



ANNUAL REPORT

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Investigation Body for Railway Accidents and Incidents
Belgium

The Investigation Body for Railway Accidents and Incidents is an independent body created to promote safety by carrying out investigations after railway accidents or incidents.



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Foreword

Serious accidents can create a feeling of insecurity within the general public. As a result, above and beyond apportioning blame or liability, it is important to grasp the sequence of events of an accident and the associated safety principles.

Generally speaking, an accident is the joining together of minor, independent failures, not likely, unwanted, etc.

Human error cannot be entirely eliminated: the organisation is responsible for integrating error management mechanisms into its procedures, designed to reduce the frequency or prevent unwanted consequences.

What is important is to no longer consider the error made by one player or another in isolation, but to conceive and put in place organisations capable of detecting in time, any error made, any malfunction, bug, etc., capable of initiating a series of incidents or accidents. Once under way, the most regrettable of consequences must be prevented as rapidly as possible by implementing the necessary safety actions.

The reliability of an organisation can be defined as: «the probability of accomplishing a given mission, in the given conditions, within acceptable limits and accepted by society».

The safety elements are all measures which are intended to prevent the occurrence of an event. These measures involve clearly defined areas (regulatory measures, procedures, conception, etc.) but also implied areas which are more or less clearly defined (good practices, etc.).

A meticulous examination of the elements assembled in the course of an investigation allows the most likely scenario to be established; detailed analysis allows the why of an incident or accident to be established.

Communication does not stop at the publication of an accident report: the objective is also to inform the main parties through meetings, interviews or a request for information, to allow them to immediately adopt the safety measures.

The objective is to encourage the adoption of precautionary safety and risk mitigation measures.

Genuine safety requires an outlook that is turned towards the future.

1. Investigation Body

1.1 Legal basis

The creation of an independent body responsible for investigating railway accidents and incidents aimed at improving safety is foreseen by European Directive 2004/49¹

This Directive has been transposed into Belgian law by one law and two implementing decrees :

- the Law of 19 December 2006² : Law on railway operational safety amended by the Law of 28 December 2011, in particular Chapter VII.
- the Royal Decree of 16 January 2007 amended by the Royal Decree of 25 June 2010 setting certain rules for investigations into railway accidents and incidents.
- the Royal Decree of 22 June 2011 designating the investigation body for railway accidents and incidents and repealing the Royal Decree of 16 January 2007.

The Law of 26 January 2010, amending the Law of 19 December 2006, removes various royal missions for safety, entrusted until now to SNCB/NMBS Holding. It was decided that there was a risk of confusion. The changes no longer allow the IB to commission SNCB/NMBS Holding to carry out investigations. As a consequence, a new structure for the investigation body has been in place since February 2010.

¹ Chapter V of the Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings, and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification

² Chapter VII Investigations into railway accidents and incidents from the law of 19 December 2006

Royal Decree of 22 June 2011

To enhance the independence of the IB, the Royal Decree of 22 June 2011 foresees that the investigation body be managed by a lead investigator and an assistant investigator, from different linguistic bands, subject to the direct authority of the Minister. They may have no link, contractual or statutory, even if temporarily suspended, with any organisation of railway sector actors. There can be no appointment if they do not fulfil this condition.

1.2 Organisation and means

The offices of the IB are situated in Brussels, rue du Progrès, in the vicinity of the North station.

