RAIIU
RAIL ACCIDENT AND INCIDENT INVESTIGATION UNIT

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ANNUAL REPORT 2022

RAIL ACCIDENT AND INCIDENT INVESTIGATION UNIT

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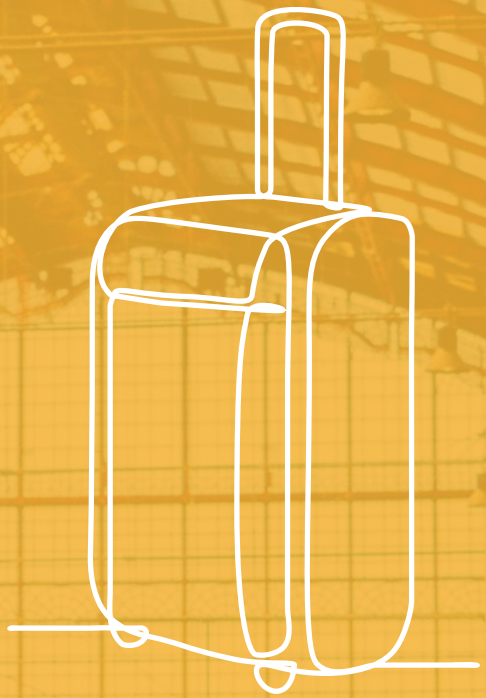
CHAPTER 1

Foreword



The objective of the investigative work of the Investigation Unit (IU) is to improve the safety of railway operations by identifying the factors that are assumed to have contributed to an occurrence and, if necessary, issuing safety recommendations. Where appropriate, they are included in the published investigation report. Using these reports with a different aim than that of accident prevention would be a complete distortion of the aims of these reports.

In 2022, the IU published 4 safety investigation reports:

- the 3 investigations opened in 2021 (Weerde, Ruisbroek, Germoir) were closed;
- the investigation report into an earlier derailment was also published in 2022 - the IU continues to reduce the time taken to close investigations.

The Ruisbroek accident was a fatal accident involving an employee of a primary subcontractor of the Infrastructure Manager, who was maintaining the track. Apart from the emotional aspect of such an accident, this type of occurrence has major consequences for the companies involved.

Both for this accident and for the other accidents the investigation of which was closed in 2022, measures were taken by the parties involved: they are identified in the investigation reports.

In 2022, the IU opened 3 new investigations, including, once again, an investigation following a fatal accident involving a worker of a secondary subcontractor (subcontractor of a subcontractor) of the Infrastructure Manager.

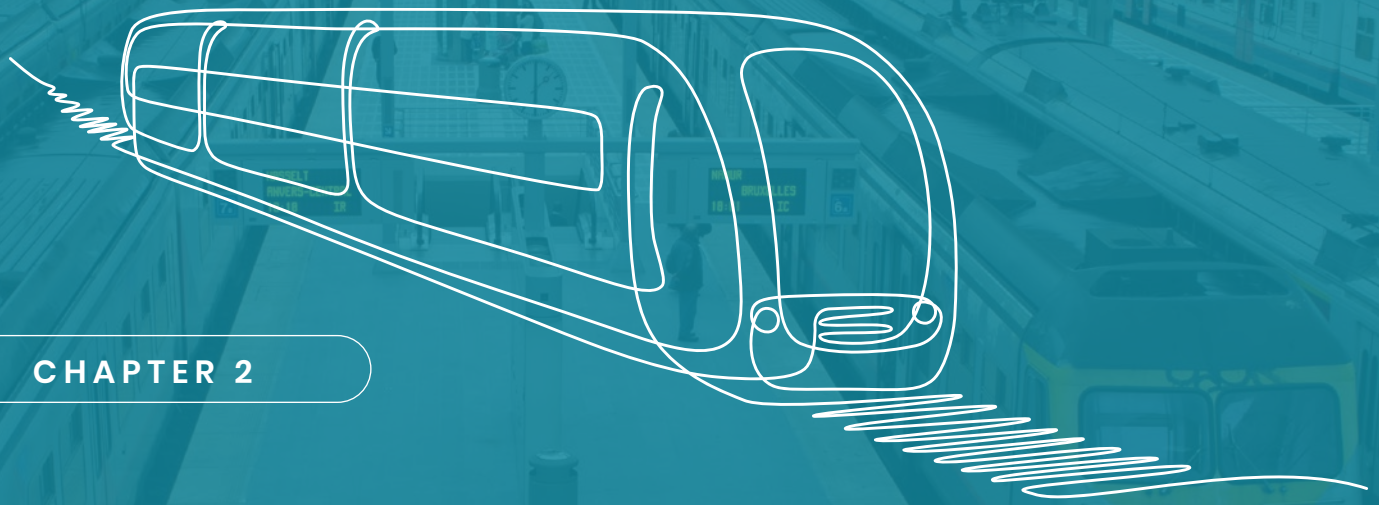
In addition, we carried out a number of preliminary investigations into accidents and incidents, which improve our knowledge and will serve as a basis for subsequent investigations into specific subjects.

We are working to make a better use of the data in the database to draw up dashboards aiming at guiding us when we decide to open a safety investigation.

One of our senior investigators retired in February 2022: this was an opportunity for us to look back on the key moments of his career within our department, and to wish him a retirement as rich as his professional career. This departure represents a challenge: our work is based, among other things, on the knowledge and expertise of each of our team members. The retirement had been anticipated and the senior investigator had had the opportunity to share some of his knowledge and experience with the junior investigator who joined our team in January 2020.

Our main mission is to carry out investigations in the event of rail accident or incident. This means being able to deploy one or more investigators to the site of an accident to collect the relevant data as quickly as possible. Therefore, the investigators take it in turns to be on call 24 hours a day, 7 days a week. Recruitments were organised in 2022 and will be organised in 2023 to complete the staffing plan.

Leslie Mathues
Chief investigator



CHAPTER 2

The investigation unit

1. Legal status

The creation in 2007 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, replaced by the European Directive 2016/798. 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 partially transposes:

1. Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 on the certification of train drivers operating locomotives and trains on the railway system in the Community, as amended by Commission Directive 2016/882 of 1 June 2016 amending Directive 2007/59/EC of the European Parliament and of the Council as regards language requirements;
2. Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area;
3. Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union;
4. Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety.

Chapter 6 of the law of 30 August on the Railway Code, title 4 Operating safety relates to:

- Designation of an investigative body (Section 1 – Art. 110);
- Tasks (Section 2 – Art. 111-112);
- Powers (Section 3 – Art. 113-114);
- Investigation (Section 4 – Art. 115-119);
- Conclusions and reports (Section 5 – Art. 120-122);
- European consultation (Section 6 – Art. 123-124).

Royal Decree of 16 January 2007

The Royal Decree of 16 January 2007 has been amended by the Royal Decree of 1 March 2019 setting certain rules for investigations into railway accidents and incidents.

In its Chapter 3, it stipulates the autonomy that the RAIIU has to decide on when to open an investigation, visit the site and the scale of an investigation.

It sets out that the members of the RAIIU have an authority card and that the holder of this card has the powers listed in Article 113 of the Railway Code.

Royal Decree of 22 June 2011

The Royal Decree of 22 June 2011 designates the Rail Accident and Incident Investigation Unit (IU), and repeals 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 for the operational safety of museum railway lines. A museum railway line has the main function of touristpassenger 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.

Implementing regulation 2020/572

The reports on investigations and any findings and subsequent recommendations provide crucial information for the future improvement of rail safety in the Single European Rail Area.

A common structure of the investigation report should facilitate sharing the reports.

To facilitate the access to useful information and its application to other European stakeholders, some parts of the report are requested in two European languages.

The structure should protect the NIB from external interferences, guarantee that the investigation has been carried in an independent manner in accordance with Article 21(4) of the Directive (EU) 2016/798.

2. Organisation and resources

Independence

To keep the public's trust, the IU must be objective, independent and free of any conflict of interest.

The various legislative changes made since its creation allow the IU to work completely independently.

The hierarchical position of the IU guarantees its independence from other organisations and institutions such as the cabinet of the minister for Mobility, Mr Gilkinet, having jurisdiction over infrastructure manager INFRABEL and Belgian railway undertaking SNCB/NMBS, the FPS Mobility and Transport, the Safety Authority, etc.

Thus, the IU is under the direct authority of Ms Petra De Sutter, the minister of Public Administration, Public Enterprises, Telecommunication and the Postal Services.

However, this independence is not only linked to the hierarchical position.

It can also be seen in the freedom to decide when to open investigations, in 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 Chief 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 2022, the IU was made up of:

- A chief investigator
- A senior investigator
- Two junior investigators
- An administrative expert

A senior investigator retired on 1 February 2022.

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.

