

ANNUAL REPORT

of the Rail Accident and Incident
Investigation Unit



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THIS ANNUAL REPORT RELATES TO THE WORK COMPLETED BY THE INVESTIGATION UNIT (IU) DURING THE COURSE OF 2019.

We have closed three investigation reports and opened five new investigations, one of which concerns a serious accident relating to the death of a level crossing user.

We continue to strengthen all our activities through a progressive optimisation of our processes aiming at greater efficiency. It is essential to sustain the efforts undertaken in recent years to reduce the time taken to publish our reports. The collaboration and input of the various actors concerned are necessary to meet the targets and challenges that we have set ourselves.

In recent years, the IU has faced periods of staff instability. We continue to develop the recruitment and training process in this regard.

A recruitment procedure for a French-speaking and a Dutch-speaking investigator was started in the last quarter of 2019. Two investigators will be added to the IU staff in the course of 2020. This recruitment of 2 new investigators will require investment in their training.

These efforts will strengthen the positive profile of the ongoing projects and will allow to measure their positive impact over the next few years.

It is also essential to sustain the efforts undertaken over the last few years to demonstrate our independence and expertise, whether through the development of new processes, the design of a new logo or the development of a new website.

Our new logo was designed in December. The development of our website also started in December. It is expected to go online in March 2020.

Concerning the accident and incident databases, we are developing new applications aiming at strengthening safety, in particular by sharing the results of these applications with the actors concerned. For example, a project to develop statistical dashboards has been initiated and will have to be continued in the years to come.



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THE INVESTIGATION UNIT

02



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LEGAL STATUS

The creation of an independent body responsible for investigating railway accidents and incidents for the improvement of safety is provided for by the European Directive 2004/49. This Directive has been transposed into Belgian law with one law and two implementing decrees.

LAW OF 30 AUGUST 2013 ON THE RAILWAY CODE

The Railway Code is intended to codify and assemble three laws on the railways in a single and coherent text. It finalises the transposition of certain directives and provides for the modifications to railway legislation made necessary by the experience acquired since adoption of the following three laws:

- The Law of 4 December 2006 on the use of railway infrastructure;
- The Law of 19 December 2006 on the safety of railway operations;
- The Law of 26 January 2010 on interoperability of the railway system within the European Community.

ROYAL DECREE OF 16 JANUARY 2007

The Royal Decree of 16 January 2007 has been amended by the Royal Decree of 25 June 2010 setting certain rules for investigations into railway accidents and incidents.

ROYAL DECREE OF 22 JUNE 2011

The Royal Decree of 22 June 2011 designating the rail accident and incident investigation unit (IU) and repealing the Royal Decree of 16 January 2007.

It stipulates in Article 4, that the chief investigator and the assistant investigator of the IU may have no link to the Department for Railway Safety and Interoperability (DRSI), or to any railway regulatory body or any authority whose interests could conflict with the investigation.

LAW OF 26 MARCH 2014

The Law of 26 March 2014 regulates all requirements on the operational safety of museum railway lines. A museum railway line has the main function of tourist-passenger transport with historical rolling stock, such as steam trains. These are abandoned railway lines which have remained in place and which are generally operated by a company operating tourist trains.

To be able to operate a museum railway line, the operator must have authorisation, issued by the Safety Authority (DRSI).

This law stipulates that the operator of a museum railway line should immediately inform the IU of the occurrence of a serious accident, according to the means determined by the IU. It also foresees

that the IU carries out an investigation following every serious accident occurring on a museum railway line.



ORGANISATION AND RESOURCES

INDEPENDENCE

Since its creation in 2007, the IU has made some major advances.

The various legislative changes made since its creation allow the IU to work completely independently. To keep the public's trust, the IU must be objective, independent and free of any conflict of interest.

The IU is hierarchically independent of the Minister for Mobility, the FPS Mobility and Transport, the Safety Authority, etc.

The hierarchical position of the IU reinforces its independence, to the extent that it is under the direct authority of the Minister for Small Businesses, Self-employment, Small and Medium sized Enterprises, Agriculture and Social Integration, in charge of policy on the railway system and regulations on railway transport and aviation.

Our independence is not only linked to the hierarchical position.

It can be seen in our freedom to decide when to open investigations as well as how to conduct them, and also in the availability of financial resources. The annual budget is established by the Chief Investigator in collaboration with the department for Budget and Management Control. He has the power to authorise various expenses within the financial limits mentioned, to finalise contracts etc. The Ministerial Decree of 4 October 2011 sets

the powers which are delegated to the Lead Investigator in financial matters.

Aside from general expenses (staff, offices, operations, equipment), there are also specific operational expenses foreseen which ensure the IU is able to fulfil its duties: regular external expertise and consulting, individual safety equipment, participation in specialised training and conferences etc.

The Memorandum of Understanding made with the FPS Mobility and Transport allows not only use of its offices but also numerous services: legislative, personnel procedures, etc.

BUDGET

The creation of an organic budgetary fund by Article 4 of the programme act of 23 December 2009 is intended to guarantee the financial independence of the Rail Accident and Incident Investigation Unit.

The funds are made up of contributions to the operational costs of the IU by the infrastructure manager and railway undertakings.

The King determines, by Decree, the amount of the annual IU budget, after consultation with the Council of Ministers.

TOTAL STAFF

On the 31 December 2019, the IU was made up of:

- a Chief Investigator,
- two permanent investigators,
- an administrative assistant.

Investigations are led by the permanent investigators with the support of experts chosen according to the skills considered necessary.

To be able to carry out its duties effectively and with the level of quality required while remaining independent in its decision making, the IU has an appropriate level of technical expertise internally in the railway domain and experience on the ground. Newly-recruited IU personnel generally have engineering skills and specialised knowledge in areas other than the railway.

The IU offers its personnel the opportunity to take regular training courses. The aim is for members of the team to be specialised in various disciplines, and for them to accrue and share experiences through a policy of knowledge transfer within the group.

LOCALISATION

The offices of the IU are situated in the offices of the Federal Public Service Mobility and Transport, rue du Progrès 56 (5th floor) in Brussels, close to the North station.



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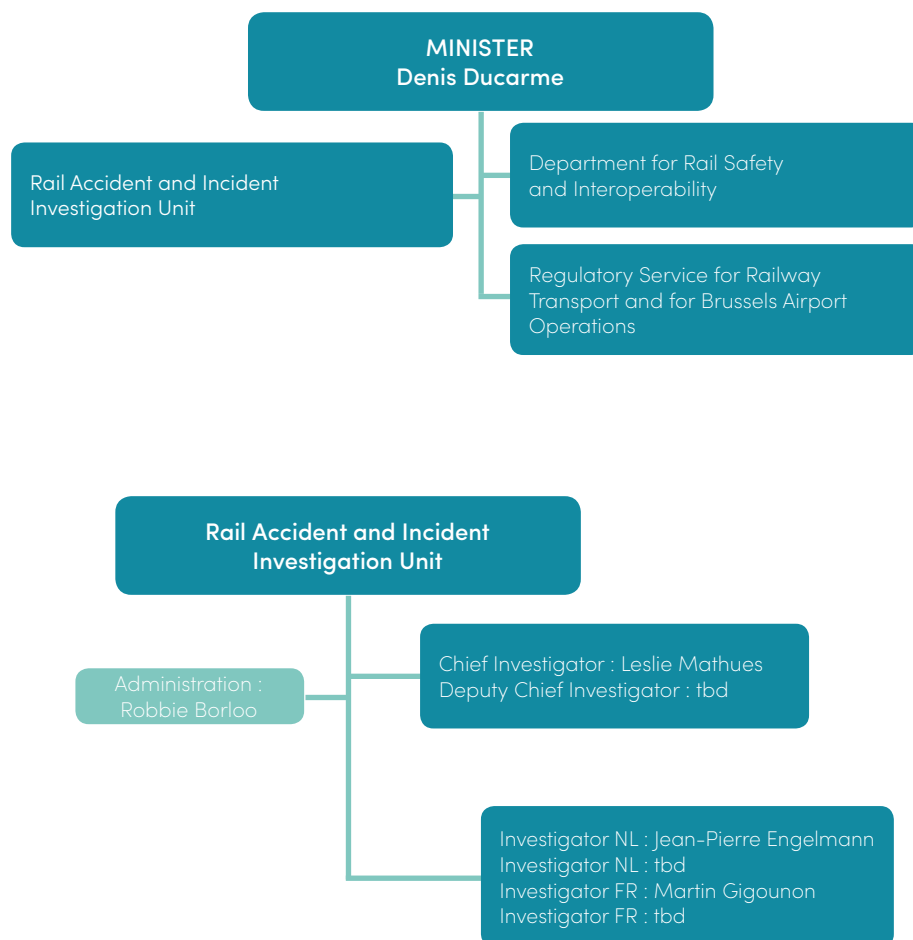
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THE IU ORGANISATION CHART





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INVESTIGATIONS

THE MAIN TASK OF THE INVESTIGATION UNIT (IU) IS TO INVESTIGATE OPERATIONAL ACCIDENTS CONSIDERED SERIOUS, OCCURRING ON THE BELGIAN RAILWAY NETWORK.

