DEPARTMENT FOR RAIL SAFETY AND INTEROPERABILITY

ANNUAL REPORT ON RAILWAY SAFETY
Belgian National Safety Authority

2015

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INTRODUCTION

In front of you lies the Annual Report on Railway Safety – 2015 by the Department for Rail Safety and Interoperability (DRSI). DRSI is the Belgian National Safety Authority. This report provides an overview of the evolution of rail safety in 2015. It implements the requirements of Article 18 of Directive 2004/49/EC concerning Safety on the Community's Railways, implemented in Belgian law by Article 78 of the law of the 30th of August 2013 concerning the Railway Codex.

The report follows the structure as recommended by the European Railway Agency (ERA). It deals with the following subjects:

a) rail safety development, including the common safety indicators (CSI);

b) important amendments to the legislation and regulations regarding rail safety;

c) the development of the safety certification and safety authorisation;

d) the results of and experiences with the supervision of the infrastructure manager and railway undertakings.

DRSI provides this report to the agency, as prescribed in the above-mentioned Directive and to:

- the Minister for Self-Employed, minister responsible for DRSI;
- the Minister for Mobility, minister responsible for Infrabel and NMBS/SNCB (National Railway Undertaking of Belgium);
- the Special Commission of the Belgian House of Representatives entrusted with researching the safety terms and conditions of the railway network in Belgium;
- the Court of Auditors;
- the National Investigation Body on Rail Accidents and Incidents (NIB);
- the Regulatory Body for Railway Transport and for Brussels Airport Operations (the competition authority);
- the Federal Public Service Mobility and Transport (FPS MT);
- the railway sector acting in Belgium: railway undertakings, infrastructure manager, entities in charge of maintenance, the notified and designated bodies, passenger associations, etc.

The infrastructure manager and the railway undertakings provide their annual safety reports to DRSI on the 30th of June at the latest. For the first time these reports and the CSIs were presented using a template commonly agreed upon. These reports are an important source of information for the present report.

The scope of this report concerns the main lines of the Belgian railway system, including the high speed lines. DRSI performs some other tasks in addition to the tasks of an NSA. These tasks, imposed by the Belgian law, concern for example the safety of historical railway lines. These tasks are not specifically the subject of this report.

The organizational structure of DRSI has not changed. In April 2015 the director resigned. Consecutive ad interim directors managed DRSI until April 2016. At that moment a new director was appointed having a mandate for the following six years. More information on how DRSI is organised is available on the website.

This report is available in English, French and Dutch on the following webpage: http://mobilit.belgium.be/nl/spoorwegverkeer/nationale_veiligheidsinstantie/jaarverslagen.

DRSI wishes you a lot of reading pleasure.

Feel free to react at: nsa@mobilit.fgov.be.


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OVERALL SAFETY PERFORMANCE AND STRATEGY

Ⓑ 1. Main conclusions on 2015

Number of train-km remains stable

In 2015 trains travelled 96.7 million train-km on the Belgian network, of which 13.0 million for freight, 83.4 million for passengers and 0.3 million for other purposes. This means a modest increase in comparison with 2014.

Railway traffic in Belgium has never been safer

First of all a very positive observation: 2015 was a safe year. The total number of significant[1] accidents was more than halved compared with 2014, from 47 to 21. Since 2010, when Belgium started the registration of the common safety indicators (CSI), it has never been lower.

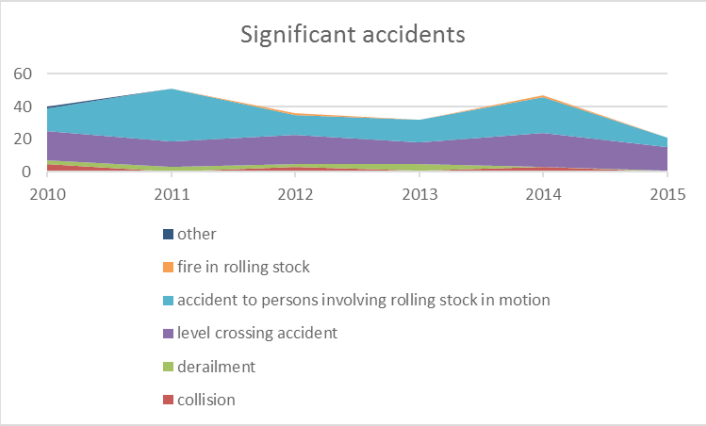

Figure 1 Number of significant accidents 2010-2015

The decrease of the total number is the result of a decrease in the number of 'accidents at level crossings' from 21 to 14 and of 'accidents caused by rolling stock in motion' from 22 to 6. The number of accidents at level crossings, 14, accounts for two thirds of the total number of accidents. In the past five years there has been an average of 16 accidents per year at level crossings. However, the figures fluctuate so much year after year, that no trend can be detected.

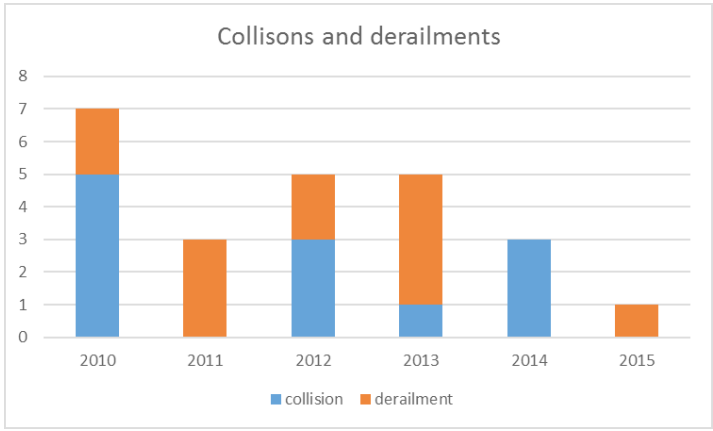

Figure 2 Number of significant collisions and derailments 2010-2015

There were no collisions and only one derailment. According to the CSIs this type of accident has never been higher than 7 since 2010, when registration started.

1. On the basis of the Railway Codex, appendix 4: Significant accident= every accident which involved at least one moving rail vehicle and in which at least one person died or was seriously injured or which resulted in a loss of more than Đ 150,000 or which caused the rail traffic to be interrupted for at least 6 hours on the main track. In the text referred to as "accident".

Victims and costs: level crossings account for the major part

In 2015, 14 persons were killed and 5 seriously injured. The total number of seriously injured persons is at an absolute minimum since 2010 and amounts to only one third of the average over the last five years. The decrease in the number of deaths is largely due to a strong decrease in 'unauthorised persons on railway premises'. For the injured a decrease is seen in all categories. In 2015 one person got killed and one seriously injured in the category 'others'. Both cases were the result of a fall from the platform into the track bed. They were hit by a train.

In view of the overall decrease, the level crossings with 11 deaths (80 % of the total) and the 2 seriously injured persons represent an ever bigger percentage of the accidents and victims.

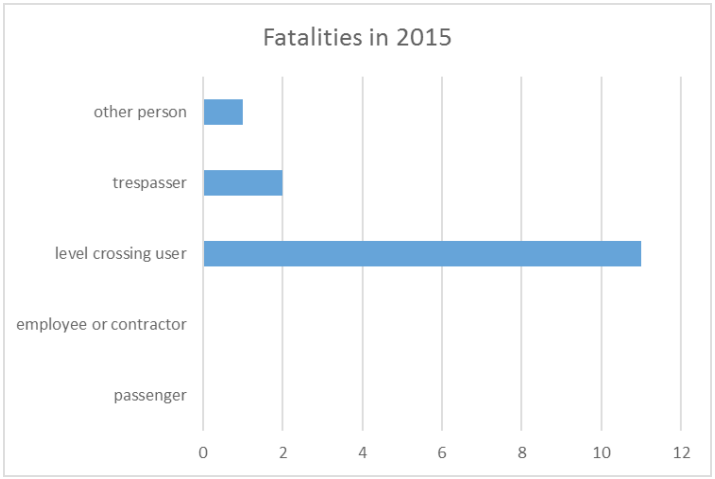

Figure 3 Number of persons killed in 2015

The calculated costs of the accidents are, in accordance with previous findings, relatively low and amount to 23 million euro. This is the smallest cost since 2012, when the calculation was made for the first time. Level crossings play a dominant role.

Increasing number of signals passed at danger

The total number of precursors increased from 132 in 2014 to 158 in 2015. This rise is completely due to an increase in the number of signals passed at danger (SPADs) from 66 in 2014 to 92 in 2015. This accounts for 58 % of the number of registered precursors. In 40 % of the cases the dangerous point was reached.