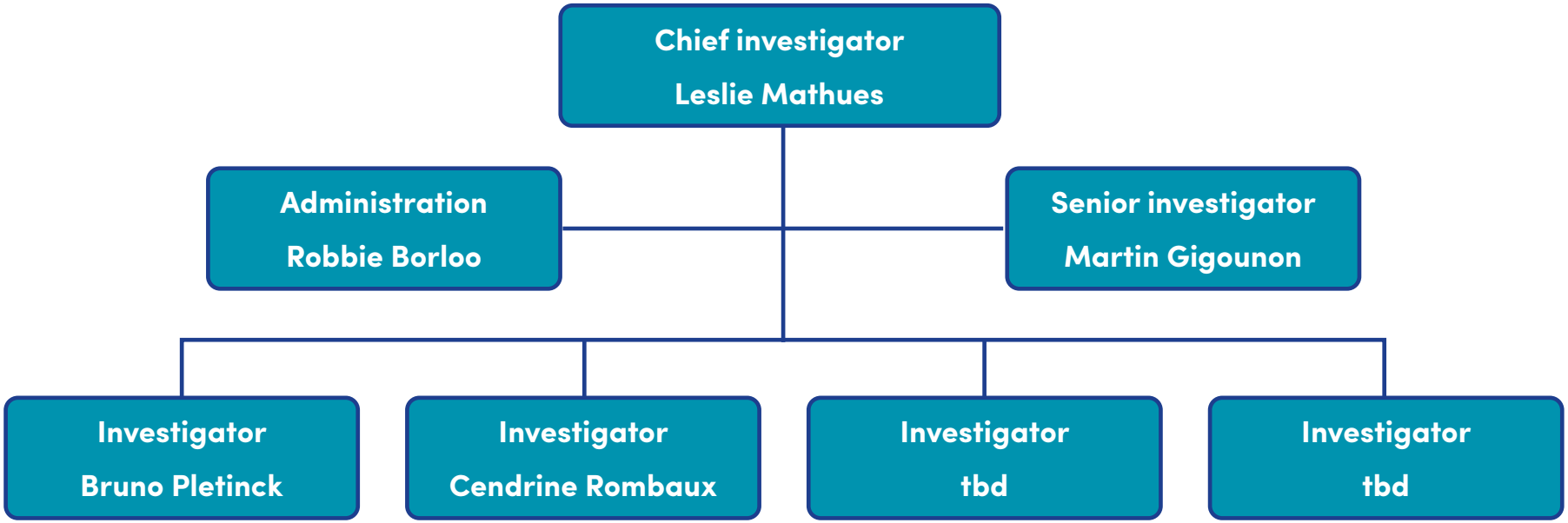
The IU actively collaborates with the infrastructure manager and the company or companies concerned while an investigation is being conducted and when drafting safety recommendations.

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.

The IU organisation chart



CHAPTER 3

Our main duties

1. The 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.

However, this investigation report is not a formal decision. It may contain safety recommendations for authorities, railway undertakings, the infrastructure manager or other public.

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 2022 are briefly described in chapters six and seven.

2. 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 database is essential for allowing the IU to efficiently conduct its investigations and to analyse the general safety trends.

The data are 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 2018, monthly statistics were also put at their disposal through the IU database system. These statistics will be provided on a provisional basis, since they are based on the data entered by the railway undertakings and the infrastructure manager. It is quite common for the classification of an event to be modified following an investigation.

The database is not static, and evolves in function of acquired experience, frame references and needs that have been identified.

In 2022, various development projects led to changes in databases, including:

- an improved follow-up of recommendations, in cooperation with the DRSI;
- an improved management of data export for drawing up dashboards.

Actually, the IU wants to delve further into the statistics and establish tendencies for other events besides the Common Safety Indicators (CSI).

For the IU, but also for National Safety Authorities, there are a plethora of goals and interests in obtaining information.

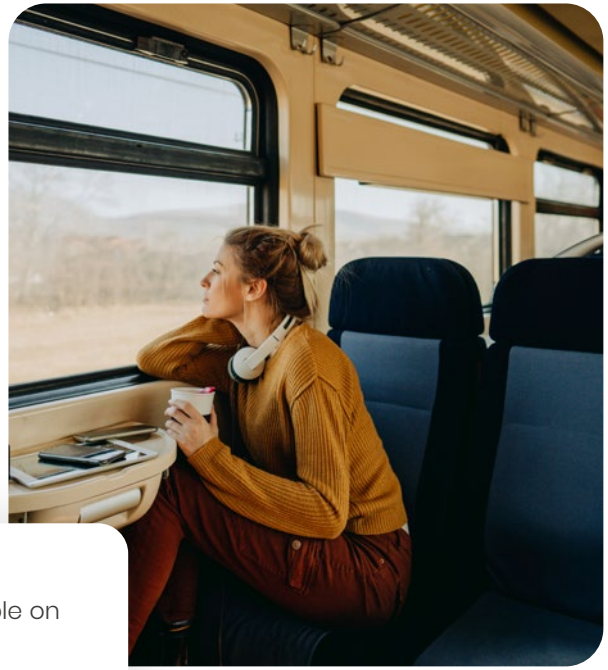
3. Communication

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 two languages (French and Dutch) the reports, and 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.

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 updated 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 information is not yet the analysis that will be published afterwards in the investigation report.



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

www.rail-investigation.be/en/investigations

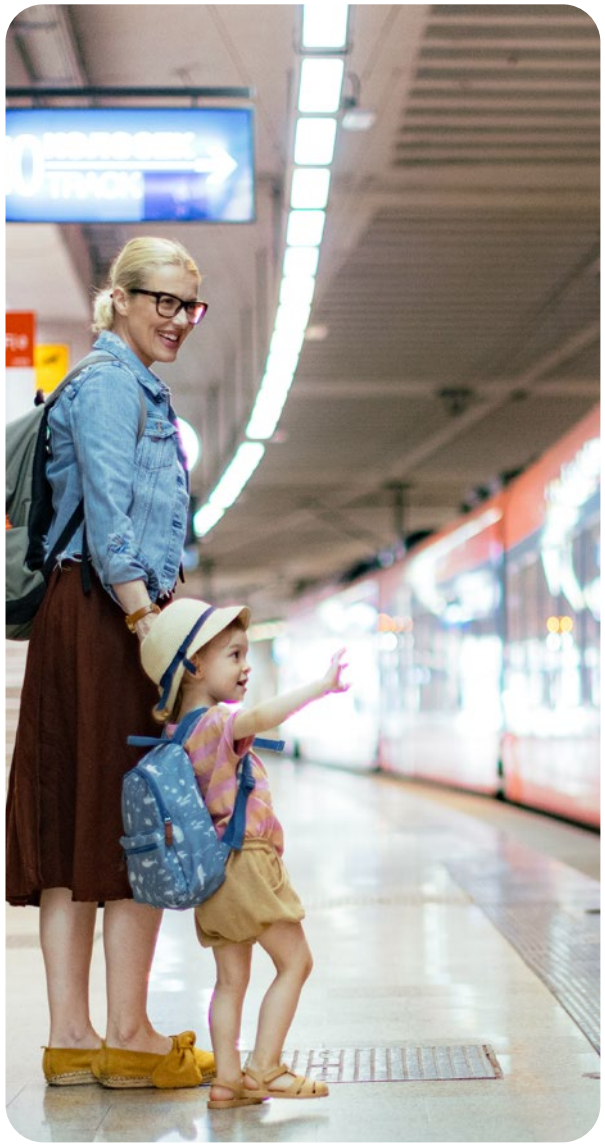
CHAPTER 4

Other activities

1. 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 to have a common vision and interpretation of the practical application of European Directives. There is a maximum number of three meetings per year with a maximum duration of two days.



Plenary meetings

We are actively involved, whether upon the presentation of available elements from investigations, upon the presentation of the status of an ongoing investigation, or upon the sharing of results of "human and organisational factors" (HOF) investigations that are conducted with the help of external experts.

Online plenary meetings:

- 2 and 3 February 2022

Partially online plenary meetings to limit the number of face-to-face participants:

- 18 and 19 May 2022
- 12 and 13 October 2022

Task force 2 : revision of guidelines

The IU participates in meetings (14 meetings in total) in order to revise the guidelines used by investigating bodies but which can also serve as information for railway undertakings, infrastructure managers, national safety authorities, etc

- Guidance on safety recommendation
- Guidance on decision to open an investigation
- Guidance on good reporting practices

CSM ASLP[1]

The IU acts as an observer and provides progress reports and commentary about the project during plenary meetings.

German speaking Group

On 6 and 7 September 2022, a meeting took place in Brussels.

During this exchange meeting between investigation bodies, participants are encouraged to give:

- information on changes, innovations and developments in the various investigation bodies;
- presentations to serve as a basis for discussions on the results of investigations, the difficulties encountered and the procedures implemented.

Peer Review

Peer review aims to monitor the effectiveness and independence of an investigation body by examining its organisation, processes and results (e.g. accident reports, safety recommendations, annual reports). The peer review process also aims to contribute to the development of all investigation bodies by sharing the strengths and suggestions for improvement identified during the reviews.

On 26 and 27 October 2022, the IU participated as an observer in the Peer Review of the Hungarian NIB.

Op 14 and 15 November 2022, the IU participated as a panel member in the Peer Review of the Irish NIB.

2. Trainings

Some examples of trainings attended by some IU members:

ERA

“Online training seminar for investigators”

Lineas Academy

Training course “ETCS on lines with trackside signalling”

The aim of this training course is to learn how the European signalling system ERTMS works, as well as the safety system of trains equipped with ETCS, as these systems are applied on the Belgian rail network:

- the different levels
- ETCS operating parameters and driving rules
- handling the DMI

CQHN

“Managing human and systemic factors to prevent human error”

The study of human factors enables us to understand how human capabilities and limitations influence the way people behave in their professional or private environment. Consideration of these factors can provide a response to the normative requirement to manage human error, but we cannot limit ourselves to this aspect. It is crucial to study the interaction between human beings and the system in which they live and work, and therefore to integrate systemic factors into our analysis.

[1] *Common Safety Methods on the Assessment of Safety Level and Safety Performance*

3. Seminars

Seminar EUMedRail

The training seminar, attended by experts from the Maghreb (national authorities and rail operators), developed the EU legal framework applicable to investigations into rail accidents and incidents, from the notification of the occurrence, its reconstruction, the identification of its causes and its analysis, to the publication of the investigation report including safety recommendations.

In particular, the event included specific training modules among other tools developed by the RAIIU, focusing on the skills management system for investigators, the preliminary investigation, the level crossing accident checklist, the interview-based safety investigation process, the analysis process based on human and organisational factors, investigation reports drafting and databases.

Human and Organisational Factors Conference ERA (06 & 07 December 2022)

Integration of Human and Organisational Factors: Managing Workload and Fatigue

This topic was addressed from different angles: research, other transport modes such as aviation, railway undertakings, infrastructure managers, entities in charge of maintenance and regulators.

Symposium « Safety Rocks » organised by Infrabel

In order to improve the safety of the teams of Infrabel on construction sites, as well as that of all the people who work on them, the Infrastructure Manager organised a first symposium with the aim of :

- bringing together the stakeholders who play a role in safety
- finding ways to improve safety
- working on the drafting of a charter that will be signed by everyone

A time for discussion and debate in the presence of contractors, the Department for Railway Safety and Interoperability (DRSI) and the Rail Accident and Incident Investigation Unit (RAIIU).