As well as serious accidents, the IU 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 with apportioning blame.

They are separate from the legal investigation, which takes place alongside.

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

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 authorities, railway undertakings, the infrastructure manager or other publics.

The aim of these recommendations is to reduce the risk of similar accidents re-occurring in the future, but also to reduce the consequences.

The investigations opened and closed in 2019 are briefly described in chapters six and seven.

DATABASES

All the accidents and incidents reported by the infrastructure manager and by railway undertakings are recorded into the IU database daily.

In this database all events are catalogued based on the information provided by the railway undertakings and the infrastructure manager.

The information in the databases is essential for allowing the IU to analyse general safety trends and provide useful information in the context of investigations.

The data is either automatically transferred, or introduced directly in the database via an automatic electronic form by the railway undertakings and the infrastructure manager.

Access is managed by the IU.

Each year, we receive:

- about 9000 brief accounts (including aggression towards train conductors, rolling stock failure, signalling failure...);
- about 5000 reports.

The database is made available to the Safety Authority (DRSI) and allows common safety indicators to be determined, as foreseen by European Directives.

The safety, security and environment service of the Directorate-General for Sustainable Mobility and Railway Policy of the FPS Mobility and Transport also has access to the "report"

database for accidents and incidents occurring at level crossings.

Automatic alerts have been put in place by the IU to draw the attention of IU investigators to certain types of events: death, derailment, collision, etc.

Since 2017, railway undertakings and the infrastructure manager are able to access the database of the IU when they are involved in an event.

In 2019, the Investigation Unit initiated a statistical dashboards development project.

In addition to including CSI statistics, these dashboards have multiple purposes, in particular:

- establishing trends for events other than those listed in the CSIs;
- highlighting accident precursors;
- searching for possible atypical links between various contributing factors.

This project will be continued in 2020. It will include the sharing of dashboards with the National Safety Authority, the infrastructure manager and the railway undertakings through periodic reports.



COMMUNICATION

The investigation reports are made public and are intended to inform the parties concerned, the industry, regulating bodies, but also the general public. This is why the IU publishes, in four languages (English, French, Dutch and German), summaries giving details of the main elements of an investigation. The report outlines the elements that have allowed conclusions to be drawn.

The reports and summaries by the IU are available via the IU website at the following address:

<https://www.rail-investigation.be/en/investigations/>

Contact with the press is via the spokespersons of FPS Mobility and Transport, in accordance with the agreement protocol established between the FPS and the IU.

For further transparency, the website is changed when the Investigation Unit decides to open an investigation.

After having brought the primary elements together, the Investigation Unit publishes a bulletin of general information pulling information on factual grounds; this is not the analysis that will be published in the investigation report.



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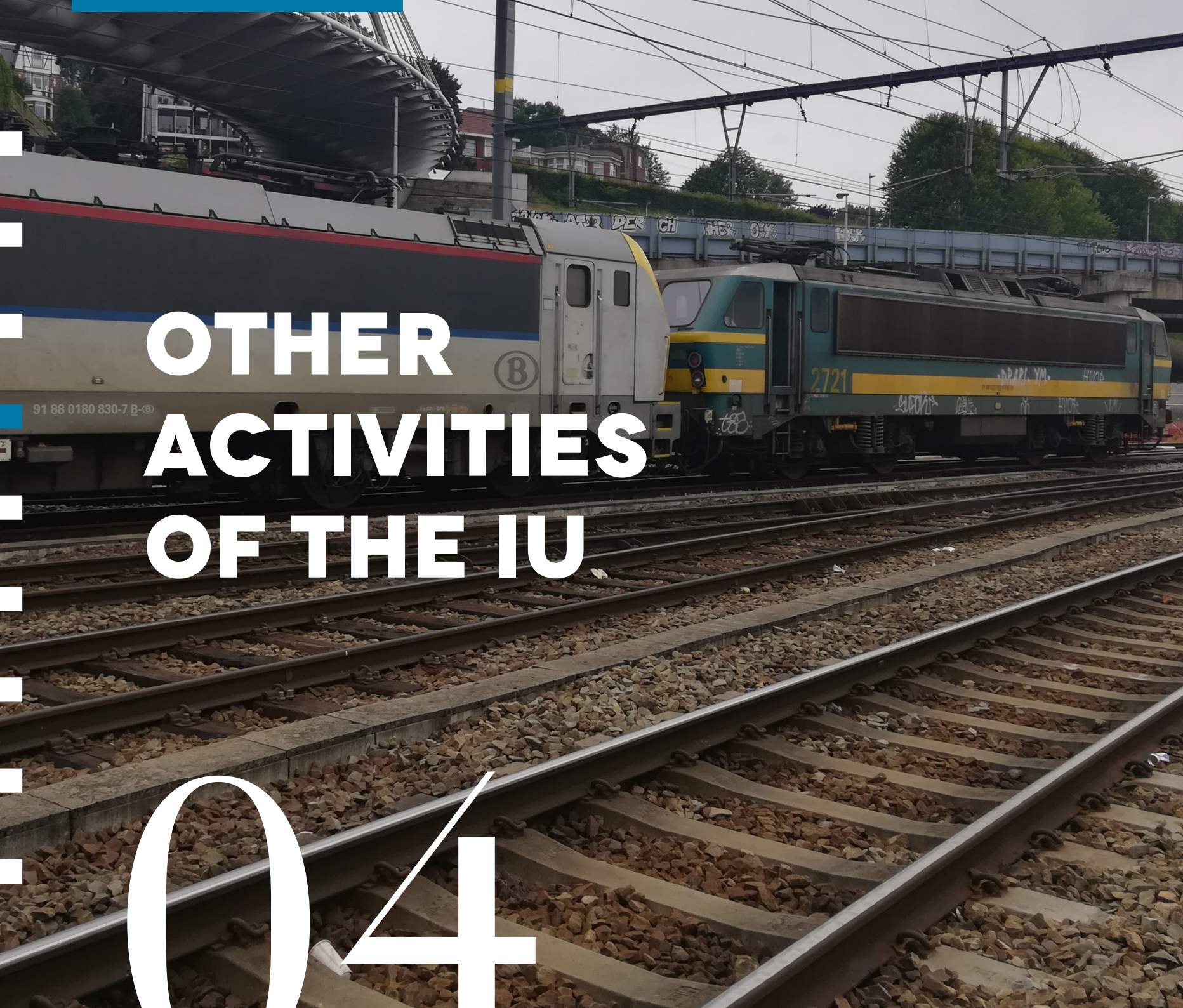
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NATIONAL INVESTIGATION BODY NETWORK

The IU takes part in the activities of the network of national investigation bodies, which take place under the aegis of the European Union Agency for Railways (ERA). The aim of this network is to allow an exchange of experiences and to work together on European harmonisation of regulations and investigation procedures. This international platform ensures an exchange of good practices between Member countries, as well as the development of guides so as to have a common vision and interpretation of the practical application of European Directives. There is a maximum number of 3 meetings per year with a maximum duration of two days.

The Investigation Unit also participates in meetings for the 'German-speaking group'.

Our participation is active, whether this is in presentation of the available elements from investigations or the process of an investigation or in the sharing of results from human and organisational factor investigations carried out with the help of external experts.

As a result of new European directives, we participate with other NIBs and ERA in organising and improving the management of plenary meetings.

SEMINARS

BRUSSELS 19.03.2019 DAY ON SAFETY IN THE RAILWAY WORLD

As there was an increase in 2017 in the number of accidents involving contractor personnel, the IU initiated a seminar carried out in close collaboration with the UETF (union of railway works companies), Infrabel and Tuc Rail.

The common thread was safety culture during railway work and the basic principles of "hearing, seeing and being seen" during works carried out in and around the tracks.

This first day (19/03/2019) was a great success and attracted a large number of participants.

The presentations of this day are available on the website through this link:

<https://www.rail-investigation.be/en/day-on-safety-in-the-railway-world/>

11TH EDITION OF (INTERNATIONAL LEVEL CROSSING AWARENESS DAY) ILCAD JUNE 6, 2019 LAUNCH CONFERENCE, AMERSFOORT, NL

During this conference, the IU presented the lessons learned from the Pittem and Morlanwelz level crossing accidents.