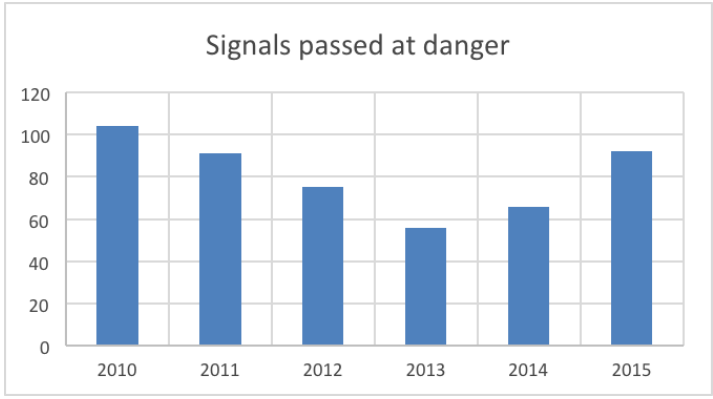

Figure 4 Evolution of SPADs

Enhancement of the technical safety of the infrastructure

Infrabel manages 3 607 km of railway lines, that is 6 541 track-km. Investments in level crossings and automatic train protection systems (ATP) enhanced the technical safety of the infrastructure.

ATP

The percentage of track-km equipped with ATP, TBL1+ included, was 80 % in 2015. The installation of the national ATP system TBL1+ was completed in December 2015. 74 % of the track-km are equipped with the system. It is now in operation on the major junctions in the network and, according to Infrabel, covers 99.9 % of the risks.

At the end of 2015 23 % of the track-km had been equipped with a cab signalling system (ETCS, TBL2 or TVM 430). The installation of ETCS will continue in the years ahead. Because it is mainly installed on lines where TBL1+ is present, the total amount of protected track-km will not increase significantly. The level of protection will, however, be higher.

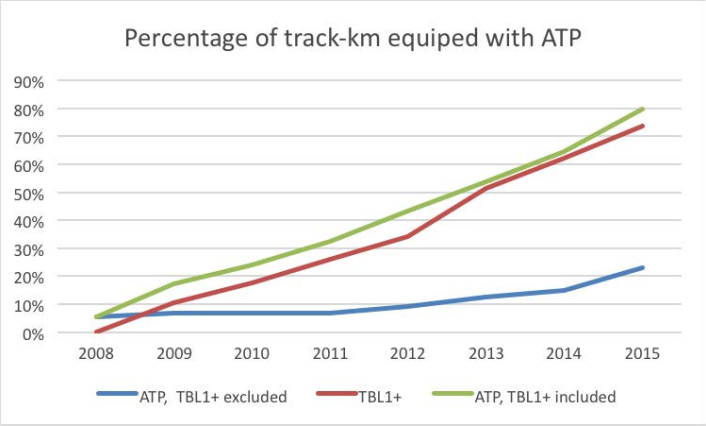

Figure 5 Percentage of track-km equiped with ATP

78 % of the train-km were driven using the various ATP systems. TBL1+ was used the most, with 66 % of the total train-km.

Level crossings

The number of level crossings decreases every year and amounts to 1 773 of which 86 % are protected.

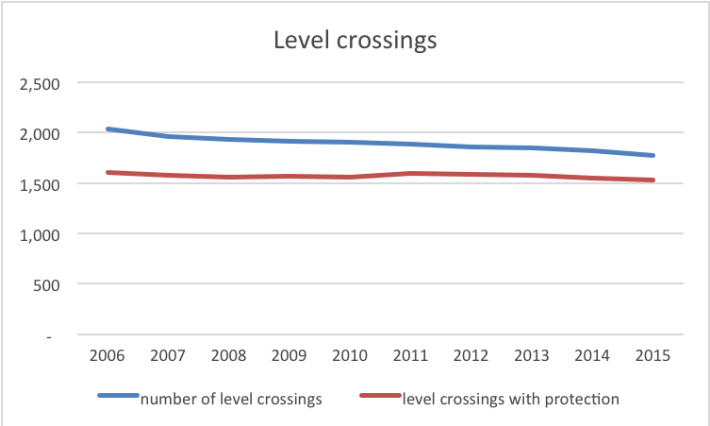

Figure 6 Number of level crossings

Execution of 83 % of the planned audits, inspections and controls

The number of inspection activities executed by DRSI was 83 % of the planned inspections, with a total of 8.81 FTE involved. In addition, the railway undertakings and infrastructure manager are conducting their own audits and inspections.

Ⓑ 2. National safety strategy, programmes and initiatives

Strategy and plans

The objective of the federal government is a continuous improvement of the safety level on the Belgian railway network. The main concerns are the improvement of safety culture, the safety investments for example in ERTMS and level crossings and dangerous goods.

A national plan for railways safety does not exist. One of the most important levers consists, however, of the public service contracts concluded with Infrabel and NMBS/SNCB and the investment plans linked to these contracts. In the chapter on safety, objectives for plans and achievements are imposed in both cases, although they do not imply obligations for other actors.

The following projects are, among others, related to safety:

- Infrabel:
  - plan to concentrate signal cabins: by the end of 2015 there were 126 signal cabins, the plan for the concentration of signal cabins will reduce this number to 10 in 2022;
  - plan to prevent SPADs;
  - plan to prevent accidents at level crossings including investments and initiatives to raise the awareness of the population;
  - plan to prevent trespassing and suicides and projects for a better shielding of railway sites against track walking and similar activities, including raising awareness;
- Infrabel and NMBS/SNCB: master plan for the improvement of the safety on the railway network in Belgium. This plan foresees the quick installation of TBL1+. Simultaneously to the installation of TBL1+, Infrabel worked on an ambitious programme to implement ETCS aimed at equipping all lines of the entire network with some type of ETCS by 2022. From 2025 onwards, ETCS should be the only protection system in operation.
- NMBS/SNCB:
  - adaptation of procedures for departure (DICE);
  - TBL1++ software on rolling stock;
  - plan 2017 TBL1+ (NG) software on rolling stock.

All railway undertakings make efforts to improve safety, particularly by installing the ATP systems.

Sector-wide safety consultation meetings

Following the accident in Buizingen in 2010, the initiative was taken to involve the sector as a whole in so called 'safety consultation meetings'. DRSI organises these meetings. They are attended, on average, by 60 representatives of the railway sector and the transport sector. The main objective is to disseminate information and to stimulate discussion on safety topics that are of interest for the sector. The participants are invited to give presentations as a base for these discussions. The FPS MT explains the most recent changes in legislation.

In 2015 the safety meetings took place on the 17th of March and the 20th of November. Working groups are set up for specific subjects. In 2015 this was the case for the visibility of lateral signalling and the common template for the annual safety report and for reporting on CSIs by railway undertakings and the infrastructure manager.

Working groups for SPADs

SPADs are potential precursors for accidents and therefore are closely monitored by all actors. Working groups meet 5-6 times a year to analyse these events more thoroughly, to draw lessons from this and - if possible – to propose various improvement measures to avoid their reoccurrence.

DRSI is present at these working groups and strives to play an active role. In this context, consultation platforms have been set up by Infrabel: SPAD Desk, Safety Desk. Here topics are discussed at a more structural level.

Ⓑ 3. Assessment of 2015

Safety culture: progress, but still room for improvement

Both for activities of certification and of supervision DRSI notices that the maturity of the sector in terms of safety is still limited, despite the progress that has already been made.

Concern for safety is all too often seen as a legal obligation with a relatively low return and a negative impact on the available capacity and the use thereof. It would be better if the sector saw safety management as a vital instrument to safeguard the correct functioning of the company and the sector.

In addition, DRSI remarks that the safety management systems still do not meet the expected quality standards. Attention is quite often focused on the operational aspects of safety, without envisioning the entire safety system and management.

Level crossing: a major point of attention

The level crossings are the main source of significant accidents and represent a risk that is difficult to manage. The number of accidents and their impact are very variable. This problem requires ongoing attention, not only from the infrastructure manager but as well from the road managers involved, in order to provide - on a sound legal base - a safe and well performing infrastructure.

It is probably too early to draw any final conclusions in relation to the initiatives of Infrabel (awareness raising, more difficult access to railway sites, less level crossings, etc.) in view of the inconsistency of these numbers and the large external impact, but this evolution gives some hope.

Signals passed at danger: issue of concern

Until 2013 the number of SPADs decreased. In 2014 for the first time an increase was noted. In 2015 another increase was reported.

The investments in systems of train protection and train control have generated great expectations and have apparently not yet reached their full potential. The human factor has a negative influence on the number of SPADs, which is the case with the inflow of inexperienced drivers and the use of social media.