Safety consultation meeting organised by the DRSI

This consultation is mainly aimed at disseminating information and launching debates on safety issues having an impact on the entire sector. Participants are encouraged to give presentations that will serve as a basis for these discussions. The FPS MT comments on the most recent changes to the legislation.

Two meetings were planned by the DRSI on 28 April and 18 November. In order to limit the number of face-to-face participants, these meetings took place partially online.

CHAPTER 5

The investigations

1. Investigation procedure

The procedure is subdivided in 5 different phases:

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, to check what can be considered as relevant or not. The most probable scenario is then established.

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 and incidents.

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 threefold: minimising the number of potential accidents, limiting their consequences 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 nature of the recommendations, the IU also addresses other Belgian authorities or other Member States of the European Union.

4. The investigation reports

The investigation reports serve as a reminder as well as an archive and 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, 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.

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.

2. 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 the Law of 30 August 2013 and the Law of 20 January 2021, 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 the same consequences and obvious impact on the regulations or the management of railway safety. "Extensive damage" means damage that an investigative body can immediately estimate a value of at least EUR two million in total.

In addition to serious accidents, the IU may also investigate those accidents and incidents which under slightly different conditions might have led to serious accidents, including technical failures of the structural subsystems or of interoperability constituents of the Union rail 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.

« Serious » accident / incident level 1 [2]

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 an 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:

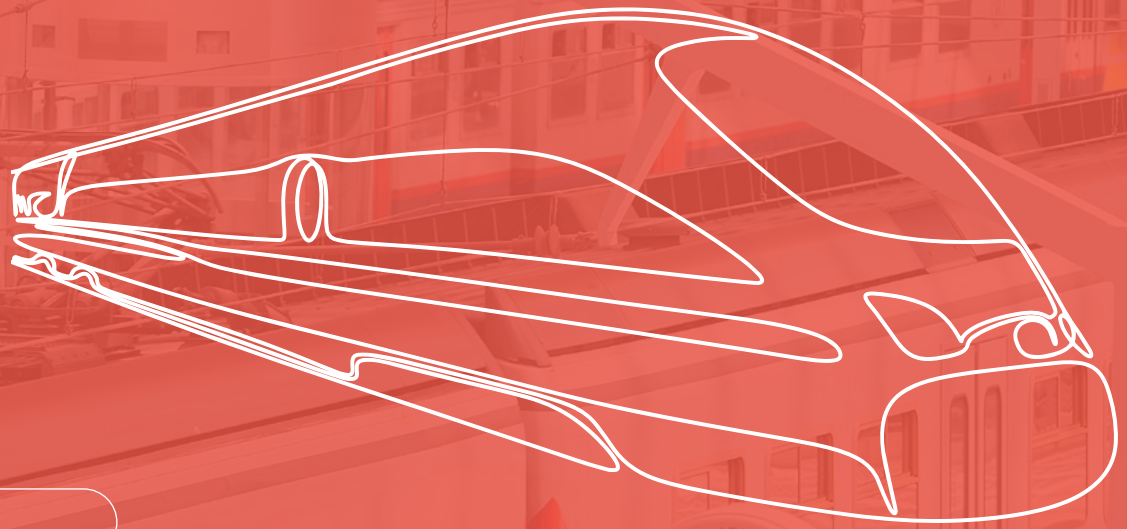
- in serious injuries to at least one person or
- causing damages assessed to be worth at least EUR 150,000 or
- suspension of rail traffic for over six hours.

« Other » accident / incident level 3

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

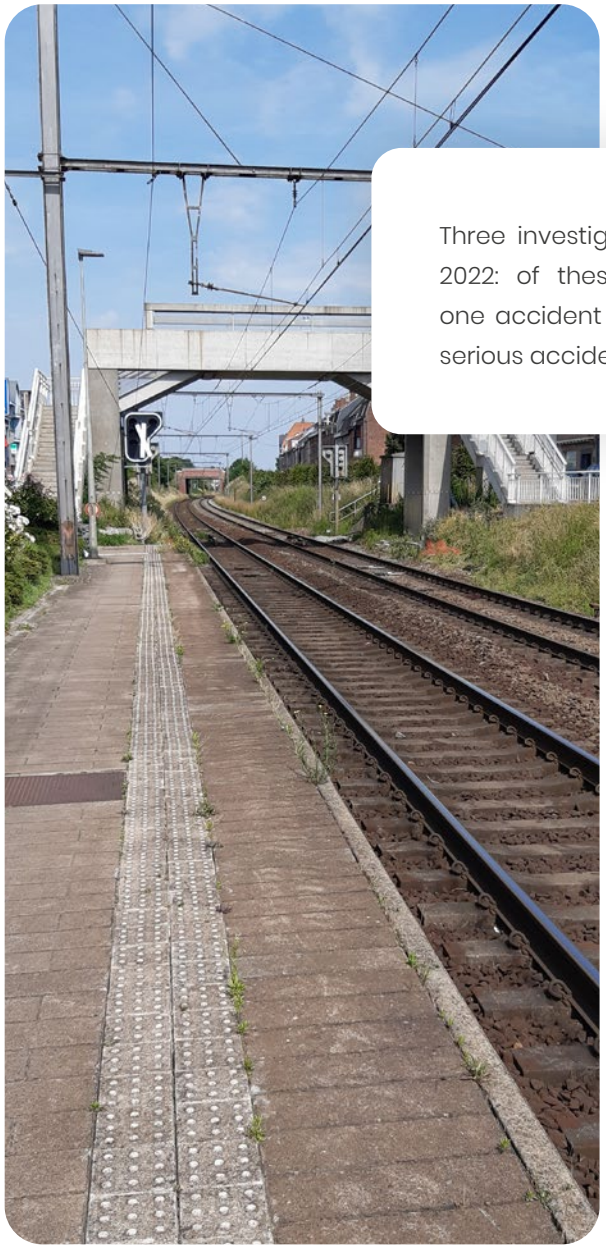
The decision to open an investigation is taken by the IU independently on the basis of this information, potentially supplemented by a preliminary enquiry.

[2] *Article 19 (1) of Directive 2004/49*

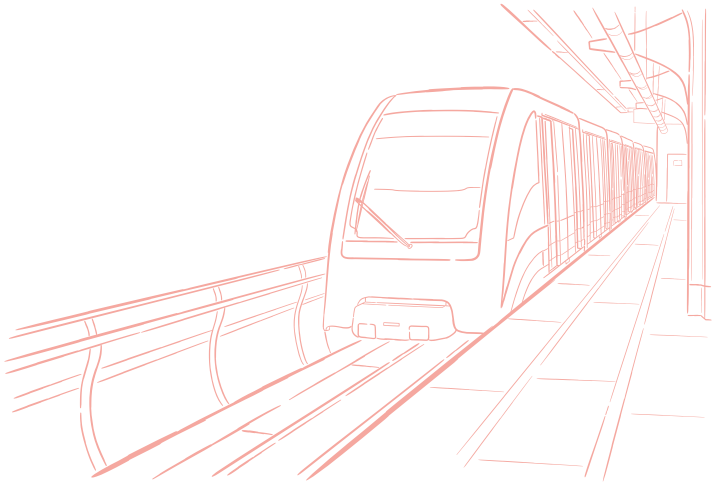


CHAPTER 6

Opened investigations



Three investigations were opened in 2022: of these three investigations, one accident meets the definition of serious accident.



1. “Serious” accident: level 1

Wetteren: Personnel hit by a passenger train

Facts

During the night of 14 to 15 June 2022, works are planned to install crocodiles (devices located between both rails of the track that help the driver to follow the indications given by a signal or a sign) on two signals of track A of line 50, near Wetteren.

In order to protect the workers involved in these works, it is planned to take this track out of service (for a distance of about 7 km) between 00:40 am and 04:20 am.

Shortly after midnight, SNCB/NMBS passenger train E2844 runs on track A of line 50 near Wetteren: the train runs between Brussels Airport Zaventem and Bruges and is not due to stop at Wetteren station.

As the train approaches Wetteren station at around 00:07 am, the driver suddenly sees people in the gauge of the track on which his train is running: he applies emergency braking but cannot prevent workers from being hit by the train.

2. "Significant" accident: level 2

Bressoux: Derailment of a wagon of a freight train

Facts

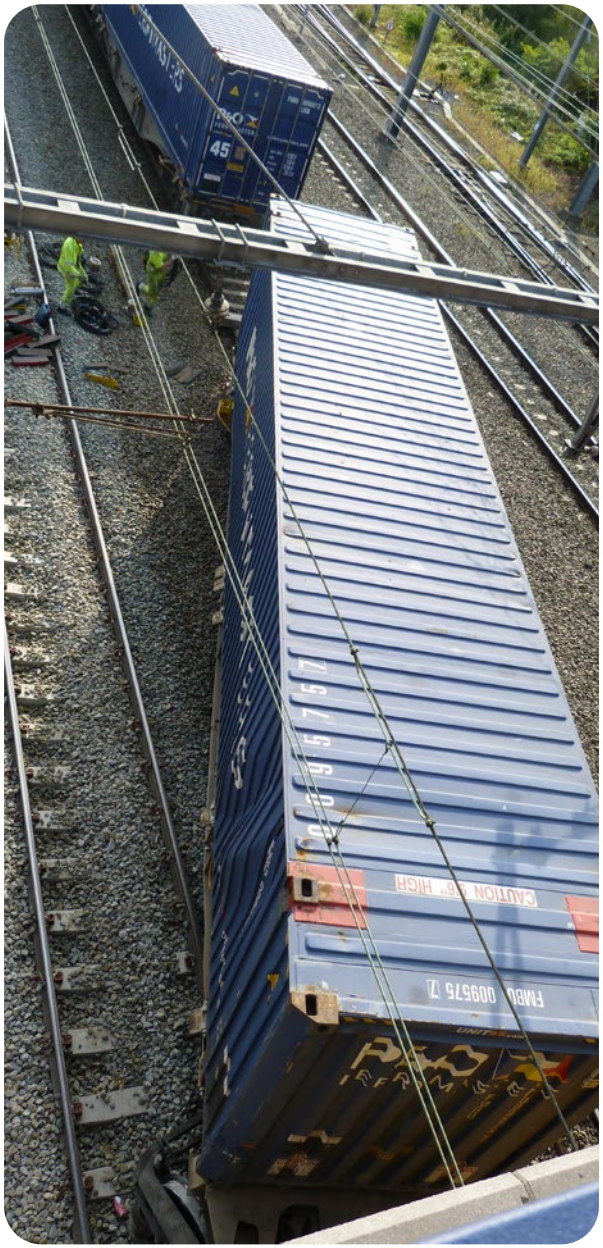
On 28 August, at around 11:15 pm, the freight train Z40653 of the railway undertaking Railtraxx departs from the fan of sidings Muizen-Goederen.