TRAININGS

VALENCIENNES 27-29.11.2019 - PILOT TRAINING COURSE «INVESTIGATION INTO HUMAN AND ORGANISATIONAL FACTORS»

This training course, developed in cooperation with several NIBs, offers a mix of theory and practice. The IU takes part in the pilot training course to propose improvements and comments.

This training course is an introduction to the integration of human and organisational factors in accident investigations.



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INVESTIGATIONS

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INVESTIGATION PROCEDURE

THE PROCEDURE IS SUBDIVIDED IN 5 DIFFERENT PHASES:

DATA COLLECTION

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1

DATA COLLECTION

The railway infrastructure manager immediately telephones the investigator on duty to inform him of serious accidents and incidents as well as all collisions and derailments on the main line. The practical formalities for these communications are sent by post to the infrastructure manager. The Investigation Unit (IU) can be reached 24 hours a day, 7 days a week. The decision by the IU to open an investigation is communicated to the European Union Agency for Railways, to the Department for Rail Safety and Interoperability, to the railway undertaking and to the infrastructure manager concerned. The actors concerned are consulted from the beginning of the investigation.

The first phase of the investigation involves factual data collection by investigators on the site of the accident or incident. This involves looking for and collecting all the information, descriptive as well as explicative, likely to clarify the causes of an unsafe event. All the information, proof and declarations available and linked to the elements in a situation which have led to the accident or incident, are evaluated, so as to check what can be considered as proof or not. The most probable scenario is then established.

ANALYSIS



2

ANALYSIS

The careful analysis of a safety management system with three dimensions (technical, human and organisational) allows possible failures and/or inadequacies to be revealed. And this at different levels of the system and in particular in the management of risks, with the aim of preventing accidents.

RECOMMENDATIONS



3

RECOMMENDATIONS

The recommendations in the area of safety are proposals that the IU makes in order to improve safety on the railway system. The recommendations are centred around the prevention of accidents. Their role is three-fold: minimising the number of potential accidents, limiting the consequences of an accident and finally to lessen the seriousness of resulting damage. The IU addresses, formally, the National Safety Authority with recommendations resulting from their investigation into the accident. If it turns out to be necessary due to the character of the recommendations, the IU also addresses other Belgian authorities or other Member States of the European Union.

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INVESTIGATION PROCEDURE

THE PROCEDURE IS SUBDIVIDED IN 5 DIFFERENT PHASES:

THE INVESTIGATION REPORTS



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THE INVESTIGATION REPORTS

The investigation reports serve as a reminder as well as an archive, but also allow the lessons learned from accidents and/or incidents to be recognised.

Their goal is to encourage the circulation of knowledge acquired in the course of different analyses. The preliminary reports are generally sent twice to the actors concerned, so as to allow them to get to know the analyses and to provide their comments.

The goal is not to alter the content of the report but to add any necessary details. The conclusions and recommendations are a part of the draft final report sent to the actors concerned. The changes accepted by the IU are then incorporated into the reports. Further investigations are sometimes necessary to remove any ambiguities or to verify new elements made available to the IU.

FOLLOW-UP TO THE RECOMMENDATIONS



5

FOLLOW-UP TO THE RECOMMENDATIONS

The law specifies that the addressees of the recommendations inform the IU, at least once a year, of the follow-up to the recommendations. The inspection of the operational follow-up given to recommendations made are not part of the IU duties. The monitoring of this implementation falls to the National Safety Authority for the railways, according to Directive 2004/49/EC.



CASES SUBJECT TO AN INVESTIGATION

An accident is defined as an event which is undesirable, unintentional and unforeseen, or a particular chain of events of this kind, having detrimental effects.

According to Article 111 of the Law of 30 August 2013, the Investigation Unit (IU) carries out an investigation following every serious accident occurring on the railway system. A serious accident is defined as any train collision or any derailment causing at least one death or at least five serious injuries, or causing major damage to the rolling stock, to the infrastructure or to the environment, as well as any similar accident having obvious consequences for the regulations or the management of railway safety. "Extensive damage" means damage that the investigation unit can immediately estimate to a value of at least EUR two million in total.

As well as serious accidents, the IU can carry out investigations into the accidents and incidents which, in slightly different circumstances, could have led to serious accidents, including technical failures at the level of structural subsystems or interoperability constituents of the high speed or conventional railway system.

The IU receives from the infrastructure manager and the railway undertakings:

- **reports**, within 24 hours, on all incidents and accidents occurring on the Belgian railway network;
- **summary reports**, within 72 hours, of operating incidents and accidents.

They are put into two separate databases: one with the reports and the other with the summarised reports.

The accidents and incidents are sorted in the database according to the elements provided by the railway undertaking and the infrastructure manager, according to three levels of seriousness: serious, significant and other.

¹ Article 19 (1) of Directive 2004/49

"SERIOUS" ACCIDENT / INCIDENT LEVEL¹

Any type of accident/incident resulting:

- in the death of at least one person **or**
- serious injuries to five or more persons **or**
- causing extensive damage to the rolling stock, to the infrastructure or to the environment; "extensive damage" meaning damage that the investigation body can immediately estimate at a value of at least EUR two million in total.

"SIGNIFICANT" ACCIDENT / INCIDENT LEVEL 2

Any type of accident/incident resulting:

- in serious injuries to at least one person **or**
- causing damages assessed to be worth at least EUR 150,000 **or**
- suspension of rail traffic for over six hours.

"OTHER" ACCIDENT / INCIDENT LEVEL 3

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

The decision to open an investigation is taken by the IU independently on the basis of this information, potentially supplemented by a preliminary enquiry.

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Five investigations were opened in 2019: of these five investigations, one accident meets the definition of serious accident.

SIGNIFICANT ACCIDENT

Level 2

NOORDERKEMPEN

11 FEBRUARY 2019

SWITCH RUN-THROUGH

On 11 February 2019 at 5:45 am, the empty passenger train E15214 leaves the fan of sidings F of Antwerpen-Schijnpoort-Carwash to Noorderkempen. The train leaves 8 minutes ahead of schedule and runs via L.12 and then L.4 on track A towards the Netherlands.

While the train E15214 running empty on L.4 approaches Noorderkempen station, the passenger train E7226, Noorderkempen-Puurs, scheduled to depart at 5:55 am, is waiting at platform 1 of Noorderkempen station. The route of the train E7226 goes from platform 1 to track A and from track A via switch 02W to track B and then towards Antwerp. Since the route of the train E15214 was set first, the departure signal remains closed for the train E7226.

The movement agent notices this conflict and takes action to close the signal for the approaching train and then open the departure signal for the train E7226. He contacts the driver of the train E15214 and asks him if he can close the signal in advance of the train. The train driver gives his consent.

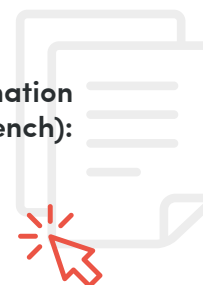
The movement agent closes the signal C-W.12, cancels the route of the train 15214 in advance of the signal C-W.12 and opens the departure signal for the train E7226 at 5:58:02 am. The train E7226 departs in the direction of track B, line 4, towards Antwerp.

On 11 February 2019 at approximately 5:58:20 am, the train E15214 passes the closed signal C-W.12. The train driver receives a "TRIP" (the TRIP mode is a braking action that cannot be interrupted by the train driver) and sees his train come to a stop at the switch 02W as a result of an emergency braking. The switch is run through and, therefore, damaged.

The exit signal of platform 1 is automatically closed at 5:58:35 am. The driver of the train E7226 notices that the exit signal is closing and manages to stop his train in time.



**Bulletin of General Information
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OTHER ACCIDENT

Level 3

GENT-SINT-PIETERS

14 APRIL 2019

SIDE-ON COLLISION WITH A FREIGHT TRAIN BY A RUNAWAY PACKING MACHINE

Works are being carried out on the infrastructure in Landegem. A Unimat 7 packing machine from contractor Strukton is being used for this. This packing machine has a driver's cab and a handbrake at each end. The door of driver's cab 1 at end 1 is locked. At end 1, there is no platform and handbrake 1 is in driver's cab 1. The door of driver's cab 2, end 2, is open. At end 2, there is a platform and on the platform is handbrake 2.

On 13 April 2019 at 10:27 pm, the train Infrabel Z97900 departs from Oudenaarde with the packing machine and is received at platform 2 of Gent-Sint-Pieters at 10:58 pm. The train consists of 1 locomotive and end 1 of the packing machine is coupled to this locomotive.

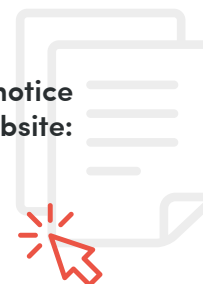
On 13 April 2019 at 10:26 pm, the train TUC RAIL LZ96021 departs from Schaerbeek and is received at platform 2 at 11:26 pm. The train consists of 1 locomotive and on board is a conductor from TUC RAIL.