Implementation of new generations of safety systems: some obstacles

The Infrabel master plan for ETCS is not linked to the roll-out of these systems within the railway undertakings, except for NMBS/SNCB. This implies the risk that the use of the systems and therefore the increased safety is not in pace with the investments in infrastructure.

In order to promote the use of the systems and to increase safety, Infrabel foresees the systematic dismantling of the Memor-Crocodile system on the Belgian railway infrastructure on which ETCS and TBL1+ are installed.

Of course this requires an effort on the part of the undertakings, both in terms of finances and organisation, to equip their traction vehicles with at least one of those systems. In view of the high cost of ETCS , the lack of stability in the versions available on the market and the long period needed for the installation, this is not obvious. Besides, the undertakings depend on their suppliers for the design and installation of both systems.

The Royal Decree of 1 July 2014, which adopts the requirements applicable to rolling stock using train paths, foresaw that the Memor-Crocodile system on the Belgian railway infrastructure, equipped with the ETCS and TBL1+ systems, would no longer be used from 1 January 2016 onwards. However, as railway undertakings for freight transport were not able to equip their rolling stock with the systems ETCS or TBL1+ in time, the date for taking the Memor-Crocodile system out of service, which was initially set for 1 January 2016, has been postponed at the request of some railway undertakings and their suppliers. The Royal Decree of 18 December 2015 pushed back this date to 12 December 2016.

Ⓑ 4. Focus areas for 2016

Integration of system audits in the supervision activities

DRSI will integrate system audits into its supervision activities. They look at safety from the perspective of the system contrary to the punctual verification and inspections. To this end the support of a consultant was sought.

Continued attention to SPADs

Based on the evolution within the sector further attention will be given to the SPADs both within DRSI and in contact with the sector, in order to gain a better insight into the evolution.

Make better use of the controls of freight trains

DRSI will examine the possibility of cooperation in the field of operational control of freight trains. Various actors such as railway undertakings and DRSI have legal obligations to conduct such controls. DRSI would like to dispose of an overview of all controls executed, in view of an improvement of the safety of the rail system making use of existing data, without adding extra burdens. Taking into account the demands concerning anonymity, the sector as a whole could use the data.

In order to reach this goal, DRSI proposes to develop in working groups a common reference framework, as has been done in Switzerland. Working groups with the sector will be started in 2016.

Alignment with other NSAs

DRSI will continue to work together with those NSAs for which cooperation exits and take new initiatives if necessary. In this manner DRSI aims at optimising the workload when different countries are involved in a certification or a supervision process. In particular this approach will be recommended to applicants for placing into service of rolling stock in the context of cross-border projects.

Topics for audits, inspections and controls

The specific topics for audits, inspections and verifications can be found in Annex 1. They are the basis for the supervision of railway undertakings, the infrastructure manager and training centres and medical and psychological centres.


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DEVELOPMENTS IN SAFETY PERFORMANCE

© 1. A detailed analysis of the latest established trends

Overview

The numbers regarding accidents based on the common safety indicators, have shown a very positive development over the past five years: three consecutive decreases; one increase in 2014 as compared with 2013 and a significant decrease in 2015 compared with 2014. The increase in 2014 occurred primarily in the categories 'accidents on level crossings' and 'accidents caused by rolling stock in motion'. These accidents were caused by external factors that are difficult for the railway undertakings and the infrastructure manager to influence, and which are particularly unstable. And yet the number of accidents on level crossings has again dropped to the level of 2013 (lowest number for the past five years) and the number regarding collisions with persons has even dropped to 27 % of the 2013 number (lowest number for the past five years).

The number of registrations of precursory elements of accidents remains at the average level of the past five years, with a slight increase with respect to the 2013 number. However, this evolution needs to be nuanced somewhat, considering that the number of SPADs has increased for the second time in a row, after a three year decrease between 2011 and 2013. One positive factor is that more than half of the SPADs involve overrunning signals that do not reach the first dangerous point; they belong to the group of SPADs with the lowest risk of an accident.

This development occurs in a situation where there was a very slight increase in the number of train-km compared with 2014, to 96,65 million train-km, whereas from 2011 to 2014 a decrease of about 4 % (or 1 % per year) was noted. The conclusions are therefore also valid for the relative numbers.

Significant accidents

The total number of significant accidents during the past five years first decreased from 51 in 2011 to 36 in 2012, to 32 in 2013, to increase to 47 in 2014 and then to diminish again to 21 in 2015. This is a decrease of 29 % in 2012, of 37 % in 2013, of 8 % in 2014 and of 59 % in 2015 respectively, compared with 2011. The 2015 number is 46 % lower than the average over the past five years.

20 of these 21 accidents were collisions with persons and vehicles on level crossings (14) or with 'accidents caused by rolling stock in motion' (6). These types of accidents find their origin in external factors with relatively small risks for passengers and the staff of the railway undertakings and the infrastructure manager. They are difficult to prevent. In spite of this, the infrastructure manager continues to invest in measures to avoid these types of accident.

The number of collisions has decreased from 1 in 2014 to 0 in 2015 and the number of derailments has increased from 0 in 2014 to 1 in 2015. No fires in rolling stock were counted in 2015, compared with 1 in 2014, and no accidents were registered in the category 'Other accidents' either.

Persons killed and seriously injured

The marked decrease in the number of victims in 2015, for both deaths and serious injuries, is the result of the significant drop in the number of victims in the category 'level crossing users' and in the category 'unauthorised persons on the tracks'. These categories had a large influence on the variations during the last five years. No victims or serious injuries were recorded for 'Passengers' and 'Employees'.

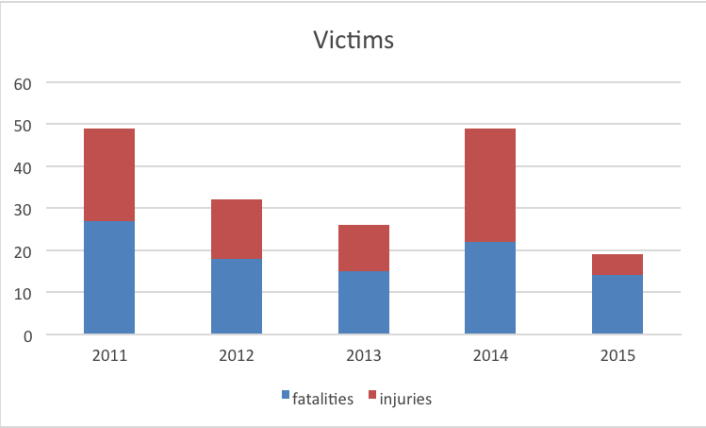

Figure 7 Victims

The efforts by the infrastructure manager, i.e. awareness campaigns on the dangers of being on and in the vicinity of tracks in operation, technical adjustments that make it difficult to reach critical points on the tracks and a plan to reduce the number of level crossings and to improve those remaining, seem to have had a positive impact on the figures for 2015. It is however not yet possible to explain the sharp fluctuation in these numbers. While the evolution seems hopeful, it is still absolutely not certain that this will continue in the years to come, given the major impact of external factors.

Suicides

The number of suicides (92 suicides and 18 attempts in 2015) is connected to social phenomena external to the railway system and can be influenced, to a limited extent, by, for example, limiting the access to the railway domain.

Dangerous goods (RID)

In 2015 no significant accidents involving dangerous goods occurred.

Precursors to accidents other than SPADs

Within the categories an important shift occurred: the number of broken rails decreases, the number of track buckles or other deformations increases to the same extent.

After three years of an increasing number of broken rails, there was a decrease from 76 in 2013 to 57 in 2014 and a further decrease to 35 in 2015. This corresponds with a decrease of 25 % in 2014 and of 54 % in 2015, in comparison with 2013. The 2015 number is 44 % lower than the average over the past five years. This decrease could on the one hand be a consequence of the milder winters and on the other hand of the new equipment and preventive measures that the infrastructure manager has implemented over the past years.

During the past five years, the number of track buckles has increased from 21 in 2011 to 26 in 2012 and to 29 in 2013, dropped spectacularly to 6 in 2014 to increase again to 26 in 2015. This concerns a parameter that includes all track buckles that result in restrictions of the exploitation. This number corresponds to the average of the previous years. The infrastructure manager has no explanation for the exceptionally low number of 2014. In 2016 he will continue to implement the preventive measures initiated in 2013.

The number of signalling failures has decreased over the past three years from 12 in 2012 to 4 in 2013, to 3 in 2014 and increased again to 5 in 2015.