Shortly before 1:00 am, the train runs on track A of line 40 and enters the Froidmont tunnel.

Approximately 20 metres from the tunnel entrance, the 7th wagon of the train (3-axle wagon No 338549610818 carrying 2 containers) derails from the first 2 axles.

The train continues its journey towards Bressoux.

Approximately 2 kilometres after the Froidmont tunnel, the train runs over a switch: the first part of the train up to the 6th wagon continues its journey, while the second part of the train (from the derailed wagon onwards) moves to another track. The 2 parts of the train separate and the brake pipe breaks, causing the 2 parts of the train to stop.



3. "Other" accident: level 3

Antwerpen Noord: Incidents and accidents during shunting operations in the fan of sidings of Antwerpen-Noord during the first months of 2022

Facts

From the reports sent to the IU by the Infrastructure Manager and Railway Undertakings, the IU detected a significant number of incidents and accidents during wagon shunting operations in fans of sidings B and C in Antwerpen-Noord during the first four months of 2022.

Some 20 events were counted for this period in 2022, which not only represents a significant increase in the number of cases compared to the same period in 2021, but also a high figure in absolute terms.

The IU listed these shunting events according to their type:

- Collisions
- Derailments
- Runaway vehicles
- SPAD

None of these events resulted in casualties, but they did result in leaks of dangerous goods, damage to rolling stock and infrastructure, or delays, as the case may be.

CHAPTER 7

Closed investigations

Four investigations were closed in 2022: Ruisbroek, Schaerbeek, Weerde and Germoir.

All reports and summaries of closed investigations are available on the IU website. In its reports and summaries, the IU provides information on the causes and factors that contributed or may have contributed to an accident or incident.

Any use of a report with a different aim than of accident prevention - for example, in order to attribute liability - individual or collective blame in particular - would be a complete distortion of the aims of this report, the methods used to assemble it, the selection of facts collected, the nature of questions posed and the ideas organising it, to which the notion of liability is unknown. The conclusions which could be deduced from this would therefore be abusive in the literal sense of the term.

Investigation reports on accidents and safety incidents are meant to provide lessons from past accidents and incidents. They should help to identify safety risks and eliminate all similar risks related to safety in the future, and also allow actors in the rail sector to revise their evaluations of risks tied to their activities, to update their safety management systems where necessary and, especially, to adopt corrective measures.

1. "Serious" accident: level 1

Ruisbroek: Personnel hit by a passenger train

Summary

During the night of 26 to 27 February 2021, signalling and cable works are carried out on lines 96 and 96E. These works fall within the framework of an assignment of the infrastructure manager Infrabel, for which TUC RAIL acts as project supervisor. The company APK Infra is the contractor that carries out the assignment after a tendering procedure.

The works start in Buizingen and continue through Lot towards Ruisbroek. Up to Lot station, lines 96 and 96N run parallel to each other. Beyond Lot station, both tracks of line 96 continue on level ground, while both tracks of line 96N go up the Lot viaduct. Beyond this viaduct, both tracks of line 96N run between tracks A and B of line 96.

The width of the six-foot way between track A of line 96 and track A of line 96N on the one hand, and that between track B of line 96 and track B of line 96N on the other hand is more than 4.50 metres. According to the regulations of the infrastructure manager and the safety and health plan of the project supervisor, no additional safety measures have to be applied in this situation. The contractor examines the possibility and necessity of indicating the limit if the distance exceeds 4.5 metres and checks the risk analysis in relation to the railway activity and the general risk analysis, taking into account the circumstances of the accident.

The scenario used by the contractor during the kick-off meeting contains an operational planning which provides for team 1 to carry out works on track A of line 96 and team 2 on track B of line 96. A foreman is assigned to each team. Both team 1 on track A of line 96 and team 2 on track B of line 96 are equipped with a road-rail crane. There is no indication that team 1 or team 2 must carry out works on a track other than their assigned track, nor that they must cross the tracks of line 96N while carrying out the works. The crosswalks are not mentioned in the scenario presentation during the kick-off meeting.

All employees have signed an instruction on safety measures in the event of works next to or near the tracks. This instruction specifies that it is strictly forbidden to cross the tracks in service without a professional reason.

At 05:56 a.m., passenger train E3726 departs from Bruxelles-Midi/Brussel-Zuid station and continues its journey towards Ruisbroek on line 96N track A. While the works were being carried out on L96, three de-icing trains previously passed on line 96N.

At around 06:00 a.m., according to our hypothesis, the APK Infra employee goes from track A of line 96 to track B of line 96 for an unknown reason and without using a crosswalk, and by doing so enters the danger zone of line 96N. This change was neither communicated nor discussed. At around 06:00 a.m. on 27 February 2021, it is still dark and there is a dense fog at that time.

When the APK Infra employee goes on track A of line 96N, he is struck by passenger train E3726.

The contractor provides its workers with a Last Minute Risk Analysis (LMRA), which is used in the event of a change in circumstances or planning, to first assess the risks and the situation before taking action. However, this proved insufficient to prevent the accident.

Several procedures (for example on crossing tracks) and instructions (for example on carrying out an LMRA) are in place. It is also important to monitor that these procedures and instructions are applied by employees in the field so that the risk of non-compliance is limited.

The importance of reminding people that it is not allowed to cross tracks in service, and that in case of unforeseen circumstances they must use crosswalks cannot be emphasised enough. The contractor organises a repeat of the training course on safe working alongside the tracks and of the instructions on working alongside the tracks.

The Investigation Unit makes no recommendation in view of the measures taken by the contractor.

2. "Significant" accident: level 2

Schaerbeek: Derailment of a Lineas freight train

Facts

On 7 February 2018 at 01:08 a.m., train E48810 (Schaerbeek-Formation - Tergnier, 28 freight wagons - 562 m - 749 tons, locomotive HLE 1312, train driver Lineas) departs in Schaerbeek-Formation towards track A of L.28.

In advance of the first signal met on L.28, signal F-L.8, the track forms a curve with a switch at the end of the curve.

Locomotive HLE1312 derails at the end of the curve, damages the switch, crosses the adjacent track, and comes to a stop on the public road, where the locomotive collides with parked road vehicles. The first 3 wagons partially derail. During the derailment, the train driver is seriously injured.

The technical investigation includes the analysis of the locomotive's speed recordings and the inspection of the derailed locomotive, on the one hand, and the analysis of the operation of the signals and the inspection of the tracks at the scene of the accident, on the other hand.

The recordings of the passage of previous trains and of the operation of signals and of switches show that the signals and switches functioned normally.

During the derailment, the nose and bogies of the locomotive are damaged. Several points and crossings under the locomotive are ripped off or damaged. The locomotive is inspected on the premises and the condition of the driver's cab is determined.

In consultation with all parties, it is decided to take the locomotive to the workshops in Schaerbeek for further technical investigation to check the geometry of the wheels.

From the measurements of the wheels, it can be concluded with reasonable certainty that the locomotive complied with the technical requirements for rolling stock at the time of the accident, and that the damage observed is the result of the derailment.

The examination of the tracks at the scene of the derailment reveals that the derailment began at the expansion joint on distance point 605, and that several sleepers and fastenings in the area just before and after this expansion joint show defects.

The indications of derailment, shifted base plates, and inefficient sleeper screw connections are clearly visible on the left rail of the track. That is why it is decided by mutual agreement to subject the sleeper screws to a tensile test just before and after the expansion joint, in accordance with Infrabel's instructions for use.

In cooperation with Infrabel, tensile tests are performed on the sleeper screws of the left rail. The sleeper screws are pulled out of the sleepers at low tractive forces, which shows that the fastenings are inefficient.

Direct cause

According to the retained hypothesis, it is assumed that the direct cause of the derailment is the opening up of the track as a result of the inefficient fastening of the rails to the sleepers at an expansion joint and in a curve.

No recommendation: line 28 in Schaerbeek has been renovated since the derailment.

The investigation therefore focused on whether these defects were identified earlier and, if so, whether the appropriate control tasks were carried out, and whether the necessary maintenance tasks were carried out correctly.

Pre-accident findings

During the two years preceding the accident, a number of findings were made which provide important indications for the problem at the expansion joint:

- The poor condition of the sleepers: a clear indication of a possible inefficient fastening of the rails to the sleepers;
- The condition of the ring springs: several ring springs are not compressed: a clear indication of a possible inefficient fastening of the rails to the sleepers;
- The findings at the joint;
- Shifted base plates;
- Partially lifted sleeper screws;
- ...

These findings, reinforced with information from the EM130 measurement campaigns, must prompt a local team responsible for 'control and maintenance' to carry out a very thorough 'control' (not merely a 'visual' one) on the premises.

Human and organisational factor analysis: risk mitigation measures

The Infrastructure Manager has put in place a process of maintenance works to ensure the regularity and safety of operations. This process, hereafter referred to as the 'control and maintenance' process, includes the detection of problems followed by maintenance, repair or renovation works to meet them.