Budget

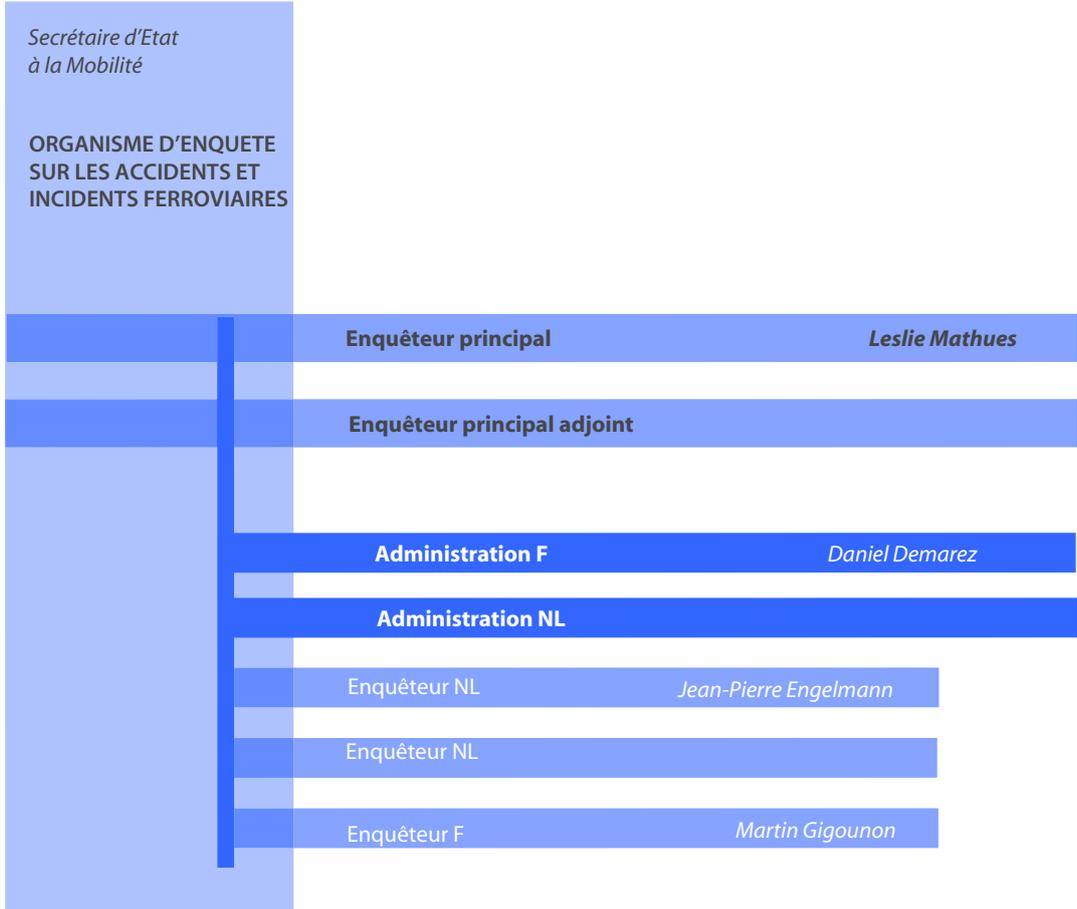
The creation of an organic budgetary fund by Article 4 of the Programme Act of 23 December 2009 is intended to be guarantor of the financial independence of the investigation body for railway accidents.

The funds are composed of contributions from the infrastructure manager and railway undertakings for the operation of the investigation body for railway accidents. Aside from general expenses (staff, offices, operation, equipment), specific operational expenses also exist, allowing the investigation body for railway accidents and incidents to guarantee fulfilment of its tasks: regular external expertise and consultancy, individual safety equipment, participation in specialised training and conferences, etc.

Staff requirements

Recruitment interviews were conducted by Selor during the second half of 2011, to enrol statutory investigators. The ultimate objective is to reach the 7 full-time equivalents provided for in the staffing plan.

A third investigator will join the team in February 2012, as well as an administrator. In addition to its staff, in the context of accidents, the investigation body may call upon external expertise to carry out investigations.



1.3 Missions of the Investigation Body

Investigations

The principal mission of the investigation body is to investigate operational accidents deemed serious, occurring on the Belgian railway network.

As well as serious accidents, the IB is allowed to investigate other accidents and incidents with consequences for railway safety.

The safety investigations carried out aim to determine the circumstances and causes of the event and not to apportion blame.

They are based on multiple aspects: infrastructure, operation, rolling stock, staff training, regulations, etc.

They are separate from the legal enquiry, which takes place in parallel.

The results of the investigations are analysed, evaluated and summarised in the investigation report.

The investigation report is not a formal decision. It may contain safety recommendations for the authorities, railway undertakings, railway infrastructure managers, etc. The aim of the recommendations is to reduce the risk of similar accidents occurring in the future, but also to reduce their repercussions.

Database

The Investigation Body brings together elements collected in a single database for the purposes of archiving, trend analysis and confirming shortcomings in safety.