SPADs

The number of SPADs has dropped over the past five years from 91 in 2011 to 75 in 2012, to 56 in 2013 and increased again to 66 in 2014 and to 92 in 2015. Only 40 of the 92 SPADs from 2015 or 43.5 % were SPADs in which the first dangerous point was exceeded, the other 52 SPADs or 56.5 % were SPADs in which the first dangerous point was not exceeded. So 56.5 % of the SPADs belong to the group with the smallest risk of causing an accident. This could be linked with the technical support offered to train drivers through the installation of the TBL1+ in rolling stock as well as on the infrastructure.

Based on information provided by the working groups, the number of SPADs increased, not only on the main lines, but as well on the other parts of the network. The percentage of SPADs reaching the dangerous point has dropped. However their absolute number has slightly increased.

In terms of methodology, two comments can be made as far as SPADs are concerned. In a limited number of cases, there is a lack of shared vision about the SPAD classification. The interpretation of what is a SPAD must therefore be refined. In addition, the improved registration by the infrastructure manager may have an impact on the number of SPADs that are detected and registered.

As mentioned above working groups analyse this evolution and the causes, technical as well as human.

Following the accident in Buizingen in 2010, the sector's first reaction was to deploy a technical solution. The first - and main - finding that has in fact emerged from the investigation of this accident, is that Belgium was lagging behind in terms of implementation of safety equipment of the type automatic train protection (ATP). To overcome this situation, it was decided, as a first step, to install on a large scale an ATP system called TBL1+. The deployment and implementation of this system took place between 2010 and the end of 2015 and is now complete. The observed number of SPADs does not seem to have decreased. The overall risk linked to this type of event is gradually decreasing. Secondly and simultaneously, it was decided to equip the rail network with the ETCS system. This system is more sophisticated, more efficient and most importantly, interoperable. However, it is more expensive and much more difficult to implement because it is more complex. That is why the deployment plan for the network has been spread until 2022. Belgium is at the forefront of applying this system in Europe.

This system is a cab signalling system performing continuous monitoring of train speed. The goal is to prevent the occurrence of SPADs by automatically decelerating the train before it reaches the signal imposing a standstill. The implementation of this system will normally reduce the number of SPADs.

Despite the demonstrated effectiveness of these technical systems (several potential accidents have already been avoided), there is still a significant residual risk. This residual risk results from human intervention in all critical activities and is summarised as "human factors". The latest comments from the working groups involved in the analysis of SPADs tend to indicate their increasing dominance as the underlying cause of SPADs. The identification and management of these human factors has for some time been given special attention by the entire sector. It is a lever – short to medium term at least - which promises to deliver the most significant improvements. In particular the use of social media has a negative impact on the number of SPADs. This must be given special attention, especially when these media, like in daily life, would be used in a professional way. For example, special apps are available to train drivers to support them in driving more economically. It is important to verify the safety impact of such systems. The inflow of younger drivers with less experience plays a role as well. This means that coaching and training are important levers.

Costs of significant accidents

The costs of accidents regarding the years 2013 till 2015 (the costs for the previous years are estimates), vary significantly as a consequence of the accidents on level crossings. Depending on the type of the vehicle involved in the accident, these costs can vary considerably. In 2014 the figure increased by 15.2 % with respect to the 2013 number, to drop again by 43.2 % in 2015.

Technical safety of the installations and their use, safety management

Infrabel manages 3 607 km of railways, this is 6 541 track-km. The technical safety of the infrastructure has increased thanks to investments in automatic train protection systems (ATP) and level crossings.

ATP

The percentage of track-km equipped with ATP, TBL1+ included, was 80 % in 2015 compared to 65 % in 2014. The most important increase since 2008.

The installation of the national ATP system TBL1+ was completed at the end of 2015. By the end of 2015, 73.8 % (or 4 810 track-km) was equipped with the automatic braking system TBL1+, in comparison with 62 % (or 4 043 track-km) a year before. It is now used on the major junctions in the network and, according to Infrabel, it covers 99.9 % of the risk.

At the end of 2015 23 % of the lines was equipped with a cab signalling system (ETCS, TBL2 or TVM 430), set against 14.7 % (or 957 track-km) a year before. The installation of ETCS will continue in the years ahead. Because it will be installed mainly on lines where TBL1+ is already present, the total number of protected track-km will not increase significantly anymore. The level of protection will, however, be higher.

Taken together, by the end of 2015, about 80 % (or 5 214 track-km) of the rail network was equipped with the systems ETCS, TVM430, TBL2 and TBL1+, set against 64.6 % (or 4 211 track-km) a year before.

By the end of 2015 Infrabel had completed the equipment with ETCS L1 2.3.0D of the North Sea – Mediterranean corridor for rail freight (RFC) between Antwerp and Athus. This corridor connects the ports of Antwerp and Rotterdam with Marseille and Basel.

78 % of the train-km were driven using the various ATP systems. TBL1+ was used the most, with 66 % TBL1+ of the total train-km.

Level crossings

The total number of level crossings decreased by 45 in 2015 and amounts to 1 773, which is 87 % of the number in 2006 and the most important annual decrease since 2006.

The percentage of protected level crossings systematically rose from 79 % in 2006 to 86 % in 2015.

© 2. Results of safety recommendations

During the year 2015, the Belgian National Investigation Body reported to DRSI that it had set up three investigations, following accidents or incidents that happened in 2015:

- Buizingen 10/09,
- Antwerpen-Luchtbal 01/11,
- Pittem 25/11.

During 2015, DRSI received five reports from the NIB, concerning investigations that were started in 2009, 2010 and 2014 respectively:

- Jemelle 15/11/2009,
- Bergen 19/11/2009,
- Aarlen 15/09/2010,
- Ottignies 28/07/2014,
- Linkebeek 03/11/2014.

Only the report of Linkebeek (published in December 2015) contained recommendations. Infrabel must take action on five of the six given recommendations and DRSI must take action on four of them. The follow-up on the recommendations of the Linkebeek report will start in 2016.

In 2015, DRSI did not receive any investigation report from the investigation bodies of other Member States.

The implementation of the safety measures in response to the safety recommendations can be found in Annex 4.

© 3. Executed measures not connected with the safety recommendations

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SUPERVISION

Ⓓ 1. Strategy and plan(s)

The management annually discusses the various supervision activities identified by the operational divisions in order to determine the main topics and define the supervision strategy for the next year.

It concerns topics that have to be checked based on information obtained during the assessment of:

- the application for certification of a railway undertaking;
- the application for authorisation of the infrastructure manager;
- a demand for placing into service for 'Infrastructure';
- a demand for placing into service for 'Rolling Stock';

and as well:

- points to be checked based on the analysis of annual reports of the infrastructure manager and railway undertakings;
- follow-up of safety level indicators (common safety indicators, compliance with safety objectives, etc.);
- recommendations from the investigation body;
- supervision activities carried out.

The supervision activities are regularly revised to ensure that they are always in accordance with the elements affecting the safety level of the network.

To do so, the operational divisions use their own findings as well as information generated by safety policy activity or from the investigation body, namely:

- the analysis of annual reports from the infrastructure manager and railway undertakings;
- the monitoring of safety level indicators (common safety indicators, compliance with safety targets, etc.);
- recommendations from the investigation body;
- follow-up and registration of events affecting the safety level;
- the analysis of pertinent elements recorded in the accident reports by the infrastructure manager and railway undertakings.

In 2015, two additional inspections have been carried out.

These are:

- an inspection of the interface between a railway undertaking and its partner following findings in a previous inspection;
- an inspection on the operational rules relating to a recurring incident following an incident noted by DRSI.

Ⓓ 2. Human resources

DRSI has used 8.81 FTE for activities concerning supervision on a total of 36 employees. The FTE are based on the number of tasks executed and on an average workload per task. It was foreseen to use 10.46 FTE, but other assignments necessitated to reconsider the planned activities.

Ⓓ 3. Competence

Within the various operational divisions of DRSI the focus varies, but technical knowledge of the railway system and knowledge associated with risk analysis and audits are the main pillars for the development of the competences of the employees. DRSI provides a basic training for each employee. Depending on the background of the new employees and their tasks, they will develop their skills in each of the two pillars to a lesser or a greater extent. This will be done through mentorship by experienced staff and by training. These trainings are provided by, for example, the infrastructure manager or the undertakings, since they have specific knowledge about the railway world. Regarding the execution of audits, the decision was made in 2015 to call upon a consultant for guidance over a longer period of time for all staff involved in supervision.

Ⓓ 4. Decision-making

The decision-making criteria regarding the way the NSA has followed, promoted and enforced the regulatory framework and the procedure for establishing these criteria are based on the principles in the Regulations 1158/2010 and 1077/2012 and on the internal procedures that result from these regulations.

