BEATT Bureau d'Enquêtes sur les Accidents de Transport Terrestre

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

ANNUAL REPORT 2024

A word from the director

As I wrote in the 2023 annual report, the BEA-TT celebrated its 20th anniversary at a seminar held on 8 February 2024 at the Hôtel de Roquelaure. It was a time to take stock. I would add that the day before and the day before that, we had welcomed several of our colleagues from other European offices for a peer review. This voluntary exercise, which is nevertheless encouraged by European law and supported by the European Railway Agency, aims to verify the effective existence of an efficient National Investigation Body in each EU country. These "peer-to-peer" exchanges can reveal areas for improvement in our practices. The review found that the BEA-TT has no significant weaknesses. For structural reasons, there may be differences with other countries in terms of the ability to quickly reach the scene of a railway accident and relations with the judiciary: these are issues on which we remain active.

In 2024, the BEA-TT was notified of nearly 2,700 accidents or incidents, summarily analysed 710 of them and opened 13 investigations: 5 in the road sector, 7 in heavy rail and 1 in ski lifts. This selection is ultimately quite straightforward. In the road sector, three accidents involved electric vehicles, one concerned the rail-road interface from a new angle, and the last one opened up a field that had not yet been explored. In the rail sector, three accidents involved the operation of so-called "service" tracks, on which we had previously produced an overall assessment and identified recurring types of accidents; two were related to the track environment and climate change, one concerned a test procedure for the qualification of new equipment, and the last addressed the sensitive relationship between accidental and intentional events.

Eleven investigations have been published:

- two in road transport, also involving electric vehicles;
- five in heavy rail, including two derailments that met the EU definition of a serious accident as transposed into the Transport Code;
- three on level crossings, one of which was also classified as a serious accident (causing a derailment and, in a very rare case, one casualty in the regional express train concerned);
- one involving ski lifts.

In this area, the BEA-TT has also produced, in collaboration with its Swiss counterpart, a compilation of 46 investigation reports published in Europe between 2002 and 2022.

In this edition, the attentive reader will notice the disappearance of certain "historical" tables which had very little added value. I suggest retaining the following:

The BEA-TT website provides access to all investigations since the beginning: the report, the recommendations issued, the recipients' responses to these recommendations, which announce the follow-up they will give to them.

The annual report details the actions that have actually been taken. These actions are monitored by the EPSF and the STRMTG for their scope, as well as by the DiSR, the DGEC and the DGITM in their areas of competence. When the follow-up announced in response to a recommendation is deemed to have been fully implemented, the line disappears from the table. However, previous annual reports remain accessible to anyone who wishes to track developments over time.

A "recommendation" is not a unit of account that can be aggregated and evaluated in small tables. Some are modest, others more ambitious and sometimes difficult to implement.

A recommendation aims to eliminate the causes of a given accident. As accidents remain rare, retrospective evaluation will very rarely be possible.

A recommendation should find its rightful place in an operator's overall prevention strategy.

A report could be published without a recommendation, while still being useful if the parties concerned have taken corrective action before its publication.

We must therefore remain cautious in how we present things.

The BEA-TT is a safety partner: that is how it sees itself, and we work to ensure that it is viewed in this way, as this is a prerequisite for its effectiveness.

It is very rare for its recommendations not to be followed, more or less quickly, with the necessary effects. In the event of failure, this would only be reported here if it were the result of very exceptional and manifest ill will.

The public display of our activity imposes obligations on us as well as on the parties involved in the accidents we investigate. Our website is the main means of this exposure, and promoting it is part of our mission. It is growing as investigations are published (265 at the time of this publication). Over a rolling year, our website has been visited 38,000 times and 15,000 documents have been downloaded. In order to increase traffic, we are gradually communicating on social media and enriching the site with videos produced in-house and by recognised partners. We have just passed the 5,000 follower mark on LinkedIn, and our various posts have been viewed more than 470,000 times.

SUMMARY

1 Accidents in 2024

1.1 Sources of information on accidents and incidents

As stipulated in the Transport Code, incidents and accidents involving land transport must be reported to the BEA-TT as soon as possible after they occur. In practice, this information is mainly reported "via" the Ministerial Operational Monitoring and Alert Centre (CMVOA) of the Ministry of Ecological Transition and Territorial Cohesion, as well as through alerts and daily reports from major transport operators.

Monitoring consists of exploiting this information in real time. After initial sorting, a brief analysis of the accidents selected is carried out to understand the circumstances and assess whether an investigation should be opened. This task, which is carried out on a daily basis, is summarised in the table below.

It should be noted that the BEA-TT does not produce statistics and is not responsible for conducting accident studies, as its close partners (EPSF, STRMTG, ONISR, etc.) do. The selection of accidents to be investigated is guided solely by the objective of producing new recommendations. The severity of the accident is not always the main criterion.

The BEA-TT focuses primarily on transport "carried out by professionals". Thus, for road transport, the events reported generally involve at least one goods transport or public transport vehicle.

The results of this analysis for 2024 are as follows:

	Reported events	Analysed events	Investigations opened
Road, river and level crossingtransport sector	1 188	463	5
Rail, guided and ski lifts transport sector	1 477	247	8
Total	2 665	710	13

1.2 Investigations opened i 2024

- The BEA-TT therefore launched 13 investigations in 2024:
- • 5 For road transport: the fall of a bus onto the Provence railway tracks, two electric vehicles leaving the road, each followed by a fire, the fire of a small tourist road train, and the overturning of an ambulance while transporting a patient;
- • 7 For heavy rail: the derailment of a work train on a rear base, the derailment of a freight train that caught up with a previous train, the derailment of a TER train on a landslide, a high-voltage accident (electrification) during a test run, the derailment of a Supply Chain train leaving the service track network, and finally the fall onto the track of the driver of a moving TGV train;

  • 1 for ski lifts: the collision of two cabins with the terminal stations of the Cime Caron cable car in Val Thorens.

1.2.1 Road transport

1.2.1.1 Bus falls onto the Provence railway tracks on 12 January 2024 in Levens (06)

On Friday 12 January 2024 at around 9 a.m., a bus from the "Lignes d'Azur" network veered to the left and left the road at the entrance to the hamlet of Plan du Var (municipality of Levens) outside the built-up area, on the M6202 north of Nice.

The vehicle struck a low stone wall bordering the road, fell and came to rest on its left side on the Train des Pignes railway line a few metres below.

The accident caused serious injuries to two teenagers, the only passengers seated at the back of the bus.

A few minutes after the bus came to a halt, a fire broke out in the engine compartment but was quickly extinguished by the emergency services.

Post-accident tests revealed the presence of cocaine in the system of the driver, a man in his thirties who had recently been hired as a temporary driver.

1.2.1.2 Electric light vehicle crashes and catches fire on 27 March 2024 in Villemur-sur-Tarn (31)

On 27 March 2024, an electric light vehicle collided with a tree at the side of the road and caught fire on impact. No witnesses were present at the time of the collision, but road users who arrived shortly afterwards reported seeing a vehicle on fire across the road. They said that flames several metres high were coming from under the front of the vehicle.

Some traces were found in the grass on the right-hand side of the road and at the foot of the tree immediately upstream of the one that was hit.

Initial investigations showed that the vehicle involved was a plug-in hybrid, with a 647 cm³ combustion engine at the rear and a 9-litre fuel tank for recharging the high-voltage battery used in the main propulsion system of this electric car, whose motor is located on the rear axle.