Various circumstances in-situ lead to multiple coupling and decoupling manoeuvres of the 2 locomotives with the packing machine. The last manoeuvre takes place when the Infrabel locomotive has already been decoupled and departed. During this manoeuvre, the conductor decouples end 2 of the packing machine from the TUC RAIL locomotive without the handbrake engaged. As the conductor and the TUC RAIL locomotive's driver move away from the packing machine, it begins to move in an unintended manner.

The runaway packing machine reaches point switch AW61BK at the moment freight train Z65902 is coming past and collides with it side-on. There are no casualties, but there is material damage to the infrastructure, 5 wagons and the packing machine.



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SIGNIFICANT ACCIDENT

Level 2

BELSELE-SINAAI

9 MAY 2019

DERAILMENT OF A WAGON OF A FREIGHT TRAIN

On Thursday, 9 May 2019, freight train E52903 of the railway undertaking LINEAS is riding between Antwerpen-Noord and Gent-Zeehaven: it is composed of an electric locomotive and 18 wagons.

Around 8:43 am, on line 59, near the town of Belsele, the first axle of the first bogie of the 9th wagon breaks.

The driver does not feel or notice this breakage: the train continues its journey.

As a result of this breakage, parts of the wagon are dragged, and various elements of the infrastructure are damaged (sleepers, level crossings, signalling elements).

Ballast is also projected and causes damages to third party properties.

At Sinaai station, the 9th wagon – which is crabbing – scrapes elements of the structure of the platforms, causing significant damages.

Around 8:45 am, in his driver's cab, the driver feels that the evolution of his train is not usual and he activates the locomotive cameras towards the rear of the train and he sees the images of the derailed wagon. He immediately stops his train (about 4.5km further than the point where the axle breaks) and launches a GSM-R alarm.



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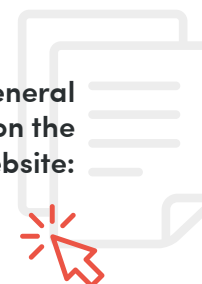
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SERIOUS ACCIDENT

Level 1

AARSCHOT

20 JUNE 2019

ROAD VEHICLE HIT BY A FREIGHT TRAIN ON A LEVEL CROSSING

A freight train runs towards Aarschot on track B of line 35. At about 8:41 pm, in the vicinity of Langdorp, the freight train experiences traction problems. The train driver is unable to solve the problems.

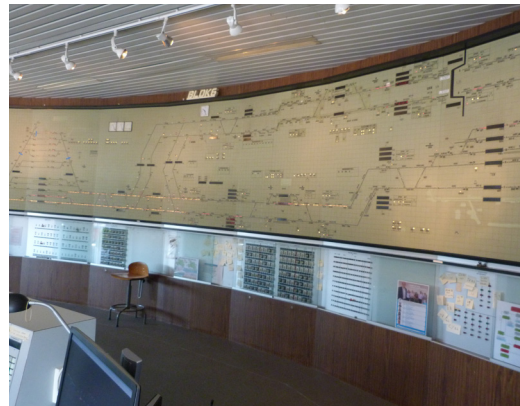
An emergency unit is sent by mutual agreement between the block post, Traffic Control and the train driver. The emergency unit comes from Hasselt and runs on track B of line 35, in order to be coupled to the rear end of the freight train.

Once the coupling with the emergency unit is completed and the train is ready to depart, a restart permission is given by the Aarschot block post for an evacuation movement to the rear. The communication is made in writing using the form E377.

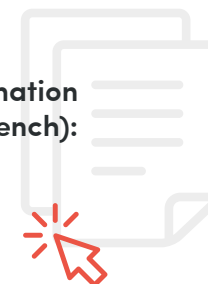
The train departs and, as it passes over the third level crossing (level crossing 99), it hits a car.

The train driver performs an emergency braking and the train comes to a stop at kilometre marker 86.700. The train driver sends a GSM-R alarm.

One occupant of the road vehicle involved dies, two other occupants are slightly injured.



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SIGNIFICANT ACCIDENT

Level 2

LIÈGE-GUILLEMINS

11 JULY 2019

DERAILMENT OF AN EMPTY SNCB/NMBS PASSENGER TRAIN

On Thursday 11 July 2019, following a technical problem, passenger train E7400 of the railway undertaking SNCB/NMBS is at a standstill at Waremme station and passenger disembarkation is organised. After unsuccessfully having tried to repair his train, the driver declares his train in distress.

A type 18 locomotive is sent as a rescue train in order to tow the broken down train to Liège-Guillemins station.

Around 9:48 am, when the train arrives at Liège-Guillemins station, the first carriages of the train derail on the switches at the entry of the station grid.

Following the rupture of the supply line of the braking system, the train comes to a standstill.

A driver of a stationary train sees the derailment from the station platforms and launches a GSM-R alarm.



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OTHER ACCIDENT

Level 3

BRUXELLES-NORD

24 APRIL 2018

DRIFTING OF A TRAIN

On Tuesday 24 April 2018 at around 8:01 am, at the unmanned stopping point (PANG) of Essene-Lombeek, the train E2178, consisting of two AM08 Desiro railcars (08118 + 08564), is stationary due to a problem with the pantograph of the AM08564 which prevents this railcar from being supplied with electricity.

The train E2178 is declared in distress at 8:46 am. The passenger train E2057 consisting of 3 AM08 Desiro railcars (08210 + 08051 + 08083) arrives in Ternat at 8:41 am. It is sent from the Ternat station to the PANG of Essene-Lombeek to tow the damaged railcars at 9:03 am.

At about 10:14 am, the train consisting of the 5 railcars departs towards Brussels-North station, where the train arrives at about 10:59 am.

A driver is dispatched to the platform of Brussels-North to uncouple the first 3 railcars (08210 + 08051 + 08083) and drive them to Aalst. The 2 damaged railcars (08118 + 08564) must be driven to the workshops in Schaerbeek by the driver of the train E2178. The driver dispatched to the platform of Brussels-North undertakes the uncoupling from the rear end of the towing train. Once uncoupled, the 2 rear railcars (08118 + 08564) break away without

the driver or the other Infrabel and SNCB/NMBS staff present at the scene being able to stop them.

The Infrabel staff present on the platform warns the signal cabin and a GSM-R alarm is sent.

The railcars run through a switch and go on drifting. They take the train 17907 (technical train without passengers) slightly slantwise, causing limited damage.

Following the intervention of the driver of the train E2232, the drifting railcars come to a stop approximately 800 metres from the platforms of Brussels-North where the uncoupling was performed.

Direct cause

When the driver started the decoupling from the driver's cab, the railcars that were to be driven to Schaerbeek came loose and drifted in the Brussels-North set of tracks towards Schaerbeek.

The fact that the parking brake was not engaged on these two railcars was the direct cause of the uncoupling and drifting.

Indirect factors

TRAIN IN DISTRESS

After various attempts to restart his train, the driver of train E2178 sent a distress call in accordance with Traffic Control. The train was stationary at the PANG of Essene-Lombeek.

As a result, two other trains running on line 50 between Denderleeuw and Essene-Lombeek – train E7954 (Kortrijk – Brussels-Midi) and train E7016 (Aalst – Brussels-Midi) – were immobilised.

Only railcar 08564 (at the front) was defective, but it was not possible to change the front railcar (place railcar 08118 at the front) or to turn back towards Denderleeuw (with railcar 08118 at the front) given that the 2 trains E7954 and E7016 were immobilised on line 50.

Traffic Control, in agreement with the CTC, then decided to send another train to evacuate the two railcars to Brussels-North station, from where they could be taken under their own propulsion (railcar 08118 towing railcar 08564 in «vehicle» mode) to Schaerbeek.



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Train E2057 was sent to evacuate passengers: it was composed of 3 railcars of the same type AM08, allowing straightforward coupling via the GF automatic couplers fitted to the AM08 railcars.

However, the train was in service: it was decided to cancel the train and disembark passengers at Ternat station. The train was sent to the PANG of Essene-Lombeek.

At Essene-Lombeek, the onboard staff asked passengers to disembark onto the platform, so the coupling could be performed.

COUPLING OF THE TRAINS

When train E2057 arrived, it was coupled with train E2178.

The two railcars were in «vehicle» mode, which meant:

- the mechanical and pneumatic couplings (automatic brake line (CFA in French)) were performed;
- but the electric couplers were not connected between the 2 trains.

The consequences included the following:

- as there was no electrical connection between the 2 trains, the service brake was not operational on the 2 railcars 08564 and 08118;
- the continuity of the automatic brake line (CFA) ensures that the automatic brake is operational: it is applied in the event of emergency braking or in the event of unintentional uncoupling (coupling failure);

- the braking capabilities of the full train are reduced and, in accordance with the rules laid down in the Drivers' Regulations (HLT in French), the speed of the convoy is limited to 80 km/h.

