at Boisseuil (87)	0	RY
01.08.2009	Collision between a minibus and an LV on the A20 at Bonnac-la-Côte (87)	5	R
25.09.2009	Collision between a train and an HGV on the LC at Laluque (40)	0	LC
08.10.2009	Collision between a tram and an LV at Valenciennes (59)	0	GT
31.10.2009	Pile up on the A54 at Bellegarde (30)	1	R
24.11.2009	Derailment of a wagon carrying dangerous goods at Orthez (64)	0	RY
20.12.2009	Derailment of an RER C train at Choisy-le-Roi (94)	0	RY



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## **Appendix 5: Follow-up to the implementation of the BEA-TT recommendations in the railway sector**

### ***Appendix 5-1: Rail transport: recommendations monitored by the EPSF***







## **Monitoring Department Database Division**

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**Follow-up by the EPSF of the recommendations of the  
BEA-TT**

**Drafted by: S.Quéva**

Follow-up by the EPSF of the recommendations of the BEA-TT

## List of changes

Version	Date	Subject of the change	Author
1	22/08/2008	Creation	S.Quéva
2	19/08/2009	Updates and additions	S.Quéva
2.1	18/09/2009	Updates	S.Quéva
3	13/09/2010	Change to the structure of the document in order to classify the events by year of appearance of the report. Updates from the latest information obtained.	S.Quéva

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## **Introduction**

This document is the result of the follow-up, by the EPSF, of the recommendations made by the BEA-TT in the accident reports published by it. This follow-up uses two sources of information. The first is the inspections and audits made as part of its remit, defined in Decree no. 2006-369 of 28 March 2006, to monitor and check the authorisations issued. The second source of information is the annual safety report sent to the EPSF by the infrastructure manager and railway companies in accordance with Article 17 of Decree No. 2006-1279 of 19 October 2006.

Follow-up by the EPSF of the recommendations of the BEA-TT

## 1 Reports appearing before 2007

For each report, the recommendations are classified as follows:

- recommendation enforced (**green**);
- recommendation partially enforced (**blue**). This status is given to the recommendations sent to several entities and where at least one of these entities has enforced the recommendation;
- recommendation in progress (**orange**). This status concerns the recommendations for which the initiatives undertaken do not yet enable the recommendation to be considered as enforced or for which the EPSF has not yet been informed of the initiatives in progress.

Amongst the reports appearing before 2007, only three accident reports present recommendations stated as being not yet enforced by the entities concerned.

### 1-1 *Saint-Laurent-Blangy – 09/06/06*

Collision involving an RET (Regional express train) and an HGV on a level crossing at Saint-Laurent-Blangy On Thursday 9 June 2005, a Regional Express Train collided with an articulated lorry carrying gas cylinders which was blocked on level crossing No 83 at Saint-Laurent-Blangy in the Pas-de-Calais region. Despite an extensive incident, due to the explosion of the load, none of the 150 passengers on the RET was injured.
<b>BEA-TT report dated 28/12/06</b>

<b>Recommendation R1 (CG 62, RFF)</b> Continue to examine solutions (change in level on site or new route) to remove this LC, in order to reach a decision and completion as quickly as possible.
<b>Initiatives undertaken</b> [SNCF letter of response to BEA-TT report – 17/12/07] RFF is looking at the industrial area of St Laurent Blangy from now until the end of the second quarter of 2007, with two objectives in mind: <ul style="list-style-type: none"><li>to remove the level crossing by building a rail bridge close to the current crossing;</li><li>to reduce the traffic of HGV on the LC, particularly for dangerous goods.</li></ul>
<b>Status of initiatives</b> [Appendix 9 – RFF 2009 Annual Report - 10/06/2010] In 2009, a meeting took place between RFF and the urban community of Arras. At the end of 2009, a finance agreement for the study was signed. A priori, the study should begin before the end of 2009.

Apart from the recommendation mentioned above, all the recommendations in the report that appeared in 2006 have been enforced.

Follow-up by the EPSF of the recommendations of the BEA-TT

## **1-2 Saint-Flour – 25/02/06**

<p>Derailment of a Corail express train in Saint-Flour. On Saturday 25 February 2006, express train 5941 travelling from Paris to Béziers derailed at KP 692.480 in the Saint-Flour district. The locomotive and the first carriage were projected against the rock face. Of the 52 passengers aboard the train, two suffered minor injuries.</p>
<b>BEA-TT report dated 02/11/06</b>

<p><b>Recommendation R1 (SNCF)</b> Devise a methodology making it possible to define, across lines fitted with DC rails, in accordance in particular with the configuration, track condition, route, topography, and the type of signalling, “special zones” in which the speed of trains would be limited to a level making it possible to avoid derailment in the event of a break in the rail.</p>
<p><b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Development of a tool for classifying UIC lines 7 to 9</p>
<p><b>Status of initiatives</b> [Sheet Q – RFF Annual Safety Report] Assessment of lines 7 to 9 undertaken A new assessment tool for all lines of groups 7 to 9 AV was created and is now in use; its assessment criteria include in particular, the presence of DC rails. It shall be updated every year.</p>
<p><b>Recommendation enforced.</b></p>

<p><b>Recommendation R2 (RFF, SNCF)</b> In the event that a defect is established in the DC rail which requires the replacement of the damaged part, insofar as possible welding must be avoided and instead the rail is to be replaced in full.</p>
<p><b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Constitution of reserve stocks of the various types of DC rails [RFF Annual Report – 29/05/2009] Wherever possible, replace DC rails without thermit welding.</p>
<p><b>Status of initiatives</b> [Sheet Q – RFF Annual Safety Report] Constitution of stocks across two operations in 2007: Toulouse-Auch and Neussargues-St Chely d’Apcher. PAS sheet 2008-6 [Appendix 9 – RFF 2009 Annual Report – 10/06/2010] The monitoring of the state of the stocks was included in track commission at the end of March 2009</p>

<p><b>Recommendation R3 (RFF, SNCF)</b> On sections of lines fitted with DC rails, prioritise the widespread replacement of sleepers in combination with lifting of the ballast.</p>
<p><b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Systematically combine lifting of the ballast with any widespread replacement of sleepers [RFF annual report - 29/05/2009] Action identical to Sheet Q of the RFF 2008 annual report</p>

Follow-up by the EPSF of the recommendations of the BEA-TT

**Status of initiatives**

[Sheet Q – RFF Annual Safety Report]

In 2007, all operations (major maintenance and replacement) made provision for lifting. PAS sheet 2008-7  
Appendix 9 – RFF 2009 Annual Report – 10/06/2010

The action plan provided for a survey of the annual sleeper requirements. This task, planned for 2008, could not be completed due to operations in 2008, it is to be followed up in 2009. The second task concerned the organisation of a Stoneblower experiment which took place during the first half of 2009. The outcome of the experiment was satisfactory, the economic relevance is currently being studied.

**Recommendation R4 (RFF, SNCF)**

Devise a programme to bring the lines open to passenger traffic and fitted with DC rails up to the required standard.

In the long term, organise the progressive replacement of DC rails by Vignole rails given the ageing of this stock, its growing maintenance cost, and the high risk of derailment in the event of a break in the rail.

**Initiatives undertaken**

[Sheet Q – RFF Annual Safety Report]

In the long term, replacement of all DC rails by Vignole rails.

[RFF Annual Report – 29/05/2009]

Backfitting programme for AV lines fitted with DC rails.

**Status of initiatives**

[Sheet Q – RFF Annual Safety Report]

Programme for replacement:

– 2007: €34M

– 2008: €48M planned

PAS sheet 2008-8

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

The 2008/2013 plan has been extended to 2015 due to the joint effect of the performance contract and the recovery plan.



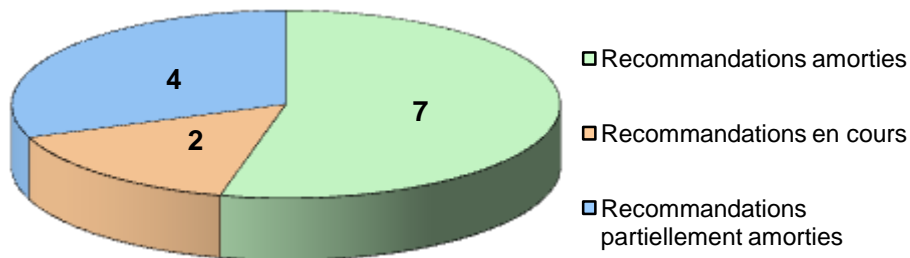
Follow-up by the EPSF of the recommendations of the BEA-TT

## 2 Reports appearing in 2007

In 2007, 13 recommendations (included in four reports) were issued by the BEA-TT for the rail sector for which the EPSF has the role of national safety authority. The diagram below shows the status of these recommendations, classifying them as follows:

- recommendation enforced (green);
- recommendation partially enforced (blue). This status is given to the recommendations sent to several entities and where at least one of these entities has enforced the recommendation;
- recommendation in progress (orange). This status concerns the recommendations for which the initiatives undertaken do not yet enable the recommendation to be considered as enforced or for which the EPSF has not yet been informed of the initiatives in progress.

### États des recommandations émises dans les rapports parus en 2007



FRENCH	ENGLISH
états des recommandations émises dans les rapports parus en 2007	status of recommendations made in the reports appearing in 2007
recommandations amorties	recommendations enforced
recommandations en cours	recommendations in progress
recommandations partiellement amorties	recommendations partially enforced

Follow-up by the EPSF of the recommendations of the BEA-TT

## **2-1 La Ferté-sur-Chiers – 13/06/06**

Derailment of a goods train in La Ferté-sur-Chiers On Tuesday 13 June 2006, the last wagon of an iron ore train, travelling from Dunkirk to Dieulouard, derailed in the La Ferté-sur-Chiers district. The accident caused only one minor injury (to a maintenance worker) but damaged 10 km of tracks.
<b>BEA-TT report dated 07/09/07</b>

<b>Recommendation R1 (SNCF)</b> When a wagon undergoes accidental repairs and intervention is necessary on the Lenoir damping system (detection of an insufficient "A" rating), specify the number of the axle box concerned for the requirements of both the initial inspection and the repair.
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 17/12/07] SNCF guideline amended accordingly
<b>Status of initiatives</b> [Appendix 3 – 2007 SNCF Annual Report – General aspects – 28/05/2008]
<b>Recommendation enforced</b>

<b>Recommendation R2 (SNCF, RFF)</b> Across the national rail network, identify areas with similar track geometry to that of KP 190.200 of the northeast artery in June 2006 (close and regular succession of straightening and banking defects that are likely to lead to a dynamic resonance effect; simultaneous presence of a bending defect as an alert value adding to the bend inherent in the spiral at the end of turns). Devise rules for track intervention to correct these situations (correction of straightening problems according to the values quantified after detection of repetitive and periodic straightening defects at the end of bends).
<b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Computerisation of the readings of geometry defects between 10 and 30 m. Opening of a project researching correlation of geometry defects with the behaviour of wagons. [SNCF Letter of response to BEA-TT report – 17/12/07] Definition of an alert threshold planned for 2009/2010
<b>Status of initiatives</b> [Appendix 9 – RFF 2009 Annual Report – 10/06/2010] PAS sheet 2008-5 The computerisation of the tool was delayed in the processing of the algorithm. The time limit for this task has been postponed until June 2009.

<b>Recommendation R3 (SNCF, RFF)</b> Remind employees who are directly concerned by the running of trains of the usefulness of the ground-train radio for emergency situations, and the implementation of emergency procedures for those present on the tracks.
<b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] The deployment of GSM-R will change the means of communication available to GID and EF employees. In this framework, new procedures will be implemented. [SNCF letter of response to the BEA-TT report – 17/12/07] Feedback sheets reiterating the steps and measures making it possible to stop the trains in the event of an emergency

Follow-up by the EPSF of the recommendations of the BEA-TT

**Status of initiatives**

[RFF Annual Safety Report – 29/05/2009]

PAS sheet 2008-17 indicates three stages, the first of which is completed:

- get feedback on La Ferté and decide whether the procedures have to be modified or recalled;
- obtain the appointment of a GSM-R maintenance pilot within the GID;
- define and have validated the means of communication and their functions made available to employees along lines as part of GSM-R

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

A six-month experiment starting from mid-March 2009 took place on 2 sites with the aim of defining and validating the means of communication and their functions made available to employees along the lines as part of GSM-R. Feedback on this experiment is available a priori from the end of June 2009.

[Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]

**Recommendation enforced**

Follow-up by the EPSF of the recommendations of the BEA-TT

## **2-2 Tencins-Theys – 28/06/06**

<p>Near collision involving two trains in Tencin-Theys station On the morning of 28 June 2006, a equipment train arrived in Tencin-Theys station. On the same track, the Chambéry–Grenoble Regional Express Train was stationary pending permission to leave. The driver of the material train used the emergency brakes and managed to stop some twenty metres behind the RET, thereby preventing an accident. Although there were no casualties or material damage, the consequences could have been serious under slightly different circumstances.</p>
<b>BEA-TT report dated 09/11/07</b>

<b>Recommendation R1 (SNCF and RFF)</b> Move the pedal for Pg2 as far upstream as possible from the V2/V4 switch and examine equivalent situations across the national rail network in order to apply measures of the same type following local analysis of the manoeuvres.
<b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Risk analysis of similar situations Movement of the pedal planned in works in early 2009 [SNCF letter of response to the BEA-TT – 13/02/08] The installations will be modified with the agreement of RFF A letter has been sent to the regions drawing their attention to this type of situation. A study will lead these situations to be addressed on a case-by-case basis. [Annual RFF report – 29/05/2009] When planning work, include the movement of the pedal at Tencin
<b>Status of initiatives</b> [Appendix 3 – 2007 SNCF Annual Report – General aspects – 28/05/2008]
<b>Recommendation enforced</b> [Appendix 9 –RFF 2009 Annual Report – 10/06/2010] The technical plan for the neutralisation of switch B (VS access) has been prepared. The technical verification of the plan will be produced by the end of January 2010 which will allow neutralisation on the ground to be completed (a priori end of March 2010). For trains in VUT, if applicable, instruction S3B will be changed to include the obligation to install a stop board upstream of the pedal before use by VUT (G/H) These 2 provisions will prevent any possibility of a train travelling in the opposite direction from activating the pedal concerned at the wrong time and it will therefore not be necessary to remove it.