However, the vehicle was completely destroyed and, due to a lack of information and data on the circumstances, the BEA-TT closed the investigation without publishing a report.

1.2.1.3 Electric vehicle crashes and catches fire on 12 October 2024 in Celles-sur-Belle (79)

On 12 October 2024 at around 10.45 p.m., the emergency services were called to the scene of a light vehicle that had left the road and caught fire.

Four people died in the accident, three of whom were employees of a nearby restaurant. The fourth was a customer of the restaurant and the owner of the vehicle, which was completely destroyed.

Tyre marks were found on the road at the beginning of the interchange exit ramp. A signpost located on the side of the road about a hundred metres after these marks had been torn down. Other longitudinal marks parallel to the road, found in the grass at the side of the road, seem to indicate that the vehicle left the carriageway at a slight angle and continued on its way, or was skidding, until it crashed and then continued for a distance of about 100 metres.

The technical investigation focuses in particular on determining the causes of the vehicle leaving the road, the causes of the fire, the performance of the safety equipment and, where applicable, the driver assistance systems fitted to the vehicle.

1.2.1.4 Fire on an electric tourist train on 10 September 2024 in Riquewihr (68)

On 10 September 2024 at around 11:20 a.m., while on a tourist circuit in the Alsatian vineyards around Riquewihr, a small tourist train, which had left the town centre at the town hall, took the Schoenenbourg road to bypass the village to the north. The driver stopped the train at a stopping point after black smoke was seen and small explosions were heard coming from the tractor unit. He was able to evacuate the 50 or so passengers, none of whom were injured, including around 30 with reduced mobility, who were spread across three trailers. The fire originated in the power supply system, which consisted of 36 lithium-ion (LiFePO4) cells connected in series.

1.2.1.5 Ambulance crashes on the A10 motorway on 13 November in Pamproux (79)

On Wednesday 13 November 2024, at around 2.15 a.m., an ambulance travelling on the A10 motorway left the road on the right-hand side, hit a metal safety barrier, rolled over and came to a halt on its right-hand side. It was transporting a three-year-old child, accompanied by his mother, from Rochefort to Poitiers. The child was thrown from the vehicle and seriously injured. His mother, who remained strapped into the ambulance, was also seriously injured. The two paramedics transporting the child suffered minor injuries.

1.2.2 Rail transport

1.2.2.1 Derailment of a work train on 18 January 2024 in Saint-Florentin-Vergigny (89)

At the rear works base located on the premises of Saint-Florentin-Vergigny station in the Yonne department, a shunting movement on a busy dead-end track collided with two stationary flat wagons, despite orders to slow down and then stop. The two flat wagons pushed the buffer stop and continued their journey, colliding with bungalows located perpendicular to the track. The manoeuvre was stopped by the restraining force caused by the derailment and the application of the brakes resulting from the rupture of the main brake pipe. There were no casualties in this accident. The material damage was significant. The works train – a track renewal train – was badly damaged. The bungalows at the base camp were destroyed.

The immediate cause of the collision was the use of a "consumer" radio by those involved in the manoeuvre. Several factors were identified as having contributed to this situation: the establishment of rear bases, the design and implementation of production processes at these bases, and safety management.

A recommendation is currently under investigation concerning the use of a radio that does not comply with the requirements described in SNCF document MT 07320.

The final report was published on 20 December 2024. The BEA-TT issued six recommendations in it.

1.2.2.2 Derailment of a freight train following a catch-up manoeuvre on 11 February 2024 at Metz-Sablon (57)

The Fret SNCF freight train no. 41 665 caught up with and then collided with the rear of the Fret SNCF train no. 48 231, which was stationary on a main track at the Metz railway junction. This junction is controlled by three signal boxes. The train that was struck consisted of 37 wagons, the last seven of which were empty flat wagons. It was stopped on track 1R. The train that struck it consisted of 21 wagons, some of which were carrying hazardous materials. At 5:54 a.m., this train left the Montigny reception area. Authorisation to move is given by means of a light signal. A second white light is encountered before accessing the main track. The signalling system requires the train to proceed with caution.

The collision occurred at 27 km/h. The seven rear carriages of the train that was hit derailed and engaged the gauge of the surrounding tracks. It took several days and the use of a Kirow crane to lift them. The damage to the electrical traction and track installations was significant. Both drivers were in shock.

The causes leading to the failure to comply with the "Marche à Vue" (MV) were confusion about the objective and driver fatigue. The contributing factors identified were signalling that was not well suited to a point where freight trains enter the main tracks, incorrect interpretation of the signalling, impersonal and incomplete driver scheduling that allowed the minimum time required to board a locomotive to be disregarded, and failure to exercise

the right to call on reserves when the driver felt that he was not in full physical, mental and physiological condition.

1.2.2.3 Derailment of a TER train on 24 July 2024 after hitting a landslide in Eus (66)

TER train no. 877 650, travelling from Villefranche to Perpignan, hit a mudslide at a speed of 97 km/h. Under the impact, the locomotive derailed and veered to the right, with the left wheels remaining on the track, guided by the outer right rail. The right wheels were in the ballast or the track outside the track. The train continued on its way and, after hitting a catenary pole, crashed into the right abutment of a road bridge. The train remained on the railway platform, did not overturn and came to a halt shortly afterwards. The driver applied the emergency brakes as soon as he saw the obstacle on the track. The train travelled approximately 240 m between the emergency braking point and the stopping point. The train driver alerted the Perpignan signal box, which took safety measures, cutting off the power and closing the line to rail traffic.

The cause of the incident was linked to the surface irrigation method used on neighbouring plots, which caused the embankment to slide. The contributing factors identified were the irrigation method, the microtopography, the malfunctioning of the concrete ditch at the top of the embankment, the slope of the embankment and the presence of burrows made by burrowing animals.

1.2.2.4 High-voltage accident on 22 July 2024 during a test run at the Zillisheim (68)

On 22 July 2024, an employee was electrocuted in the driver's cab between Mulhouse and Belfort during a series of tests to check the compatibility of Alstom's new TRAXX MS 3 locomotive with the French network. While the test train was travelling at a speed of 100 km/h near Zillisheim with eight people on board, an Ethernet cable that was poorly secured on the outside came loose and touched a high-voltage component on the roof. This caused an electric arc in the cab, seriously injuring one member of the crew. The material damage was minor. Since 2022, the test campaign has been subject to strict preparation through a structured organisation, governed by European and French regulations.

The investigation highlighted the systemic factors that led to the accident, such as technical incidents on the rolling stock, garage management issues and operational constraints. Many of these difficulties arose late in the process, prompting the test team to adopt a hyper-adaptive mode of operation in order to continue the tests. Cooperation between the various parties involved made it possible to find solutions, but also le d to improvised options and decisions taken in a hurry, increasing the risks and leading to unauthorised test conditions that went beyond the pre-established framework.

The analysis highlights the importance of maintaining safety and preparedness standards, even in the face of unforeseen events. The analysis also revealed that, although compliant, the flammable material in the injured crew member's clothing contributed to the severity of his injuries.

Following the accident, testing was halted.

Those involved implemented strong corrective measures to prevent a recurrence. These measures include updates to safety procedures in the areas of test condition modification, test train preparation and verification of exceptional modes of use of the engines. In addition, the personal protective equipment on board has been adapted. These measures have enabled the tests to resume as normal.