All events reported on a daily basis by the infrastructure manager and by railway undertakings are introduced into the IB database. It allows identification, in the case of incident or accident, of similar events.

In the course of 2011, the data received from SNCB/NMBS Holding, on incidents and accidents since 01/01/2000, have also been transferred to the database.

The database also allows access to the common safety indicators foreseen by European Directives and transposed into Belgian law. The database is available to the National Safety Authority.

European consultation

The investigation body takes part in the network activities of the National Investigation Bodies (NIB) , which take place under the aegis of the European Railway Agency (ERA), intended for drawing on the experiences of other investigation bodies and to collaborate towards the European harmonisation of regulations and investigation procedures.

Communication

When the IB investigates an accident, its objective is to determine what happened, why, and to uncover the underlying causes.

The reports are made public and are intended to inform the general public, industry, regulating bodies, etc.

The IB website provides access to the published reports. These reports present the facts, analysis, the causes identified, the measures taken by the actors and recommendations made.

Action Plan

Following the accident in Buizingen, in 2010 the ERA carried out an assessment of the investigation body and prepared a report. The Buizingen Commission included the recommendations from the ERA in its final report.

The IB is committed to putting an action plan in place to address each of the recommendations identified at the staffing level, independence, procedures, training of investigators, the content of investigation reports, the procedure for a systematic exchange of ideas between the actors concerned, etc.

Procedures

The IB has developed internal procedures to allow the investigators to perform quality and reproducible work.

Various procedures have been transcribed in the procedural manual. This is in constant development, according to the knowledge acquired through training and field work experience.

Training

To be able to carry out quality work, knowledge needs to be improved. Training is essential in the world of work: it is a means of acquiring knowledge and improving acquisition. It allows each person to maintain a high level of skills and productivity.

A key step has been taken in a training plan which aims at facilitating the adaptability of collaborators towards new working methods: acquiring, maintaining or perfecting knowledge

A development sheet of skills allows a made-to-measure training plan to be prepared and implemented. As well as the many hours of self-study (study of internal regulations, laws, Directives and Royal Decrees, etc.); the IB members have taken numerous training courses in 2011 (approximately 270 hours per investigator).

As an example, several training courses taken during 2011, explained briefly below.

April 2011	4 days of training in the critical analysis of accidents and incidents given by Dédale to all investigators
May 2011	3 weeks of training at the University of Cranfield to one investigator / Participation in the Agoria seminar in Brussels
June 2011	6 weeks of Infrabel Training to one investigator
July 2011	3 days of training «Signalling & Railway Safety» at the UIC in Paris
September 2011	Conference on derailments by the ERA
November 2011	Participation in the seminar «Rail & Public Transport Safety and Security» for 2 days in London
December 2011	3 days of training on derailments given by TQ Catalis to all investigators

Two training courses (Dédale and TQ Catalis) organised by the IB were open to Railway Undertakings and to the Infrastructure Manager, so as to share know-how and allow an exchange between the different participants who are brought together at the scene of an accident.

2 Events

2.1 Event Classification

Events are classified as an accident or an incident.

Incident

Any event other than an accident or serious incident, linked to the operation of trains and impacting on operational safety.

Accident

An undesirable event or unintentional and unforeseen, or a particular chain of events of this kind, having detrimental effects.

Accidents are divided up according to type below :

- collisions,
- derailments,
- level crossing accidents,
- accidents to persons caused by rolling stock in motion,
- fires and
- other.

Accidents and incidents are grouped according to 3 levels of seriousness :

Accident - level 1 « serious »

Any type of accident resulting

- in the death of at least one person or
- serious injuries to five or more persons or
- extensive damage to rolling stock, the infrastructure or the environment.
«Extensive damage» means damage that can immediately be assessed by the investigating body to cost at least EUR 2 million in total.



Accident / incident level 2 « significant »

Any type of accident / incident resulting

- in serious injuries to at least one person
- in damage assessed to be worth at least EUR 150 000
- suspension of rail traffic for over 2 hours.

Accident / incident level 3 « other »

Accidents and incidents that do not fall into the other two categories.

2.2 Investigations into events

Serious accidents (unintentional and unforeseen) must be immediately reported to the investigation body by telephone. The IB has set up a duty system and is reachable 24 hours a day, 7 days a week.