<b>Recommendation R2 (SNCF and RFF)</b> Modify the control circuit of disk D2 by having it close automatically with the occupation of at least one of the two zones of track 2 of Tencin-Theys station.
<b>Initiatives undertaken</b>
<b>Status of initiatives</b> [Appendix 3 – 2007 SNCF Annual Report – General aspects – 28/05/2008]
<b>Recommendation enforced</b> [Sheet Q – RFF Annual Safety Report] Modification carried out
<b>Recommendation enforced</b>

<b>Recommendation R3 (SNCF)</b> Remind traffic employees that, whilst they have not handed over their service, they must coordinate all interventions by making the tasks of all parties clear.
<b>Initiatives undertaken</b> Letter sent to the regions Fact sheet on the topic of service handovers is in the process of being finalised

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Follow-up by the EPSF of the recommendations of the BEA-TT

**Status of initiatives**

[Appendix 3 – 2007 SNCF Annual Report – General aspects – 28/05/2008]

**Recommendation enforced**

Follow-up by the EPSF of the recommendations of the BEA-TT

## **2-3 Chaville – 10/11/06**

<p>Passenger accident in Chaville Rive Droite station On Friday 10 November 2006, following traffic problems and on an exceptional basis, local train 113473 did not stop at Chaville Rive Droite station. A passenger then activated the alarm signal, opened a door, and jumped from the moving train. When falling, he struck a concrete post on the station platform and was seriously injured. He died shortly afterwards.</p>
<b>BEA-TT report dated 09/11/07</b>

<p><b>Recommendation R1 (SNCF)</b> Study, for the rolling stock set to undergo significant workshop maintenance, modifications making it possible to limit the possibility of opening the doors manually after an alarm signal has been activated to situations in which the train is travelling below the lowest detectable speed and devise a programme for implementing these modifications.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 11/02/08] An inventory was undertaken. Several trains are already fitted therewith, and others are in the process of being modified or this has been scheduled. A feasibility study was requested from the Equipment Department for equipment that has already been overhauled. No modification is envisaged for equipment that is set to be withdrawn shortly.</p>
<p><b>Status of initiatives</b> [2007 SNCF Annual Report – Rail Operation Assignments – Appendix 3 – Investments made in 2007]. In 2007, continuation of the investments: - lateralisation of the lights presuming the opening of the doors in Transilien suburban trains; - management of the lines of the doors of Z2 stock; and - blockage of the control for the emergency opening of the doors when the train is running. During “comfort” operations of Z2N trains (Z20500) the function of the doors is changed to keep them locked in the event that the intercom alarm signal (SAI) is used whenever the speed reaches 10 kph in acceleration and 6 kph in deceleration. [Appendix 3 – SNCF Annual Report for 2007 – General aspects – 28/05/2008] Following an inventory on the rolling stock concerned: for the Z20500, a modification order was drafted; 27% completion rate as at 01/12/08. For the Z5600 and 8800, a modification order is being drawn up and shall be applied as from the 1st quarter of 2010. For the Z6400 and VB2N, no modifications are planned. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] Initiatives being deployed.</p>

<p><b>Recommendation R2 (SNCF)</b> Revise and clarify the regulations that apply to route changes by strictly limiting the cancellation of regular stops, particularly after the departure of the train from its originating station.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 11/02/08] A framework document is in the process of being written. Taking the risks of the various situations into account, it will clarify the methods of implementing measures to be taken when cancelling regular stop(s) on an exceptional basis.</p>
<p><b>Status of initiatives</b> [Appendix 3 – Annual SNCF report for 2007 – General aspects – 28/05/2008] A new directive has been drafted and included in the contractor information system: VO0352 "Modifying the commercial stopping pattern of a "Transilien" train: principles of the elimination of regular stops" of 25/07/08.</p>
<b>Recommendation enforced.</b>

Follow-up by the EPSF of the recommendations of the BEA-TT

## **2-4 Paris-Est – 05/04/07**

On the morning of Thursday 5 April 2007, the Transilien suburban train travelling from Château-Thierry to Paris struck the buffer on track 21 of Paris-Est station at low speed. The material damage was limited but 58 people with minor injuries were attended to by the emergency services
<b>BEA-TT report dated 10/12/07</b>

<b>Recommendation R1 (SNCF)</b> Increase the awareness of the drivers of rolling stock of the various special features of braking control, particularly “full application” and “emergency braking”. This initiative must be included in driving guidelines and in-service training.
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 25/03/08] Training initiative and rewriting of the guidelines for the material concerned by the TM 606 rail brake switch.
<b>Status of initiatives</b> [SNCF letter of response to the BEA-TT report – 25/03/08] Completion by PPOS (professional practice observable in real-life situations) undertaken by DPX (local leaders) for the drivers affected before the end of the authorisation phase (late 2007) Computer-assisted training devoted to TM 606 is under development and will be available from 1 September 2008. [Appendix 3 – Annual SNCF report for 2007 – General aspects – 28/05/2008] Action taken
<b>Recommendation enforced</b>

<b>Recommendation R2 (SNCF)</b> For the “braking system” aspect of the design of future railcars, accept a configuration of the brake switch integrating emergency braking control, as for the equipping of modern railcars (MI2N, AGC, Z-TER).
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 25/03/08] This recommendation is taken up in all the specifications of rolling stock under development or on the verge of being ordered
<b>Status of initiatives</b> [Appendix 3 – Annual SNCF report for 2007 – General aspects – 28/05/2008] Action taken
<b>Recommendation enforced</b>

<b>Recommendation R3 (SNCF)</b> Improve the response to the lessons that can be drawn from feedback: shorten the timeframe for implementing amendments to driving manuals, particularly for a safety function such as braking, and shorten the timeframe for raising the awareness of drivers to subjects that are most keenly affected by the safety of running trains (themes addressed during line accompanied trips and in-service training days).
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 25/03/08] Local and individual management initiatives were preferred to collective action as is shown by the response to recommendation R1 Guarantees of traceability are provided by SITAR (computerised monitoring and traceability of traction skills)
<b>Status of initiatives</b> [Appendix 3 – Annual SNCF report for 2007 – General aspects – 28/05/2008] Action taken
<b>Recommendation enforced</b>



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<p><b>Recommendation R4 (SNCF)</b> For the equipment in Z2N railcars, study the feasibility of reducing the speed threshold below which the passenger doors are unlocked prior to the train stopping. If the feasibility of doing so is demonstrated, amend all Z2N railcars.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 25/03/08] A feasibility study has been underway since the investigation of the Paris-Est incident on 5 April 2007.</p>
<p><b>Status of initiatives</b> [Annexe 3 – 2007 SNCF Annual Report – Rail Operation Assignments – 28/05/2008] During “comfort” operations of Z2N trains (Z20500) the function of the doors is amended to keep them locked in the event that the intercom alarm signal (SAI) is used whenever the speed reaches 10 kph in acceleration and 6 kph in deceleration. [Appendix 3 – Annual SNCF report for 2007 – General aspects – 28/05/2008] Action being taken [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] Action being taken</p>
<p><b>Recommendation R5 (RFF, SNCF)</b> For tracks in Paris-Est station receiving trains comprised of Z2N units, study the relevance and feasibility of implementing a system making it possible to absorb a significant proportion of the energy of a train arriving at a buffer at low speed.</p>
<p><b>Initiatives undertaken</b> [Sheet Q – RFF Annual Safety Report] Technical and financial study requested by RFF from IG-T</p>
<p><b>Status of initiatives</b> [Sheet Q – RFF Annual Safety Report] Investment prioritised in accordance with incident rates (low priority) [Appendix 3 - 2007 SNCF Annual Report – General aspects – 28/05/2008] An investment programme was presented. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2020] An investment programme was presented. [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] The project file was completed.</p>

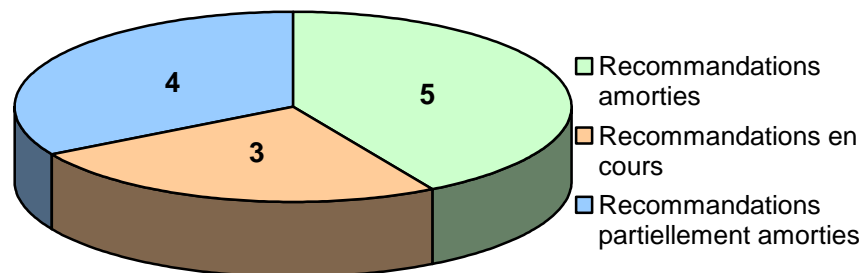
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### 3 Reports appearing in 2008

In 2008, 12 recommendations (included in five reports) were issued by the BEA-TT for the rail sector for which the EPSF has the role of national safety authority. The diagram below shows the status of these recommendations, classifying them as follows:

- recommendation enforced (green);
- recommendation partially enforced (blue). This status is given to the recommendations sent to several entities and where at least one of these entities has enforced the recommendation;
- recommendation in progress (orange). This status concerns the recommendations for which the initiatives undertaken do not yet enable the recommendation to be considered as enforced or for which the EPSF has not yet been informed of the initiatives in progress.

**États des recommandations émises dans les rapports parus en 2008**



FRENCH	ENGLISH
états des recommandations émises dans les rapports parus en 2008	status of recommendations made in the reports appearing in 2008
recommandations amorties	recommendations enforced
recommandations en cours	recommendations in progress
recommandations partiellement amorties	recommendations partially enforced

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### **3-1 Carcassonne – 27/02/07**

<p>Derailment of a maintenance vehicle in Carcassonne station At approximately 12.40 pm on Tuesday 27 February 2007, a maintenance vehicle of the Equipment of the SNCF derailed in Carcassonne station involving track 2 at a point where trains run at 110 kph. This incident did not result in casualties but minor material damage to the track installations was observed.</p>
<p><b>BEA-TT report dated 09/04/08</b></p>

<p><b>Recommendation R1 (SNCF)</b> Remind duty station controllers of the importance of providing full information to employees participating in movements in stations, particularly employees who are less familiar with the installations of the station.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 02/07/08] Feedback sheet at national level under production</p>
<p><b>Status of initiatives</b> [SNCF letter of response to the BEA-TT report – 02/07/08] This sheet will be distributed in the third quarter of 2008. [Appendix 3 – SNCF Annual Report 2007 – General aspects 28/05/2008] <b>Recommendation enforced.</b></p>

<p><b>Recommendation R2 (SNCF, RFF)</b> Examine the implementation of a unified derailer on track 4 between switches 120b and 118a.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 02/07/08] Feasibility study (SNCF) that shows the possibility of installing a unified derailer between the 120b and 118a switches. Need to take possible changes into account. [RFF letter of response to the BEA-TT report – 01/07/08] RFF studied the possibility of the emergence of an identical or higher risk to that of the accident on 27 February 2007 on the basis of two hypotheses of track modification.</p>
<p><b>Status of initiatives</b> [SNCF letter of response to the BEA-TT report – 02/07/08] Approval of RFF pending. [RFF letter of response to the BEA-TT report – 01/07/08] This dossier is still being considered by the services concerned [RFF annual report – 29/05/2009] This depends on one of 2 following hypotheses: "principalisation" of track 4 or use of Carcassonne station and track 4 as a works base in 2012. We are awaiting a response on one of the scenarios. [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] A final letter to the BEA-TT should be sent when the solution has been chosen: SGSI unit + SGR. Awaiting decision. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] Action being dealt with.</p>

Follow-up by the EPSF of the recommendations of the BEA-TT

### **3-2 Villeneuve-Triage – 01/03/07**

Collision with a person in Villeneuve-Triage station At 6.54 am on 1 March 2007, a person who had climbed down onto one of the tracks of Villeneuve-Triage station was struck by a train. He died instantly.
<b>BEA-TT report dated 13/03/08</b>

<b>Recommendation R1 (SNCF, RFF)</b> Ensure that a sufficient number of "Do not cross the tracks" signs, or any similar system, are installed and kept clean so as to be legible.
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 11/06/08] National study undertaken to assess the equipment of each establishment. The primary objective is to update the conditions whereby signage is installed and maintained. [RFF letter of response to the BEA-TT report – 10/06/08] Directive IN 1724 is in the process of being updated. This will provide an opportunity to remind local heads of GID [contracted infrastructure management] of their tasks in terms of maintaining all the corresponding installations in good condition. [RFF annual report – 29/05/09] Use the reissue of IN 1724 to remind local managers (GID action).
<b>Status of initiatives</b> [SNCF letter of response to the BEA-TT report – 11/06/08]. In 2007, 66 stations were fitted with platform panels reminding users that they must not cross the tracks. [Annual SNCF report – General aspects – 27/05/09]. The corresponding text was rewritten and is being validated by RFF. The diagnostics of the equipment of each depot is being carried out.