Every major stage of a supervision activity, identified through the internal procedures, is subject of a report to the management of the divisions involved. It checks the compliance with the regulations and procedures as well as the coherence in terms of classification of nonconformities and this prior to validating it formally.

No complaints were submitted by the railway undertakings and infrastructure managers regarding decisions made during the course of monitoring activities.

Ⓓ 5. Coordination and cooperation

On the 6th of February 2015, DRSI signed a protocol agreement with the NSAs from Luxemburg and France, the Administration des Chemins de Fer (ACF) and the Etablissement Public de Sécurité Ferroviaire (EPSF). The protocol should lead to the signing of an agreement in 2016. The main purpose is to organize supervision activities for example with railway undertakings or training centres where there is a common interest. This way double work can be avoided.

In the context of this agreement, the NSAs have decided to hold three meetings per annum. In these meetings the NSAs will deal with the following subjects:

- Return of Experience (REX) of supervision activities conducted jointly;
- themes identified as important in the context of the sharing of good practices and a possible future harmonisation of the procedures;
- NSA strategies;
- monitoring activities carried out;
- points to be checked, based on information received in the assessment of an authorisation or certification procedure;
- points to be checked based on the analysis of annual safety reports;
- the follow-up of safety level indicators (common and national safety indicators, compliance with safety targets, etc.);
- recommendations from the investigation bodies;
- the follow-up and registration of events affecting the safety level, within the provisions existing at a national level;
- the pertinent elements included in accident analysis or accident reports from railway undertakings;
- the planning of supervision activities in seperate periods and thus avoiding, as far as possible, the programming of simultaneous and/or superfluous activities in the same railway undertaking;
- common supervision activities the NSAs could undertake.

Without having signed a formal cooperation agreement, DRSI meets twice a year to exchange information about the railway undertaking ‘Eurostar’ with its colleagues of France, EPSF, and the United Kingdom, the Office of Rail and Road (ORR).

First contacts for a better collaboration have been made with the Dutch NSA, Inspectie Leefomgeving en Transport (IL&T).

Ⓓ 6. Findings and measures taken

The railway undertakings generally limit themselves to measures that focus on the identified nonconformity and disregard the indicator or warning role that this nonconformity may have in relation to items not covered by the NSA check.

This lack of proactive attitude within the railway undertakings is worrying and should be the subject of continuous attention by DRSI.

Railway undertakings have been subjected to both inspections and monitoring on-site by DRSI. The inspections covered points on the safety management system via a top-down approach. On the basis of documentation in the safety management system, DRSI checks if the data corresponds to reality. 64 % of detailed inspections have been carried out, 56 % of them were planned, 8 % were unplanned at the time of preparing the supervision plan. As for monitoring, this covers safety on-site. The number of verifications set in the supervision plan was exceeded by 39 % .

The planned inspections mainly concentrated on the following topics:

1. collaboration between railway undertakings (partnership);
2. internal monitoring;
3. journey recording;
4. adaptation of the safety management system following the modification of a national rule;
5. the recruitment of experienced train drivers.

For each topic the conclusions are listed here:

1. The results of inspections linked to the collaboration between railway undertakings (partnership) revealed frequent deficiencies in the various safety management systems. These should primarily be adapted to improve the mutual exchange of information, to clearly define the various responsibilities linked to collaboration and to optimise the implementation of internal controls concerning this collaboration.
2. The internal monitoring inspections were primarily focused on the running of the control process by the railway undertaking. Furthermore, particular attention was given to determining the monitoring strategy, monitoring priorities and monitoring plans linked to this process. Despite the presence of monitoring plans, a monitoring strategy is almost systematically lacking and the priorities are almost never set.
3. The results of inspections linked to the recording of data concerning the running of a train are contrasting. Certain railway undertakings have a good quality system to record and trace these (analyses of) recordings, other railway undertakings still have to improve a lot. The recording on board the train showed few deficiencies, but it should be noted that the analysis of recordings is often a time-consuming task. If certain railway undertakings would carry out a more automated analysis, this data could be used more often to avoid incidents and accidents.
4. Practically speaking, the safety management system of different railway undertakings does not manage to detect a modification made to a Belgian national rule, to record and carry out the planned analysis. In certain railway undertakings, a structured and formalised method in order to ensure these tasks is lacking as well.
5. The safety management systems of railway undertakings foresee the possibility of recruiting experienced train drivers. In any case, checking the validity of the European licence is not, very often, 100 % conclusive. The guarantee of medical and psychological fitness can also sometimes be improved upon.


SIEMENS

E

CERTIFICATION AND AUTHORISATION

Ⓔ 1. Guidance

Railway undertakings

In Belgium 14 railway undertakings are authorised to operate on the network, of which 7 Belgian companies with Part A and B issued by DRSI and 7 foreign companies with only Part B issued by DRSI. A quantitative evolution is not envisaged in the short term. In 2015, 1 Part A and 6 Part B were issued or renewed.

DRSI uses a client oriented approach. There is indeed a large variation between railway undertakings concerning the maturity of their safety management system. In this context, the ratio between accompanying the railway undertaking in its application for certification and evaluating a complete application file in a more formal manner can vary considerably.

Rolling stock

In 2015, 23 authorisations for the placing into service of rolling stock were issued or renewed following a modification. Annex 3 shows an overview of new and modified vehicles. Annex 3 shows an overview of the number of railway vehicles registered in the National Vehicle Register as being active on 1 January 2016.

For rolling stock DRSI uses a client oriented approach as well.

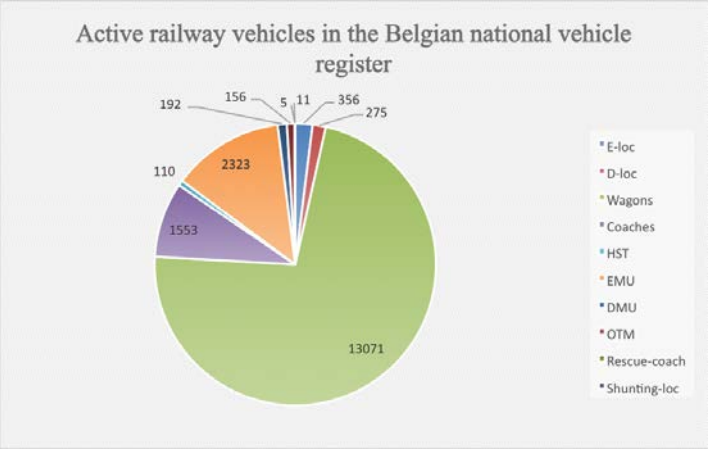

Figure 8 Rolling stock NVR

Ⓔ 2. Contact with other NSAs

There were no requests from other NSAs for information on a Part A certificate of a certified railway undertaking in Belgium making the request for a Part B certificate in the other member state. There were no requests submitted to other NSAs for information on a Part A certificate of a certified railway undertaking in the other member state making the request for a Part B certificate in Belgium.

The first phase of the working group for the authorisation of the new Velaro e320 train sets for Eurostar Ltd. was completed with the issuing of an authorisation for placing into service by the 4 safety authorities concerned (ORR, CTSA, EPSF and DRSI). The working group will be maintained during the next phase when ETCS is activated and authorisation will be requested for the Netherlands too. IL&T as well will join the working group.

In future, this method will be recommended to applicants for cross-border projects. It prepares the different national safety authorities and the ERA for the introduction of the fourth railway package.

Ⓔ 3. Procedural issues

Null

Ⓔ 4. Feedback

Currently, there is no formal mechanism intended for railway undertakings and DRSI has not yet noticed a need. DRSI envisages examining the application for certification on the basis of a constructive exchange allowing the railway undertaking as well as the NSA to openly discuss difficult points. This approach requires frequent contact with the railway undertaking, as well as an increased and a clear and precise motivation on the part of the NSA, but has the advantage of leading the railway undertaking to acknowledge the necessary improvements it needs to apply to its application. This exchange also allows the NSA to improve its communication with railway undertakings and to be self-critical.

If the railway undertaking believes that the decision is not pertinent, it can submit a legal challenge. No challenge has been submitted so far.


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F

CHANGES IN LEGISLATION

Ⓕ 1. Railway Safety Directive

- Legislation in force transposing the railway safety directive;
- The status of the transposition of the amendments to the railway safety directive at the end of the reported year (annex 5).

Ⓕ 2. Changes in legislation and regulations

See annex 5.

G

APPLICATION OF THE CSM FOR RISK EVALUATION AND ASSESSMENT

Ⓖ 1. NSA experience

The infrastructure manager has used the CSM for the following important projects placed into service in 2015 or early 2016:

- tunnel Schumann-Josaphat;
- equipment of the Rail freight corridor North Sea – Mediterranean (RFC2 of C), with ETCS L1 2.3.0D.