The 'control and maintenance' process follows a PDCA cycle (Plan Do Check Act) as provided by the Infrastructure Manager.

Indirect factor

According to the retained hypothesis, the indirect cause of the opening up of the track is the failure to perform the 'control and maintenance' process according to the procedures provided by the Infrastructure Manager.

No recommendation: a discussion of the events and a reminder of the procedures took place.

Systemic factor 1 – Information and communication

The diagnoses resulting from 'checks' are ambiguously converted into 'control and maintenance' notifications or work instructions, and when diagnosing, no link is made between successive measurement results.

No recommendation: In application of the PDCA principle and in relation to 'Information and communication', Infrabel has undertaken four

actions to improve performance in relation to the result area concerned (Cf. Chapter 5 Measures taken).

Systemic factor 2 – Operational planning and control

The follow-up and traceability of the follow-up of a number of 'control and maintenance' assignments is not optimal.

No recommendation: In application of the PDCA principle and in relation to 'Operational planning and control', Infrabel has undertaken two actions to improve performance in relation to the result area concerned (Cf. Chapter 5 Measures taken).

Systemic factor 3 – Performance assessment - monitoring

The PDCA principle, which has been put in place by the Infrastructure Manager to evaluate the 'control and maintenance' process by supervision / audit / control, and/or inspection, has not been efficient enough to identify the failure of the 'control and maintenance' process in time.

No recommendation: In application of the PDCA principle and in relation to 'Performance assessment - monitoring', Infrabel has undertaken two actions to improve performance in relation to the result area concerned (Cf. Chapter 5 Measures taken).

3. "Significant" accident: level 2

Weerde: Derailment of an SNCB/NMBS passenger train

Summary

As a partial assignment within the framework agreement "renewal of main line rails Area North East" between the infrastructure manager Infrabel and the contractor Strukton Rail, the contractor carries out rail renewal works during six nights in the period from 19 to 27 January 2021. The works take place between Weerde and Mechelen on L27 track A. During the night of 27 to 28 January, clearance works are then carried out: the old rails are cut in the six-foot way so that they can be loaded and removed later. The rail cutting works are completed on time on 28 January, and the track is put back into service at around 05:00 a.m.

The SNCB/NMBS passenger train E1954 (Charleroi-Sud – Antwerpen-Centraal) departs from Weerde station towards Mechelen on 28 January at 06:12 a.m. E1954 is the first movement on L27 track A. At kilometre marker 17.206, i.e. 832 metres in advance of Weerde station, the passenger train derails with the second wheelset axle of the first bogie. As a result of the shock, the train driver performs an emergency brake at 06:13 a.m. The speed of the train at that time is 85 km/h.

The train driver and the 15 passengers on board are unharmed. Between the location of the derailment and the place where the train comes to a standstill, damaged Pandrol clips, shifted concrete sleepers, and destroyed railway cabling can be observed. There are various impact and abrasion damages to the chassis of the first bogie of the passenger train.

Direct cause

The direct cause of the derailment is the collision with a rail that, after being cut, encroaches on the clearance gauge. A component of an axle-bearing on the primary suspension of wheel number 21 of the second wheelset axle collides with a cut rail lying in the six-foot way, lifting the first wheelset axle and pushing it off the tracks. The wheels of the second wheelset axle end up to the left of the rails of L27 track A on which the train ran, and the derailment is a fact. The Investigation Unit (RAIIU) does not make a recommendation.

Contributing factors

A first contributing factor to the derailment is the encroachment of a cut rail on the clearance gauge. After being cut, the rails lie on the ballast in the six-foot way. Despite the fact that levelling works would have been carried out earlier, the ballast in the middle of the six-foot way is remarkably higher. This elevated ballast has contributed to the risk of cut rails lying on it encroaching on the clearance gauge. In its specifications – more specifically Bundle 61 – the infrastructure manager states: "Equipment, tools, and materials must not cause a nuisance where they are placed, nor be left in an unstable condition." The RAIIU does not make a recommendation.

A second contributing factor is the absence of a check of the position of cut rails after the execution of the works. The clearance gauge is only checked by the subcontractor's crane operator, who visually checks the position of the cut rail during the cutting works. After the execution of the works, it is the contractor who notifies the infrastructure manager that the works are completed, and that all encroachments on the danger zone have been removed. Prior to this notification, the contractor does not organise a check of the position of the cut rails in the six-foot way. The RAIIU does not make a recommendation.

A third contributing factor is the insufficient description of the control tasks the Agent in Charge of the Execution of the Works (ARET/VBUW) of the infrastructure manager carries out after the completion of the works, before putting the track back into service. The ARET/VBUW monitors the execution of the works and relies on the contractor's declaration that all encroachments on the clearance gauge have been removed. For the final decision to release the track, the regulations insufficiently describe the control tasks the ARET/VBUW must have carried out first. The RAIIU recommends that the DRSI should ensure that the infrastructure manager develops the regulations regarding the powers/duties of the ARET/VBUW in more specific terms in relation to the powers of the contractor

Systemic factors

1. A first systemic factor is that the contractor and subcontractor have no identification and description of the processes and activities for storing the cut rails. In the absence of work instructions, employees fall back on routine action: they act in accordance with a working method that has become commonplace. Work instructions, which set out the way in which works must be carried out, provide clarity and structure, which benefits the quality and safety of the works. However, the absence of detailed guidelines increases the risk of errors. The RAIIU recommends that the contractor and subcontractor concerned develop a process concerning the activity and monitoring of rail cutting.
2. A second systemic factor is that the contractor does not identify and analyse all operational, organisational, and technical risks relevant to the rail cutting works. The risk of a type II encroachment, where cut rails encroach on the clearance gauge, and thus pose a specific risk of rail collision with rolling stock, has not been included in the risk analysis. As not detected, there are no risk management measures in place to prevent cut rails from causing a nuisance or being left in an unstable condition. The RAIIU recommends the contractor to identify risks inherent to the rail cutting works, and include them in their risk analysis, including risk management measures.
3. A third systemic factor is that the contractor does not monitor that a check has been carried out at the place where cut rails lie in the six-foot way before the track is put into service. One step further than the failure to carry out a check, is the failure to provide for a check on the rails before putting the track into service. The RAIIU recommends the contractor concerned to monitor that the clearance gauge has been checked after the execution of the works.
4. A fourth systemic factor is that the infrastructure manager insufficiently monitors contractors' awareness with regard to potential safety risks relating to the position of cut rails. The specifications of the infrastructure manager stipulate that materials must not cause any nuisance and must be stable, but he does not notice that the relevant safety risk of a type II encroachment, where cut rails encroach on the clearance gauge, and thus pose a specific risk of rail collision with rolling stock, has not been included in the risk analysis of the contractor. The RAIIU recommends the DRSI to verify that the infrastructure manager raises the awareness of contractors on potential safety risks relating to the position of cut rails, and, by extension, on other potential safety risks.

4. "Other" accident: level 3

Germoir (Ixelles): Derailment of a passenger train

Summary

On Thursday 4 March 2021 at around 6:35 p.m., SNCB/NMBS passenger train E3289 arrives at the Germoir unmanned stopping point for a commercial stop. The train driver sees a metal object in the track: he applies maximum service braking but cannot prevent a collision with the metal object. Because of the impact, the first axle of the train derails.

The train driver launches a GSM-R alarm.

After investigation, the metal object could be identified as the emergency coupling box of an AM08 Desiro motor coach: it came from train E2189, which passed the Germoir unmanned stopping point at around 6:29 p.m.

Causal factor

The direct cause for the derailment of passenger train E3289 is this train colliding with an emergency coupling in the track

Contributing factors

The presence in the tracks of the emergency coupling of an AM08 Desiro motor coach was due to the untimely opening of the coupling box located at the rear (in the direction of movement) of the second AM08 Desiro motor coach making up train E2189 and its impact on the edge of the platform at Germoir unmanned stopping point.

Systemic factors

Several similar incidents have occurred where the coupling box of an AM08 Desiro motor coach opened.

Since the first such incident in 2014 the SNCB/NMBS has taken measures.

The first measure was to remind all personnel that was able to open and close the box, that they have to verify that it has been closed correctly and thereafter to have them check whether the lock of the coupling box of each AM08 motor coach functions properly.

After the third incident, the SNCB/NMBS research department starts studying and developing an additional safety system for the central lock of the box to prevent incomplete locking the box. A prototype is installed and then validated. The technical solution is then installed on SNCB/NMBS' entire fleet of AM08 Desiro motor coaches.

The IU is of the opinion that SNCB/NMBS has put in place a process to develop and implement measures to control the risk of untimely opening of the coupling box, indicating in particular the parties responsible for ensuring that these measures are carried out.

Therefore, the IU does not issue a recommendation.