<b>Recommendation R2 (SNCF, RFF)</b> Install at least one sign indicating the presence of an underground passageway and the obligation to use it to go to other platforms on the paths naturally taken by passengers in Villeneuve-Triage station.
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 11/06/08] Awareness campaign in 64 stations in the Ile de France region Installation of visible signage from the two possible means of access to the central underground passageway in Villeneuve-Triage. [RFF letter of response to the BEA-TT report – 10/06/08] This recommendation will be implemented by the RFF following the installation study. The installation is set to be completed by late 2008.
<b>Status of initiatives</b> [Appendix 3 – 2007 SNCF Annual Report – General aspects – 28/05/2008] The sign that is visible from the access to the platforms was installed on the 18 <sup>th</sup> June 2008.
<b>Recommendation enforced</b> [RFF annual report – 29/05/09] <b>Recommendation enforced</b>

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### **3-3 Pertuis – 09/11/07**

Derailment of a train in Pertuis At 8.11 pm on Friday 9 November 2007, the train on the Briançon–Manosque route derailed in the commune of Pertuis. The consequences were purely material: damage to the rolling stock and 300 metres of track.
<b>BEA-TT report dated 26/06/08</b>

<b>Recommendation R1 (SNCF, RFF)</b> Assess the condition of thermit welds on the high rail at bends, for LRS zones between Aix-en-Provence and Manosque, limited to the sections identified (from KP 361.850 to KP 345.495 and from KP 345.495 to KP 347.266). The method of inspection will be clarified: visual assessment of the underside of the foot by an appropriate system or examination of the rail foot by ultrasound probing.
<b>Initiatives undertaken</b> [Annual RFF report – 29/05/2009] Defining and implementing a method for the inspection of the 2 LRS zones between Aix-en-Provence and Manosque. [Annual SNCF report – 27/05/2009] A check procedure has been developed for incipient cracking on changes of direction (angle flange/weld bead) under the rail. Following inspection of the Pertuis area, two rails, the welds of which caused a slight echo, were sampled and are now being analysed.
<b>Status of initiatives</b> [Annual SNCF report – 27/05/2009] The lab report and the final conclusions for R1 should be finalised during February 2009. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] <b>Recommendation enforced</b> [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] <b>Recommendation enforced</b>

<b>Recommendation R2 (SNCF, RFF)</b> From the annual feedback on a break in the rails, determine relevant indicators (e.g. rate of ruptures per km) on line sections of the national rail network which may present similar risks (same context as in Pertuis) making it possible to reveal the sections requiring an assessment of the condition of rail welds to be done in accordance with the procedure determined by recommendation R1 (or equivalent procedure).
<b>Initiatives undertaken</b> [Annual SNCF report – 27/05/2009] Inspection of zones identified in progress by SNCF rail and welding experts.
<b>Status of initiatives</b> [Annual SNCF report – 27/05/2009] The "density of thermit weld failures" indicator was finalised in September 2008. The inspection report will be published in April 2009. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] <b>Recommendation enforced</b> [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] <b>Recommendation enforced</b>

<b>Recommendation R3 (RFF)</b> Conduct a feasibility study of a catalogue of sounds that are representative of an "abnormal shock" in order to train the ear and senses of drivers from various rail companies who are faced with such a situation (perception of the sound produced in accordance with the gap in the rail, axle load of the motor vehicle and the type of motor vehicle and travelling speed).
<b>Initiatives undertaken</b> [Annual RFF report – 29/05/2009] Investigation with European Infrastructure Managers to establish whether they make specific resources available to railway companies for the training of drivers in the detection of broken rails and, more generally, in recognising abnormal movements.
<b>Status of initiatives</b> [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] <b>Recommendation enforced</b>

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### **3-4 Versailles rive gauche – 13/08/07**

At 10.27 am on Monday 13 August 2007, the Transilien suburban train travelling from Paris-Invalides to Versailles Rive Gauche struck the buffer on track 3 of Versailles Rive Gauche station at a speed of 6 kph. No one was hurt amongst the passengers, the driver or other SNCF employees. The accident caused material damage to the fixed installations and the rolling stock.
<b>BEA-TT report dated 28/03/08</b>

<b>Recommendation R1 (SNCF)</b> For the equipment in Z2N railcars, study the feasibility of reducing the speed threshold below which the passenger doors are unlocked prior to the train stopping. If the feasibility of doing so is demonstrated, amend all Z2N railcars.
<b>Initiatives undertaken</b> [SNCF letter of response to the BEA-TT report – 02/07/08] A feasibility study has been underway since the investigation of the Paris-Est incident on 5 April 2007.
<b>Status of initiatives</b> [Appendix 3 – 2007 SNCF Annual Report – Rail Operation Assignments – 28/05/2008] During “comfort” operations of Z2N trains (Z20500) the function of the doors is amended to keep them locked in the event that the intercom alarm signal (SAI) is used whenever the speed reaches 10 kph in acceleration and 6 kph in deceleration. [Annual SNCF report for 2008 – General aspects – 27/05/09]. The feasibility study was carried out and decided to lower the door release threshold on all Z2N from 6 to 3 kph. The modified board hardware on trains is planned for 2009 and 2010. [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] Action being dealt with

<b>Recommendation R2 (SNCF, RFF)</b> For tracks in terminus stations receiving trains comprised of Z2N, study the relevance and feasibility of technical provisions making it possible to either prevent a buffer impact or to minimise the consequences thereof for the people aboard the train or on the platform. It would be worthwhile evaluating and comparing the beneficial effects of implementing: <ul style="list-style-type: none"><li>• a shock absorber designed to slow down a train when there is a danger that it will make contact with the buffer,</li><li>• and/or a final speed control beacon (at an agreed distance from the buffer and controlling to approximately 4 kph) to slow the train further, if not bring it to a halt.</li></ul>
<b>Initiatives undertaken</b> Shock absorber [SNCF letter of response to the BEA-TT report – 02/07/08] Technical proposals for the implementation of a shock absorber further to the recommendation made following the Paris-Est incident will be sent to RFF by the SNCF. A proposal in principle is expected from RFF and will condition the on-site study of Versailles Rive-Gauche. Control beacon [SNCF letter of response to the BEA-TT report – 02/07/08] With the response to recommendation R1, the SNCF will continue to study the installation of the track beacon and the consequences thereof on driving ergonomics. Subject to the positive outcome of this study and financing of the investment by RFF. [SNCF 2008 annual report - General aspects - 27/05/09] The Engineering Department of the SNCF has conducted a feasibility study which will be available during the first half of 2009.
<b>Status of initiatives</b> Investment prioritised in accordance with incident rates (low priority) [Appendix 9 – RFF Annual Report 2009 – 10/06/2010] A technical and financial study was completed at the end of June 2008 <b>Recommendation enforced</b> [Appendix 3 – SNCF Annual Report 2009 – 26/05/2010] Action being deployed.



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### **3-5 Culoz – 24/07/06**

<p>Derailment of a works train at Culoz. On Monday 24 July 2006 at about 18.30, part of a works train derailed, engaging the lower and side clearances. At the origin of a bridge over the Rhône, the out of clearance mass hit the deck of the first span of the bridge which collapsed. Only one person suffered minor injuries but the material damage was considerable: the deck of the bridge was destroyed, as was the active part of the train.</p>
<b>BEA-TT report dated 15/12/08</b>

<p><b>Recommendation R1 (SNCF, RFF)</b> When line running specialised equipment (approved rail works) incorporated in a works train, from the area of the works to the garage and vice versa, ensure that the authorisation to depart is conditional upon a certificate that the route is in order, duly signed by the representative of the operator of this specialised equipment, being delivered in advance to the employee in charge of issuing the authorisation to depart. (He could then send the information 'train ready for departure' to the employee of the Delegated Infrastructure Manager [GID] who could then authorise access to the network by opening the corresponding signal).</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to BEA-TT report – 10/03/2009] This recommendation was the subject of an experiment, in the Chambéry region, of a new procedure for running specialised equipment (approved rail works) incorporated in a works train. The conclusions of this experiment will be produced during the first half of 2009. [RFF letter of response to BEA-TT report– 20/03/2009] The SNCF GID will propose changes to the legislation concerned by this recommendation, in accordance with the Safety Management System of the RFF and SNCF GID. In particular, for the legislation stated in Article 10 of Decree No. 2006-1279, RFF will approve and publish it, after consulting the EPSF.</p>
<p><b>Status of initiatives</b> [Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]</p>
<p><b>Recommendation enforced</b> [Appendix 9 – RFF 2009 Annual Report – 10/06/2010] Supplementary examination between EPSF, SETVF, SNCF GID and RFF of draft of IN 1418 to be carried out (future RFN CG MR 3 A N°2)</p>

<p><b>Recommendation R2 (SNCF, RFF)</b> For future complex track maintenance vehicles under reference N 1418, check their ability to negotiate curve transitions and apply the complete protocol for dynamic testing on line under sheet UIC 518 for vehicles using new technologies, which provides in particular for measuring the wheel/rail Y and Q interaction forces. In the case of a train similar to P21/95, at least submit the axle of the working group to these measures.</p>
<p><b>Initiatives undertaken</b> [SNCF letter of response to BEA-TT report – 10/03/2009] This recommendation has already been taken into account in the draft special operating rule (RFN CG MR3 A n°3) concerning specialised equipment or equipment for exclusive use for infrastructure maintenance operations which will be put shortly to RFF for approval and publication. In the transitional period until this rule is applied, the instruction body (SNCF – Industrial Production Department Locomotives and Tools, DPI EO) has applied this recommendation since mid 2008 for equipment whose files are under review. [RFF response to BEA-TT report – 20/03/2009] The test on the axle when negotiating curve transitions must be restricted to cases where it would be relevant. The legislation concerned is currently being drawn up in SNCF GID, who are in charge of its preparation, and will take this recommendation into account. As soon as it is received, and in accordance with the process for drawing up and updating this type of legislation under Article 10 of Decree No. 2006-</p>

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1279, RFF will publish it and make it applicable, after consultation with the EPSF and approval by RFF.

**Status of initiatives**

[Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]

**Recommendation enforced**

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

Supplementary examination between EPSF, SETVF, SNCF GID and RFF of draft of IN 1418 to be carried out (future CG MR 3 A N°2)

**Recommendation R3 (RFF, SNCF)**

Develop reference framework relating to the circulation of works trains; when these trains travel outside their working route on lines equipped with track-train radio (RST), and whatever the number of accompanying employees, provide for the track-train link on board the train, of the analogue RST or RST GSMR type.

**Initiatives undertaken**

[SNCF letter of response to BEA-TT report – 10/03/2009]

SNCF is moving gradually towards the following general change, not achievable in the short term, which will take around ten years:

- all new SNCF locomotives will from now on be equipped with RST when they have to travel on equipped lines;
- all SNCF locomotives that are not equipped, which still constitutes the majority of trains will be upgraded as the ground deployment of the GSM-R is implemented.

While awaiting this change, SNCF will use portable RST equipment, which, however, does not offer the same performance in terms of reception sensitivity.

[RFF letter of response to BEA-TT report – 20/03/2009]

The track-train radio equipment of works trains must ... be subject to particular conditions, all the more so as it is not considered to be a safety installation within the meaning of Decree No. 2006-1534 of 6 December 2006 for the application of Articles 1, 1-1 and 1-2 of Law No. 97-135 of 13 February 1997 creating the public body Réseau Ferré de France (RFF – French Rail Network) with a view to renewing rail transport.

**Status of initiatives**

[Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]

**Recommendation enforced**

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

To be followed up in the re-writing of IN 1418.

Follow-up by the EPSF of the recommendations of the BEA-TT

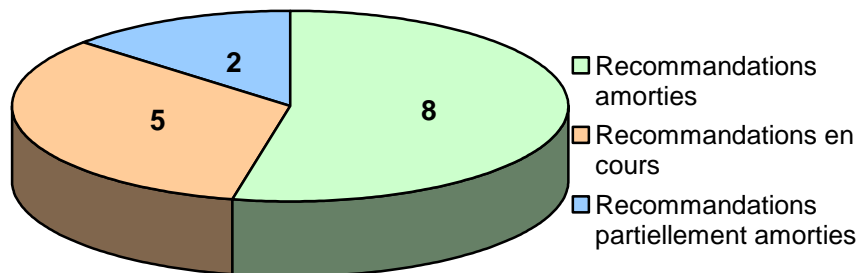
#### 4 Reports appearing in 2009

In 2009, 15 recommendations (included in five reports) were issued by the BEA-TT for the rail sector for which the EPSF has the role of national safety authority. The diagram below shows the status of these recommendations, classifying them as follows:

- recommendation enforced (green);
- recommendation partially enforced (blue). This status is given to the recommendations sent to several entities and where at least one of these entities has enforced the recommendation;
- recommendation in progress (orange). This status concerns the recommendations for which the initiatives undertaken do not yet enable the recommendation to be considered as enforced or for which the EPSF has not yet been informed of the initiatives in progress

FRENCH	ENGLISH
états des recommandations émises dans les rapports parus en 2009	status of recommendations made in the reports appearing in 2009
recommandations amorties	recommendations enforced
recommandations en cours	recommendations in progress
recommandations partiellement amorties	recommendations partially enforced

#### États des recommandations émises dans les rapport parus en 2009



Follow-up by the EPSF of the recommendations of the BEA-TT

**4-1 Montauban – 26/04/08**

<p>On Saturday 26 April 2008, at 06.36, freight train 467 473 belonging to Veolia Cargo France, travelling from Bordeaux-Bassens to Bouszens, made an emergency stop in Montauban station without respecting the signals protecting the merge points on the Brive - Toulouse and Agen – Toulouse lines, despite applying the brakes. Between the acknowledgement of the emergency braking after the warning announcing the stop signal and the actual stopping point of the train, the distance travelled by the train was approximately 3,300 metres.</p> <p>There were no injuries or material damage, thanks to the quick reaction of the points man at Montauban and the absence of traffic on the merge point and on the track occupied by train 467 473.</p> <p>This incident could have become a serious accident under slightly different circumstances.</p>
<b>BEA-TT report dated 16/01/09</b>

<b>Recommendation R1 (Veolia)</b> When drafting 'vehicle' rosters, specify the time for the routine preparation of locomotives prior to shunting and the formation of freight trains
<b>Initiatives undertaken</b> [VEOLIA letter of response to the BEA-TT report – 03/03/09] Publication of a 'preparation of a train' Experience feed back sheet, on 15/07/08, stating that routine preparation should be carried out before the locomotive is coupled. Publication of a general management note on 25/07/08, concerning routine preparation on traction units, laying down three requirements: <ul style="list-style-type: none"><li>• preparing locomotives before coupling;</li><li>• making the registration of the routine preparation of each locomotive systematic in the vehicle roster and service graph, so that the locomotive is not coupled to its sets of wagons;</li><li>• involving depot managers to pass this information on to those in the field.</li></ul>
<b>Status of initiatives</b> <b>Recommendation enforced</b>

<b>Recommendation R2 (Veolia)</b> Have a trainer check the accuracy of the train composition abstract (given in the consignment note).
<b>Initiatives undertaken</b> [VEOLIA letter of response to the BEA-TT report – 03/03/09] Publication of Safety Note No. 39, on 27/05/08: "Traceability of reconnaissance, training and brake test operations": setting up a track to train communications sheet. Meeting between VCF and SOCORAIL on 02/07/08, which decided to take the following action: 'improving and formalising the track to train relation by setting up a communications sheet' On 01/09/08 check that the communications sheet has been set up within the VCF South West branch.
<b>Status of initiatives</b> <b>Recommendation enforced</b>

<b>Recommendation R3 (Veolia)</b> Reinforcing and improving the efficiency of management control (and within contractual relations) of the railway company and training and train operators.
<b>Initiatives undertaken</b> [VEOLIA letter of response to the BEA-TT report – 03/03/09] drafting a VCF-SOCORAIL plan of action on 02/07/09: <ul style="list-style-type: none"><li>• Improving the KN1 for SOCORAIL operators by assigning a permanent track manager to the VCF South West branch.</li><li>• Describing the measures set up by SOCORAIL to improve the organisation work on the Bassens site and ensuring the effective implementation of such measures by the manager.</li></ul> As at 23/10/08, all sub-contractor employees had been checked in KN1. On 05/12/08, the plan of action drafted by SOCORAIL was completed.