The 2 defective railcars were then towed by the 3 railcars to Brussels-North station.

STAFF FOR THE DECOUPLING

A driver was dispatched by the CTC to the platforms in Brussels North, to decouple the two trains.

This was a different driver to:

- the one who was driving train E2178 when it sent a distress call at Essene-Lombeek, and
- the one who brought all 5 railcars to Brussels-North station.

According to information collected by the IU, this driver sent to Brussels-North was not informed of the situation, i.e. that 2 of the 5 railcars were in «vehicle» mode.

Regarding HLT regulations:

- Two drivers were present on the platforms of Brussels-North to perform the decoupling: the driver sent by the CTC and the driver who brought the 5 railcars to Brussels-North;
- The two drivers did not consult each other, as specified in the HTL V 08-2 (Annex II);
- During a decoupling procedure, the parking brakes should have been applied to the whole train when the train composed of

5 railcars arrived at the Brussels-North platform. It was not checked whether the parking brakes were applied before the decoupling.

The decoupling procedure stipulated in the SNCB/NMBS regulations (HLT) was not correctly applied.

ERGONOMICS FOR THE DECOUPLING

To perform the decoupling, the driver sent to Brussels-North tried to board the first of the towed railcars: he pressed the door button, but as there was no power supply on these railcars, the doors did not open.

This did not catch his attention.

He did not notice either that the parking brake indicators on the side of the railcar were green: the parking brakes were not applied.

The driver then went to the last door of the last railcar of the towing train, and entered the driver's cab.

On the TDD screen in the driver's cab:

- the white area represents the railcar in which the driver is located;
- the dotted lines indicate that one or more railcars are coupled in «vehicle» mode.

This characteristic display did not sufficiently draw the driver's attention to the fact that the 2 towed railcars were in «vehicle» mode.

On the control panel, a parking brake indicator light was on, but as there were no electrical connections between the towing railcars and



the towed railcars, this indicator only provided information on the status of the parking brakes of the 3 towing railcars.

This last element did not help the driver realise that the railcars that were to be brought to Schaerbeek did not have their brakes on.

The driver then started the decoupling.

DRIFTING

Once the decoupling had been started, the 2 railcars drifted towards Schaerbeek.

The fact that there was no power supply on both railcars 08118 and 08564 meant that the ETCS system was deactivated, on which the anti-drifting system depends.

Neither of the two safety features, provided by both the parking brake and the automatic braking generated by the anti-drifting system, was operational at the time of decoupling, and could not stop the drifting.

MITIGATION - FOLLOW-UP OF THE GSM-R ALARM

The IM agent on the platform immediately reported the incident to the Brussels-North signalling station. The Brussels-North signalling station sent an alarm via the GSM-R system, with a voice message in both languages «Alarm alarm, stop alle verkeer Brussel-Noord; alarme alarme, stoppez toutes les circulations à Bruxelles-Nord».

All trains in these zones received the alarm. Immediately after receiving the alarm, the signal in front of train E17907 opened.

The driver did not see any obstacles in front of his train or on the adjacent tracks : he started his train with restricted speed. Other train drivers in the zone adopted the same procedure.

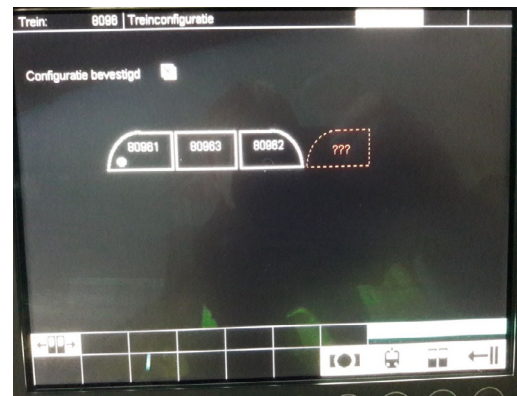
During its route, train E17907 sustained a minor lateral collision by the drifting railcars, with no serious consequences (minor damage to rolling stock).

According to the HLT, an alarm call received by the driver stipulates that the train must stop, or proceed with restricted speed, depending on the nature of the danger.

The voice message communicated during the GSM-R alarm ordered all traffic in Brussels-North to stop.

In such cases, drivers should have no margin for interpretation.

Following the measures taken by SNCB/NMBS, the IU does not issue any recommendations.



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SIGNIFICANT ACCIDENT

Level 2

NEUFVILLES

8 JUNE 2018

DERAILMENT OF AN EMPTY SNCB/NMBS PASSENGER TRAIN

At about 10:20 am on Friday 8 June 2018, the E15809 train belonging to the railway undertaking SNCB/NMBS, a train without passengers, comprising 2 AM 08 «Desiro» railcars, left Braine-le-Comte station for the Mons-Aviation siding on line 96.

At Neufvilles-Garage, the E15809 train's route passed along the secondary track via the 08AE and 09AE points. The maximum speed for passing the points is 40 km/hour.

At about 10.27 am, the train derailed on the siding, causing major damage to the infrastructure and the rolling stock. The train driver was slightly injured.

Direct cause

The direct cause of the derailment of the E15809 train is its excess speed at the points directing the train from the main track to the Neufvilles secondary track.

Indirect factors

LACK OF ATTENTION BY THE DRIVER

When the train passed the signal (A378) showing a Green Yellow Horizontal aspect, the driver

noticed it but did not apply the expected rules of his profession, namely braking to reduce the speed of the train to 40 km/hour imposed by the following signal.

The train reached the points at a speed of 128 km/hour.

According to our most likely scenario, a lack of attention is an indirect factor.

The lack of attention among drivers has already been the subject of various inquiries and recommendations. Consequently, the Investigation Unit is not issuing any additional recommendations.

ABSENCE OF EFFECTIVE RECOVERY SYSTEM (TBL1+ AND ETCS SYSTEMS)

The rolling stock was equipped with the level 1 ETCS system: because of the absence of the ETCS system on this portion of the line (equipped with TBL1+), the rolling stock was in TBL1+ mode.

The TBL1+ driving support system turns on the yellow memory lamp on the operating console in the driving cab when passing a signal

presenting a Green Yellow Horizontal aspect. But not being designed to control the speed of trains when passing a signal presenting such an aspect, the TBL1+ system did not trigger any braking and control of the train.

If the ETCS system had been active, the system on board the train would have received the profile of the speed curve from the equipment in the track. In the absence of braking by the driver, the system would have taken control of the train and warned the driver; in the absence of a reaction from the driver, the system would have triggered braking thus allowing an accident to be avoided.

The absence of an effective recovery system is an indirect factor.

The subject has already been considered in other inquiry reports which is why the Investigation Unit is not issuing any recommendations.

Also, the installation of ETCS has been planned within the framework of a Masterplan committed to by the infrastructure manager and the railway undertaking: this deployment plan is underway until 2022.





Systemic factor

MONITORING OF EXCESS SPEEDS

SNCB/NMBS is making many efforts to control data recorded aboard trains.

The analysis of all cases of excess speeds after passing a Green Yellow Horizontal signal should help the railway undertaking to identify their causes (lack of systematic acquisition of automatic reflexes when driving, tendency for certain drivers to not pay enough attention, etc.), all preliminary signs of an accident. But, currently, the work on the analysis of data recorded aboard trains concerns a sample of this data, which creates bias in the analysis.

This does not allow the railway undertaking to assess the true scale of certain categories of incidents, including cases of excess speed, or cases of non-conform speed curves after a signal showing a Green Yellow Horizontal aspect.

We refer to the various observations made during the investigations following the accidents in Buizingen in 2015 and in Leuven in 2017.

With the purpose of inter alia increasing safety and improving the analysis process of driving events by representative surveys, the SNCB/NMBS has launched an automation project for the analysis of data recorded aboard trains.

The culmination of this project named «AMELIE» is expected in the course of the year 2020.

The Investigation Unit is not issuing any further recommendations and refers to the recommendations already made in the two afore-mentioned reports.



The full report is
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Level 3

GENT-SINT-PIETERS

14 APRIL 2019

SIDE-ON COLLISION WITH A FREIGHT TRAIN BY A RUNAWAY PACKING MACHINE

Works are being carried out on the infrastructure in Landegem. A Unimat 7 packing machine from contractor Strukton is being used for this. This packing machine has a driver's cab and a handbrake at each end. The door of driver's cab 1 at end 1 is locked. At end 1, there is no platform and handbrake 1 is in driver's cab 1. The door of driver's cab 2, end 2, is open. At end 2, there is a platform and on the platform is handbrake 2.