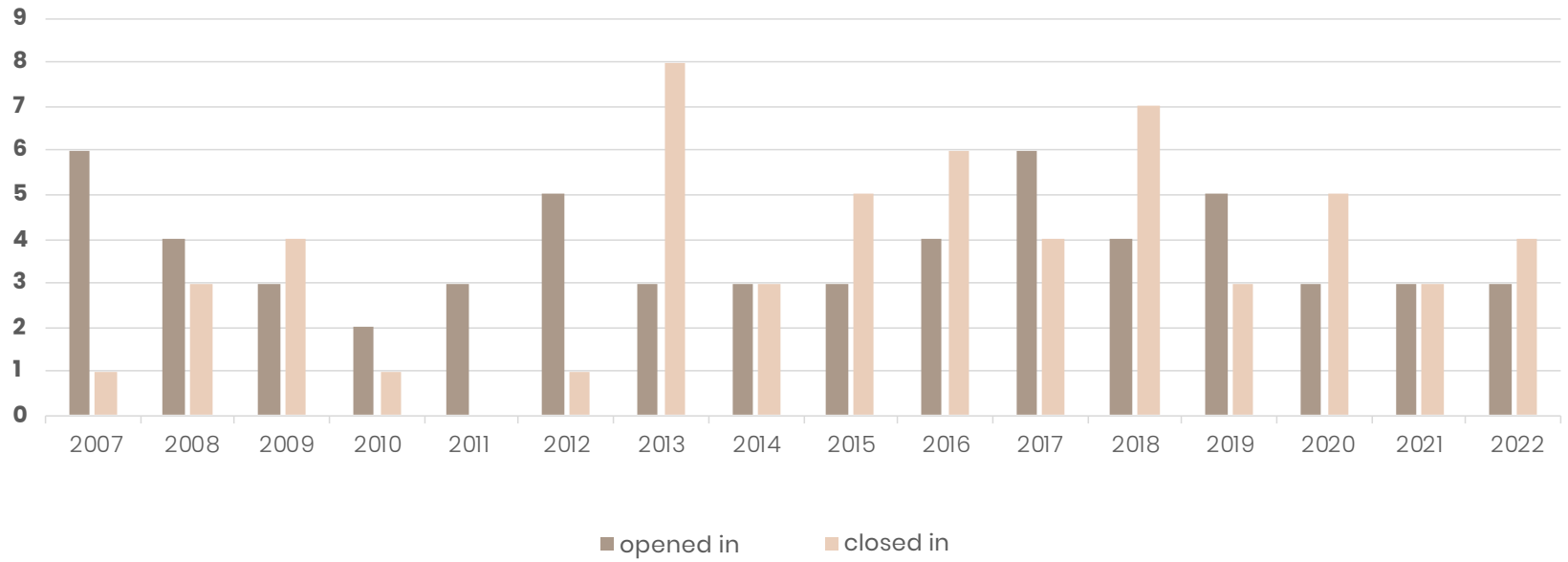
CHAPTER 8

Statistics

STATISTICS

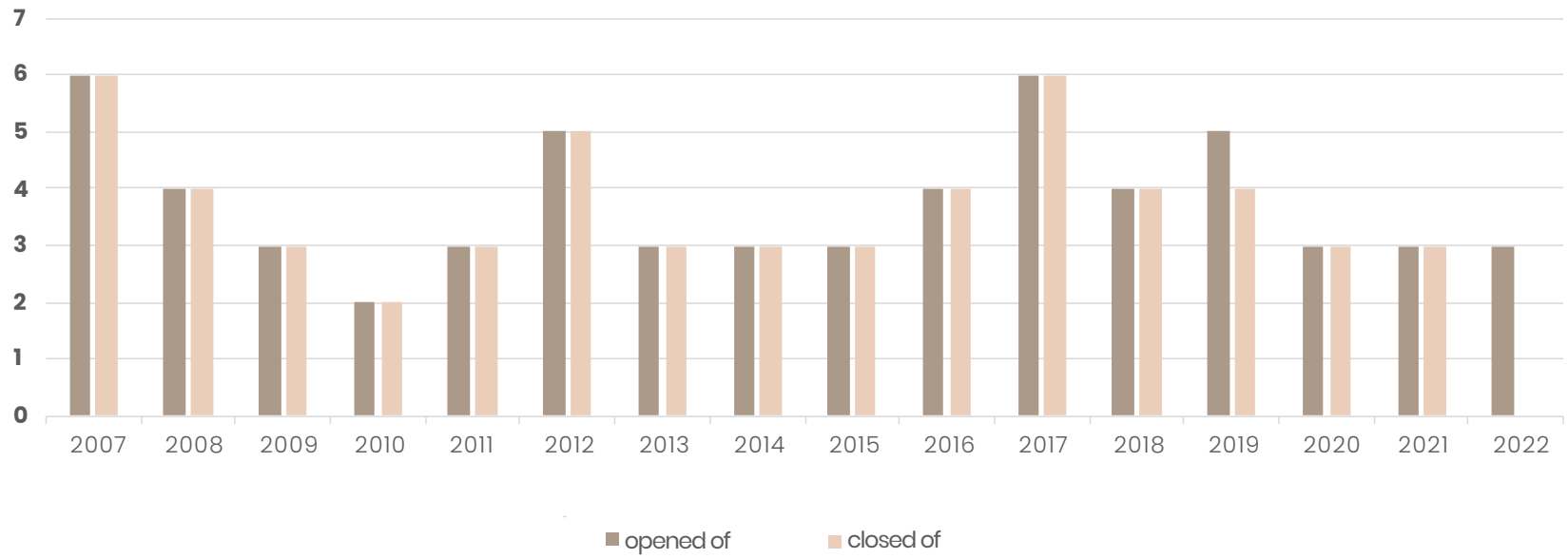
Number of investigations in the course of the year

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of investigations opened	6	4	3	2	3	5	3	3	3	4	6	4	5	3	3	3
Number of investigations closed	1	3	4	1	0	1	8	3	5	6	4	7	3	5	3	4



Balance of opened and closed investigations

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of investigations opened of	6	4	3	2	3	5	3	3	3	4	6	4	5	3	3	3
Number of investigations closed of	6	4	3	2	3	5	3	3	3	4	6	4	4	3	3	0



Number of investigations on museum railway lines

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of investigations opened										1	0	0	0	0	0	0
Number of investigations closed										0	1	0	0	0	0	0

Investigation types opened by the IU

Serious accidents - level 1

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Collision	1	1	0	1	0	1	0	0	0	1	1	0	0	0	0	0	6
Derailment	0	0	1	0	0	0	1	0	0	0	2	0	0	1	0	0	5
Accident at level crossing	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
Accident involving a person caused by rolling stock	3	1	1	0	0	1	0	0	0	0	1	0	0	0	1	1	9
Fire in rolling stock	0	0	0	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**	**1**	**1**	**1**	**1**	**22**

Significant accidents - level 2

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Collision	1	1	0	0	1	1	1	1	0	1	0	0	0	0	0	0	7
Derailment	1	0	0	0	0	2	1	0	1	0	0	1	1	1	1	1	10
Accident at level crossing	0	1	0	0	0	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	0	0	0	2
Fire in rolling stock	0	0	0	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	0	0	0	1
	2	**2**	**1**	**0**	**1**	**3**	**2**	**1**	**1**	**2**	**0**	**1**	**2**	**1**	**1**	**1**	**21**

Investigation types opened by the IU

Other accidents / incidents - level 3

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Collision	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Derailment	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3
Accident at level crossing	0	0	0	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	0	0	0	2
Fire in rolling stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other SPAD Incident signalling	0 0 0	0 0 0	0 0 0	0 0 0	0 1 0	0 0 0	0 0 0	0 1 1	0 1 0	0 1 0	0 0 0	1 0 1	0 0 0	1 0 0	0 0 0	1 0 0	9
	0	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**1**	**2**	**3**	**2**	**1**	**1**	**1**	**15**

Museum railway lines /Other

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1

CHAPTER 9

Recom-mendations

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."

The follow-up of the recommendations 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 have to 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 2021 and the first half of 2022 as well as the outstanding recommendations.

FOLLOW-UP TO THE RECOMMENDATIONS

Lieu de l'événement : Wetteren
Date de l'événement : 4/05/2013
N° recommandation : 3

Date de Publication du rapport :12/2014
Adressée au : SSICF
Exécution par : Lineas

Constat - Analyse
Le système ferroviaire attend des conducteurs qui circulent sur son réseau qu'ils perçoivent les signaux, les interprètent correctement et adoptent le comportement approprié.

Dans ce cadre les entreprises ont adopté divers mécanismes de protection pour aider à prévenir les accidents.

Ces mécanismes de protection sont insuffisants dans la situation où un conducteur de train interprète mal ou perçoit mal l'indication du signal avertisseur.

Recommandation
Le SSICF devrait veiller à ce que les entreprises ferroviaires et le gestionnaire d'infrastructure incorporent, dans la mesure du réaliste, une tolérance aux modes de défaillances humaines de telle sorte qu'une simple défaillance ne mène pas directement à un événement catastrophique, et pallient par des mesures structurelles et opérationnelles aux risques identifiés.

Suivi par l'entreprise Lineas
Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation
Lineas a effectué le contrôle d'efficacité des « temps de conduite et de repos » de quatre conducteurs. Après analyse des services effectués, Lineas confirme que les conducteurs sélectionnés se situent dans la fourchette de l'indice de fatigue et de risque. Ce contrôle d'efficacité est basé sur des échantillons aléatoires.

Commentaire du SSICF
Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises
Le lien entre le résultat du contrôle d'efficacité, la mesure prise et la recommandation est à préciser.

LIEU DE L'ÉVÉNEMENT : REMERSDAAL
DATE DE L'ÉVÉNEMENT : 1/10/2013
N° RECOMMANDATION : 1

DATE DE PUBLICATION DU RAPPORT :12/2014
ADRESSÉE AU : SSICF
EXÉCUTION PAR : SNCB-NMBS

Constat - Analyse

Lorsqu'un conducteur de train franchit le dernier signal fermé permissif le séparant du train qui le précède, et qu'il progresse en marche à vue dans une section occupée par un autre train, aucun autre dispositif technique ne prend le relais pour assister le conducteur :
- excepté le signal de queue, il n'existe plus aucun élément de signalisation garantissant l'espacement entre les trains et leur non-rattrapage.
- aucun contact n'est prévu par la réglementation du gestionnaire de l'infrastructure entre le poste de signalisation et le conducteur: le poste de signalisation n'a pas de vue sur les signaux non desservis.

Recommandation

L'Autorité de Sécurité devrait veiller à ce qu'une réflexion sur les risques de collision suite au rattrapage d'un train par un autre soit menée par les acteurs du secteur ferroviaire :
- afin d'identifier les divers éléments intervenant que ce soit au niveau organisationnel, technique ou opérationnel;
- et afin d'identifier des mesures de maîtrise et de récupération à entreprendre.

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 6 : vérification de l'efficacité des mesures prises

Pour l'heure, il n'y a pas d'informations sur la fréquence à laquelle un train entre dans une section occupée séparée par un signal permissif. Lorsque le gestionnaire de l'infrastructure aura achevé la centralisation des cabines de signalisation, la SNCB poursuivra l'évaluation, en collaboration avec le gestionnaire de l'infrastructure, de la mesure selon laquelle le conducteur de train contacte le poste de signalisation avant de franchir un signal non-desservi.