## Follow-up by the EPSF of the recommendations of the BEA-TT

<p>During the 2nd half of 2008, a mission for accompanying those in the field was entrusted to a VCF business expert on the following subjects:</p> <ul style="list-style-type: none"><li>• Analysis of watch methods used in the field by VCF business managers (frequency, mode of triggering, preparation and organisation, tools and methods used).</li><li>• VCF business managers' means of finding weaknesses in the operators (observation, questioning, use of surveillance)</li><li>• Proposals for improving methods of monitoring in the field for each branch.</li><li>• Methods of accompanying trainees during practical courses: (analysis of current practices, conditions for reception, efficiency of the tutor system, logbook, proposals for improvement)</li></ul>
<p><b>Status of initiatives</b> <b>Recommendation enforced</b></p>

<p><b>Recommendation R4 (Veolia)</b> For each train leaving for operation, conduct a routine 'Braking efficiency test' as close as possible to its place of departure.</p>
<p><b>Initiatives undertaken</b> [VEOLIA letter of response to the BEA-TT report – 03/03/09] Publication of Safety Note No. 37, on 05/05/08 concerning "Braking efficiency tests" making a line braking efficiency test mandatory on each train as close as possible to its place of departure. Continuous monitoring of dynamic braking tests by the analysis of ATESS cassettes.</p>
<p><b>Status of initiatives</b> <b>Recommendation enforced</b></p>
<p>Note During the feedback meeting 'sharing to make progress' of 8/04/09, the EPSF drew the attention of the EF to the 'Braking test' recommendation.</p>

Follow-up by the EPSF of the recommendations of the BEA-TT

#### **4-2 Zoufftgen – 11/10/06**

On Wednesday 11 October 2006, extensive work on the tracks of the French network required the neutralisation of one of the two tracks of the international section of the Thionville – Bettembourg line from 08.50 to 16.30. Accordingly, trains in both directions ran on the other track operated under Installations Permanentes de Contresens (IPCS) conditions [Wrong-track Working Fixed Equipment system]. As an SNCF freight train was running along this line from Thionville to Bettembourg, a regional express train (TER) ran on to the same line in the opposite direction in Bettembourg station. These two trains were involved in the head-on collision at about 11.44 in France, at about ten metres from the border towards DM (Distance Marker) 203.700 (commune of Zoufftgen).  
**BEA-TT report dated 28/02/09**

#### **Recommendation R8 (CFL, SNCF, RFF)**

Examining the feasibility of extending SAAT to Bettembourg, by displaying the first train announced on the TCO.

##### **Initiatives undertaken**

[RFF letter of response to the BEA-TT report – 10/06/09]

The possibility of extending the SAAT to Bettembourg was analysed without being conclusive. It led to considering another solution considered to be more effective and which corresponds to setting up an interconnection between the SAAT RFF and ZNL CFL systems. The SNCF is studying its feasibility and, testing is in progress, in particular.

[SNCF Letter of response to the BEA-TT report – 08/06/09]

Since the compatibility of the functionalities and interconnection of the systems requires an interface which is being developed by the contractor selected for similar projects with the DB (German Railways), since the German and Luxembourg systems are similar (Strasbourg – Khel or Forbach – Saarbrücken). Furthermore, this system is in operation as an equipment test between the French station of Mont St Martin and the Luxembourg station of Rodange.

Once the interface has been developed and is in operation under satisfactory conditions, it shall be installed at Bettembourg.

To be fully efficient, its implementation shall be accompanied by appropriate training for operators.

##### **Status of initiatives**

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

Initiative in progress

[Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]

An initiative is in progress to interconnect the Luxembourg (ZNL) and French (SAAT) systems.

#### **Recommendation R11 (CFL, SNCF, RFF)**

Modifying the track to train radio installations so that radio alerting and radiotelephone communications from Bettembourg or Thionville are received by the installations of the block sections on the other side of the border.

##### **Initiatives undertaken**

[RFF letter of response to the BEA-TT report – 10/06/09]

Commissioning of the GSM-R system on the section on the border with Luxembourg, Thionville (Fr) – French border planned for 05/07/09.

[SNCF Letter of response to the BEA-TT report – 08/06/09]

On 05/07/09, the date of commissioning the GSM-R on the French part of the border section, a new SNCF GSM-R unit was put into service in the master signal box at Bettembourg and PRCI at Thionville. These 2 signal boxes have an alert button used to trigger an RST GSM-R alert on the section on the French border. The border set point shall be reissued at this time and take such modifications into account.

[Appendix 9 – RFF 2009 Annual Report – 10/06/2010]

In July 2009, IANA installed (automatic alert between the CFL systems and the French system) and a GSM-R desk in the central signal box at Bettembourg and in the PRCI of Thionville. These devices must be adapted when the RSR switches to GSM-R in Luxembourg.

##### **Status of initiatives**

[Appendix 3 – SNCF 2009 Annual Report – 26/05/2010]

## Follow-up by the EPSF of the recommendations of the BEA-TT

<p><b>Recommendation enforced</b> [Appendix 9 – RFF 2009 Annual Report – 10/06/2010] The IANA system has been installed since 14/09/2009 Currently, the GSMR-T is installed on the French side and the analogue RST is installed on the CFL side.</p>
<p><b>Recommendation R12 (SNCF, RFF, EPSF)</b> Considering more rigorous regulations, in the event of radio failure, requiring faults to be repaired (change of locomotive, provision of portable radio sets, etc.), according to more rigorous criteria.</p> <p><b>Initiatives undertaken</b> [RFF letter of response to the BEA-TT report – 10/06/09] After review, RFF together with the EPSF and SNCF, was not in favour of tightening the rules in the event of a failure of the track to train radio [SNCF Letter of response to the BEA-TT report – 08/06/09] Given the information set out in the SNCF Letter of response to the BEA-TT report of 08/06/09, the SNCF is not in favour of tightening the rules beyond that which has already been done. [Letter of response EPSF to the BEA-TT report – 12/06/09] The EPSF recommends that a study be conducted, under the responsibility of RFF, to review the possibility employees have, depending on the situation, to stop two trains heading towards each other. This study should determine, on an individual basis, whether each situation should be considered to be different to protection against obstacles and, if so, define the measures which should be taken, particularly in the absence of a radio or the failure of the radio. This study should also provide:</p> <ul style="list-style-type: none"><li>• the reliability rate of the RST and GSM-R;</li><li>• the frequency of initiating events (i.e.: installation of VUT) and the probability of the occurrence of the use of the overtaking loop;</li><li>• a map of the RST and GSM-R equipment of the network and the development programme.</li></ul>
<p><b>Status of initiatives</b> [Appendix 3 – SNCF 2009 Annual Report – 26/05/2010] <b>Recommendation enforced</b></p>
<p><b>Recommendation R14 (CFL, SNCF, RFF)</b> Setting up telephone links to ease tension quickly in the event of an emergency on the Thionville section of the line on the French border, at the request of the master signal box of Bettembourg.</p> <p><b>Initiatives undertaken</b> [RFF letter of response to the BEA-TT report – 10/06/09] At the date of the letter, telephone links are operational. Therefore, the master signal box of Bettembourg has a direct telephone link with the CSS East-France, which is responsible for the catenary power supply on the French – Thionville section of the line. Similarly, the PRCI of Thionville can communicate directly with the CSS Luxembourg, which is responsible for the catenary power supply on the Luxembourg – Luxembourg border section of the line. [SNCF Letter of response to the BEA-TT report – 08/06/09] The telephone links between the Master Signal Box of Bettembourg and the "Central Sous Station" (CSS) Eastern France, on the one hand and, on the other, between the PRCI of Thionville and the CSS Luxembourg are in service and their use is defined by an agreement between the SNCF and CFL. The republication of the border instructions planned for 05/07/09 shall take these specificities into account.</p> <p><b>Status of initiatives</b> [Appendix 3 – SNCF 2009 Annual Report – 26/05/2010] <b>Recommendation enforced</b></p>



## Follow-up by the EPSF of the recommendations of the BEA-TT

<p><b>Recommendation R18 (CFL, SNCF, RFF)</b> For employees responsible for safety, provide preparation for the emergency situations most likely to occur and, in particular:</p> <ul style="list-style-type: none"><li>• identifying the risks to be handled;</li><li>• the formalisation of reaction scenarios;</li><li>• training and carrying out exercises.</li></ul>
<p><b>Initiatives undertaken</b> [RFF letter of response to the BEA-TT report – 10/06/09] Insofar as employees responsible for safety are concerned, such as those concerned by this recommendation, RFF is not directly involved, with the exception of the finance of the training of SNCF GID employees who have safety responsibility under the terms of this order. [SNCF Letter of response to the BEA-TT report – 08/06/09] Controllers, traffic employees and checkers:</p> <ul style="list-style-type: none"><li>• reinforcement of training in the different languages of operators on cross border sections;</li><li>• setting up a common safety management reference base;</li><li>• special or rare procedures (emergency measures and operation of the IPCS, issuing crossing permits, operations associated with electrical traction) require training to maintain the skills of operators. Operators are monitored individually as part of the safety watch.</li></ul> <p>Drivers:</p> <ul style="list-style-type: none"><li>• in addition to initial training, emergency and degraded situations are reviewed during in-service training (scenarios defined in the specifications) in a three year cycle;</li><li>• simulation tools are used for practical exercises;</li><li>• accompaniment by both the DPX Traction SNCF and their counterparts on foreign networks should be carried out every year on cross border routes.</li></ul>
<p><b>Status of initiatives</b> [Appendix 3 – SNCF 2009 Annual Report – 26/05/2010] <b>Recommendation enforced</b></p>



Follow-up by the EPSF of the recommendations of the BEA-TT

### **4-3 Saint-Médard-sur-Ille – 26/11/07**

On 26 November 2007, a lorry loaded with gravel was hit by the Rennes/Saint Malo Regional Express Train (RET) on the level crossing at Saint-Médard-sur-Ille. Forty people were injured, including 20 who were hospitalised, all passengers on the train. Rail traffic was stopped for several hours.

**BEA-TT Report dated 11/12/09**

#### **Recommendation R1 (Département of Ille-et-Vilaine and RFF)**

Study and implement measures to facilitate crossing of HGVs and their passing one another on this level crossing (arrangements or operation measures, regarding road or railway).

#### **Initiatives undertaken**

[RFF letter of response to BEA-TT report – 12/03/2010]

Recommendation R1 falls within the national approach to diagnostics on the safety of level crossings open to road traffic etc. Level crossing No. 11 at Saint-Médard-sur-Ille is part of this approach. Following the accident of 26 November 2007, and in agreement with the circulars, a meeting is planned for 30 April 2010 between RFF and the General Council of Ille-et-Vilaine in charge of safety diagnostics. The purpose of this meeting is to launch the safety diagnostics for level crossing no. 11. RFF will contribute to the assessment of the railway aspects in the implementation of the diagnostics and the definition of necessary additional safety measures.

#### **Status of initiatives**

#### **Recommendation R2 (SNCF)**

Integrate, in the legislation governing the SNCF project management, consultation with the regional Level Crossing expert for all works sites likely to affect the safety of a level crossing.

#### **Initiatives undertaken**

[SNCF letter of response to BEA-TT report – 02/03/2010]

The two documents (IN 2934 and IN 2702) setting out the principles for organising safety will be supplemented by the requirement that the main contractor should consult the Level Crossing expert (new position of Regional Level Crossing Expert since 1 January 2010) for all works sites likely to affect the safety of a level crossing.

This matter will be the subject of a written information note to the Etablissements Equipements [Equipment Departments] before the end of the first semester of 2010.

#### **Status of initiatives**

[Appendix 3 – SNCF 2007 Annual Report – General aspects – 28/05/2008]

Recommendation currently being dealt with.

Follow-up by the EPSF of the recommendations of the BEA-TT

#### **4-4 La-Roche-en-Brenil – 07/07/08**

On 7 July 2008, an HGV loaded with a bituminous mix, on its way to an industrial area nearby, was hit by the Autun/Avallon Regional Express Train (RET) on the level crossing at La Roche-en-Brenil. Six people were slightly injured, all passengers on the train. Rail traffic was stopped for two days. Road traffic on the LC has not been re-established.

**BEA-TT Report dated 14/12/09**

##### **Recommendation R1 (SNCF, RFF)**

Remind rail operating services to do the following when they are aware of significant changes to road traffic on a level crossing:

- check that safe conditions are maintained, in particular regarding the criteria fixed by the decree of 18 March 1991;
- then, if necessary, alert those concerned and the authorities responsible to take appropriate measures to re-establish the safety of this level crossing.

##### **Initiatives undertaken**

[SNCF letter of response to BEA-TT report – 02/03/2010]

A letter briefly stating the circumstances of the accident on LC19 at La Roche en Brénil was sent on 16 February 2009 to all the directors of the territorial Departments, with the aim of raising the awareness of the services in charge of managing level crossings on several points, including the following:

- when they are asked for an opinion on a case involving a level crossing, ensure that the provisions of the decree of 18 March 1991 are complied with both during an intermediate stage of a works site and in the final situation;
- if necessary, start the administrative procedure relating to the classification of the LC;
- set up the project file to set supplementary equipment in place;
- provide for information to be given to road users.

This letter also stated that if the safety of the LC is affected during a works site, the parties involved (in particular the contractors and clients) and the authority concerned should be warned.

[RFF letter of response to BEA-TT report – 23/03/2010]

This recommendation is part of the organisation currently in place within RFF to deal with problems of safety when non-railway works are carried out beside level crossings. Therefore, RFF will send a letter reminding its regional directorates of the implications of such works sites and the organisations to be taken into account. The note drawn up by the Service d'Etude sur les Transports, les Routes et leurs Aménagements (SETRA) [Technical Department for Transport, Roads and Bridges Engineering and Road Safety] on 'Road works close to level crossings' will be attached to the reminder letter. In fact, although it does not apply directly to the accident on level crossing no. 19, it presents solutions that may be applied generally to other works configurations.

##### **Status of initiatives**

[Appendix 3 – SNCF 2007 Annual Report – General aspects – 28/05/2008]

**Recommendation enforced**

Follow-up by the EPSF of the recommendations of the BEA-TT

#### **4-5 Stade de France – 07/03/09**

On 7 March 2009, after attending a match at the Stade de France in the commune of Saint-Denis, supporters were returning to their coach along the railway track close to the stadium. At about 23.25 they were hit by an RER B train. Two people were killed, three were seriously injured and one had minor injuries.

**BEA-TT report dated 15/12/09**

##### **Recommendation R3 (SNCF, RFF)**

Set in place organisations and specifications for closures ensuring that the doors and access gates to the railway are a reasonable deterrent to third parties while remaining easily accessible to authorised persons.