On 13 April 2019 at 10:27 pm, the train Infrabel Z97900 departs from Oudenaarde with the packing machine and is received at platform 2 of Gent-Sint-Pieters at 10:58 pm. The train consists of 1 locomotive and end 1 of the packing machine is coupled to this locomotive.

On 13 April 2019 at 10:26 pm, the train TUC RAIL LZ96021 departs from Schaerbeek and is received at platform 2 at 11:26 pm. The train consists of 1 locomotive and on board is a conductor from TUC RAIL.

Various circumstances in-situ lead to multiple coupling and decoupling manoeuvres of the 2 locomotives with the packing machine. The last manoeuvre takes place when the Infrabel

locomotive has already been decoupled and departed. During this manoeuvre, the conductor decouples end 2 of the packing machine from the TUC RAIL locomotive without the handbrake engaged. As the conductor and the TUC RAIL locomotive's driver move away from the packing machine, it begins to move in an unintended manner.

The runaway packing machine reaches point switch AW61BK at the moment freight train Z65902 is coming past and collides with it side-on. There are no casualties, but there is material damage to the infrastructure, 5 wagons and the packing machine.

Analysis and conclusions

The packing machine's braking system was visually inspected a few hours after the accident: a pressure reservoir was torn off during the collision such that it was not possible to control the automatic braking system function in-situ. The handbrakes in driver's cab 1 and 2 were working normally, but the packing machine was not immobilised. The rear brake lever was open when visually inspected.

After the inspection, the pressure reservoir was checked and tested at the workshop: the pressure reservoir showed no leaks. The braking system was also checked and tested at the workshop: aside from the consequential damage from the derailing and the collision, the packing machine's braking system was working normally.

There are no images of the accident and the limited journey details, without recording traction orders, provide no usable information.

A first finding is that the packing machine is accompanied by TUC RAIL staff that has not undergone training by Strukton for the use of the packing machine and therefore is not familiar with operating the contractor's packing machine. The presence of a trained operator from the contracting company for the decoupling and immobilisation manoeuvres was foreseen in the contract. By mutual agreement this clause was deviated from.

A second finding is that the handbrake (or other means) to immobilise the packing machine is not used when coupling – decoupling it. This is



definitely stipulated in the RGE/ARE (Annex 1). The general operating principles of a packing machine's braking system do not deviate from the operating principles of classical freight wagons, however.

The packing machine is equipped with 2 handbrakes: one handbrake is in driver's cab 1, which is locked, and is not accessible. The 2nd handbrake is clearly and visibly stationed at end 2 of the packing machine and is accessible via a platform.



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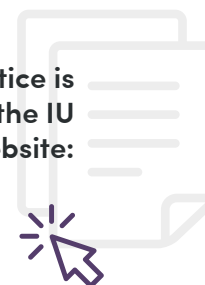
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NUMBER OF OPENED AND CLOSED INVESTIGATIONS IN THE COURSE OF THE YEAR

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of investigations opened in	6	4	3	2	3	5	3	3	3	4	6	4	5
Number of investigations closed in	1	3	4	1	0	1	8	3	5	6	4	7	3

BALANCE OF OPENED AND CLOSED INVESTIGATIONS

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opened in	6	4	3	2	3	5	3	3	3	4	6	4	5
Closed of	6	4	3	2	3	5	3	3	3	3	6	3	1

NUMBER OF INVESTIGATIONS ON MUSEUM RAILWAY LINES

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of investigations opened in										1	0	0	0
Number of investigations closed in										0	1	0	0

NUMBER OF INVESTIGATIONS CLOSED PER YEAR

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of investigations closed	6	4	3	2	3	5	3	3	3	3	3	7	3

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INVESTIGATION TYPES OPENED BY THE IU

Serious accidents level 1	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	total
Collision	1	1	0	1	0	1	0	0	0	1	1	0	0	6
Derailment	0	0	1	0	0	0	1	0	0	0	2	0	0	4
Accident at level crossing	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Accident involving a person caused by rolling stock	3	1	1	0	0	1	0	0	0	0	1	0	1	8
Fire in rolling stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	2	2	1	0	2	1	0	1	1	4	0	2	20

Significant accidents level 2	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	total
Collision	1	1	0	0	1	1	1	1	0	1	0	0	0	7
Derailment	1	0	0	0	0	2	1	0	1	0	0	1	2	8
Accident at level crossing	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Accident involving a person caused by rolling stock	0	0	1	0	0	0	0	0	0	1	0	0	0	2
Fire in rolling stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	2	2	1	0	1	3	2	1	1	2	0	1	3	19

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INVESTIGATION TYPES OPENED BY THE IU

Other accidents / incidents level 3	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	total
Collision	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Derailment	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Accident at level crossing	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accident involving a person caused by rolling stock	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Fire in rolling stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	1	0	1
SPAD	0	0	0	0	1	0	0	1	1	1	0	0	0	4
Incident signalling	0	0	0	0	0	0	0	1	0	0	0	1	0	2
	0	0	0	0	1	0	0	2	1	1	2	3	1	11

Museum railway lines / Other	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	total
	0	0	0	0	0	0	0	0	0	1	0	0	0	1

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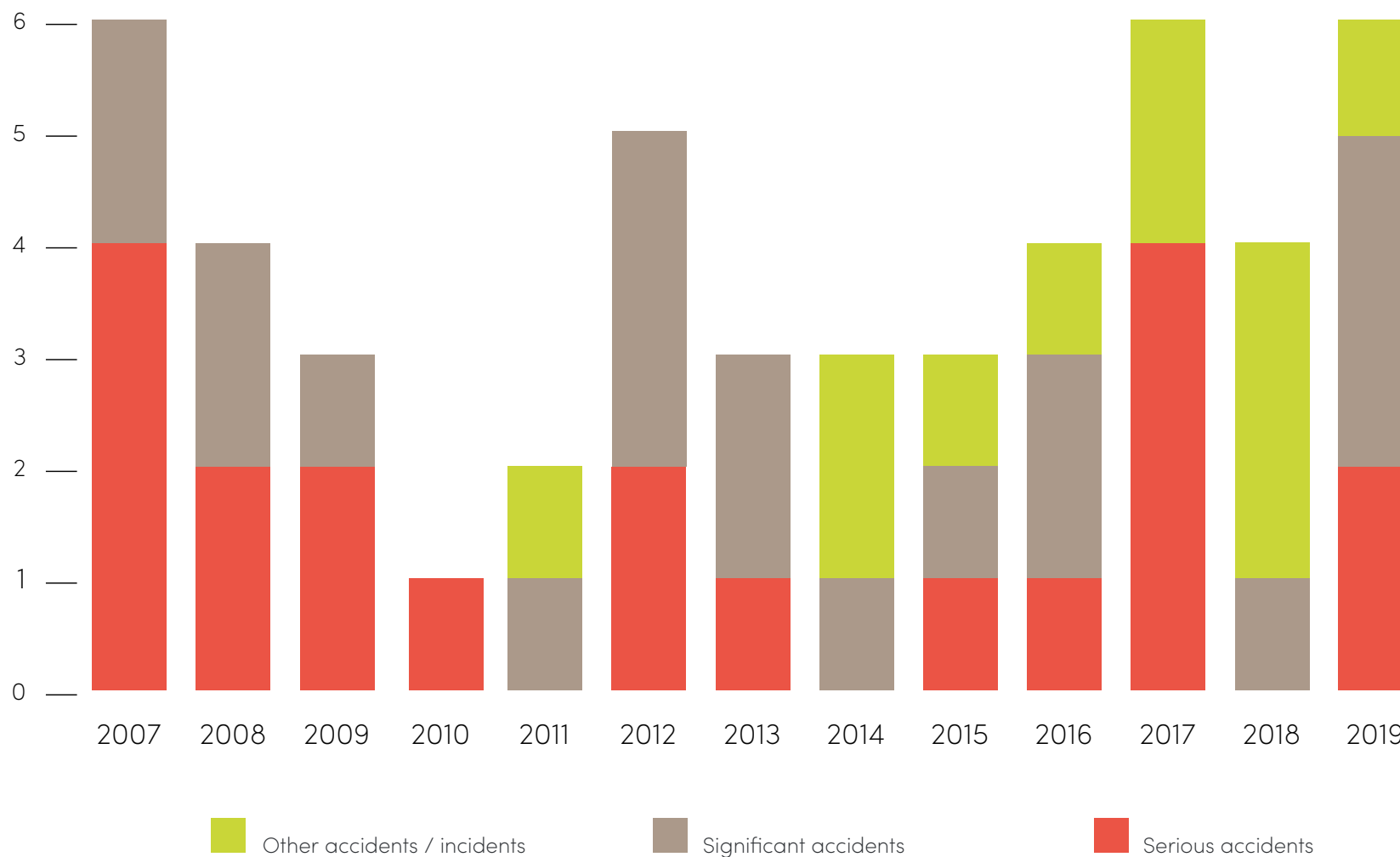
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ANNUAL REPORT 2019

THE PROCESS OF DRAFTING A RECOMMENDATION IS BASED ON THE ERA GUIDE "GUIDANCE ON SAFETY RECOMMENDATIONS IN TERMS OF ARTICLE 25 OF DIRECTIVE 2004/49/EC".