Other events are reported to the investigation body on a daily basis by the infrastructure manager and by the railway undertakings.

The decision to proceed to an investigation is taken by the investigation body independently, taking into account :

- the seriousness of the accident or incident;
- whether it is part of a series of accidents and incidents with a certain systemic importance;
- the consequences of the accident for railway safety at a Community level;
- requests from the Minister, the railway infrastructure manager, one or more railway undertakings concerned, the Safety Authority or one or more Member States of the European Union;
- the extent to which an investigation will contribute to improvements in railway safety and to prevention of similar accidents and incidents;
- the results of a European consultation or an exchange of views and experience between investigation bodies or with the ERA;
- any other reason the investigating body considers pertinent in the circumstances.



2.3 Investigations opened in 2011

The investigation body has started 3 investigations in 2011.

28 January 2011: Pepinster, derailment of a passenger train

Friday 28 January 2011, train E507 Oostende-Eupen, pushed by a locomotive, running in counter-flow track regime at a reduced speed on line 37 between Olne and Pépinster.

The traffic speed was reduced due to works on the line between Olne and Pépinster, temporary signalling was in force.

The train E5280 from Verviers-Central in the direction of Liège Palais running on line 37 was stopped between the signal K-I.53 at danger (red), at 300 metres from the entrance to the Pépinster station.

The train E507, leaving Pépinster station, crossed switches 02A1 :03I and 02B1 before re-entering traffic on a normal track regime on line A.



The train was made up of twelve carriages, measuring around 317 metres in length.

As the train crossed the switches, the rear section of train E507 derailed, the eleventh carriage left the tracks.

This carriage side-swiped train E5280 which was stopped at the signal.

The driver and train operators immediately signalled a GSMR alarm. The B.53 Verviers block noted

the loss of control of the points. The disengaging was noted by the electrical distribution frame.

Measures were taken to avoid an escalation of the accident.

The accident had no serious consequences; there were no fatalities or casualties, no extensive damage worth over EUR 2 million. It was, by definition, a significant accident as railway traffic was interrupted for more than 2 hours.

The investigation body went to the scene and decided to open an investigation to determine the different circumstances of the derailment.

30 June 2011, Charleroi-Sud : face to face between two passenger trains

Thursday 30 June 2011 at 15:34 hrs, the train ME3916 left the workshop of Charleroi. According to the planned timetable, the train ME 3916 should leave the workshop at 15:15 hrs to arrive in Binche at 16:00 hrs so as to provide passenger transport from Binche to Louvain-la-Neuve at 16:15 hrs.

The line of movement is not pre-planned.

The movement agent plotted a route from the workshop to Charleroi station in minor movement up to the small stop signal GY-H.20. The driver left the workshop of Charleroi via the signal IY-H.20.

Arriving in the vicinity of platform VII of Charleroi station, the driver of ME3916 noted the presence of a passenger train ahead and put on the emergency brake.

The two trains stopped a few metres apart.



The investigation body did not go to the scene. This accident does not fit the definition of a serious accident. The IB was informed via the incidents reported daily by the infrastructure manager and the railway undertakings. The accident could have had more serious consequences. A reconstruction was carried out at the request of the Investigation Body.

Similar incidents have been identified in the database. The investigation body has initiated an investigation in order to determine the indirect causes

8 September 2011, Feluy : Derailment of freight wagons in a SEVESO area

Thursday 08/09/2011, at 10:40 hrs, the B-LOGISTICS GLI platform manager noted, on track 11 of sidings B in Feluy, the derailment of a bogie from the last wagon of a set of 16 wagons.

The tank on this wagon was empty but was a container for hexane (code UNO 2370 - danger code: 33 (highly flammable liquid material)).
The buffer on track 11 was pushed back a distance of around 5 metres as a result of the probable shock produced by the derailment.

The nature of the product contained in the tank required an inspection by the fire service: despite there being no leak, a safety perimeter was put in place, preventing all rail traffic in the sidings B in Feluy.



The clearing of the non-impacted wagons and the lifting of the derailed wagon was done over the following days under the supervision of the fire service.



The accident had no serious consequences; there were no fatalities or injuries, nor damage worth over

EUR 2 million.