##### **Initiatives undertaken**

[SNCF letter of response to BEA-TT report – 03/03/2010] and [RFF letter of response to BEA-TT report – 23/03/2010]

Launch a joint specific study between SNCF and RFF before the end of 2010 to re-evaluate the specifications of current closures. This study must take into account the impact on the organisations and the human factor (facility of use and checking, adapting to the local context etc.).

##### **Status of initiatives**

[Appendix 3 – SNCF 2007 Annual Report – General aspects – 28/05/2008]

Recommendation being dealt with.

##### **Recommendation R4 (SNCF)**

Remind track maintenance employees of the importance of checking the condition of closures and access during their rounds. Specify the service expected of SUGE [Railway Police] during their rounds, particularly concerning the locks on access points, when it is decided to assign this task to them.

##### **Initiatives undertaken**

[SNCF letter of response to BEA-TT report – 03/03/2010]

Since the end of March 2009, the following specific measures have been set in place to ensure that access points on the perimeter of the Stade de France are properly closed:

- an inspection round is carried out on the day of the event, including weekends, by an employee of the Equipment Department;
- if there is any doubt about the efficiency of a closure, the employee doing the round should close the access using a chain and padlock;
- if this is impossible, he should notify the SNCF Railway Police so that officers can be positioned at that point of access;
- this round will be traceable by a note on a document sent by fax to the Stade de France supervisory unit situated in the Traffic Management Operational Centre for Paris North.

A note for the attention of all employees of the Equipment Department will be drawn up and issued before the end of March 2010.

##### **Status of initiatives**

[Appendix 3 – SNCF 2007 Annual Report – General aspects – 28/05/2008]

**Recommendation enforced**

##### **Recommendation R5 (RFF)**

Review the policy for putting up notices stating that access to railway land is prohibited as well as the associated dangers, at the doors and gates providing access to the railway platforms. Define the ways of implementing this policy.

##### **Initiatives undertaken**

[RFF letter of response to BEA-TT report – 23/03/2010]

The policy of marking the boundaries of RFF railway land, formalised in document PO IF 2 B 42 n°1 of 22 October 2008 and in practical guide NG IF 2 B 42 n°2 of 22 October 2008, provides for defining safety measures (notices, closures) depending on the level of the risks of intrusion.

The implementation of this policy was begun in 2009 with the identification of sensitive areas. The policy document will be amended by the end of 2010 so that notices are put up at the entry points of the national rail network situated close to locations of mass attendance.

*Translation provided for information purposes, by the Translation Centre for the bodies of the EU  
The only valid version is the original version provided by the NIB*

#### Follow-up by the EPSF of the recommendations of the BEA-TT

Consequently, in the area around the Stade de France, the doors and gates providing access to the railway platforms will be the subject of specific notices systematically. The notice chosen will aim to prohibit access to the national rail network by unauthorised persons, state the penalties incurred and warn of the risks in the event of intrusion.

#### **Status of initiatives**



*Translation provided for information purposes, by the Translation Centre for the bodies of the EU  
The only valid version is the original version provided by the NIB*

**Appendix 5-2: Rail transport: recommendations monitored by the DGITM**

Recommendation completed: C  
Recommendation partially completed or modified: CM  
Recommendation completed not retained: NR  
Recommendation undergoing implementation: UI  
Action not known: NK

Recommendations made in 2004

Case No.	Title of investigation	Recommendation No.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal and codified)	
						literal	coding
	Fire in a sleeper car on the Paris-Munich train, stopped at Nancy station.	R6	Ask the European Commission (TSI) to consider the treatment of the security/safety pairing	DTT			NK
		R9	After tests and validation of equipment and procedures, provide for fitting all coaches with sleeping berths with smoke detectors and public address systems in compartments; propose this development to the international regulatory bodies.	DTT		Paragraph 4.2.5.6 of the Tunnel TSI annexed to Decision 2008/163/EC applicable to all conventional and high speed rolling stock applicable to all new or existing rolling stock subject to repair/upgrading works states that: 'Areas of rolling stock which present a high fire risk must be equipped with a system allowing fires to be detected at an early stage and appropriate automatic action to be triggered to reduce the risk to passengers and on board personnel as much as possible. This requirement is considered to be met when conformity with the following provisions is verified: ▪ Rolling stock must be equipped with a fire detection system capable of detecting a fire at an early stage in the following areas: --- - sleeper cars, compartments with sleeping berths, compartments reserved for staff and corridors, as well as their adjacent combustion heating installations. ▪ When the detection system of a technical area is activated, the following automatic actions are required: - information to train driver; - --- ▪ When the detection system of a compartment with sleeping berths is activated, the following automatic actions are required: - information to train driver and steward responsible for the affected area; - in the compartment with sleeping berths: activation of a local audible alarm in the affected area, sufficiently loud to wake passengers.'	C
		R17	Ensure that the conditions for applying directives on the interoperability of the railway system can improve the legibility of and compliance with the safety requirements concerning rolling stock.	DTT			

Recommendation completed: C  
Recommendation partially completed or modified: CM  
Recommendation completed not retained: NR  
Recommendation undergoing implementation: UI  
Action not known: NK

Recommendations made in 2005

Case No.	Title of investigation	Recommendation no.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal and codified)	
						literal	coding
2005-002	Runaway train at Longueville	R5	Examine how to improve the efficiency of the feedback of experience, for example by allowing the CFTA to benefit from information from national feedback that may influence the operation of the section of the line between Provins and Longueville.	DGMT	O (10/03/06)	Letter dated 10 March 2006 from the DTFC indicating that the aims of the rail safety authority EPSF created by the law of 5 January 2006 on the safety and development of transport will be mainly to instruct and issue safety certificates and collect feedback from the infrastructure manager and each railway company. The regulations concerning the requirements for issuing a safety certificate are being amended within the framework of the transposition of the second railway package. The rail companies must implement internal feedback, and send the relevant lessons from this feedback to the EPSF to add to the national feedback to which they will have access.	C
		R6	Re-examine the conditions for ensuring, from the safety point of view, the validity of the operation of such a short isolated line, given the limits in obtaining real experience of driving trains; these conditions may concern the continuing training of the driver, and even professional mobility.	DGMT	O (10/03/06)	Same letter from DTFC 'The quality of a driver lies in his ability to show good reflexes in particular circumstances which are by their nature exceptional. These reflexes are, it is true, not as essential when the driver is always driving on the same journeys. With the opening of rail freight to competition, this type of situation will develop. However, railway companies which are sometimes small in size cannot be required to meet conditions of staff rotation in varied geographical areas. This type of situation is already known and dealt with particularly in urban public transport. It is necessary that the initial and continuing training can prevent bad driving habits which may develop in such cases. When examining the request for a safety certificate and during inspections, controls and audits that the EPSF will have to make, a check must be made that the rail company has taken the necessary steps to that end and ensures that the skills of its staff assigned to safety duties are kept up to date over time.'	C



**Recommendation completed:** C  
**Recommendation completed and modified:** CM  
**Recommendation completed not retained:** NR  
**Recommendation undergoing implementation:** UI  
**Action not known:** NK

Recommendations made in 2006

Case No.	Title of investigation	Recommendation No.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of Response	Action taken and state of progress (literal and codified)	
						literal	coding
2005-007	Accident at LC at St Laurent de Blangy	R3	Check with training operators for 'HGV, FIMO and FCOS', particularly those concerning dangerous goods, so that they can take into account in their training modules how to behave (technical and environmental evaluation as well as relevance of reactions) in critical situations, including incidents on LCs.	DGITM		The order of 3 January 2008 on the programme and procedures for implementing initial and continuing professional training for drivers of road transport of goods and passengers, transposing directive 2003/59/EC on the training of drivers, fixes the programme of compulsory training of drivers which includes a module on road and environmental safety, which deals with the crossing of level crossings, preventive driving behaviour and the evaluation of emergency situations, in particular by means of practical exercises and case studies aiming to develop behaviour that is suitable for these risk situations.	C
2004-009	Accident on LC between train and semi-trailer at Millau	R2	For level crossings subject to frequent congestion (urban area and/or close to a junction), promote the search for provisions to avoid an accident or at least reduce its severity, in the event of a road vehicle blocking the railway; reinforcement of perception of areas that must remain free of traffic, lateral space for a vehicle in a queue.	LC Department	O (10/10/06)	The secretary of this department is an official from DTFC/SOE1. This department responded to the BEA-TT in a letter dated 10 October 2006: The presence of a junction close to a level crossing presents a safety problem concerning possible queues of traffic waiting at the level crossing. When there is a risk of vehicles stopping on the level crossing at the approach of a train, solutions are envisaged either to dissuade or prevent drivers from entering the level crossing without being certain of being able to clear it immediately, or to allow them to clear the railway land before the train arrives. The following four methods can be implemented: 1) Set in place preventive devices by reinforcing static signalling. 2) The addition of advanced traffic control detecting the line of traffic and the arrival of the train.. 3) A clearance area, where parking and stopping are prohibited, may be created. 4) Installing a traffic light on one or more entrances or on a roundabout.. During works close to level crossings, safety must be a priority. Prior agreement between all the partners must be organised. A SETRA information note 'improving safety at level crossings – adaptation of the infrastructure and road signalling' was published in December 2008. A guide entitled 'Safety at a level crossing close to a roundabout' was published in September 2006.	C
		R3	In guides and support for training concerning temporary signals on a works site, draw attention to the precautions to be taken during works situated close to a level crossing.	DSCR SETRA	O (18/08/06)	(Letter from SETRA dated 29/10/09 informing the BEA that the recommended action had been carried out).	C

Recommendation completed: C  
Recommendation completed and modified: CM  
Recommendation completed not retained: NR  
Recommendation undergoing implementation: UI  
Action not known: NK

Recommendations made in 2007

Case No.	Title of investigation	Recommendation No.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal & codified)	
						literal	coding
2006-014	Collision between a TGV and an abnormal load on a level crossing at Domène	R1	Study and set in place reinforcement of sanctions for offences committed by transport companies operating abnormal loads with a view to dissuading them from breaching the safety and procedural rules notified to them.	DSCR		A draft decree to be submitted to the permanent Interministerial road safety group in 2010 provides for the following: - move from 4th to 5th class the contravention for abnormal loads not keeping to their itinerary or not complying with a requirement relating to crossing a level crossing. (art. R. 433-1 of the Highway Code) - The creation of an offence of lack of authorisation is not planned, but the offence penalised will be that of exceeding weight and dimensions. (Articles. R. 312-1 to R. 312-25 of the Highway Code). A 4th class contravention is provided for per excess tonne instead of a breach for excess weight.	UI
		R3	Integrate in authorisations for abnormal loads the obligation to be able to prove that they have contacted SNCF and the police in advance.	DSCR		An overall review of the order of 4 May 2006 relating to abnormal loads taking into account the problem of 'level crossings and abnormal loads' will be carried out during 2010.	UI

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Recommendations made in 2009

Recommendation completed: C  
 Recommendation completed and modified: CM  
 Recommendation completed not retained: NR  
 Recommendation undergoing implementation: UI  
 Action not known: NK

Case No.	Title of investigation	Recommendation No.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal & codified)	
						literal	Coding
2007-019	Collision between a TGV train and an abnormal load stopped on the level crossing at Tossiat	R1	Study and set in place reinforcement of sanctions for offences committed by transport companies operating abnormal loads to dissuade them from breaching the safety and procedural rules notified to them.	DSCR	O (22/09/10)	Same response as for the same recommendation on the accident at Domène on 18/10/06.	UI
		R2	Study and set in place a system for tracing the itineraries of abnormal loads managed by operators certifying the conformity of the itinerary followed with the itinerary authorised and facilitating its being checked. In the case of a journey covered by several separate authorisations, require that carriers draw up a route sheet before departure grouping together all the obligations relating to each portion and the stops concerned.	DSCR	O (22/09/10)	A study of the advisability of setting up a system for tracing abnormal loads was requested from SETRA in a letter dated 22/09/09	UI
		R3	Encourage operators of abnormal loads to organise the preparation of the journey and the work of their crews on the ground rigorously, with a view to their mission being completed properly and in safety.	DGITM	N	Letter for the attention of the professional organisations being drawn up by TR.	UI
		R4	Produce specific training modules for abnormal loads possibly leading to compulsory authorisation to drive these loads.	DGITM	N	Article 43 of the 'ORTF' law of 8 December 2009 requires an obligation of training for drivers of vehicles accompanying abnormal loads. A draft decree in EC and orders being drawn up define the obligations of training for drivers of pilot vehicles and escorts as well as the duration, content, frequency and conditions for completing this training.	UI
2008-013	Collision between an RET and an HGV at La Roche en Brénil (21)	R2	Raise the awareness of local planning offices to the need to inform the competent authority when the issue of the planning authorisation requires a safety arrangement which is not laid down by the authorisation (for the record not changing the classification and operating system of a LC situated on a road serving a construction site or industrial area beside the railway).	DHUP	N		NK
2007-017	Collision between an RET and an HGV at the level crossing at Saint-Médard sur Ille	R3	Add to the guide on 'railway signalling – contraflows' on its next update with specific provisions on level crossings, with the rail operator to be consulted when the operating system of an LC is likely to be notified.	DSCR SETRA	O (05/05/10)	Elements of responses requested by the DSCR from SETRA.	NK

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**Appendix 5-3: Guided transport and cableways: recommendations monitored by the DGITM**

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Recommendations made in 2005

recommendation completed: C  
recommendation completed and modified: CM  
recommendation not retained: NR  
recommendation undergoing implementation: UI  
action not known: NK