For the railway undertakings, this aspect is treated in a general manner in the context of certification or supervision. DRSI has not yet considered doing this from the point of view from specific activities and the experience is rather limited.

Ⓖ 2. Feedback from stakeholders

Null

Ⓖ 3. Revision of NSRs to take into account the EC regulation on CSM on risk evaluations and assessment

Null


5511

H

DEROGATIONS REGARDING ECM CERTIFICATION SCHEME

Not applicable for DRSI.

In Belgium, the certification of ECMs is entrusted to accredited bodies (by Belac) for product certification (according to the standard EN ISO/CEI 17065). To date, Belgorail is the only Belgian body authorised to certify ECMs.

ABBREVIATIONS

ACF	Administration des Chemins de Fer (NSA LU)
CCS	Control Command and Signalling (TSI)
CTSA	Channel Tunnel Safety Authority (NVI CT)
DB Netz	German IM
DeBo	Designated Body
DMU	Diesel Motor Unit
DRSI	Department for Rail Safety and Interoperability (NSA BE)
FPS MT	Federal Public Service Mobility and Transport
EBA	Eisenbahn-Bundesamt (NSA DU)
ECM	Entities in charge of maintenance
ERAIL	European Railway Accident Information Links
EPSF	Etablissement Public de Sécurité Ferroviaire (NSA FR)
ERA	European Railway Agency
ERTMS	European Railway Traffic Management System
EMU	Electric Motor Unit
ETCS	European Train Control System
CSI	Common Safety Indicator
CSM	Common Safety Method
CST	Common Safety Target
IM	Infrastructure Manager
IL&T	Inspectie Leefomgeving en Transport (NSA NL)
Infrabel	Belgian infrastructure manager
MS	Member-State
NIB	National Investigation Body
NMBS/SNCB	Belgian railway undertaking (passengers)
NoBo	Notified Body
NRV	National Reference Value
NSA	National Safety Authority
NSR	National Safety Rule
NVR	National Vehicle Register
OO	National Investigation Body on Rail Accidents and Incidents
ORR	Office of Rail and Road (NSA UK)
OTM	On Track Machine
RU	Railway Undertaking
RFC	Rail Freight Corridor
SMS	Safety Management System
SPAD	Signal Passed At Danger
TSR	Temporary Speed Restriction


GEFCO
TRANSPORT
D'AUTOMOBILES

ANNEXES

1. Themes for supervision in 2016

Railway undertakings	
"System" audits	Management practices
Inspections	REGULATION (EU) No 1078/2012 of the COMMISSION of 16 November 2012
	Implementation by the RUs of amendments to the RSEIF/VVESI
	Recruitment of train drivers from other RUs
	Compliance with the requirements under point 4.2.3.5 of the TSI OPE
	Implementation of MERL-IN application
Verification of conformity	Safety rules linked to train composition
	Safety rules in the context of operational procedures (IM/RU interface)
	RU safety personnel with focus on subcontracted personnel
Infrastructure manager	
"System" audits	Conclusion of the audit on maintenance procedures of Infrabel SMS
	Management practices
	Preliminary Hazards Identification for the 2017 procedural audit of Infrabel SMS for the management of its contractors: TUC Rail case for the placing into service of structural subsystems and in particular the transfer of information on the maintenance plan of these subsystems.
Inspections	Application notice 22 on EBP signalling centres
	Putting on/off track of undetectable vehicles
	TSR
	Level Crossing
Verification of conformity	Visibility of signals
	Maintenance of track equipment

Training bodies, training centres and medical and psychological centres:	
System "audits"	N/A
Inspections	Certification inspection of medical and psychological centres: one inspection per recognition period (recognition audit), and one annual inspection per recognition period
	Certification inspection of medical and psychological centres: inspection with annual interval per recognition period
	Certification inspection of the training centres and bodies: one inspection with recognition period (recognition audit)
	Certification inspection of training centres and bodies: one inspection per recognition period (recognition audit), and one annual inspection per recognition period, (some recognitions (RD 2008) are not of limited duration).
	Inspection on certification of examiners recognised by DRSI
Controls	None

For the year 2016, the themes DRSI will concentrate on during its supervision activities (audits, inspections and controls) in railway undertakings, the infrastructure manager and the training centres and medical and psychological centres can be found in the table.

For training centres and medical and psychological centres special attention will be given to the following points during the inspections:

- the implementation of the new criteria related to the language requirements for train drivers (B1) and examiners (B2);
- the internal procedures for the recognition of examiners, and to maintain the professional competencies of the examiners involved in the examination related to the certificate;
- the implementation of the new procedure for the recognition of examiners involved in the examination related to the license, which is currently being conducted by DRSI;
- the measures taken in response to the findings of the audits performed in 2015.

2. Common safety indicators (CSI)

SIGNIFICANT ACCIDENTS

Significant accidents according to type

year	collision	derailment	level crossing accident	accident to persons involving rolling stock in motion	fire in rolling stock	other	total	1 000 000 train-km
	absolute value							
2010	5	2	18	14	0	1	40	100.7
2011	0	3	16	32	0	0	51	101.3
2012	3	2	18	12	1	0	36	99.3
2013	1	4	13	14	0	0	32	97.0
2014	3	0	21	22	1	0	47	96.6
2015	0	1	14	6	0	0	21	96.7
	value relative to million train-km							
2010	0.050	0.020	0.179	0.139	0.000	0.010	0.397	100.7
2011	0.000	0.030	0.158	0.316	0.000	0.000	0.504	101.3
2012	0.030	0.020	0.181	0.121	0.010	0.000	0.363	99.3
2013	0.010	0.041	0.134	0.144	0.000	0.000	0.330	97.0
2014	0.031	0.000	0.217	0.228	0.010	0.000	0.486	96.6
2015	0.000	0.010	0.145	0.062	0.000	0.000	0.217	96.7

FATALITIES

Fatalities according to category of persons concerned

year	passenger	employee or contractor	level crossing user	trespasser	other person	total	1 000 000 000 passenger-km	1 000 000 train-km
	absolute value							
2010	18	2	8	5	2	35	10,6	100,7
2011	0	2	8	15	2	27	10,8	101,3
2012	0	1	13	3	1	18	10,9	99,3
2013	0	0	6	9	0	15	10,9	97,0
2014	0	1	11	9	1	22	11,0	96,6
2015	0	0	11	2	1	14	10,6	96,7
	value relative to million train-km							
2010	0,179	0,020	0,079	0,050	0,020	0,348	10,6	100,7
2011	0,000	0,020	0,079	0,148	0,020	0,267	10,8	101,3
2012	0,000	0,010	0,131	0,030	0,010	0,181	10,9	99,3
2013	0,000	0,000	0,062	0,093	0,000	0,155	10,9	97,0
2014	0,000	0,010	0,114	0,093	0,010	0,228	11,0	96,6
2015	0,000	0,000	0,114	0,021	0,010	0,145	10,6	96,7
	value relative to billion passenger-km							
2010	1,697	0,189	0,754	0,471	0,189	3,299	10,6	100,7
2011	0,000	0,184	0,737	1,383	0,184	2,489	10,8	101,3
2012	0,000	0,092	1,197	0,276	0,092	1,658	10,9	99,3
2013	0,000	0,000	0,551	0,827	0,000	1,378	10,9	97,0
2014	0,000	0,091	1,002	0,820	0,091	2,005	11,0	96,6
2015	0,000	0,000	1,038	0,189	0,094	1,321	10,6	96,7

SERIOUSLY INJURED PERSONS

Serious injuries according to category of persons concerned

year	passenger	employee or contractor	level crossing user	trespasser	other person	total	1 000 000 000 passenger-km	1 000 000 train-km
	absolute value							
2010	171	4	9	4	1	189	10,6	100,7
2011	3	1	9	4	5	22	10,8	101,3
2012	1	3	5	5	0	14	10,9	99,3
2013	0	0	6	4	1	11	10,9	97,0
2014	1	5	11	7	3	27	11,0	96,6
2015	0	0	2	2	1	5	10,6	96,7
	value relative to million train-km							
2010	1,699	0,040	0,089	0,040	0,010	1,878	10,6	100,7
2011	0,030	0,010	0,089	0,039	0,049	0,217	10,8	101,3
2012	0,010	0,030	0,050	0,050	0,000	0,141	10,9	99,3
2013	0,000	0,000	0,062	0,041	0,010	0,113	10,9	97,0
2014	0,010	0,052	0,114	0,072	0,031	0,279	11,0	96,6
2015	0,000	0,000	0,021	0,021	0,010	0,052	10,6	96,7
	value relative to billion passenger-km							
2010	16,118	0,377	0,848	0,377	0,094	17,814	10,6	100,7
2011	0,277	0,092	0,830	0,369	0,461	2,028	10,8	101,3
2012	0,092	0,276	0,461	0,461	0,000	1,290	10,9	99,3
2013	0,000	0,000	0,551	0,367	0,092	1,010	10,9	97,0
2014	0,091	0,456	1,002	0,638	0,273	2,460	11,0	96,6
2015	0,000	0,000	0,189	0,189	0,094	0,472	10,6	96,7