"The NIB's role is to investigate accidents and incidents and through analysis decide if the lessons learned from an occurrence require a recommendation that would facilitate safety improvement. The role of NIBs is limited to the safety aspects."

Relating to safety recommendations issued by the NIB, the NSA's role is to ensure the NIBs recommendations are duly taken into consideration and, where appropriate, acted upon."

"As these parties have responsibility for safety according to Directive 2004/49/EC, they will make proposals for solutions to the NSA. It is for the NSA to accept the proposal or to require other or additional measures."

Sometimes, an investigation report does not include any recommendation.

"So in many cases the responsible actor in the railway sector may have already reacted appropriately and in consultation with the NSA and the NIB before the investigation is finished, and supporting evidence of implementation is available."

In such cases it should be considered carefully whether a safety recommendation is necessary or not. Actors should not wait for a recommendation before taking action to improve safety following an accident or incident."

In practice, the actors concerned are informed of any deficiency found during an investigation through the various meetings held and the draft reports sent.

The investigation results are brought to the attention of the various stakeholders well before the publication of the investigation report.

The actions taken by the actors concerned and the recommendations are included in the draft investigation report.

"Where an addressee would not fall within the scope of the actors that are under the umbrella of the NSA, the NIB may address recommendations directly to other bodies or authorities in the Member States, usually outside of the railway sector, which have the power to enforce the recommended measures."

It is sometimes difficult to draw up a recommendation for all the actors concerned. This was the case for the agent hit near the railway tracks.

Therefore, we have taken the initiative with the UETF/UASW (Union des Entreprises des Travaux Ferroviaires/Unie van Aannemers van Spoorwegwerken) and Infrabel to organise a seminar to draw the attention of contractors working near the tracks on the importance of safety and preventive measures.

The follow-up of the recommendations sent to the infrastructure manager and railway undertakings is carried out by the National Safety Authority, i.e. the DRSI. According to the procedures defined by the DRSI, the actors concerned are responsible for providing an action plan after the publication of the IU investigation report.

Each year by 30 June, the DRSI or the companies to which the recommendations apply should send a follow-up report to the IU.

According to DRSI procedures, reports published in the second half of the year are not included in the yearly follow-up report.

Therefore, the enclosed follow-up report focuses on the recommendations of investigation reports closed in the second half of 2018 and the first half of 2019 as well as the outstanding recommendations.



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LIEU DE L'ÉVÉNEMENT : ANTWERPEN

DATE DE PUBLICATION DU RAPPORT : 11/2016

N° RECOMMANDATION : 1

TYPE : CAUSE DIRECTE-INDIRECTE

ADRESSÉE À : SSICF/DVIS

EXÉCUTION PAR : EFs / SO's

CONSTAT - ANALYSE

RECOMMANDATION

Le SSICF devrait s'assurer que les entreprises ferroviaires prennent bien en compte le risque identifié lié à l'absorption, avant la conduite, de médicaments non considérés comme peu sûrs mais qui, vu que leur effet est limité dans le temps, peuvent néanmoins avoir des effets secondaires néfastes sur la conduite.

Le SSICF devrait s'assurer que les entreprises ferroviaires sensibilisent leurs conducteurs au fait que l'effet d'un médicament est limité dans le temps et risque de leur donner une fausse impression d'aptitude au service.

COMMENTAIRES & ACTION DU SSICF

Début 2017 un plan d'action a été établi.

À ce jour, la SNCB n'a pas encore présenté de plan concret de mise en œuvre et ce, malgré l'insistance du SSICF.

ACTION DE L'EF

Début 2017 un plan d'action a été établi.

La SNCB et HR-Rail travaillent sur une nouvelle réglementation ayant trait à la prévention, aux procédures de détection de la consommation d'alcool et de drogues, aux sanctions et aux mesures administratives.

Fin 2019, il n'existe toujours pas de plan concret pour la mise en œuvre de mesures correctives.





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LIEU DE L'ÉVÉNEMENT : HERMALLE-SOUS-HUY

DATE DE PUBLICATION DU RAPPORT : 12/2017

N° RECOMMANDATION : 3

TYPE : AUTRES

ADRESSÉE À : SSICF/DVIS

EXÉCUTION PAR : GI / IB

CONSTAT - ANALYSE

Durant l'enquête, le carnet S427 du technicien «signalisation» n'a pas été retrouvé : les procédures de conservation des carnets S427 ne semblent pas claires. Le registre des déplombages S425 et le carnet de bloc E934 n'avaient pas été complétés des inscriptions tel que prévu par les procédures internes d'Infrabel.

RECOMMANDATION

L'OE recommande au SSICF de veiller à ce que le gestionnaire d'infrastructure sensibilise les membres du personnel sur le suivi correct des procédures internes.

ACTION DU GI

Compte tenu de la date de publication de la recommandation (voir ci-dessus), Infrabel analysera cette recommandation et présentera ses conclusions au SSICF en 2018.

Il a été rappelé au personnel qu'il est tenu de respecter les procédures. Note interne du 11/07/2017 à tous les postes de signalisation.

En outre, le regroupement des cabines de signalisation et leur intégration dans le système PLP mettront définitivement un terme à l'utilisation de ces procédures avec livrets papier d'ici fin 2022 dans les zones concernées.

Les intégrations encore prévues dans le système PLP d'ici à juin 2020 sont les suivantes :

- block 6 Aarschot
- block 2 et block 6 Anvers « Dokken »
- block 1 Bruxelles-Midi (grill côté Bruxelles-Nord)



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LIEU DE L'ÉVÉNEMENT : LEUVEN

DATE DE PUBLICATION DU RAPPORT : 09/2018

N° RECOMMANDATION : 1

TYPE : CAUSE DIRECTE-INDIRECTE

ADRESSÉE À : DVIS-SSICF

EXÉCUTION PAR : GI - EF / IB - SO

CONSTAT - ANALYSE

Selon l'hypothèse retenue, le premier facteur indirect est le traitement incorrect des informations (commandes) données par la signalisation concernant les limitations de vitesse à respecter, ayant permis une représentation mentale erronée (biais d'ordre cognitif).

Le jour de l'accident, une combinaison de différents facteurs a occasionné chez le conducteur une représentation mentale erronée, qui s'est maintenue par la suite :

- un environnement complexe sans marques d'identification claires ;
- le caractère ambigu du panneau de fin de zone « 9 », qui permet une augmentation de la vitesse alors que le signal en amont du panneau de fin de zone impose une limitation de la vitesse à 40 km/h au pied du signal en aval du panneau de fin de zone (règlement HLT) ;
- le caractère ambigu des panneaux de ligne de la L.36, placés en aval de la voie 7 ;
- la définition incomplète dans le HLT du panneau de ligne de la L.36 ;
- la combinaison – pour le conducteur de train – de la connaissance passive de la ligne pour le départ de la voie 7 et du développement insuffisant des habitudes de conduite fixes, d'une part, et de la quantité d'informations à traiter pendant et peu après le départ de la voie 7, d'autre part.

Ces facteurs occasionnent chez le conducteur une représentation mentale pouvant laisser croire au conducteur qu'il roule en voie normale sur la L.36 alors qu'il est dirigé vers la L.36 en contrevoie.

RECOMMANDATION

L'Organisme d'Enquête recommande au gestionnaire d'infrastructure et à l'entreprise ferroviaire de vérifier si des constatations similaires peuvent avoir une influence sur leur fonctionnement à d'autres endroits et, si c'était le cas, d'établir des plans d'action appropriés à cet effet.

ACTION DU GI

Compte tenu de la date de publication de la recommandation (voir ci-dessus), Infrabel analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

Infrabel effectue une analyse de risques par rapport à d'autres situations similaires. Les résultats seront disponibles au début de 2020.

ACTION DE L'EF

Compte tenu de la date de publication de la recommandation (voir ci-dessus), la SNCB analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

La SNCB a fait une analyse de trajets identiques (E3636) et d'autres situations où l'aspect VJH a été montré. Il en est résulté 11 infractions en 2018 et 16 infractions en 2019. Toutes les infractions étaient liées à un excès de vitesse relativement faible.





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LIEU DE L'ÉVÉNEMENT : LEUVEN

DATE DE PUBLICATION DU RAPPORT : 09/2018

N° RECOMMANDATION : 2

TYPE : CAUSE DIRECTE-INDIRECTE

ADRESSÉE À : DVIS-SSICF

EXÉCUTION PAR : GI - EF / IB - SO

CONSTAT - ANALYSE

Deux passages spécifiques de la réglementation interne de l'entreprise ferroviaire peuvent mener au développement des gestes-métier arbitraires ou à une mauvaise interprétation.