Case No.	Title of investigation	Recommendation No.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal & codified)	
						literal	coding
2004-001	accident on snow walkway occurring at Val Cenis on 14 February 2004	R1	Based on Article 50 bis of the amended Mountain law, regulations applicable to snow walkways must be drawn up and implemented, taking into account the provisions listed above.	DGMT		In its circulars of 15 September 2004 and 19 October 2004, the Ministry defined the administrative and technical methods for putting these installations into service and for the conformity of snow walkways previously put into service and recommended the technical safety rules applicable to this type of installation. All of these instructions appear in the 'leaflet on snow walkways in mountain resorts – V4 May 2005' drawn up by the STRMTG. These documents supplement the provisions listed by the BEA-TT. In addition, the legislative part and then in 2007 the regulations of the Tourism Code were modified to deal with snow walkways parallel to the provisions governing cableways. A draft order from the Minister of Transport is currently being drawn up. This order will give regulatory force to the essential safety requirements currently defined in the leaflet drawn up by the STRMTG and the draft European standard (prEn 15700). It should be published in the OJ during September 2010.	C
		R2	As part of its assignment to provide feedback, the STRMTG must monitor in particular the development of the stock of snow walkways and their operating conditions in order to propose the necessary changes.	STRMTG BIRMTG		The STRMTG is monitoring the development of the stock of snow walkways and their operating conditions. The STRMTG is taking part in the preparation of the draft order entitled 'walkways' and will develop the resulting regulations as indicated in the follow-up to recommendation 2004-001-R1.	C
2004-007	Tramway accident occurring at Rouen on 30 August 2004	R1	Study the effective adaptation of the drivers' living and working patterns; particularly for drivers undergoing medical treatment or undergoing medical monitoring for partial unfitness at their usual job position, look at allocation of worked days in order to reduce the risk of hypovigilance (lack of alertness) when returning from a leave of absence.	TCAR	20/09/05	Arrangements for services for returning from a leave of absence of more than three weeks affecting drivers presenting partial unfitness for their usual job position. Allocation of services reducing the risk of hypovigilance (lack of alertness) and with drivers not commencing their shifts before 05.30.	C
		R2	To avoid the recurrence of such an event on the Rouen tramway network, equip rakes and tunnel blocks with a device to control when signals are passed.	CAR TCAR	CAR 16/09/05 TCAR 20/09/05	Automatic stopping device installed on trains (DAAT). Entering into service during 2010.	UI
		R3	Develop the system for locating vehicles to obtain effective identification of each vehicle in operation, whatever their respective positions. At the same time, provide in the future system for monitoring traffic for a transfer to the PCC (Main Control Centre) of the occupation of the 22 blocks; thus any rake in a tunnel can be identified as well as the block where it is located.	CAR TCAR	CAR 16/09/05 TCAR 20/09/05	Renewal of system to assist operation to identify and locate vehicles. Occupation of blocks by DAAT systems above.	UI
		R4	Develop the rake-Control Centre link system to provide a portable radio telephone and allow the driver to intervene in a range of several metres around his rake. The new system could allow the driver to send written messages to the Control Centre from the SAE keyboard of his rake (similar to SMS messages in GSM telephones generally available to the public). Look at the possibility of fitting the front of the rakes with a sensor emitting an automatic alert to the Control Centre in the event of a head on impact of the rake against an obstacle.	CAR TCAR	CAR 16/09/05 TCAR 20/09/05	Portable radio telephone installed as part of the renewal of the SAE above. Possibility of sending written messages to Control Centre: Recommendation not retained. Sensor emitting an automatic alert in the event of head on impact: recommendation not retained. These last two recommendations covered by the renewal of the SAE and the DAAT.	UI
		R5	implement a dedicated link providing direct access to mutual information in an emergency.	TCAR CODIS 76	TCAR 20/09/05 CODIS 76 15/07/05	(A dedicated line between the SDIS and the Control Centre is present)	C
		R6	Make the pedestrian route in the tunnel passable in safety by installing continuous lighting at pavement level, protect the outlets of dry standpipes and install a handrail	CAR TCAR	CAR 16/09/05 TCAR 20/09/05	Lighting installed in accordance with tunnel IT of 2005. Modification of dry standpipes. Handrail installed.	C
		R7	Fit on board lamps on the rakes which are rechargeable and can be carried by the driver to the place of intervention	TCAR	20/09/05	Two lighting strips in place on board rakes	C
		R8	Look at the relevance of including 'first aid' in the knowledge and practice of drivers, as defined in the training of 'first-aiders at work'.	TCAR	20/09/05	Recommendation not retained with the agreement of the control department	NR
		R9	Develop the French reference framework concerning rolling stock (category 'guided transport') regarding criteria for passive resistance. For future equipment to be put into service, make it compulsory to comply with European Standard EN.12.663 and its variation draft EN.15.227 which deals with devices for absorbing energy and anti-climbing devices.	DTT	24/08/05	Application of the standard on the new rolling stock or demonstration that objective has been achieved.	C
		R10	For the Rouen tramway equipment, carry out a modification to the electrical wiring of passenger lighting, using the 'emergency lighting' switch (which is used for night time cleaning in the workshop) splitting the two functions of 'lighting' and 'door operation'.	CAR TCAR	CAR 16/09/05 TCAR 20/09/05	All of MR (rolling stock) fitted with an emergency lighting device.	C

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recommendation completed: C  
 recommendation completed and modified: CM  
 recommendation not retained: NR  
 recommendation undergoing implementation: UI  
 action not known: NK

Recommendations made in 2006

Case No.	Title of investigation	Recommendation no.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal and codified)	
						literal	coding
2005-008	Fire on 2 metro coaches at Simplon station (RATP line 4) on 6 August 2005	R1	Check from feedback that the reinforced maintenance of the circuit breaker on the traction equipment, planned by RATP, is suitable.	RATP	22/02/07	Update maintenance sheets, audit at end of September 2006 Detection of early warning signs of circuit breakers failing to function (with R2): possible preventive maintenance	C
		R2	Study, test and apply a change to the electrical wiring of the MP 59 traction units consisting of detecting a simultaneous blockage of the JH on a traction control and the circuit breaker of the electrical equipment. When this detection is working, the new function must cause the forced opening of the circuits supplying the traction motors.	RATP	22/02/07	Opening of power circuit in the case of non-regression of the JH when it is impossible to open the power circuit of an ATM circuit breaker Storage of associated malfunctions data Tests stated to be conclusive in October 2006 Installation completed during 2007	C
		R3	Evaluate the level of risk represented by the MP 39 and MP 05 equipment (on expiry of its service on line 1): risk of slipping in traction or when stopped together with a non-opening of the traction circuit breaker.	RATP	22/02/2007 10/01/2008	Response in letter from RATP of 22 February 2007 Supplement to RATP response dated 10 January 2008 Request for additional evaluation on the MP73 (BIRMTG letter NO of 6 February 2008) RATP response dated 10 March 2008	C
		R4	Evaluate for each provincial rubber-tyred train the risk of a wheel slipping in traction or when stopped together with a non-opening of the traction circuit breaker.	STRMTG	26/01/07	Letter from STRMTG sent to each provincial operator on 26 January 2007 Risk considered to be acceptable following responses of operators and/or manufacturers (cf STRMTG summary note dated 23 October 2008)	C
		R5	Revise the procedures for updating and presentation of the GOL so that IPEX has a document showing the situation on the ground exactly, with the exception of non-availabilities of very short duration.	RATP	22/02/07	New instruction implemented in October 2006: Pilot analysis with cross-cutting discussion partner GOL modified as a result	C
		R6	Review the effectiveness of smoke extraction measures planned by the GOL, to prevent cases where the measures may prove to be ineffective or even negative.	RATP	22/02/07	Update of GOL on underground; creation of smoke extraction areas Ideal smoke extraction configurations defined and validated during tests Installation completed in normal and damaged mode for lines 1, 4, 6 and 11	C
		R7	Improve the ergonomics of implementing the GOL, particularly by indicating the telephone numbers of the receiving centres at the areas where they intervene.	RATP	22/02/07	GOL updated in October 2006 Integration of tel. numbers of receiving centres or info counters, and liaison centres	C
		R8	Provide for the installation of a centralised control of ventilators, as a priority for rubber-tyred lines.	RATP	02/02/07	CCVM Installation completed on most sensitive lines: L4 (02/03/06), L11 (29/06/06), L1 (13/04/07) and L6 (16/07/07). Line 14 has a centralised control at Bercy Control Point and not at IPEX.	C
		R9	Prepare a call grid established in advance in agreement between the BSPP and the RATP (between the SDIS and any public transport operator) to optimise the handling of the alert.	BSPP RATP	RATP 22/02/07 BSPP 12/03/07	Preparation and evaluation in 2007 Final version completed and set in place	C
		R10	Specify the organisation of the exchange of messages in an emergency situation, improve the training of drivers and ensure the technical quality of transmissions.	RATP	22/02/07	Raise awareness of control supervisors in training Study of a training module on communication: finalised in 2008. All control supervisors and drivers received training in 2009. This is integrated in the basic training modules from now on.	C



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recommendation completed: C  
recommendation completed and modified: CM  
recommendation not retained: NR  
recommendation undergoing implementation: UI  
action not known: NK

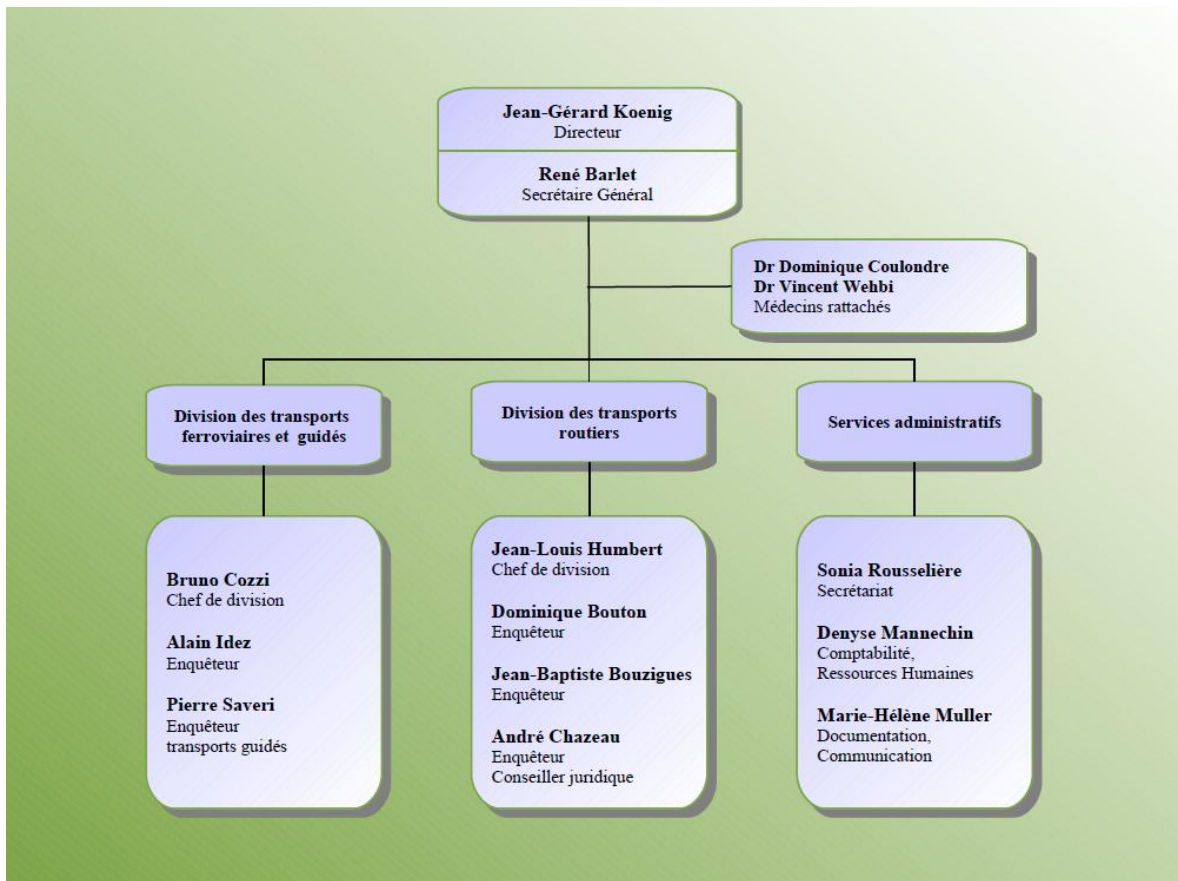
Recommendations made in 2008

Case no.	Title of investigation	Recommendation no.	Wording of recommendation	Recipient(s)	Response (Y/N) Date of response	Action taken and state of progress (literal and codified)	
						literal	coding
2007-008	Collision between a tram and private car that occurred on 4 June 2007 at Saint-Herblain (44)	R1	Identify the sectors, in particular suburban, where advance signs on entering a junction indicating a tram crossing may provide useful additional information for the car driver. Define a programme to introduce advance signs, particularly sign A9 and implement it.	Nantes Métropole SEMITAN	NM 17/03/09 SEMITAN 27/03/09	Modification of the IISR in April 2009. A9 is no longer compulsory if the crossing has a light signal. In the suburban area, the crossings have light signals.	NR
		R2	Complete the programme of reinforcement of signing already decided in SEMITAN, programme detailed in paragraph 4.8.1.	SEMITAN	27/03/09	3 phases achieved in 2008 – 2009 – 2010. Awaiting feedback before continuing	UI
		R3	Continue experimenting with different uses in barrier lights of current statutory signals, to assess the efficiency from the point of view of compliance by road users. Identify the signals used in other countries of the European Union and assess whether it would be appropriate to experiment with them in France.	DSCR CERTU DGITM	DSCR 03/03/2009 CERTU 18/03/09 DGITM: N	The measures requested do not fall within the area of competence of the DGITM.	
		R4	Enter into communication, nationally, in partnership with the AOT [Transport Authorities], but also the GART [Transport Authorities Group] and the UTP [Public Transport Association] with the aim of making the meaning and scope of signal R24 better known.. This communication must also cover the use of the R24 signals for railway level crossings.	DSCR	03/03/09	Study entitled 'Safety of roundabouts crossed by a tramway platform' piloted by the STRMTG and completed by CETE [Centre for Technical Studies of Equipment] in Nantes. Publication by CERTU [Centre for Studies on Networks, Transport and Planning] in February 2008 of a design guide: 'Roundabout and tramway: Tramway crossing a roundabout'.	C
		R5	Reconsider the installation of fixed obstacles situated in the immediate vicinity of the Vasco da Gama roundabout which do not comply with the recommendations of the STRMTG guide on obstacles. Implement a programme to change the installation of LAC support posts on the junctions that cause most concern.	Nantes Métropole SEMITAN	NM 17/03/09 SEMITAN 27/03/09	Vasco de Gama: dealt with Programme begun on all of the network according to the criteria defined in agreement with the control department, awaiting a new mandate for continuation beyond 2010.	CM
		R6	Ensure that operators provide adequate regular training for drivers to prepare them for emergency responses in dangerous situations.	STRMTG	05/05/09	Recommendation passed on to the Birmtg [Interdepartmental Office for Cableways and Guided Transport] during the network meeting on 12 May 2009	C
		R7	Look at whether it is appropriate to add a loud alarm (for example, of the 'klaxon', 'whistle' type as at Mulhouse or 'fog horn') which can be distinguished from horns on road vehicles.	STRMTG	05/05/09	Expert chosen. Study begun. Phase I: identification of need for a warning device in addition to existing signal Phase II: study of prospective characteristics of warning devices on current TW Phase III: sound design of an additional emergency signal.	UI
		R8	Look at the design of frontal parts of trams to make them less harmful to pedestrians and road vehicles in the event of an impact, both from the point of view of shape (to push away any foreign bodies) and of absorbing impact forces.	STRMTG	05/05/09	Consideration begun GT (Working Group) set up (SNCF, Alstom, Bombardier, Siemens, Lohr). First meeting held on 22 March 2010.	UI
		R9	Study the conditions in which tram cars could be fitted with a video camera directed on to the area to be crossed, and, depending on the results of the study, integrate it in the recommendations of the technical reference documents.	STRMTG	05/05/09	The video equipment to be fitted on trams to analyse the causes of accidents and/or training of drivers does not fall within the scope of application of law no. 95-73 of 21 January 1995 (letter from Ministry of Interior of 13 March 2009).	C
		R10	Determine the conditions and time frames for increasing the parametric content of the black box of trams in all of the French fleet according to the list recommended by the STRMTG. Study the procedures to be set in place so that network operators can equip all of their fleet with the same devices.	STRMTG	05/05/09	- Status of existing situation of renewal programmes in progress via the Birmtg. Action to be developed within the terms of the instruction from the DSR.	UI