DANGEROUS GOODS AND SUICIDE

Dangerous goods and suicides

year	accident involving at least one railway vehicle transporting dangerous goods	number of such accidents in which dangerous goods are released	suicides	attempted suicide	1 000 000 train-km
	absolute value				
2015	0	0	92	18	96.7
	value relative to million train-km				
2015	0	0	1.0	0.2	96.7

PRECURSORS

Precursors of accidents								
year	broken rail	track buckle and other track misalignment	wrong-side signalling failure	signal passed at danger	broken wheel on rolling stock in service	broken axle on rolling stock in service	total	1 000 000 train-km
	absolute value							
2010	67	5	2	104	0	0	178	100.7
2011	45	21	2	91	0	0	159	101.3
2012	52	26	12	75	0	0	165	99.3
2013	76	29	4	56	1	0	166	97.0
2014	57	6	3	66	0	0	132	96.6
2015	35	26	5	92	0	0	158	96.7
	value relative to million train-km							
2010	0.666	0.050	0.020	1.033	0.000	0.000	1.77	100.7
2011	0.444	0.207	0.020	0.899	0.000	0.000	1.57	101.3
2012	0.524	0.262	0.121	0.756	0.000	0.000	1.66	99.3
2013	0.784	0.299	0.041	0.577	0.010	0.000	1.71	97.0
2014	0.590	0.062	0.031	0.683	0.000	0.000	1.37	96.6
2015	0.362	0.269	0.052	0.952	0.000	0.000	1.63	96.7

COST OF ACCIDENTS

Cost of significant accidents						
year	persons killed	persons seriously injured	cost of material damages to rolling stock or infrastructure	cost of delays as a consequence of accidents	total cost	1 000 000 train-km
	million €					
2010						100.7
2011						101.3
2012	29.502	3.486	1.271	0.441	34.700	99.3
2013	24.585	2.739	6.352	0.538	34.214	97.0
2014	36.058	6.723	0.070	0.296	43.147	96.6
2015	22.946	1.245	0.137	0.14	24.468	96.7
	€/train-km					
2010						100.7
2011						101.3
2012	0.293	0.035	0.013	0.004	0.345	99.3
2013	0.243	0.027	0.063	0.005	0.338	97.0
2014	0.363	0.068	0.001	0.003	0.435	96.6
2015	0.237	0.013	0.001	0.001	0.252	96.7

TECHNICAL SAFETY OF INFRASTRUCTURE AND ITS IMPLEMENTATION

Train protection systems

Technical safety - automatic train protection ATP							
year	ATP, TBL1+ excluded	TBL1+	ATP, TBL1+ included	track-km	percentage of train-km using tracks equiped with ATP, TBL1+ excluded	percentage of train-km using tracks equiped with ATP, TBL1+ included	1 000 000 train-km
2008	6%	0%	6%	6 282			
2009	7%	11%	17%	6 426			
2010	7%	18%	24%	6 344			100.7
2011	7%	26%	33%	6 344			101.3
2012	9%	34%	43%	6 446			99.3
2013	13%	51%	54%	6 472			97.0
2014	15%	62%	65%	6 522			96.6
2015	23%	74%	80%	6 514	12%	88%	96.7

Level crossings

Technical safety - level crossings					
year	number of level crossings	level crossings with protection	percentage of level crossings with automatic or manual protection	track-km	number of level crossings per track-km
2006	2 037	1 613	79%	6 212	0.328
2007	1 957	1 581	81%	6 212	0.315
2008	1 929	1 562	81%	6 282	0.307
2009	1 913	1 569	82%	6 426	0.298
2010	1 902	1 560	82%	6 344	0.300
2011	1 879	1 595	85%	6 344	0.296
2012	1 857	1 590	86%	6 446	0.288
2013	1 848	1 581	86%	6 472	0.286
2014	1 818	1 554	85%	6 522	0.279
2015	1 773	1 530	86%	6 514	0.272

3. Vehicles

Authorisation for placing into service of new or modified rolling stock

Name of vehicle type	Vehicle category	Authorisation n°	Authorisation category	Description modification(s)
ES64U4-H/H1 (HLE 18/19 SNCB)	Locomotive	BE51 2011 0009	Upgrade	New SW version F1.8
ES64U4-H/H1 (HLE 18/19 SNCB)	Locomotive	BE51 2011 0009	Upgrade	Adaptation conditions of use
Thalys, variant PBKA	Train set	BE51 2011 0017	Upgrade	New SW Bi-Standard ERTMS/TVM, version V7.3.2
Thalys, variant PBA	Train set	BE51 2011 0016	Upgrade	New SW Bi-Standard ERTMS/TVM, version V7.3.2
Diesel-electric loc Class 66	Locomotive	BE51 2015 0001	Upgrade	Installation EVC with STM Memor in preparation to TBL1+ and ETCS
Diesel-electric loc DE 6400/6500	Locomotive	BE51 2015 0002	Upgrade	Installation TBL1+
TRAXX F140MS, variant KF (D-A-B-NL)	Locomotive	BE51 2008 0004	Upgrade	New SW 7C and 7C*
TRAXX F140MS, variant KF (D-A-B-NL)	Locomotive	BE51 2008 0004	Upgrade	New SW 7C.1 and 7C.2
TRAXX F140MS, variant KF (D-A-B-NL)	Locomotive	BE51 2008 0004	Prolongation	prolongation limit date for SW version 6D, 7, 7A, 7B and 7B*
TRAXX F140MS, variant KL (D-B-F)	Locomotive	BE51 2009 0005	Upgrade	New SW 7C
Diesel-electric loc EURO4000 Type II	Locomotive	BE51 2015 0005	Upgrade	Installation TBL1+
Electric motorunit MR 75-76-77	Train set	BE51 2015 0003	Upgrade	Improvement GSM-R
Double-deck driving coach M6 Bx	Driving coach	BE52 2010 0002	Upgrade	Installation ETCS
Wagon Shmmns (3614E2)	Wagon	BE53 2015 0001	Upgrade	Adaptation structure conform TSI
Tamping machine Matissa B66UC-06607	Special vehicle	BE54 2015 0002	Additional	First authorisation for Belgium
Infrastructure monitoring motorcar catenary EM 201	Special vehicle	BE54 2015 0003	First	First authorisation with TBL1+
Infrastructure monitoring motorcar catenary EM 201	Special vehicle	BE54 2015 0003	Upgrade	Installation ETCS
Infrastructure monitoring motorcar ETCS EM 202	Special vehicle	BE54 2012 0003	First	First authorisation with ETCS
Infrastsructure monitoring motorcar ETCS EM 203	Special vehicle	BE54 2015 0001	First	First authorisation with TBL1+
Infrastructure monitoring motorcar ETCS EM 203	Special vehicle	BE54 2015 0001	Upgrade	Installation ETCS
Robeltrain 5	Special vehicle	BE54 2015 0004	Additional	First authorisation for Belgium
Infrastructure monitoring motorcar UFM 160	Special vehicle	BE54 2015 0005	Additional	First authorisation for Belgium
Tilting wagons	Special vehicle	BE54 2015 0006	Upgrade	Adaptation wagon

XA = Cross Acceptance; CSM = Common Safety Methods; NA = Not Applicable; APIS = Authorisation for placing into service

Number of active railway vehicles in the Belgian national vehicle register (NVR)

Type	Registered
E-loc	356
D-loc	275
Wagons	13 071
Coaches	1 553
HST	110
EMU	2 323
DMU	192
OTM	156
Rescue coach	5
Shunting loc	11