1.2.2.5 Train derailment (Supply Chain) on 22 August 2024 on the main line at the exit of the Jorquenay junction (52)

Train no. 417 754, operating under SNCF R's safety approval, was travelling from Langres to Tergnier. It consisted of two locomotives in "multiple unit" mode pulling a machine

car and 32 wagons. Its departure was scheduled for 5:11 a.m. At approximately 4:53 a.m., after receiving the AuM (Authorisation to Move), it started moving from track 3 of the Jorquenay junction towards Chaumont.

While monitoring the train as it passed, the ground operator did not detect any anomalies as the first carriages passed by. Then he heard a loud noise, saw smoke billowing and a carriage being lifted up. He immediately notified the train driver using his personal mobile phone and asked him to stop. He alerted the signalman at post D. Two carriages derailed, causing damage to the main tracks and service tracks. Rail traffic was completely interrupted. A recovery operation was requested. An SNCF investigation manager was dispatched to the scene. The damage to equipment and infrastructure and the operating losses were significant.

Initial findings reveal that the train was set in motion and then tested without any loss of speed or acceleration.

An anti-drift wedge was found in the centre of a switch. The train probably derailed because this wedge was not removed. This case raises questions about the instructions for managing immobilisations and the conditions for dispatching trains, the management and resources of subcontracted operations, and the organisation of work. The technical investigation will examine several areas: operational, managerial and subcontracting organisation.

1.2.2.6 Derailment of a freight *train on 30 October 2024 in Oulchy-Breny (02)*

The Captrain railway company's freight train was travelling from Châlons-en-Champagne to Oulchy-Breny to serve a branch terminal facility (ITE). It was pulled by a EURO 4000 locomotive.

Several weeks after a period of storms and heavy rainfall, early in the morning, the train derailed on track 2 in an area affected by sinkholes, damaging a section of embankment track. The driver was required to proceed at "slow speed" (the normal operating mode for the line, requiring reconnaissance of the line after a traffic interruption of more than 72 hours). The locomotive and several front carriages derailed, the locomotive and the first carriage fell on their sides, and several carriages became entangled. The train driver and the conductor were not injured but were trapped in the driver's cab. The fire brigade rescued them.

The line was closed for a long period (more than a month) due to the difficulties involved in lifting the train and the damage to the track infrastructure. The platform had to be rebuilt throughout this area and in other surrounding areas.

1.2.2.7 Driver falls onto the track from a moving TGV on 24 December 2024 in Crisenoy (77) - With recommendation under investigation addressed to SNCF Voyageurs

On 24 December 2024, the incident occurred on track 1C in the direction of Lyon on high-speed line (LGV) no. 752 100 – Villeneuve-St-Georges line at the Moisenay junction. TGV no. 6689 operated by EF SNCF V and bound for St-Étienne departed Paris Gare de Lyon at 7 p.m. It initially travelled on track 1 of the conventional line connecting Paris to Dijon before being directed onto track 1C of the LGV Sud-Est via Valenton.

At around 7:21 p.m., shortly before the Moisenay junction, while the train was travelling at 255 km/h, the automatic monitoring system triggered an emergency stop (opening of the circuit breakers and venting of the main pipe).

The train came to a halt at 7:22:38 p.m. after travelling 2,320 metres, in the commune of Crisenoy. The automatic monitoring system immediately sent a "VA" alarm radio signal, which was received by the South-East Traffic Control Centre in Lyon and triggered the warning light signal on the front of the TGV 6 689 locomotive. The centre tried unsuccessfully to contact the driver via the ground-to-train radio. A crew member was

"authorised" to get off the train and go to the front carriage of the TGV. The driver was not in the driver's cab and did not respond to calls.

A local incident commander is dispatched to the scene to allow emergency services access to the high-speed line. The gendarmerie and fire brigade discover the driver's body approximately 2,000 metres upstream from the stopping point. Two drivers from the SNCF Voyageurs Driving Support Centre are dispatched to the scene to restart the train. With the authorisation of the judicial police officer leading the investigation opened by the Melun public prosecutor's office, TGV No. 6689 resumes its journey at 00:10.

1.2.3 Ski lifts

1.2.3.1 Collision of two cabins with the upper and lower stations of the Cime Caron cable car in Val Thorens (73) on 19 November 2024

On Tuesday 19 November 2024 at around 6.45 a.m., during the first morning rotation of the Cime Caron cable car, which was not open to the public, the ascending cabin was transporting 16 craftsmen to the summit of Cime Caron, where a construction site had been in operation for two years. A technical manager from the Tarentaise and Maurienne cable car operating company (SETAM) was operating the installation. To avoid a predictable stoppage due to a known and probable fault during this first trip, the manager turned four operating mode selectors and activated two bypasses on the supervision screen. The device is now in manual mode, exceptional operation, active jumper validation and "out of safety".

The driver controls the speed manually using the potentiometer, starts at low speed, stops cabin no. 2 above the gondola positioned on the ground and hooks it up. The driver restarts the installation, controlling the speed with the potentiometer until it reaches 8 m/s.

The driver hears a mechanical noise outside, goes out and looks for the cause. He remains outside the control room for more than 3 minutes. He then hears the noise of cabin No. 1 crashing into the lower station and rushes into the control room where the potentiometer had remained set at 8 m/s and the bridges were still active. Only the detectors at the station entrance were triggered and reduced the speed to 6 m/s before the collision.

When cabin no. 2 hit the upper station, two people were seriously injured and four suffered minor injuries. The SETAM driver was in a state of psychological shock. The material damage mainly affected the two cabins, the traction cable and parts of the station structure.

Investigations determined that this accident did not involve any technical issues with the Cime Caron cable car system. The causes of the accident were strictly human and organisational. The "revealing" cause of the accident was human error on the part of the SETAM technical manager. This human error was the tipping point in an unsafe situation that had been in place for months. In fact, the root cause was found to be widespread non-compliance by SETAM's technical management with regulations prohibiting the transport of people in manual mode at nominal speed "outside safety limits".

1.2.4 Level crossing

No investigation opened in 2024

1.2.5 Guided transport

No investigation opened in 2024

1.2.6 Waterways transport

No investigation opened in 2024

1.3 Study opened

No study opened in 2024

2 Reports published in 2024

2.1 Road transports

2.1.1 Technical investigations published

Two reports dealt with road traffic accidents (excluding level crossings and intersections with tram lines).

Date	Nature and location of the accident	Nb of fatalities
11/12/2021	Accident involving a TESLA vehicle in Paris	1
04/04/2022	Fire involving two RATP electric buses in Paris	0

The first investigation concerned an accident involving an electric vehicle that suddenly braked heavily and then accelerated in central Paris to a speed of over 120 km/h ( ). At the start of this acceleration phase, which lasted around 20 seconds, the driver managed to steer the vehicle off the road but ended up on a two-way cycle path protected from road vehicles by concrete barriers. Unfortunately, a cyclist travelling on the path was fatally struck. After knocking down several pieces of street furniture and road signs, the electric vehicle was stopped after colliding with a light commercial vehicle at an intersection. The leading hypothesis, based on data recorded on board the vehicle, highlights the driver's failure to understand the vehicle's automatic emergency braking system and his subsequent failure to notice that he was pressing the accelerator pedal to the floor and holding it there, as his attention was focused exclusively on steering.