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## Appendix 6: BEA-TT Organisation Chart as at 1 January 2010



Jean-Gérard Koenig  
Director

René Barlet  
Secretary General

Dr Dominique Coulondre  
Dr Vincent Webbi  
Seconded doctors

Railway and Guided Transport  
Division

Bruno Cozzi  
Head of the Division  
Alain Idez  
Investigator  
Pierre Saveri  
Investigator for  
Guided Transport

Road Transport Division

Jean-Louis Humbert  
Head of the Division  
Dominique Bouton  
Investigator  
Jean-Baptiste Bouzigues  
Investigator  
André Chazeau  
Investigator  
Legal Advisor

Administrative Services

Sonia Rousselière  
Secretariat  
Denyse Mannechin  
Accounting  
Human Resources  
Marie-Hélène Muller  
Documentation  
Communication



## **Appendix 7: Legislation**

- Law 2002-3 of 3 January 2002 relating to the safety of transport infrastructure and systems, technical investigations and the underground storage of natural gases, hydrocarbons and chemicals<sup>2</sup>.

Law amended by law 2006-10 of 5 January 2006 and law 2006-686 of 13 June 2006.

Technical investigations come under Heading III of law 2002-3.

- Decree 2004-85 of 26 January 2004 relating to technical investigations following maritime incidents and land transport accidents or incidents<sup>3</sup>. Decree amended by decree 2006-1276 of 19 October 2006.

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<sup>2</sup> published in the Official Journal of 4 January 2002, page 215

<sup>3</sup> published in the Official Journal of 28 January 2004, page 1996

**LAW No 2002-3 of 3 January 2002 amended, relating to the safety of transport infrastructure and systems, technical investigations and the underground storage of natural gases, hydrocarbons and chemicals**

NOR: EQUX0000153L  
consolidated version at 14 June 2006  
as amended by law No 2006-10 of 5 January 2006  
and law No 2006-686 of 13 June 2006

**Heading I: Safety of transport infrastructure and systems**

**Heading II: Safety relating to the underground storage of natural gases, hydrocarbons and chemicals**

**Heading III: Technical investigations**

**Article 14**

I. – Following an event at sea, a land transport accident or incident, or an accident or incident affecting nuclear activities, as specified in Article L. 1333-1 of the Public Health Code, a technical investigation may be set up for the sole purpose of preventing future events, accidents and incidents. Without prejudice to the judicial investigation, if indeed one is conducted, the technical investigation entails collecting and analysing relevant information in order to determine the circumstances and real or possible causes of the event, accident or incident and to issue safety recommendations where applicable.

II. – Technical investigations into maritime events may involve civilian vessels flying the French flag wherever they are situated, and civilian vessels flying another flag when the maritime event has occurred in domestic waters or in waters forming part of French territory. An investigation may also be conducted when the maritime event, wherever it occurred, has cost lives or inflicted serious injury on French nationals, or caused or threatened to cause serious harm to French territory, to the environment, to facilities or to structures falling under French jurisdiction. These investigations are conducted in accordance with the rules of international maritime law. Technical investigations into land transport accidents or incidents may involve rail transport systems or other guided transport systems, as well as road transport or river transport, provided that the accident or incident has occurred on national territory.

The technical investigation of accidents or incidents relating to nuclear activities may concern all the activities mentioned in Article L. 1333-1 of the Public Health Code.

III. - Technical investigations into maritime events, or land transport accidents or incidents, are conducted by a specialised permanent body which may call on members of inspection or monitoring agencies or, if necessary, request that the Minister of Transport set up an investigation committee.

Within the scope of the investigation, the body or persons in charge of the investigation are totally independent and do not receive or seek instructions from any authority or body whose interests may conflict with their assignment.

A Council of State decree stipulates the conditions for commissioning persons in charge of investigations and for appointing investigation committee members.

This decree also specifies in which instances and according to which procedures foreign technical investigators may be authorised to take part in investigations on national territory or on board French vessels, when their presence is required for the proper conduct of the investigation.

The technical investigation of accidents or incidents relating to nuclear activities must be conducted by agents of the Nuclear Safety Authority, which is a permanent body in the sense of this law. The authority may call upon members of inspection and control bodies, agents of the Institute of Radioprotection and Nuclear Safety, or French or foreign technical investigators.

**Article 15**

Technical investigators can immediately access the location of the event at sea, the land transport accident or incident, or the accident or incident affecting nuclear activities in order to carry out any inspections that may be useful. In the case of a maritime event or accident, the Public Prosecutor as well as, if necessary, the Administrator of maritime affairs in charge of the investigation mentioned in Article 86 of the Merchant Navy Disciplinary and Criminal code, are informed in advance of the details of their participation.

If necessary, technical investigators shall take all measures required to preserve evidence.

**Article 16**

Technical investigators are granted immediate access to the content of technical devices used to record data that may be useful for understanding the causes and circumstances surrounding the maritime event or accident or incident, and may utilise these devices subject to the following conditions:

1) When a judicial investigation or inquiry is initiated, recording devices, previously seized by the judicial authorities in accordance with the provisions stated in Articles 97 and 163 of the Code of Criminal Procedure are, at their request, placed at the disposal of the technical investigators who take a copy, under the supervision of a police officer, of the data contained in them.

2) If a legal investigation or inquiry is not initiated, recording devices and their content may be removed by technical investigators in the presence of a police officer. In the case of a maritime event or accident, the police officer's assistance is sought via the intermediary of the Public Prosecutor.

**Article 17**

If a judicial investigation or inquiry has not been initiated, technical investigators may remove, for purposes of examination or analysis, any debris, fluids, parts, components, units or mechanisms that they think will help to determine the circumstances and causes of a maritime event or accident or incident, in the presence of a police officer. The police officer's assistance is sought via the intermediary of the Public Prosecutor.

Objects or documents held by technical investigators are returned as soon as it is no longer considered necessary to keep them for purposes of determining the circumstances and causes of the maritime event or accident or incident. The withholding and if necessary, the alteration or destruction, for the purposes of the investigation, of objects or documents submitted for examination or analysis are not subject to any compensation.

**Article 18**

When a judicial investigation or inquiry has been opened, technical investigators may, for purposes of examination or analysis and subject to the approval of the Public Prosecutor or Investigating Magistrate, remove debris, fluids, parts, components, units or mechanisms that they think will help to determine the circumstances and causes of a maritime event or accident or incident.

Technical investigators may only submit seized debris, fluids, parts, components, units or mechanisms for examination or analysis that might modify, impair or destroy them subject to the approval of the judicial authorities.

They are informed of expert analyses carried out by the competent judicial authorities. They are entitled to be present at these occasions and to use observations made during these operations for the purposes of the technical investigation.

**Article 19**

Technical investigators may meet with any persons concerned and may obtain, irrespective of professional secrecy claims,

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any information or any documents relating to the circumstances, organisations and equipment associated with the maritime event or accident or incident, particularly with regard to the construction, certification, maintenance, use of equipment, transport preparations, operation and checking of the vehicle(s) involved. Under the same terms, the technical investigators may also request any personal information or documents relating to the training or qualification of the individuals involved and, in the case of events at sea or land transport accidents or incidents, their aptitude to drive or control the vehicles involved. However, information of a medical nature may only be conveyed to doctors attached to the permanent body or designated to assist these investigators, subject to the conditions laid out by the Council of State decree.

Confidential information or documents forming part of the investigation or inquiry may be conveyed to technical investigators with the approval of the Public Prosecutor. If such documents are placed under seal by the judicial authorities, a copy is then made for them.

#### **Article 20**

Doctors working for the permanent body or designated to assist the technical investigators may, upon request, be provided with the results of analyses performed or samples taken from the individuals driving and, if applicable, controlling the vehicles involved in the event at sea or the land transport accident or incident, or from the individuals involved in the nuclear activities in question, together with medico-legal reports on any casualties.

#### **Article 21**

When legal proceedings are initiated, a copy of the technical investigation report is sent to the Public Prosecutor.

#### **Article 22**

I. - Persons in charge of the investigation and experts whom they might consult are bound to professional secrecy subject to the conditions and penalties mentioned in Article 226-13 of the Criminal Code.

II. - By special dispensation from the clauses of Article I, the person in charge of the permanent body is authorised to convey information resulting from technical investigations to the administrative authorities responsible for safety, to managers of companies responsible for the construction or maintenance of infrastructures, transportation facilities or their fittings, to the individuals or companies in charge of operating infrastructures or transport equipment, conducting nuclear activities, designing, producing or maintaining equipment used within the scope of nuclear activities, or training personnel, if the above-mentioned person considers that such information could help to prevent a maritime event or accident or incident. For the same purpose, the person in charge of the permanent body and, if applicable, persons chairing investigation committees, are authorised within the scope of their assignment, to publish technical information on observations made by investigators, proceedings of the technical investigation and if necessary, its provisional conclusions.

#### **Article 23**

In the course of an investigation, the permanent body may issue safety recommendations if it considers that immediate implementation of these recommendations could help to prevent a maritime event or accident or incident.

Upon completion of the technical investigation, the permanent body publishes a report in a form that is commensurate with the severity of the event. This report does not name specific individuals. It only includes information resulting from the investigation and which is required for determining the circumstances and causes of the accident or incident, and for understanding safety recommendations.

Prior to submitting the report, technical investigators may gather observations from the relevant authorities, companies and staff members, who are bound to keep the content of these exchanges confidential.

#### **Article 24**

I. - A period of one year's imprisonment and a penalty of EUR 15 000 will be imposed for any act that hinders the work carried out by technical investigators:

1) Either by objecting to them carrying out their assigned duties;  
2) Or by refusing to provide them with relevant materials, information and documents by concealing, impairing or disposing of these items.

II. - Under the conditions stipulated in Article 121-2 of the Criminal Code, natural persons may be declared criminally responsible for the offences defined under heading I.

Penalties imposed on natural persons are as follows:

1) Fines, in accordance with the provisions stipulated under Article 131-38 of the Criminal Code;  
2) Penalties mentioned in Article 131-39 of the same code.

The ban mentioned under no. 2 of Article 131-39 of the same code pertains to operations due to which or during which the offence was committed.

#### **Article 25**

Clauses coming under heading III of this statute apply, provided they concern maritime events in Mayotte, in Overseas territories and in New Caledonia, without prejudice to the powers devolved to these communities.

#### **Article 26**

Article L. 412-2 has been inserted after Article L. 412-1 of the Highway Code and reads as follows:

"Art. L. 412-2. - A six-month period of imprisonment and a fine amounting to EUR 3 750 will be imposed on any driver of a motor vehicle who when in a tunnel, does not keep a sufficiently safe distance between two vehicles or a distance of 50 metres for vehicles weighing more than 3.5 tons, and who commits the same offence within a year of the date on which this sentence became final."

"Any driver found guilty of this offence also incurs the additional penalty of suspension of his/her driver's licence for a period of three years or more. This suspension may be limited to driving outside the scope of professional activity.

"Clamping and impounding of vehicles may be imposed by the conditions stipulated in Articles L. 325-1 to L. 325-3.

"This offence rightfully results in the withdrawal of half of the initial number of points on the driver's licence."

#### **Article 27**

Subject to the approval of the Public Prosecutor or Investigating Magistrate depending on the case, the following may be conveyed to authorities or bodies declared competent by order of the Minister of Justice after consulting with the relevant Minister(s) if necessary: information from ongoing legal proceedings that could be used to conduct research or scientific or technical investigations intended to notify the committee of accidents or to facilitate compensation of victims. Persons acting on behalf of these authorities or bodies are subsequently bound to professional secrecy with regard to this information, under the conditions and subject to the penalties stipulated in Articles 226-13 and 226-14 of the Criminal Code.

#### **Article 28**

Article L. 721-6 of the Civil Aviation Code reads as follows:

"Art. L. 721-6. - Doctors attached to the permanent body or designated to assist technical investigators are informed, upon request, of the results of examinations or tests performed on persons responsible for operating, communicating with and



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checking the aircraft(s) involved in the accident or incident, as well as the results of forensic expert reports pertaining to the victims."

**Article 29**

The last paragraph of Article L. 711-3 of the Civil Aviation Code is followed by a sentence which reads:

"This decree also specifies in which instances and according to which procedures foreign technical investigators may be authorised to take part in investigations on national territory when their participation is required for the proper conduct of the investigation."

The present statute shall be enforced as a law of the State.

Paris, 3 January 2002.

Jacques Chirac  
By the President of the Republic:  
The Prime Minister,  
Lionel Jospin  
The Minister of Economic Affairs,  
Finance and Industry,  
Laurent Fabius  
The Minister of Justice,  
Marylise Lebranchu  
The Minister of Internal Affairs,  
Daniel Vaillant  
The Minister of Foreign Affairs,  
Hubert Védrine  
The Minister of Infrastructure,  
Transport and Housing,  
Jean-Claude Gayssot  
The Minister of Regional Development  
and the Environment,  
Yves Cochet  
The Secretary of State for Overseas Territory,  
Christian Paul  
The Secretary of State for the Budget,  
Florence Parly  
The Secretary of State for Industry,  
Christian Pierret

- Community Directives:

Council Directive 96/82 of 9 December 1996 on the control of major-accident hazards involving dangerous substances.

- Preparatory work:

National Assembly:

Bill No 2940

Report by Ms Odile Saugues on behalf of the Production Committee, No 3296, amended;

Discussion and adoption, after declaration of urgency, on 10 October 2001.