4. Implementation of safety measures on account of safety recommendations

Authorisation for placing into service of new or modified rolling stock

Safety recommendation	Safety measure	Status of the implementation
Hever R1 (accident of 19/02/2013, report published by the NIB in May 2014)	Ensure that the ECMs have a watertight system of registration and traceability of the maintenance.	The problem has of now been regulated by the implementation of Regulation 445/2011. Recommendation was closed at the end of 2015, the application of the regulation by the ECMs will be monitored in Belgium by Belgorail. Recommendation closed end of 2015.
Hever R2	Ensure that the procedures for determining the payload capacity of the wagons are correctly applied so that excessive loading is avoided.	The CIS system was adapted so that in the event of overloading no braking bulletin can be printed anymore. In order to monitor the application of the loading specifications even better, the IM has started a project for working with a mobile weigh bridge when executing inspections.
Hever R3	Ensure that the private GSM operators and the infrastructure manager prevent interactions from the GSM-R network.	The infrastructure manager has negotiated with the relevant authority, the Telecom regulator, but without much success. An attempt will be made to solve this with an additional GSM-R base station. Recommendation closed end of 2015.
Remersdaal R1 (accident of 01/10/2013, report published by the national investigative body in December 2014)	The parties in the railway sector must thoroughly reconsider the collision risks as a consequence of one train overtaking another: • to determine the different elements that play a part at the organisational, technical or operational level; • to determine the management and supportive measures to be taken.	In 2015 the IM included this topic in various working groups. The analysis of this recommendation is being carried out.
Remersdaal R2	The railway undertakings take the necessary measures in order to tackle the established risk of a battery error of the rear signal that is being placed on the last wagon (last vehicle indicator).	There is now also a check of the status of the battery upon locomotive maintenance. Recommendation closed end of 2015.
Remersdaal R3	The railway undertaking takes the necessary measures to tackle the incompatibility risk that was established between the rear lights and the rear light holders on the wagons in which the rear lights must be placed.	Personnel was made aware of and encouraged to report these problems, so that the repairs could be done in time. Recommendation closed end of 2015.

Safety recommendation	Safety measure	Status of the implementation
Wetteren R1 (accident of 04/05/2013, report published by the national investigative body in December 2014)	The infrastructure manager evaluates the procedure for temporary speed restrictions and checks whether the risk of interrupting train driver observations when working on adjacent tracks is included in the risk management system.	The roll-out of TBL1+ and ETCS is being implemented as planned. Recommendation closed end of 2015.
Wetteren R2	The railway undertakings implement procedures to limit the risks of reduced alertness of train drivers to a minimum.	The functionalities of the TBL1+ system were expanded to TBL1++ and these are now being installed in the equipment. The functionalities of this version, TBL1++, will be further expanded with version NG; the new version will probably be operational in 2017.
Wetteren R3	The railway undertakings and the infrastructure manager will, as far as possible, take account of the principle of human error in such a manner that a simple failure does not immediately result in a disaster and that the identified risks are limited by structural and operational measures.	Ditto R2.
Wetteren R4	The railway undertakings and the infrastructure manager evaluate their safety policy system with a view to detailing operational measures that could improve the safety level in the intermediate period, between now and the full equipping of the network with ETCS.	Ditto 2 and 3.
Wetteren R5	The railway undertakings and the infrastructure manager include the risk analyses and LMRA in their procedures and ensure that those arrangements, safety rules and safety perimeters are observed by their own personnel and (sub)contractors and that those present are made sufficiently aware of the risks connected with the presence of RID goods.	According to the IM management, the infrastructure has worked properly and the regulations are in order. And yet this recommendation is directed to IM. The IM believes that this recommendation, if the NIB finds it necessary, should be discussed in structural consultations, with a view to translating the formulated recommendations into concrete recommendations, and if required an action plan. This item is considered closed, unless the NIB wishes to proceed with the IM proposal.
Wetteren R6	The railway undertakings take the necessary measures in order to meet the risks connected with the incorrect manipulation of the GSM-R in emergency situations.	The IM and the RUs carried out a risk analysis. The instructions for the train drivers will be adapted and an additional training has been planned. Recommendation closed end of 2015.
Wetteren R7	The railway undertakings and the infrastructure manager apply the principle of information exchange meetings after serious accidents so that experiences and lessons can be shared systematically.	The principle of the REX meetings has been provided for in the internal emergency plans. Recommendation closed end of 2015.

Safety recommendation	Safety measure	Status of the implementation
Wetteren R8	The infrastructure manager must fulfil the agreements as provided for in the INIP with a view to avoiding possible misunderstandings.	According to the IM management, the infrastructure has worked properly and the regulations are in order. And yet this recommendation is directed to IM. The IM believes that this recommendation, if the NIB finds it necessary, should be discussed in structural consultations, with a view to translating the formulated recommendations into concrete recommendations, and if required an action plan. This item is considered closed, unless the NIB wishes to proceed with the IM proposal.
Wetteren R9	The infrastructure manager evaluates the procedures to guarantee that all information expected of them about RID goods is immediately and automatically notified to HC100.	Ditto R8
Wetteren R10	The railway undertaking will complete the functioning, documentation and manuals concerning the trip registration system so that all changes are traceable.	Ditto R6
Linkebeek (6) (accident of 03/11/2014, report published by the national investigative body in December 2015)		The RUs, the IM and DRSI analyse the recommendations and will define measures in the spring of 2016. Follow-up starts in 2016.

5. Changes in legislation

Railway safety directive

AMENDMENTS TO RSD	Transposed (Y/N)	Legal reference	Date of entry into force
Directive 2014/88/EU	Y	Royal Decree of 20 October 2015 amending the Railway Code	30/10/2015 except Articles 3, 4, 5 and 8 coming into force on 1 January 2016

Important changes

LEGISLATION AND REGULATIONS	Legal reference	Date of entry into force	Description of the change	Reasons for the change
Concerning the NSA				
Legislation on the NoBos, DeBos, IBs, third party entities for registration, inspection, etc.	Royal Decree of 11 September 2015 on designation of the body, referred to in Article 203 of the Railway Code	21/09/2015	Designation of the body in charge of notifying the NoBos to the Commission.	Requirement to designate the competent body.
Concerning RUs/IMs/ECMs	Royal Decree of 18 December 2015 amending Royal Decree of 1 July 2014 on the adoption of requirements applicable to rolling stock for the use of train paths	23/12/2015	Postponing the date that the class B system known as Memor-Crocodile is taken out of service.	The subject of the Royal Decree was to postpone the date the class B system known as Memor-Crocodile would be definitively taken out of service from the Belgian railway infrastructure lines where the control and command ETCS level 1 system v2.3.0d is placed into service, the date when it will no longer be possible for railway undertakings to operate on these lines with rolling stock not equipped with ETCS or TBL1+ systems. In the course of the amendment, by Royal Decree of 9 July 2013, of the Ministerial Decree of 30 July 2010 on adoption of requirements applicable to rolling stock for the use of train paths, this date was set to 1 January 2016. The decision to take the class B system Memor-Crocodile out of service had been made in accordance with Article 7.3.3 of Annex III of Commission Decision 2012/88/EU of 25 January 2012 on the Technical Specifications for Interoperability concerning the subsystems 'control, command and signalling' of the trans-European railway system, which enables Member States to submit new requirements at a national level, so as to encourage the operation of vehicles equipped with ERTMS and to allow existing national systems to be taken out of service. However, as the deadline on 1 January 2016 approached, it became clear that the railway undertakings for freight using Belgian railway infrastructure would not be able to equip their rolling stock with the ETCS or TBL1+ control and command systems in time, and that these vehicles would then be immobilised from 1 January 2016 onwards. What is more, a part of the fleet used for international passenger transport would also be immobilised from 1 January 2016 onwards. To avoid immobilising these vehicles, which would be very harmful for the railway transport sector, and a risk that railway freight would end up on the roads, it was necessary to respond to the request from the railway sector and its suppliers to postpone the aforementioned cut-off date. It is expected that the railway undertakings and their suppliers will do everything possible to meet the new cut-off date, set for 12 December 2016. Installation of ETCS or TBL1+ control and command systems will be carried out progressively until 12 December 2016, and will thus allow a constant progression of the safety level on the Belgian railway network.

LEGISLATION AND REGULATIONS	Legal reference	Date of entry into force	Description of the change	Reasons for the change
Implementation of other EU requirements (if concerning railway safety)	Royal Decree of 20 October 2015 amending the Railway Code	30/10/2015 except Articles 3, 4, 5 and 8 coming into force on 1 January 2016	Transposition of: • Directive 2014/82/EU of the Commission of 24 June 2014 amending Directive 2007/59/EC of the European Parliament and of the Council on general professional knowledge and the medical requirements in the area of licences; • Directive 2014/88/EU of the Commission of 9 July 2014 amending the Directive 2004/49/EC of the European Parliament and of the Council on the common safety indicators and the common methods for calculating the cost of accidents; • Directive 2014/106/EC of the Commission of 5 December 2014 amending Annexes V and VI of the Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the railway system within the Community.	Transposition

DEPARTMENT FOR RAIL SAFETY AND INTEROPERABILITY

Kingdom of Belgium
National Safety Authority

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