The second investigation concerned the rapid and widespread fire in electric buses with innovative technology following a malfunction. It highlighted the difficulties in quickly identifying and alerting the driver to abnormal behaviour in the propulsion batteries, as well as the difficulties in implementing the actions required to extinguish the fire quickly and completely.

A third investigation involving an electric vehicle in Villemur sur Tarn was quickly closed after an unsuccessful search for data. (Fire and total destruction of the vehicle, including on-board recorders, and absence of direct witnesses).

2.1.2 Safety recommendations issued

In conclusion to the two published reports, 12 recommendations were made by BEA-TT:

• 3 concern international regulations on fire risk prevention and fire resistance for electric-powered public transport vehicles;

• 2 concern the protection of passengers in the event of a fire;

• 2 concern on-board data recording systems;

• 1 concerns firefighting in vehicles using new technology;

• 2 concern the AEB automatic emergency braking system;

• 1 concerns informing drivers about the performance of the main driver assistance systems that affect vehicle controls;

• 1 concerns the extension of the obligation to equip motor vehicles with an automatic emergency call device in the event of an accident.

Recipients

- 4 to the DGEC
- 1 to the DGSCGC
- 3 to Tesla
- 4 to Bluebus

Actions planned by recipients

The table below shows the follow-up actions taken by recipients at the end of 2024.

Investigation	Recommandations			
	Number	Accepted	Not accepted	No Response
Paris 13e (*) TESLA	5	5	0	0
Paris 5e and 13e (*) BLUEBUS	7	6	0	1
TOTAL	**12**	**11**	**0**	**1**

(*) The 90-day deadline for responses to recommendations had not been met by the end of 2024; responses were received in early 2025.

2.2 Railway transports

2.2.1 Technical investigations published

Five accidents involving rail traffic outside level crossings were published in 2024. The nature, dates and locations of these accidents are specified in the table below.

In accordance with Articles L. 1621-1 and L. 1621-2 of the Transport Code, the two accidents highlighted in red were classified as "serious" accidents requiring a technical investigation, given their consequences.

Date	Nature and location of the accident	Number of fatalities
08/19/2020	Derailment of a freight train in Saint-Julien-du-Sault (89)	0
05/28/2021	Fire on the Enorail work train in Saint-Hilaire-Bonneval (87)	0
11/14/2022	Pedestrian struck by a freight train on a public crossing in Donchery Station (08)	2
07/10/2023	Electrocution of a tree surgeon in Quévy (Belgium) Joint investigations with OEAIF which was responsible for drafting the report	1
01/18/2024	Derailment of a work train in Saint-Florentin-Vergigny (89)	0

The first investigation concerns a freight train travelling from Dourges to Vénissieux, which came to a halt between the towns of Villeneuve-sur-Yonne and Saint-Julien-du-Sault. The train driver noticed that the front bogie of the29thcarriage, loaded with two tank containers carrying ethyl acetate, a flammable hazardous material, had derailed. The train had been derailed for 8 km and caused significant damage to the infrastructure.
The direct cause of the derailment was the breakage of the right axle box of the125thaxle following the locking of the axle box: a forging defect in the wheel caused a defect in the circularity of its running surface, which led to the deterioration of the axle box.
The hot axle box detection systems measured its gradual heating as the train progressed without triggering an alert. The abnormal heating of the axle box could not be identified by the driver during his inspections of the train.

The second investigation concerns a track renewal train travelling between the Brive-la-Gaillarde and Limoges work bases. As the train passed through Pierre-Buffière, the traffic controller detected that a bogie was generating sparks and black smoke. Alerted, the dispatcher notified the train driver and requested that he stop the train. A few minutes after it came to a halt, the fire suddenly intensified, spreading rapidly to the surrounding vehicles. The fire brigade was able to contain the fire and prevent it from spreading to vehicles containing large quantities of fuel. Commercial traffic resumed the following day after the train had been evacuated and the track temporarily repaired. The fire caused significant damage and loss to both the train owner and other parties involved.
The direct cause of the fire was the ignition of flammable material near the wheels and braking system, following excessive heating of the braking components of a bogie and the projection of molten particles. The overheating was caused by incomplete loosening that went undetected and prolonged moderate braking, and was exacerbated by the nature of the brake pads.
The composite brake pads fitted to this train are widely used for the necessary purpose of reducing noise pollution. However, they have the disadvantage of dissipating heat less effectively, and several technical investigations in France, Italy and Switzerland have shown that this has significant implications.

The third investigation concerns a freight train that struck people on a pedestrian crossing at the Donchery stop.
To reach the exit, passengers must use a designated crossing in front of the TER train. As the TER leaves the station, the freight train arrives on the other track, travelling at a speed of 88 km/h. As soon as the TER clears the pedestrian crossing, the pedestrians step onto the tracks. The freight train, obscured by the TER, struck them fatally.
The light signals are present and working, but the victims failed to observe them. The risk of inattention at this type of crossing has already been highlighted by a series of accidents and confirmed by behavioural studies. The design of level crossings at stations does not sufficiently take into account the risk of occasional inattention on the part of passengers. They need to be improved in order to provide sufficient warning, as well as a catch-up loop or a physical barrier.

The fourth investigation concerns a tree surgeon working at the top of a tree on private land along line 96 in Quévy (Belgium) near the French-Belgian border. A branch fell on a live power feeder. An electric arc was created between the cable, the branch and the tree surgeon, who was fatally electrocuted. Line 96 in Quévy has several specific features. The 25 kV~ power supply to the sections located at Quévy station comes from two longitudinal overhead feeders placed above the catenary wires and passes through an electrical substation controlled by the Belgian authorities. The 25 kV~ power supply to the sections between Quévy station and the French border comes directly from the border point. These feeders are supplied by the French substation in Hautmont. The electrical installations in Quévy are therefore managed jointly by SNCF and Infrabel according to defined roles and tasks.

The cause of the accident was a misunderstanding between the Belgian operators, which led the tree surgeon to intervene without the power supply to the feeders being cut off.
The investigation was carried out jointly by the OEAIF and the BEA-TT, which published their joint report.

The fifth investigation concerns a track renewal train at the rear works base located on the premises of Saint-Florentin-Vergigny station in the Yonne department. When it was moved backwards on a busy dead-end track, it collided with the two carriages already there, despite orders to slow down and then stop. The two carriages pushed the buffer stop and then collided with bungalows located perpendicular to the track. The shunting movement was stopped by the restraining force caused by the derailment and the automatic application of the brakes due to the break in the continuity of the main line. There were no casualties in this accident. The material damage was significant. The track renewal train suffered serious damage. The bungalows at the base camp were destroyed.
The immediate cause of the collision was the use of a non-dedicated (consumer) radio by those involved in the manoeuvre. Several contributing factors were identified: the location and layout of the rear bases, the design of the production processes and their implementation, and safety management.
An immediate recommendation was issued concerning the use of a radio that did not comply with the requirements described in SNCF Réseau document MT 07320.