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises

LIEU DE L'ÉVÉNEMENT : LINKEBEEK
DATE DE L'ÉVÉNEMENT : 3/11/2014
N° RECOMMANDATION : 4

DATE DE PUBLICATION DU RAPPORT :12/2015
ADRESSÉE AU : SSICF
EXÉCUTION PAR : INFRABEL

Constat - Analyse
La gravité des problèmes d'adhérence pendant les heures et les jours qui ont précédé l'accident n'a pas été identifiée dans les temps.

Recommandation
Le SSICF devrait veiller à ce que le gestionnaire d'infrastructure donne les instructions à leurs services afin de répondre en temps opportun aux problèmes d'adhérence.

Le SSICF devrait veiller à ce que les entreprises ferroviaires et le gestionnaire d'infrastructure coopèrent afin de garantir un échange efficace d'informations.

Suivi par l'entreprise Infrabel
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
Local Based Voice Message (LBVM)
Fichiers audio Emma reçus le 03/03.
I-ICT et partenaire externe organisent ensemble une démo.
Organiser POC sur lignes 130 A et 132 : mardi 25/04/2023.
Analyse est en cours. Problèmes constatés avec les MESA 23 et 26. Organiser nouvelle POC après résolution des problèmes informatiques.
Annexes 7 et 8 dans mail du 20/04/2023 (mail Infrabel File Transfer)

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
Cette recommandation reste dans la même phase.

Lieu de l'événement : Linkebeek
Date de l'événement : 3/11/2014
N° recommandation : 4

Date de Publication du rapport :12/2015
Adressée au : SSICF
Exécution par : SNCB-NMBS

Constat - Analyse
La gravité des problèmes d'adhérence pendant les heures et les jours qui ont précédé l'accident n'a pas été identifiée dans les temps.

Recommandation
Le SSICF devrait veiller à ce que le gestionnaire d'infrastructure donne les instructions à leurs services afin de répondre en temps opportun aux problèmes d'adhérence.

Le SSICF devrait veiller à ce que les entreprises ferroviaires et le gestionnaire d'infrastructure coopèrent afin de garantir un échange efficace d'informations.

Suivi par l'entreprise SNCB-NMBS
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
La POC technique a eu lieu le 25/04/2023, mais n'a pas encore donné de résultats suffisamment concluants. Une deuxième POC technique est nécessaire.

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions

Lieu de l'événement : Melsele
Date de l'événement : 15/10/2016
N° recommandation : 1

Date de Publication du rapport :04/2020
Adressée au : SSICF
Exécution par : Infrabel

Constat - Analyse
La cause directe de l'accident est l'empiètement du bras de la grue dans le gabarit de la voie adjacente et le fait d'avoir laissé le train circuler dans cette zone sans activer une méthode de sécurité efficace

Recommandation
Le gestionnaire de l'infrastructure doit veiller à ce qu'une méthode de sécurité soit toujours active lors de l'exécution de travaux

Suivi par l'entreprise Infrabel
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
- Circulaires 05 I-AM/2022 et 03 I-TO/2022 ont été publiés : Travaux avec empiètement de type 1 hiérarchie de la mesure de sécurité.
Date de publication : 19/12/2022. D'application à partir du 01/05/2023
Lien : http://teams.infrabel.be/sites/Marin/Reglementations/Circulaire-11504.pdf

- Publication RGE 642.2 et la WIT SCr de I-O.13 ont été reportées au 11.06.2023. (dans le cadre de la formation prévue)
Liens : http://teams.infrabel.be/sites/Marin/Reglementations/RGE-642.2_Future.pdf et
http://teams.infrabel.be/sites/Marin/Reglementations/CR-616.pdf

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
Nous considérons que les mesures prises répondent à la recommandation et attendons la mise en œuvre de ces mesures. La recommandation reste dans la même phase.

Lieu de l'événement : Leuven
Date de l'événement : 18/02/2017
N° recommandation : 1

Date de Publication du rapport :09/2018
Adressée au : SSICF
Exécution par : Infrabel

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.

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.

Suivi par l'entreprise Infrabel

Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions

La date cible pour l'analyse pilote est mi-2022. Infrabel demande au SSICF de concentrer l'analyse sur une seule section de ligne, à savoir la section de ligne Louvain-Bruxelles (ligne 36).
Une analyse à l'échelle du réseau n'est pas réaliste.

Commentaire du SSICF

Phase décidée par le SSICF : phase 5 : suivi du plan d'actions

Le SSICF demande pourquoi le périmètre du projet a changé. Initialement, trois zones étaient prévues : une en Flandre, une en Wallonie et une à Bruxelles. Infrabel cherchera à savoir d'où vient ce changement.

Lieu de l'événement : Leuven
Date de l'événement : 18/02/2017
N° recommandation : 1

Date de Publication du rapport :09/2018
Adressée au : SSICF
Exécution par : Lineas

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.

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.

Suivi par l'entreprise Lineas

Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation

L'ETCS, en tant que système, prévient les incidents de ce type.
Le réseau belge est actuellement équipé à 50 % de l'ETCS, l'objectif étant d'atteindre 100 % en 2025. À ce jour, chez Lineas, seules la T13 et la Traxx (BR186) sont équipées de l'ETCS. La T77 débutera dans quelques mois et cessera fin 2025. En chiffres absolus, cela signifie qu'environ la moitié de nos locomotives sont actuellement équipées.
Les aspects et les indications supplémentaires sur les grands signaux sont compris dans la formation - DML fiche 1.1.3 (date d'application 15/12/2019).
Analyse check communication aux conducteurs : Téléchargé 100 % - Lu 100 % - Signé 100 %
Une fiche de communication a également été envoyée aux conducteurs, intitulée ONE,TWO,THREE, "THREE SECONDS TO AVOID SPADS"! - Fiche 2.0.1. (SPAD-PRÉVENTION - date d'application 13/12/2020).
Analyse check communication aux conducteurs : Téléchargé 100 % - Lu 100 % - Signé 100 %

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises

L'impact positif sur le niveau de sécurité de l'installation de l'ETCS sur le matériel roulant est établi.
En ce qui concerne les autres mesures, l'impact de son introduction sur le traitement correct par le conducteur de train des informations relatives à la limitation de vitesse fournies par la signalisation n'est pas clair.

Lieu de l'événement : Leuven
Date de l'événement : 18/02/2017
N° recommandation : 1

Date de Publication du rapport :09/2018
Adressée au : SSICF
Exécution par : SNCB-NMBS

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.

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.

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation
Le nombre d'anomalies (par train-km) constatées via l'analyse de trajet (dans AMELIE) diminue. Voir rapport annuel.

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises
On ignore encore dans quelle mesure la diminution du nombre d'anomalies constatée via l'enregistrement de trajet résulte d'une meilleure représentation mentale en ce qui concerne les limitations de vitesse à respecter. Est-il possible d'obtenir davantage d'explications à ce sujet ? Dans quelle mesure cela ressort-t-il des autres anomalies constatées ?

LIEU DE L'ÉVÉNEMENT : LEUVEN
DATE DE L'ÉVÉNEMENT : 18/02/2017
N° RECOMMANDATION : 2

DATE DE PUBLICATION DU RAPPORT :09/2018
ADRESSÉE AU : SSICF
EXÉCUTION PAR : SNCB-NMBS

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.

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation

Le nombre d'anomalies (par train-km) constatées via l'analyse de trajet diminue. Voir rapport annuel.

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises

On ignore encore dans quelle mesure la diminution du nombre d'anomalies constatée via l'enregistrement de trajet résulte d'un comportement de conduite différent en ce qui concerne l'accélération aux panneaux de fin de zone. Est-il possible d'obtenir des précisions à ce sujet ? Dans quelle mesure cela ressort-t-il des autres anomalies constatées ?

Lieu de l'événement : Morlanwelz / Bracquegnies
Date de l'événement : 27/11/2017
N° recommandation : 1

Date de Publication du rapport :11/2018
Adressée au : SSICF
Exécution par : SNCB-NMBS

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.

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

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation
L'audit 18.02 porte uniquement sur les tâches de relevage et ne couvre donc pas cette recommandation.
Toutefois, LO3-18039, qui précise les instructions applicables à la conduite des trains, a été diffusé le 10/09/2018. Ces instructions ont également été précisées au cours de la formation permanente prévue.

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises
On ignore à quoi LO3-18039 fait référence. Cette action peut-elle être précisée ? Quel est son impact sur l'utilisation correcte de la manivelle ?

LIEU DE L'ÉVÉNEMENT : MORLANWELZ / BRACQUEGNIES
DATE DE L'ÉVÉNEMENT : 27/11/2017
N° RECOMMANDATION : 2

DATE DE PUBLICATION DU RAPPORT :11/2018
ADRESSÉE AU : SSICF
EXÉCUTION PAR : SNCB-NMBS

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.

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.

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 7 : si efficace, clôture de la recommandation

Commentaire du SSICF

Phase décidée par le SSICF : phase 6 : vérification de l'efficacité des mesures prises
Veuillez expliquer pourquoi la phase 7 est proposée.

LIEU DE L'ÉVÉNEMENT : NOORDERKEMPEN
DATE DE L'ÉVÉNEMENT : 11/02/2019
N° RECOMMANDATION : 1

DATE DE PUBLICATION DU RAPPORT :09/2020
ADRESSÉE AU : SSICF
EXÉCUTION PAR : INFRABEL

Constat - Analyse
Le troisième facteur indirect est l'action précipitée de l'agent du mouvement de l'équipe du matin, qui arrive et reprend le travail de l'équipe précédente sans qu'il n'y ait d'intervention d'un superviseur au moment du changement d'équipe.

Recommandation
Il est recommandé au SSICF de veiller à ce que le gestionnaire de l'infrastructure gère les conditions de travail dynamiques qui surviennent lors du changement d'équipe de manière à éviter les décisions hâtives qui pourraient mettre en danger l'exploitation.