Le choix "d'accélérer ou non au panneau de fin de zone après le passage à un signal VJH" est laissé à l'appréciation des conducteurs de train. On rappelle à juste titre aux conducteurs le danger que représente l'oubli d'une limitation de vitesse, mais aucune mesure efficace n'est mise en place pour réduire ce risque d'oubli.

La définition incomplète du panneau de ligne dans le HLT peut donner lieu à des interprétations erronées. A Louvain, cela mène à l'interprétation incorrecte : "conduite sur la L.36" au lieu de "conduite vers la L.36".

RECOMMANDATION

L'Organisme d'Enquête recommande au gestionnaire d'infrastructure et à l'entreprise ferroviaire de vérifier que le secteur évalue la réglementation relative à l'accélération aux panneaux de fin de zone et relative à la définition des panneaux de ligne.

ACTION DU GI

Compte tenu de la date de publication de la recommandation (voir ci-dessus), Infrabel analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

Infrabel mène une étude sur les différentes réglementations et discutera des résultats avec les entreprises ferroviaires.

ACTION DE L'EF

Compte tenu de la date de publication de la recommandation (voir ci-dessus), la SNCB analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

L'analyse des différentes réglementations est en cours et sera discutée plus en détail avec le GI et les autres EF en 2020.





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LIEU DE L'ÉVÉNEMENT : MORLANWELZ / BRACQUEGNIES

DATE DE PUBLICATION DU RAPPORT : 11/2018

N° RECOMMANDATION : 1

TYPE : CAUSE DIRECTE-INDIRECTE

ADRESSÉE À : DVIS-SSICF

EXÉCUTION PAR : SO / EF

CONSTAT - ANALYSE

Dans le passé, la SNCB avait identifié un problème sur le système de désaccouplement manuel des AM96 : des dégâts avaient été détectés à la gaine du câble reliant le levier du coupleur à la manivelle. L'analyse alors réalisée par la SNCB avait conclu à juste titre que les dégâts apparaissaient lorsque les conducteurs utilisent le pied pour exercer une force plus importante sur la manivelle.

Le risque d'une mauvaise utilisation de la manivelle avait été identifié par l'entreprise ferroviaire, et des mesures avaient été prises en atelier lors des entretiens du matériel roulant, mais il semble que les mesures prises par la SNCB n'aient pas été suffisantes pour amener le personnel de la conduite à utiliser la manivelle selon les procédures :

- la formation des conducteurs n'intègre pas d'exercice pratique de la procédure manuelle de désaccouplement des AM96;
- l'autocollant disposé à côté de la manivelle dans la cabine de conduite rappelle que la manivelle doit être utilisée à la main mais ne mentionne pas la manœuvre simultanée dans les deux cabines de conduite;
- la documentation de la SNCB n'a pas permis d'attirer efficacement l'attention du personnel de la conduite sur la problématique.

RECOMMANDATION

L'OE recommande à la SNCB, au vu de ces éléments, d'analyser la procédure de formations afin de sensibiliser l'ensemble du personnel concerné aux risques identifiés

ACTION DE L'EF

Compte tenu de la date de publication de la recommandation (voir ci-dessus), la SNCB analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

Les formations destinées au personnel du train de relevage ont été adaptées. Le personnel concerné bénéficiera d'une reconversion intégrant les nouvelles règles.

Une plate-forme REX sera mise en place pour la communication des bonnes pratiques entre les ateliers et l'administration centrale.

On examine d'améliorer les compétences du personnel (spécialisation et centralisation).





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LIEU DE L'ÉVÉNEMENT : MORLANWELZ / BRACQUEGNIES

DATE DE PUBLICATION DU RAPPORT : 11/2018

N° RECOMMANDATION : 2

TYPE : CAUSE DIRECTE-INDIRECTE

ADRESSÉE À : DVIS-SSICF

EXÉCUTION PAR : GI - EF / IB - SO

CONSTAT - ANALYSE

Divers cas de figures d'échappement de véhicule ferroviaire sont en cours d'analyse ou ont déjà fait l'objet d'une enquête clôturée par l'OE. Les circonstances sont à chaque fois différentes et les analyses de ces différents cas permettent de déceler que les causes relèvent à la fois d'aspects techniques et d'aspects opérationnels, voire organisationnels. Les risques d'échappement de véhicule ferroviaire ont été analysés depuis de nombreuses années/décennies par le secteur ferroviaire, mais il semble que les mesures prises par ce secteur ne soient pas ou plus adaptées à la situation actuelle.

La géographie ferroviaire, l'organisation du secteur, les nombreux travaux d'aménagement et de modernisation et l'évolution du matériel roulant ont entraîné des changements importants par rapport aux analyses du passé, et il semble justifié de revoir ces analyses de risque, notamment au regard des éléments mis en lumière dans le cadre de la présente enquête :

- le mouvement d'un train avec un véhicule non freiné en queue de convoi est autorisé jusqu'à la gare la plus proche, alors qu'il n'existe pas de mesure d'urgence pouvant enrayer de façon certaine l'échappement s'il survient.
- certaines mesures prises pour protéger le personnel au travail sur les voies (fermeture des signaux) ne protègent pas contre le risque d'être heurté par un véhicule ferroviaire échappé, que ce véhicule soit échappé d'un "train technique" (train de relevage, train de travaux) évoluant réglementairement sur la voie obstruée, ou qu'il soit échappé d'un train se trouvant aux abords des signaux donnant accès au tronçon obstrué. En cas de tels échappements, le maintien à l'arrêt des signaux desservis donnant accès à la section ou au tronçon de voie obstrué n'apporte aucune protection au personnel (personnel du GI et/ou personnel du train de relevage) se trouvant sur la voie.

RECOMMANDATION

L'OE recommande que les entreprises ferroviaires et le gestionnaire de l'infrastructure vérifient conjointement les analyses de risques et les mesures techniques, réglementaires et procédurales afin d'apporter une réponse adéquate au risque d'échappement de véhicules.

ACTION DU GI

Compte tenu de la date de publication de la recommandation (voir ci-dessus), Infrabel analysera cette recommandation et présentera ses conclusions au SSICF en 2019.

L'analyse de risques concernant le relevage d'un train est prête. Le management n'a pas encore pris de décision concernant le scénario à suivre.

Une concertation bilatérale avec la SNCB a été lancée et de nouveaux accords seront conclus à court terme avec la SNCB concernant la période transitoire pour les activités de relevage de trains.

ACTION DE L'EF

Durant la période précédant la publication de ces recommandations, la SNCB a pris des mesures de protection :

- Dans le cas où un convoi est évacué après avoir été déclaré en détresse, tout mouvement incontrôlé du convoi ou d'une partie du convoi doit être empêché.
- Si la procédure d'attelage ou de dételage échoue, le conducteur doit déclarer le train en détresse et faire appel à un dépanneur.

Compte tenu de la date de publication de la recommandation (voir ci-dessus), la SNCB analysera cette recommandation et présentera ses conclusions au SSICF en 2019.





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Une interdiction a été imposée sur la circulation des véhicules endommagés non freinés sans la présence d'un expert pour l'équipement concerné.

En outre, l'annexe 4 de l'accord relatif au train de relevage contient une analyse de risques à réaliser pour chaque intervention. Cette analyse doit être complétée et signée par toutes les parties concernées par le train de relevage.

La réglementation sur le freinage des véhicules endommagés sera adaptée et entrera en vigueur en juin 2020. Ces règlements comprennent désormais des dispositions relatives à (la détection de) l'attelage et dételage corrects.

La SNCB souhaite un cadre juridique clair pour l'évacuation des véhicules après un accident, afin que la responsabilité de chacun soit clairement établie.

La SNCB négocie avec le GI sur le statut et la nature du mouvement, qui est considéré à l'heure actuelle comme celui d'un train de marchandises, alors que ce n'est pas le cas. Le terme « train de marchandises » est utilisé en l'absence d'une dénomination appropriée, alors qu'il s'agit d'un mouvement de matériel roulant endommagé à la suite d'un accident/incident et qui n'est plus en état de marche.

Par conséquent, les règlements relatifs aux trains de marchandises sont également appliqués. Une application stricte de ces règles empêcherait ces véhicules de pouvoir encore se déplacer. Une réglementation adaptée est donc nécessaire.

Cela concerne le dételage intempestif des véhicules endommagés et non le décrochage de véhicules.

En outre, une analyse est effectuée sur le dételage manuel des rames par le conducteur et la vérification de l'attelage en cas de perte d'alimentation électrique.





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