2.2.2 The safety recommendations issued

These five reports produced the following twenty-five recommendations:

- 4 recommendations to improve the rules for the installation, maintenance and centralised operation of DBC-DFS system information in order to better cover the risks of rolling stock incidents;
- 2 recommendations to manufacturers to adapt design rules to cover the risk of fire on construction machinery;
- 5 recommendations to the EPSF (the national railway authority) to take action on the national regulatory framework, with standardisation committees and the Agency;
- 9 recommendations to prevent the risk of recurrence of accidents at level crossings in stations by taking action in the following areas:
  - continuing to implement the SNCF action plan defined following the Ecommoy accident;
  - studying a redesign of the level crossing system, taking into account the actual behaviour of passengers;
  - in the interim, seeking appropriate operational measures;
  - seeking funding to obtain the means to launch a programme to replace or remove level crossings at stations, etc.;
- 5 recommendations concerning the operation of rear bases for track renewal works, particularly with regard to the definition and application of safety procedures in the management of manoeuvres

Recipients
Certaines recommandations ont été adressées, avec le même libellé, à plusieurs destinataires, de sorte que le nombre total des recommandations reçues par des destinataires s'élève à 30 dont :

- 2 to the DGITM;
- 9 to SNCF Réseau;
- 2 to SNCF Voyageurs;
- 5 to Gares et Connexions;
- 6 to the Public Railway Safety Authority;
- 2 at Plasser & Theurer;
- 4 to ETF S.

Follow-up planned by recipients
The table below shows the follow-up actions taken by recipients at the end of 2024..

Investigation	Recommandations			
	Number	Accepted	Not accepted	No Response
Saint-Julien-du-Sault	4	4	0	0
Saint-Hilaire-Bonneval	6	6	0	0
Donchery	9	9	0	0
Quévy	No recommendation for France	-	-	-
Saint-Florentin-Vergigny	6	6	0	0
TOTAL	**25**	**25**	**0**	**0**

2.3 Level crossing

2.3.1 Technical investigations published

Three investigations concerning accidents at level crossings were published in 2024. The table below specifies their nature, location and date.

In accordance with Articles L. 1621-1 and L. 1621-2 of the Transport Code, the accident in red was classified as a "serious" accident due to its consequences, for which a technical investigation was mandatory.

Date	Nature and location of the accident	Number of fatalities
02/25/2022	Collision between a regional train and a a truck on level crossing No 22 in Hochfelden (67)	1
12/26/2022	Collision between a regional train and an electric light vehicle on LC No 13 in Ayse (74)	0
06/19/2023	Collision between a regional train and an oversized convoy on LC No 51 in Le Clerjus (88)	0

The initial investigation revealed that the direct cause of the accident was the immobilisation of the lorry and its trailer on the level crossing deck shortly before the train arrived. The causes associated with this immobilisation could not be determined with certainty. The

presence of a catenary pole in the immediate vicinity ( ) caused a heavy part of the lorry to penetrate the train, resulting in the death of one passenger. The train derailed but remained on the track. Analysis of this event points to a lack of knowledge of how the PL controls work, a low awareness of the risk of a heavy vehicle stopping on this type of infrastructure, and the absence of a barrier position detection system.

The second investigation identified the immobilisation of the electric vehicle on the decking as the direct cause of the accident. Again, there may have been several causes for this immobilisation, none of which can be determined with certainty, as a fire in the batteries quickly destroyed all the vehicle's equipment that could have provided information about the circumstances. With regard to the railway system, certain actions relating to driving and emergency evacuation to be carried out by on-board personnel were discussed.

The third investigation identified as the direct cause the blocking of the low-loader semi-trailer of the road vehicle on the hump preceding the level crossing shortly before the train arrived. The analysis once again highlights the low awareness of the risk of a heavy vehicle stopping on the platform, the lack of preparation for exceptional transport, but also, on the railway side, discrepancies in the application of certain rules.

2.3.2 Safety recommendations issued

For these three investigations, 20 recommendations were made by the BEA-TT:

• 1 concerns the identification and management of level crossings that are difficult to cross;

• 1 concerns the preparation of the route for the exceptional convoy by the road haulier;

• 2 concern the actions of members of the exceptional convoy when approaching and on the level crossing;

• 2 concern the securing of equipment in the train driver's cab;

• 5 concern the actions of train drivers following a collision;

• 4 concern the procedures for analysing the accident within the SNCF;

• 1 concerns the automatic coupling of the train and the risk of it passing underneath it;

• 1 concerns the reinforcement of the train's data recording capabilities in the event of a power loss;

• 1 concerns the training of HGV drivers on vehicle controls;

• 1 concerns the study of the installation of exit barrier closure detectors;

• 1 concerns the study of moving catenary poles located just downstream of level crossings and which can act as obstacles.

Recipients

Some of these recommendations were sent, with the same wording, to several recipients, bringing the total number of recommendations received by the recipients to 22, including:

• 2 to the Public Railway Safety Authority (EPSF)

• 5 to SNCF Réseau

• 10 to SNCF Voyageurs

• 1 to Transports MAUFFRAY

• 3 to LASO France

• 1 to the Road Safety Delegation (DSR)

Follow-up planned by recipients
The table below shows the follow-up actions taken by the recipients.

Investigation	Recommandations			
	Number	accepted	Non accepted	No response
Hochfelden (*)	5	5	0	0
Ayse (*)	4	4	0	0
Le Clerjus (*)	13	9	0	4
TOTAL	**22**	**18**	**0**	**4**

(*) The 90-day deadline for responses to recommendations had not been met by the end of 2024; responses were received in early 2025.

2.4 Guided transports

2.4.1 Investigation published

No investigation were published in 2024.

2.5 Waterways transport

2.5.1 Investigation published

No investigation were published in 2024.

2.6 Ski lifts

2.6.1 TEchnical investigation published

A report dealt with a ski lift accident.

Date	Nature and location of the accident	Number of fatalities
05/27/2021	Collision between the two cabins and the two stations at La Saulire cable car in Courchevel (73)	0

This investigation concerned an incident that occurred on 29 September 2021 during the annual inspection. After a morning of testing, during an emergency brake test, the two cabins collided with the station structures. There were no injuries but significant material damage.

The primary cause of the accident was the reduced braking capacity of the installation, affecting both the service brake and the emergency brake. It appears that this braking

capacity deteriorated during the tests, with the penultimate test in particular proceeding abnormally.

This reduction in capacity can be explained by the decrease in the thickness of the brake pad linings during the tests, combined with the rapid stopping of the brake calipers due to the given adjustment of a dimension. The rapid wear of the linings was probably due to their incompatibility with the cable car's braking system. In addition, a contributing factor was the failure to identify, use and analyse the information provided by the system to the various parties involved during the tests, preventing them from detecting the risk involved and avoiding the accident. The multiple adjustments to the service brake torque rating did not improve the identification of the brakes' behaviour.

2.6.2 Safety recommendations issued

The investigations examined the following issues in depth: the compatibility of new brake linings with a vehicle and its braking system, risk awareness during an annual inspection, traceability (of documents and products) and knowledge management within the operator.

In conclusion to this report, five recommendations and four invitations were made by the BEA-TT. These mainly concerned verifying the suitability of brake linings for the corresponding installations, managing the risk of emergency/safety brake failure, improving automatic control systems, raising awareness of safety issues and managing them during annual inspections, and improving the operator's safety management system (traceability and training).

Recipients

- 3 recommendations to the STRMTG
- 2 recommendation to the operator S3V

Follow-up planned by recipients

The table below shows the follow-up action taken by the recipients at the end of 2024.

Investigation	Recommandations			
	Number	accepted	Non accepted	No response
Courchevel	5	5	0	0
TOTAL	**5**	**5**	**0**	**0**

3 Studies and progress reports published in 2024

3.1 Study

The BEA-TT and the SESE (Swiss Safety Investigation Service) studied the investigation reports of four national offices: Italy, Austria, Switzerland and France.