Senate:

Bill adopted by the National Assembly, No 15 (2001-2002);

Report by Mr Jean-François Le Grand on behalf of the Economic Affairs Committee, No 29 (2001-2002);

Discussion and adoption on 24 October 2001.

National Assembly:

Bill, amended by the Senate, No 3357;

Report by Ms Odile Saugues, on behalf of the Joint Committee, No 3418;

Discussion and adoption on 29 November 2001.

Senate:

Report by Mr Jean-François Le Grand, on behalf of the Joint Committee, No 83 (2001-2002);

Discussion and adoption on 19 December 2001.

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**Decree No 2004-85 of 26 January 2004, amended, concerning  
technical investigations following maritime incidents and land  
transport accidents or incidents.**

NOR: EQUIP0301770D  
consolidated version at 20 October 2006

The Prime Minister,

On the basis of the report by the Minister for Public Works,  
Transport, Housing, Tourism and Maritime Affairs,

Having regard to the 1973 International Convention for the  
Prevention of Pollution from ships, done in London on 2 November  
1973, as amended by the 1978 protocol, published by decree  
No 83-874 of 27 September 1983, in particular Article 12;

Having regard to the 1974 International Convention for the  
Safety of Life at Sea, done in London on 1 November 1974, and  
published by decree No 80-369 of 14 May 1980;

Having regard to the 1978 International Convention on standards of  
Training, Certification and Watchkeeping done in London on 7 July  
1978, published by decree No 84-387 of 11 May 1984;

Having regard to the United Nations Convention on the Law of the  
Sea, signed at Montego Bay on 10 December 1982, published by  
decree No 96-774 of 30 August 1996, in particular Article 94;

Having regard to Council Directive 1999/35/CE of 29 April 1999  
on a system of mandatory surveys for the safe operation of regular  
ro-ro ferries and high speed passenger craft services, in particular  
Article 12;

Having regard to the European Parliament and Council Directive  
2002/59/EC of 27 June 2002 establishing a community vessel  
traffic monitoring and information system, and repealing Council  
Directive 93/75/EEC, in particular Article 11;

Having regard to the Code of Criminal Procedure, in particular  
Article 776;

Having regard to the basic law on Inland Transport No 82-1153 of  
30 December 1982, amended, in particular Article 9;

Having regard to law No 2002-3 of 3 January 2002 concerning the  
safety of infrastructures and transport systems, technical investigations  
after maritime events, land or air transport accidents or incidents and  
underground storage of natural gas, hydrocarbons and chemicals,  
particularly part III;

Having regard to the amended decree of 8 November 1926  
reorganising the Maritime Registration General Inspectorate:

Having regard to amended decree No 84-810 of 30 August 1984  
concerning the safety of human life at sea, habitability on board  
vessels and pollution prevention;

Having regard to amended decree No 85-659 of 2 July 1985  
setting out the organisation of the central department of the Ministry  
for Town Planning, Housing and Transport;

Having regard to decree No 86-1175 of 31 October 1986  
concerning the Conseil Général des Ponts et Chaussées  
[Structural Engineering General Council] and the General  
Inspectorate of Public Works and the Environment;

Having regard to decree No 97-464 of 9 May 1997 concerning  
the creation and organisation of departments with national  
jurisdiction;

Having regard to the opinion of the Central Joint Technical  
Committee of the Ministry for Public Works, Transport, Housing,  
Tourism and Maritime Affairs dated 10 July 2003;

Having regard to the opinion of the standing Inter-ministerial Road  
Safety Group of 22 July 2003;

Having consulted the Council of State (public works section),

**Chapter 1: Common provisions.**

**Article 1**

The specialised standing bodies in charge of carrying out technical  
investigations concerning maritime events and land transport  
accidents or incidents, pursuant to Article 14 of the above-  
mentioned law of 3 January 2002, have national jurisdiction and are  
hereinafter referred to as the 'Maritime Event Investigation Bureau'  
(BEAmer) and the 'Land Transport Accident Investigation Bureau'  
(BEA-TT).

**Article 2**

The authorities of the State and its public establishments, as well  
as those of local government, for the transport services and  
infrastructures they are responsible for, shall immediately inform  
the relevant Investigation Bureau of events, accidents or incidents  
seriously jeopardizing personal safety, particularly when they  
involve professional carriers.

To fulfil their missions, the investigation bureaux can call upon all  
the State services competent in their respective domains.

**Article 3**

The organisation of the investigation bureaux is stipulated by order  
of the Minister for Maritime Affairs or by order of the Minister for  
Transport, as the case may be.

**Article 4**

The Director of each Investigation Bureau is appointed for a term of  
five years. He is assisted by a General Secretary. Their  
appointment commissions them as technical investigators.

**Article 5**

The Director of each Investigation Bureau directs its action. He has  
authority over the staff.

He is the delegated certifying officer of the Bureau's receipts and  
expenditure.

He can delegate the civil servants and staff under his/her authority  
to sign any legal documents, decisions, contracts, agreements and  
riders, as well as any order forms and accounting vouchers.

**Article 6**

The Director of each Investigation Bureau sets the scope of  
technical investigation and the methods of technical investigations. He  
designates the technical investigators in charge of organising and  
carrying them out.

**Article 7**

The Director of each Investigation Bureau organises French  
participation in technical investigations carried out by a foreign  
State under the conditions set out in the international Conventions  
and European Union regulations and directives.

**Article 8**

Doctors assigned to investigation bureaux and doctors designated  
by Directors to assist them, as well as doctors who are members of  
investigation committees, are provided with any medical  
information or documents concerning the people mentioned in  
Article 20 of the above-mentioned law of 3 January 2002, on  
request. Based on this information, they select such elements as  
will clarify the circumstances and causes of the event, accident or  
incident under investigation.

**Article 9**

Recipients of safety recommendations made as a result of a  
technical investigation shall, within ninety days of receipt, unless  
another period is expressly stipulated in the recommendations,  
inform the Investigation Bureau Director of the measures they  
intend to take and, where applicable, the time necessary to  
implement them.

The Director may make these recommendations public, with, where  
applicable, answers received from recipients.

The same provisions are applicable to safety recommendations  
which might be made after examination of experience feedback  
and **accidentology**.

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**Article 10**

Investigation reports drawn up under the terms of Article 23 of the above-mentioned Law of 3 January 2002, as well as studies and statistics, shall be made available to the public by any suitable means.

**Article 11**

The Director of each Investigation Bureau shall draw up an annual report on his/her activities which is made public.

**Chapter 2: Provisions concerning the maritime event Investigation Bureau (BEAmer) and maritime event technical investigations**

**Article 12**

The BEAmer reports to the Inspector General of Maritime Affairs. Its mission is to carry out technical investigations on maritime events.

It also collects, analyses and disseminates information on practices and lessons of maritime event experience feedback.

It carries out experience feedback and accidentology studies and research.

**Article 13**

The BEAmer Director is appointed by order of the Minister for Maritime Affairs, on the proposal of the Inspector General of Maritime Affairs, from Category A civil servants with at least twenty years' professional experience in the field of maritime activities and safety.

**Article 14**

The decision to open an investigation is taken by the Minister for Maritime Affairs, on his own initiative or on the proposal of the BEAmer Director.

The Director shall propose regulations to the Minister for Maritime Affairs on the preservation of evidence from the technical investigation as well as the use of onboard recorders.

**Article 15**

In addition to the Director and General Secretary, the BEAmer is made up of technical investigators, appointed from category A or equivalent civil servants. Their appointment commissions them as technical investigators. The BEAmer also includes technical or administrative staff. These investigators and staff, depending on whether they are employed permanently or on a contract basis, are assigned or hired on the proposal of the BEAmer Director.

For each investigation, the BEAmer Director shall propose to the Minister either the use of the Bureau's own resources or the formation of an investigation committee. In the latter case, at the director's proposal, the Minister shall appoint the Chairman of the Committee chosen from among the BEAmer investigators, as well as the other members of the committee chosen according to their competencies, with the requisite guarantees of independence and impartiality. The members of the committee have the function of technical investigators.

The BEAmer may call upon experts, including foreigners, who are subject to professional secrecy under the same terms as BEAmer officers.

The remuneration of technical investigators and experts who are not assigned to the BEAmer or who are not made available to it, is set by a joint order of the Minister responsible for the Budget and the Minister for Maritime Affairs.

**Article 16**

Technical investigators other than those mentioned in the first paragraph of Article 15, are commissioned by the Minister for Maritime Affairs at the BEAmer Director's proposal, provided that

they have no convictions or decisions recorded in the national criminal record form No 2.

Their commission can be withdrawn from them in the interests of the Bureau, by the same procedure.

**Article 17**

On the proposal of the BEAmer Director or at the request of a foreign authority made through diplomatic channels, the Minister for Maritime Affairs may authorise technical investigators from equivalent foreign agencies to participate in investigations on national territory or on board French vessels.

They may, under the same terms, be associated with the investigation if the maritime event involves a foreign vessel or a foreign national.

The BEAmer Director sets out how these technical investigators participate in or are associated with inquiries or investigations.

**Chapter 3: Provisions concerning the land transport accident investigation bureau (BEA-TT) and technical investigations after land transport accidents or incidents.**

**Article 18**

The BEA-TT reports to the Vice-Chairman of the Structural Engineering General Council.

Its mission is to carry out technical investigations on land transport accidents or incidents, which may involve rail transport systems or guided transport systems, road transport or transport on inland waterways, whenever the accident or incident has occurred on national territory.

It also collects, analyses and disseminates information on practices and lessons from feedback on accidents or incidents for these methods of transport.

It carries out experience feedback and accidentology studies and research.

**Article 19**

The BEA-TT Director is appointed by order of the Minister for Transport, on the proposal of the Vice-Chairman of the Structural Engineering General Council, from Category A civil servants with at least twenty years' professional experience in fields related to transport and its infrastructure.

**Article 20**

Amended by Decree No 2006-1279 of 19 October 2006 (Art.65 III (JORF 20 October 2006)).

The Director of the BEA-TT may take the decision to carry out an investigation upon request or with the approval of the Transport Minister.

However, the Director of the BEA-TT must conduct an investigation whenever a serious rail accident occurs. Furthermore, the Director of the BEA-TT may decide to conduct an investigation after a serious incident has occurred which under different circumstances could have led to a serious rail accident.

The Director shall propose to the Minister for Transport the regulation concerning the preservation of the elements used in the technical investigation and the use of on-board recording devices for the purposes of technical investigations.

**Article 21**

In addition to the Director and General Secretary, the BEA-TT is made up of technical investigators, appointed from category A or equivalent civil servants. Their appointment commissions them as technical investigators. The BEA-TT also includes technical or administrative staff. These investigators and staff, depending on whether they are employed permanently or on a contract basis, are assigned or hired on the proposal of the BEA-TT director.

For each investigation, the BEA-TT Director shall propose to the Minister either the use of the Bureau's own resources and, where

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necessary non-permanent technical investigators recruited under the terms set out in Article 22 of this decree, or the formation of an investigation committee. In the latter case, at the Director's proposal, the Minister shall appoint the Chairman of the committee from among the BEA-TT investigators, as well as the other members of the committee chosen according to their competencies, with the requisite guarantees of independence and impartiality. The members of the committee have the function of technical investigators.

The BEA-TT may call upon experts, including foreigners, who are subject to professional secrecy under the same terms as BEA-TT officers.

The remuneration of technical investigators and experts who are not assigned to the BEA-TT or who are not made available to it, is set by a joint order of the Minister responsible for the Budget and the Minister for Transport.

#### **Article 22**

The BEA-TT Director may also call upon technical investigators made available or temporarily recruited. They are chosen from among the members of inspection and verification bodies, working or retired, as well as from among the working or retired staff of transport or infrastructure management firms.

#### **Article 23**

Amended by Decree No 2006-1279 of 19 October 2006  
Art.65 III (JORF 20 October 2006).

Technical investigators other than those mentioned in the first paragraph of Article 21, are commissioned by the Director of BEA-TT, provided that they have no convictions or decisions recorded in the national criminal record form No 2.

Their commission can be withdrawn from them in the interests of the Bureau, by the same procedure.

#### **Article 24**

On the proposal of the BEA-TT Director, the Minister for Transport may authorise technical investigators from equivalent foreign agencies to participate in investigations on an accident or incident which has occurred on the national territory either when a vehicle registered in their country of origin is involved, or when the operator or manufacturer of the means or system of transport in question is established in their country of origin.

### **Chapter 4: Final Provisions.**

#### **Article 25**

The provisions of Articles 1 to 17 of this decree are applicable, insofar as they concern maritime events, in Mayotte, the Wallis and Futuna islands, French Polynesia, New Caledonia and French Southern and Antarctic territories, without prejudice to the jurisdiction devolved to these authorities.

#### **Article 26**

Decree No 81-63 of 20 January 1981 concerning committees for technical and administrative investigation of ship accidents and incidents is abrogated.

#### **Article 27**

The Minister for Internal Affairs, National Security and Local Liberties, the Justice Minister, the Foreign Affairs Minister, the Minister of Defence, the Minister for the Economy, Finance and Industry, the Minister for Infrastructures, Transport, Housing, Tourism and Maritime Affairs, the Minister for Agriculture, Food, Fisheries and Rural Affairs, the Minister for Public Services, State Reform and National Planning and Development, the Overseas Minister, the Minister responsible for the Budget and Budgetary Reform, the Secretary of State for Transport and Maritime Affairs and the Secretary of State for State Reform are, each in the area concerning them, in charge of executing this decree, which will be published in the Official Bulletin of the French Republic.

By the Prime Minister:

Jean-Pierre Raffarin

The Minister for Infrastructures, Transport,  
Housing, Tourism and Maritime Affairs,  
Gilles de Robien

The Minister of Internal Affairs,  
National Security and Local Liberties,  
Nicolas Sarkozy

The Minister of Justice,  
Dominique Perben

The Minister of Foreign Affairs,  
Dominique de Villepin

The Minister of Defence,  
Michèle Alliot-Marie

The Minister for the Economy,  
Finance and Industry,  
Francis Mer

The Minister for Agriculture, Food,  
Fisheries and Rural Affairs,  
Hervé Gaymard

The Minister for Public Services, State Reform  
and National Planning and Development,  
Jean-Paul Delevoye

The Minister of the Overseas Territories,  
Brigitte Girardin

The Minister responsible for the Budget  
and Budgetary Reform,  
Alain Lambert

The Secretary of State for Transport  
and Maritime Affairs,  
Dominique Bussereau

The Secretary of State for State Reform,  
Henri Plagnol