Suivi par l'entreprise Infrabel
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
31/12/2022 : Finaliser la concentration des cabines de signalisation à 10 cabines de signalisation.
L'audit interne d'Infrabel visant à estimer la charge de travail dans les salles de signalisation est en préparation.
Les départs massifs appartiennent au passé et les arrivées sont continues. Augmentation # ETP dans un avenir proche.

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
La recommandation reste dans la même phase.

LIEU DE L'ÉVÉNEMENT : NOORDERKEMPEN
DATE DE L'ÉVÉNEMENT : 11/02/2019
N° RECOMMANDATION : 5

DATE DE PUBLICATION DU RAPPORT :09/2020
ADRESSÉE AU : SSICF
EXÉCUTION PAR : INFRABEL

Constat - Analyse

Le quatrième facteur systémique est le fait que pour les trajets vers Noorderkempen de nombreux départs avant l'heure et de nombreuses manipulations incorrectes des fonctions de secours SDG et NT sont détectées sans qu'aucune mesure ne soit prise par le gestionnaire de l'infrastructure

Recommandation

Il est recommandé au SSICF de veiller à ce que le gestionnaire de l'infrastructure s'assure que les règles définies pour l'application de la fonction de secours SDG ou NT soient mieux respectées

Suivi par l'entreprise Infrabel

Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions

Après la Concertation bilatérale du 10/11/2022, I-TO.16 et I-CBE.14 ont poursuivi la concertation avec NSA Rail. (notamment meeting 26/01/2023)
Harmonisation des questionnaires, élaboration du manuel pour les contrôles I-CBE, synchronisation des méthodes de travail, ...
01/2023 : Publication nouvelle check-list I-CBE pour le monitoring NT, sur la base de la nouvelle réglementation.
Le nouveau questionnaire a également été importé dans Railreport.
Le monitoring NT a lieu à partir de 01/2023 à l'aide de la nouvelle check-list.

Il y a eu 42 contrôles au cours des 3 premiers mois de 2023. Annexes dans le mail du 20/04/2023 (mail Infrabel File Transfer)

Commentaire du SSICF

Phase décidée par le SSICF : phase 5 : suivi du plan d'actions

Le SSICF note que le « Manual audit Safety procedures » n'a pas été signé. Le SSICF demande un état des lieux concernant le monitoring de l'utilisation des fonctions de sécurité SDG et NT d'ici la prochaine réunion bilatérale en vue de clôturer la recommandation si les résultats sont satisfaisants.

Lieu de l'événement : Walenhoek
Date de l'événement : 6/02/2020
N° recommandation : 1

Date de Publication du rapport :12/2021
Adressée au : SSICF
Exécution par : Lineas

Constat - Analyse
Facteur systémique - 1
Le danger d'éblouissement par le soleil n'a pas été correctement identifié par l'entreprise ferroviaire.

Recommandation
Le SSICF doit veiller à ce que les utilisateurs de l'infrastructure soumettent le danger d'éblouissement du conducteur de train (dû au soleil) à une analyse de risques prouvant que les mesures appropriées de gestion des risques ont bien été prises.

Suivi par l'entreprise Lineas
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
23.05.2023
À la suite de cette recommandation, une action préventive AP027 a été ouverte en interne (30.12.2021).
Une analyse des risques de la tâche sera effectuée pour la fonction de conducteur de train, avec une attention particulière pour les FHO (y compris donc l'éblouissement par le soleil).
Toutefois, préalablement à cette recommandation, les mesures suivantes ont déjà été mises en œuvre : fourniture de lunettes de soleil et de lunettes de rechange pour les conducteurs de train.
Sur la base de l'analyse des risques, nous prendrons, si nécessaire, des mesures supplémentaires.

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
Le SSICF note que le « Manual audit Safety procedures » n'a pas été signé. Le SSICF demande un état des lieux concernant le monitoring de l'utilisation des fonctions de sécurité SDG et NT d'ici la prochaine réunion bilatérale en vue de clôturer la recommandation si les résultats sont satisfaisants.

Lieu de l'événement : Walenhoek
Date de l'événement : 6/02/2020
N° recommandation : 1

Date de Publication du rapport :12/2021
Adressée au : SSICF
Exécution par : SNCB-NMBS

Constat - Analyse

Facteur systémique - 1
Le danger d'éblouissement par le soleil n'a pas été correctement identifié par l'entreprise ferroviaire.

Recommandation

Le SSICF doit veiller à ce que les utilisateurs de l'infrastructure soumettent le danger d'éblouissement du conducteur de train (dû au soleil) à une analyse de risques prouvant que les mesures appropriées de gestion des risques ont bien été prises.

Suivi par l'entreprise SNCB-NMBS

Phase proposée par l'entreprise : phase 2 : analyse des recommandations proposées par l'OE
La gestion globale et dynamique des risques dans le SGS de la SNCB priorise les principaux risques et intègre cette question.

Commentaire du SSICF

Phase décidée par le SSICF : phase 2 : analyse des recommandations proposées par l'OE

LIEU DE L'ÉVÉNEMENT : WALENHOEK
DATE DE L'ÉVÉNEMENT : 6/02/2020
N° RECOMMANDATION : 2

DATE DE PUBLICATION DU RAPPORT :12/2021
ADRESSÉE AU : SSICF
EXÉCUTION PAR : INFRABEL

Constat - Analyse

Facteur systémique - 2
La décision de ne pas équiper immédiatement le signal S-W.9 de l'ETCS/TBL1+ au moment de la construction de la nouvelle liaison ferroviaire a été prise sans procéder au préalable à une analyse de risques utilisant une méthode appropriée d'évaluation des risques pour le point dangereux concerné.

Recommandation

Le SSICF doit s'assurer que le gestionnaire de l'infrastructure soumette au préalable les décisions ayant un impact sur la sécurité à une analyse de risques reprenant les points dangereux sur lesquels un projet a une influence.

Suivi par l'entreprise Infrabel

Phase proposée par l'entreprise : phase 4 : élaboration d'un plan de réalisation
Les critères définis par la NSA Rail Belgium pour l'application de la "Procédure préalable en cas de renouvellement ou de réaménagement" ont été inclus dans le RGE 105.
La version 2.0 du SIMOC (RGE 105) a été approuvée et publiée dans MARIN le 21/11/2022.
Lien : https://teams.infrabel.be/sites/Marin/Reglementations/RGE-105.pdf

Plan d'action « Interopérabilité » : avec notamment un meilleur screening de tous les projets d'infrastructure prévus et une meilleure planification du règlement administratif.

Inventaire des projets en cours SIMOC. La liste des projets pertinents a été présentée lors de la NSA Rail Board du 7/11/2022.

Travailler de manière plus proactive : un déclenchement automatique de l'application SIMOC au lancement d'un projet.

Commentaire du SSICF

Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
Le SSICF attend la formalisation des mesures prises, à savoir :
- la création d'une vue d'ensemble des projets en cours et prévus sur la base des budgets engagés pour les 2 prochaines années ;
- Mise en place du Groupe de pilotage Mise en service (SID) actif depuis le 01 juin 2023
- Une évaluation proactive via le numéro WBS.
- Un élargissement de l'horizon par le biais des projets pluriannuels d'investissement à identifier pour une période de 10 ans.

Lieu de l'événement : Weerde
Date de l'événement : 28/01/2021
N° recommandation : 1

Date de Publication du rapport :03/2022
Adressée au : SSICF
Exécution par : Infrabel

Constat - Analyse
Planning et gestion des opérations : un troisième facteur contributif est la description insuffisante des tâches de contrôle que l'Agent responsable de l'exécution des travaux du gestionnaire de l'infrastructure effectue après l'achèvement des travaux et avant qu'il ne remette la voie en service.

Recommandation
L'OEAIF recommande au SSICF de veiller à ce que le gestionnaire de l'infrastructure détaille davantage la réglementation concernant les compétences/tâches de l'Agent responsable de l'exécution des travaux en rapport avec les compétences de l'entrepreneur.

Suivi par l'entreprise Infrabel
Phase proposée par l'entreprise : phase 5 : suivi du plan d'actions
- Version approuvée et publiée du RGE 300 du 22/11/2022.
Lien http://teams.infrabel.be/sites/Marin/Reglementations/RGE-300.pdf

- Adaptations WIT 1012 Mesure de sécurité « mise hors service de la voie » - Version entrepreneur.
Publication le 13.10.22 (d'abord en interne sur Marin puis en externe sur le site web d'Infrabel)
Lien : http://teams.infrabel.be/sites/Marin/Reglementations/WIT_1012_FR.pdf

- Sensibilisation & Formation ARET : précisions sur accident Weerde et adaptation WIT 1012.
Session d'information Fonctionnaires dirigeants et personnel de surveillance, action terminée depuis le 19/04/2022.
Intégration dans FPO 2023 ARET Intermediate et Expert : action en cours - Partie 2 du Module C FPO ARET 2023 - formation au niveau local

- Adaptation du chapitre 7 fascicule 63. Catégories de personnel de l'entrepreneur/prestataire de services et préposés.
Ajouter responsabilités du Chef de travail (entrepreneur) : Mise à jour prévue pour l'été 2023
Annexe 5 du mail du 20/04/2023 (mail Infrabel File Transfer)

Commentaire du SSICF
Phase décidée par le SSICF : phase 5 : suivi du plan d'actions
Le SSICF se demande si le contrôle « ponctuel » de l'absence d'obstacles sur la voie avant la remise en service de la voie est suffisamment clair pour que l'ARET sache ce qu'il doit contrôler. Cette formulation donne l'impression que l'ARET n'a aucune responsabilité dans la remise en service de la voie alors qu'il est la personne qui a été formée à cet effet pour la tâche critique de sécurité ARET.

ANNUAL REPORT 2022

Rail Accident and Incident Investigation Unit
SPF Mobilité et Transports
City Atrium
Rue du Progrès 56 – 1210 BRUXELLES
www.rail-investigation.be

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