The aim of this study, published in 2024, is of course to learn from our counterparts and to benefit the entire profession by anticipating safety issues.

This analysis of 46 reports on incidents involving ski lifts between 2002 and 2022 identifies areas for operational improvement.

3.2 Progress reports

Depending on the nature of the accident and when the investigation takes longer than a year to complete, it is mandatory for serious rail accidents to publish progress reports to inform stakeholders and the public about the progress of the investigation and to announce the initial preventive measures to the entities concerned. The BEA-TT has decided to extend this practice to all modes of land transport.

In 2024, eight progress reports were published, concerning:

- Endangerment of persons during an OSLO train emergency in Nuits (89)
- TGV immobilisation in the Fréjus tunnel (73)
- Collision between pedestrians on a TVP and a freight train in Donchery (08)
- Collision between a TER and a heavy goods vehicle in Hochfelden
- Collision between a TER train and a coach in Cevins (73)
- Collision with a road bridge by the CELERETAS in Berneuil-sur-Aisne (60)
- Tesla vehicle accident in Paris 13e
- Accident involving a person at Bel-Air station on line 6

These notes are available on the BEA-TT website until the final reports are published.

Bureau d'Enquêtes sur les Accidents de Transport Terrestre

Grande Arche - Paroi Sud
92055 La Défense cedex
Téléphone : 01 40 81 21 83
bea-tt@developpement-durable.gouv.fr
www.bea-tt.developpement-durable.gouv.fr

SUMMARY OF APPENDICES

Annexe 1 : Table of the Public Railway Establishment (EPSF) presenting the monitoring of the implementation of the recommendations issued by the BEA-TT in the field of rail transport

This document presents the progress as of 12/31/2024 of the actions implemented following the recommendations issued by the BEA -TT for the attention of stakeholders in the railway sector.

Railway: Recommendations issued in 2015

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
05/2015	Collision following a drift in Modane (73) on 01/24/2013	R1	Tighten and clarify the maintenance rule aimed at finding and eliminating, on the fleet of wagons for which you are the entity responsible for maintenance, coupling tensioners not bearing the marks of conformity to the European standard or to recognized national standards.	ERMEWA	ERMEWA responded with a commitment to take action on the inspection of its fleet's towing hitches. By the end of 2021, 46% of the wagon fleet affected by this recommendation had been treated. **Since June 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking**	O
		R3	As soon as the modification covered by recommendation R2 is finalized, apply it during the revisions of the distributors concerned of the wagons for which you are the entity responsible for maintenance.	SNCF Passengers Materials Department	Faiveley plans to supply SNCF with prototypes of so-called “-50°C” membranes in September 2020. The first type is currently being revised. The other type of membranes planned, after acceptance and inspection, will be applied from June 2021. **Since June 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2016

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
11/2016	A TER train drifts after a collision with cattle in Serqueux (76) on 20/10/2015	R2	Positioning of the obstacle clearer and protection of sensitive components under the body By involving the railway sector and after determining the form most appropriate to the European context: ➢ explain how to calculate and use the construction gauge of the rolling stock in order to optimize the positioning of the obstacle clearer with regard to the risk of overlapping an obstacle located on the track; ➢ formulate useful prescriptions for the identification of sensitive organs under the body, their protection and their positioning in height in relation to the obstacle clearer.	EPSF	**The standard concerning passive safety (EN 15227) was published in 2020 with a new wording responding to the BEA-TT recommendation.** **Regarding the rolling stock gauge, the Loc&Pas TSI guide could usefully be amended. To this end, in May 2023, EPSF proposed a comment in the relevant application guide. The proposal was not accepted by the European Railway Agency and will require a more precisely formulated amendment request.** **Open Tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2017

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
01/2017	Derailment of a TER train on the entrance switch of Sainte-Pazanne station (44) on 10/12/2015	R1	- Launch studies or investigations useful for improving knowledge of the phenomenon of wheel fouling. - Without delay, take into account this phenomenon and the possibility of de-hunting on clean rail in the discussions relating to the risk linked to de-hunting , including on ITE track circuits and examine the relevance of equipping X 73500 with scrubbers (or any other wheel cleaning equipment). - Take into account the results of these studies to develop, if necessary, the reference frameworks for the admission of equipment on the RFN and at European level, in conjunction with the European railway agency.	SNCF Network SNCF Passengers EPSF	Studies have been conducted to better understand the phenomenon of wheel fouling. They provide details on the electrical insulation characteristics. Different wheel cleaning solutions on equipment not equipped with brake shoes were tested, particularly on X 73500s in the Auvergne – Rhône Alpes region. The entire fleet of X73500s will be equipped by SNCF Voyageurs in 2023. In 2022, joint work between SNCF Réseau and EPSF resulted in a draft version of SAM004. In 2023, discussions were extended to the entire sector in order to produce a final version. **The new version of the recommendation was published in December 2024.** **Follow-up Closed.**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2017 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
11/2017	Multiple rail breaks between Beillant and Jonzac stations (17) on 12/13/2016	R3	Develop and then implement a policy for deploying convoy anomaly detectors on the main freight traffic flows. This set of detectors should aim to stop convoys containing vehicles with dangerous wheel defects but also to identify and report to the railway company, the entity in charge of maintenance or the relevant keeper, vehicles with non-critical defects but likely to damage the infrastructure.	SNCF Network	SNCF Réseau is committed to studying the principles of implementing train anomaly detectors on the national rail network. The progress schedule, which includes technical studies and necessary risk analyses, indicates a deadline of the end of 2022. A feasibility test for alarm reporting in the substation was carried out at the end of November 2022. **In 2023, SNCF Réseau informed EPSF of the existence of a master deployment plan in draft form. The deployment of detectors was also included in the DRR. Follow-up Closed.**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2019