It was, however, an accident which could have had far worse consequences, given the presence of an RID product within a SEVESO boundary.

The investigation body went to the scene and decided to open an official investigation to determine the different causes of the derailment.



2.4 Investigations opened in 2010

15 February 2010, Buizingen: collision between two passenger trains

At the end of November, the consultation procedure on the draft report began. The investigation report was sent to the main parties to allow them to make their comments. These have been examined, the accepted comments have been integrated into the report and others have been discussed. New elements available in December 2011 were the subject of an additional investigation.

The report is now published and available on the website since May 2012.

15 September 2010, Arlon: side-swipe collision between two passenger trains

Wednesday 15 September 2010, the passenger train E5937 Luxembourg - Arlon entered the station with around 1 minute delay on track III.

The driver had to switch to the opposite driver's cab in order to leave in the direction of Luxembourg. The planned departure time from Arlon station was 17:59 hrs. It had to perform shunting operations for a change of end.

Time being up, the train operator activated the closure of the doors and sent the information on completed boarding and disembarkation to the train driver by turning the key in the IOT (completed operations indicator) box. The driver of train E5937 saw the white light of the IOT illuminated and put the train in motion. He began movements for switching on the radio. When he raised his head, he saw the simplified stop signal (red) followed by a main stop signal also at danger. The driver applied the emergency brake. The train came to a stop between the simplified stop signal and the main stop signal. At the same time, the passenger train E5888 entered the station at Arlon, with a lot of passengers. The train was switched over to track IV.

It was running at around 40km/h. At this moment the driver noticed the train in the area, applied the emergency brake and struck the train 5937 on its right side. The driver of train 5888 pressed the red button to raise the radio alarm and called Traffic Control.

3 Overview of closed and open investigations since 2007

The table below gives an overview of closed and open investigations since 2007.

Year	Nr	Date	Type	Death	Status	Date
2007	1	26/04/07	Collision	0	Closed	02/09/07
	2	19/06/07	Collision	1	Closed	23/07/08
	3	02/09/07	Derailment	0	Closed	08/10/08
	4	29/11/07	Staff hit by train	2	Closed	01/04/09
	5	14/12/07	Person hit by train	1	Closed	27/04/09
	6	17/12/07	Person hit by train	1	Closed	26/05/08
2008	1	03/03/08	Level crossing accident	0	Closed	02/2010
	2	03/07/08	Collision	1	Closed	02/10/09
	3	25/10/08	Staff hit by train	1	Closed	02/10/09
	4	14/11/08	Collision	0	Open	
2009	1	23/05/09	Boarding incident	0	Open	
	2	15/11/09	Staff hit by train	1	Open	
	3	19/11/09	Derailment	1	Open	
2010	1	15/02/10	Collision	19	Open	
	2	15/09/10	Side-swipe collision	0	Open	
2011	1	01/02/11	Derailment	0	Open	
	2	04/07/11	Face-to-face between 2 trains	0	Open	
	3	22/09/11	Derailment	0	Open	

Since its creation in 2007 and until January 2010, the investigation body called upon the technical, material and operational expertise of the safety and environmental service of SNCB/NMBS Holding to conduct investigations and produce the corresponding reports, under the supervision of the lead investigator of the FPS investigation body.

An investigation on the scale of Buizingen and training have taken up a lot of time and energy. The IB is doing everything possible to reduce the delay.

4 Recommendations

More than 80% of recommendations have been accepted by the railway undertaking concerned and/or by the infrastructure manager.

	Number	Accepted	Refused	No response
Izegem	5	5		
Genk-Goederen	4	4		
Genva	4	4		
Ede	2		2*	
La Hulpe	13	13		
Berchem Mortsels	4		4**	
Hermalle-sous-Huy	3	2	1***	
Walcourt	3	3		
Gembloux	4	4		
Total	42	35	7	

* The recommendations involved the removal of external handles close to the doors and the actions to be taken to avoid the problem of «train surfing».

** The 4 recommendations involved amendments to be made to rolling stock due to it being possible to open emergency doors whilst the train is in motion without an alarm sounding.

*** The recommendation was on the implementation of a technical measure to verify the back-up electrical feeder before switching over to it.