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
04/2019	Pedestrian struck by a train on a planked crossing on February 22, 2018 at Écommoy station (72)	R1	Study the technical conditions under which the light signals for public crossings of tracks at level can be equipped with means of recording their proof of operation. Define a modernization plan allowing, within a timeframe to be specified, to equip them with this recording.	SNCF Network	SNCF Réseau is committed to studying the technical conditions under which TVP light signals can be equipped with means of recording their proof of operation. The target date is set for the end of September 2021. The plan for deploying a technical solution remains without a target date and depends on the completion of the previous action. Technical studies were completed in 2022. For the "local TVP recorder" requirement, a technical solution was chosen. **In 2023, SNCF Réseau deployed the technical solution on 8 planned construction sites, without, however, defining a deployment plan for all sites equipped with TVPs with pictograms. The deployment plan remains pending.** **Open Tracking.**	O
		R3	Finalize the tests to improve the warning signs at road crossings by strengthening the road markings showing the danger zone, by improving the ergonomics of the signs and by adding a second mode of perception other than visual. At the end, develop a plan for deploying the improvements.	SNCF Network	SNCF Réseau is committed to testing and defining fixed warning signage for track crossings in stations (signs and floor markings) with improved ergonomics. The deployment of the new fixed signage will be specified once it has been defined. The addition of a second mode of perception other than visual is integrated into its response to recommendation 5. **In March 2023, the application guide "RRA 20069 safety signage in stations" was published. The overall deployment plan was provided in 2024.** **Follow-up Closed.**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2019 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
04/2019	Pedestrian struck by a train on a planked crossing on February 22, 2018 at Écommoy station (72)	R4	Study and deploy new awareness-raising solutions aimed at raising the awareness of risks among travellers who have to use railway crossings and encouraging them to adopt real preventive behaviours to address these risks.	SNCF Passengers	In addition to the measures already implemented in situations where stations equipped with TVPs are served (signage in stations, announcements on board and in stations, distribution of flyers in stations, etc.), SNCF Voyageurs will enhance the content of presentations made during school visits. Based on the identification of risky situations in the railway environment of each school, the prevention message will be personalized to the local context to better raise awareness among young people. **In March 2024, evidence was submitted to the EPSF on the enrichment of school-based interventions and adaptation to each level of students.** **Follow-up Closed.**	C
		R5	Drawing lessons from the risk study carried out by SNCF Réseau on pedestrian crossings of tracks at level, by testing defenses against the risk of being struck by a train in the station in the event of a lack of attention to light signals, for example the presentation of a physical obstacle. These solutions, once validated, could be proposed in crossing safety projects.	SNCF Network	SNCF Réseau has launched a research project to objectify all the factors involved and build a strategy for improving TVPs. The TVP NG (new generation) project was officially launched in January 2023. **A follow-up is open on the same actions following the Donchery investigation.** **Closed Follow-up**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2019 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2019	Study Fatal accidents due to intrusion on railway property Analysis of accidents in 2015 and 2016 and prevention policies	R2	Deploy a tool for understanding the fencing assets on the network, describing the installation and condition of the devices, for monitoring purposes by local managers of the risk of online collisions.	SNCF Network	SNCF Réseau is continuing the deployment and quality improvement of the GAIA tool, designed to ensure the inventory of all its assets and, ultimately, to store data relating to closures. In January 2022, SNCF Réseau indicated the following commitments to EPSF: • over a period of 12 months: consolidate the census system, identify the different sources of data available, establish a procedure and a work program, mobilize the necessary resources; • over a period of 24 months: carry out an inventory of all heritage elements without carrying out exhaustive field visits, and enter it; • over a period of 24 months: carry out the field visits necessary to collect the elements that could not have been obtained previously. In 2023, no additional information on the progress of the implementation of this action was provided. **A progress update is planned for 2025.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2019 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2019	Study Fatal accidents by intrusion on the railway domain Analysis of accidents in 2015 and 2016 and prevention policies	R3	Study the advisability of establishing a regulatory requirement requiring the construction of a physical barrier between railway rights-of-way and adjacent land, in and near so-called urban areas within the meaning of the Urban Planning Code.	Directorate General for Infrastructure, Transport and the Sea - DGITM	As part of the feedback meetings organized specifically for infrastructure managers, an ad hoc working group will identify alternatives or complementary devices to fencing that can prevent intrusions. The work of this group will be recorded in a report that will also include a section evaluating their effectiveness from a security perspective in relation to the investments to be made. Following this work, the DGITM will consider the advisability of establishing a regulatory requirement. The target date, initially set for 31/12/2021, could not be met. The working group will be launched in the fourth quarter of 2024. Its objectives will be to establish a review of railway rights-of-way equipped with fences, but also, if possible, to assess their effectiveness. At the same time, a benchmark and a cost analysis will enable us to continue the search for alternatives or complementary devices to fences, compatible with the objectives of the double compensation rule. **Open Tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2021

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
05/2021	Axle jammed on a freight train between Romilly-sur-Seine and Troyes (10) on 07/26/2019	R4	Re-examine the terms of the approval tests for “LL” pads, taking advantage of feedback on deterioration by digging of the wheel tread, during brake application incidents, on wagons equipped with these pads.	European Union Agency for Railways (ERA)	The Agency responded with a two-step approach. First, the UIC should reconsider the brake application tests defined in its UIC leaflet, taking into account the conclusions of the technical investigation report. When the UIC leaflet is updated, it could then be considered by the appropriate working group in charge of the revision of the TSIs in order to modify the technical document to which Regulation 321/2013 (TSI Wagon) refers. **In 2024 the normal procedure of the JNS " Consequences of unintended brake applications with LL blocks" concluded with the release of a recommendation.** **Closed Follow-up**	C
				Railway Standardization Bureau (BNF)	No response to this recommendation has been provided by the BNF to the BEA-TT at this stage. In April 2023, the EPSF reminded the BNF of the existence of this recommendation. Currently, the NF EN 16452 standard (Railway applications – Braking – Brake blocks) is at the design stage with no specific deadline for its publication. **Open Tracking.**	O
				International Union of Railways (UIC)	The UIC responded to the recommendation by initiating a working process with its members to build funding for a project to review the methods of testing for the approval of "LL" soles. **No information on the progress of the implementation of actions has reached the EPSF in 2024.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2021 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
07/2021	Exceeding the authorized speed limit by a TGV on the BPL line at La Milesse (72) on 12/22/2019	R1	Review the "ETCS signaling" production processes to ensure that a verification error is not propagated throughout the rest of the production process.	HITACHI RAIL STS	The process of verifying and validating the configuration has been re-analyzed taking into account the precursors of each activity and revised to no longer allow an error to be propagated in the rest of the process. The "Parameter Verification Plan" documentation has been updated on the BPL and SEA projects and is currently being produced on the LGVEE project as part of the N1/N2 transitions, where a transmission of documents from the client was expected for December 2021. The target date for this final action to close the monitoring is set for the first quarter of 2022. **Since October 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking.**	O
		R2	Study the implementation of formal method algorithms in the context of proving the safety of signaling systems.	HITACHI RAIL STS	This recommendation will be considered in the context of future HITACHI RAIL STS projects. The ARGOS projects already provide for the implementation of formal proof activities and studies will be carried out in this context. This action remains open pending evidence on studies of the implementation of formal methods. **Since October 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2021 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2023	Code *
07/2021	Exceeding the authorized speed limit by a TGV on the BPL line at La Milesse (72) on 12/22/2019	R3	Formalize a process for exploiting precursors during verification and validation operations in order to research and treat their root causes.	HITACHI RAIL STS	The response from HITACHI RAIL STS is identical to that provided for recommendation R1. The target date is set for the first quarter of 2022 **Since October 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking.**	O
		R4	Review the assessment methodology regarding “system validation” according to CENELEC 50126 and following standards to ensure the validity of the assessment.	CERTIFY	CERTIFER has drafted an internal document called RFU, applicable (unless justified) and relating to the "evaluation of the parameterization process". Its objective is to specify and clarify regulatory or normative requirements. This document will be referenced by the RF0015 standard “For the Certification of the safety integrity level of products or systems according to CENELEC standards EN50126, EN50128, EN50129”. The application of this RF0015 standard is controlled by COFRAC during these periodic CERTIFER audits. **Since October 2021, no information on the progress of the actions implemented has been transmitted to the EPSF; a final reminder will be made in 2025 before closing the monitoring if necessary.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2022

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
01/2022	Derailment of a TGV on the East European high-speed line on March 5, 2020 in Ingenheim (Bas-Rhin)	R1	Strengthen the requirements of the technical reference system for the construction of high-speed lines concerning the supervision of the consistency of tests leading to the choice of geomechanical parameters for verifying the stability of large excavation slopes.	SNCF NETWORK	SNCF Réseau undertakes to modify, by providing the necessary clarifications to the existing parties concerned, the requirements of the technical reference document dealing with the consistency of the tests to be carried out to define the choice of geomechanical parameters for verifying the stability of large cutting slopes for the construction of High Speed Lines. **In 2024, the resumption of the LGV IN3278 design reference, initially set for 12/31/2023, was postponed to 06/30/2025.** **Open Tracking.**	O
		R4	Review the requirements for monitoring internal drainage structures on large embankments with a view to ensuring that they are examined by camera and that they are in good working order.	SNCF NETWORK	SNCF Réseau is committed to modifying the existing requirements on the monitoring and maintenance of drainage systems, and in particular the reference document which defines the type of maintenance that should be carried out on earthworks and their associated structures such as drainage trenches. **The changes made to the three business standards have made it possible to meet the commitments made.** **Follow-up Closed.**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2022 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
07/2022	Infrastructure maintenance workers collided with a regional express train in Schiltigheim (67) on March 18, 2020	R1	Develop specific training and exercises in safety communications between maintenance agents and signal boxes. Develop monitoring regarding the quality of these exchanges using appropriate means (for example, recordings where available)	SNCF NETWORK	SNCF Réseau is committed to 4 actions: - incorporate a safety communication component into the “new S9” training scheduled for 2023 for all maintenance agents and signal box agents. - create during the year 2024, as part of continuing training, specific exercises on inter-professional safety communication which will concern maintenance agents and signal box agents. - include , from January 2025, in the initial training of maintenance operators and signal stations, joint exercises on safety communications. - study and describe the communications monitoring methodology in 2023. In 2023, evidence of the incorporation of a security communication component into the "new S9" training was submitted to the EPSF. **In 2024, the monitoring methodology was defined. Other actions are still ongoing.** **Open Tracking**	O
		R2	Implement a safety watch to verify the adequacy between the walking tours carried out and the construction site insurance actually taken out where prescribed, to anticipate any difficulty that could affect safety	SNCF NETWORK	SNCF Réseau is committed to studying the provision of information relating to the effective completion of works operations as part of the development of digital tools linked to works within the Maintenance and Works entities. **The study undertaken was inconclusive. At the same time, SNCF Réseau included the follow-up to this recommendation in the PAS with the implementation of the recommended protective measures by sampling.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2022 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
07/2022	Collision of infrastructure maintenance workers by a TER in Schiltigheim (67) on March 18, 2020	R3	Ensure the implementation of a modern system less susceptible to human error concerning the safety of personnel working on the roads during regeneration of traffic management systems. Inventory the dense traffic areas covered by the modern systems already implemented to quantify this modernization	SNCF NETWORK	SNCF Réseau is committed to three actions: • define the concept of a “dense zone” for the field of personnel security. • work , in parallel, on the criteria for characterizing a modern device concerning the safety of personnel working on the tracks in order to make an inventory of it. • link modern devices and areas meeting the definition of a “dense zone” with the aim of inventorying those already covered by said modern devices but also those programmed for regeneration. **The target date for these actions has been extended to the end of 2025.** **Open Tracking.**	O
		R4	To study reasonably practicable means of enabling a train's horn to be triggered automatically when a driver applies the emergency brake of the moving train	SNCF Passengers	In February 2023, SNCF Voyageurs committed to studying the feasibility of such a development on its vehicle fleet. **In a letter dated March 2024 addressed to the BEA-TT, SNCF Voyageurs summarizes the study carried out and concludes with an unfavorable opinion for a technical modification due to the scale of the work, the cost and the existence of a professional gesture.** **Closed Follow-up**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2022 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
11/2022	Derailment of a freight train, August 26, 2021 in Saint-Hilaire-au-temple (51)	R1	Make ARMEN and DEFRAIL data on the state of wear and tear of the rails more reliable in order to identify and locate the oldest and most heavily used rails	SNCF Network	In order to respond to this recommendation, SNCF Réseau has committed to three actions: • make the necessary changes to its monitoring tool (ARMEN) to define the year of manufacture of the reuse rails on a fixed basis when this is not known. The fixed date is calculated by subtracting 30 years from the year the rail was laid; • carry out a communication campaign on the quality of data entry in DEFRAIL among data entry operators; • deploy a new tool for identifying and locating the most critical rails. **In 2023, SNCF Réseau published two notes concerning, on the one hand, "knowledge and assessment of the criticality of the rail heritage on the RFN", and on the other hand, the new ARMEN provisions on the reuse of rails.** **Follow-up Closed.**	C
		R2	Review the requirements for rail cutting and renewal with a view to ensuring the earliest possible removal of the oldest and most stressed rails or their good working order	SNCF Network	**SNCF Réseau is committed to adapting the maintenance requirements for the oldest rails according to the following principles:** • **strengthening of the cycle of visual rail tours on lines 7 to 9 AV to V<140km/h; all the main lines of the rail network are now subject to annual visual rail tours.** • **evolution of couponing requirements;** • **ban on laying reused rail manufactured before 1980.** **The process for assigning a prioritization score based on criticality and severity was transmitted at the end of 2023.** **Pending the publication and implementation of text MT03239, the additional provisions to IN03239 concerning the reuse of rails have been integrated into NLD00885 in application from 06/03/2024.** **Closed Follow-up**	C

* C = Close ; O = Open

Railway: Recommendations issued in 2022 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
11/2022	Derailment of a freight train, August 26, 2021 in Saint-Hilaire-au-temple (51)	R3	Complete in the reference documents the strengthening of analyses and methods for monitoring the actual condition of rails in order to address the risks linked to the age of old rails, particularly vertical cracking defects. Include in the general maintenance organization the provisions ensuring that these new measures are taken into account in a reliable and auditable manner.	SNCF Network	SNCF Réseau is committed to developing a rail rating tool to enable an assessment of their criticality. The requirements relating to rail monitoring will change: • The cycle of visual rail tours has been strengthened by reducing it from 3 years to 1 year on lines 7 to 9 AV to V<140km/h. All the main lines of the network are now subject to annual visual tours. • The speed of rail inspection by heavy ultrasonic rail inspection equipment (ELUS) has already been adapted to the actual condition of the rail assets. • The US control cycles for lines 7 to 9AV will be adapted to the dilapidated state of the rail. **The MT02070 document is expected to be published by the end of 2025.** **Open Tracking.**	O
11/2022	Derailment of a freight train, August 26, 2021 in Saint-Hilaire-au-temple (51	R6	Assess the relevance of further studying the scenario of a collision on a clear obstacle that a structure may present, as part of the program of activities of the experts associated with the revision of this UIC leaflet. Depending on the result of this assessment, integrate into the current revision work or into a subsequent revision, the objective of improving leaflet 777-2	UIC	The UIC has undertaken to consult its member organisations in order to decide on and finance the implementation of the assessment recommended by the BEA-TT. **No information or target date at this stage.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2023

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
02/2023	Derailment of a freight train on 09/17/2020 in Corbonod (01)	R1	Establish a state of the art of axle cap assembly operations in the workshop, with a view to improving the operating method, control and traceability, and guaranteeing lasting pre-stressing of the cap screws	AFWP UIP	**As of 31/12/2024, the responses of the IPU and the AFWP to the recommendation made by the BEA-TT were not yet available.** **Open Tracking**	O
		R2	Ensure the completeness of feedback on the use of “SNCF” model brake plates for wagons, by integrating the events collected by the AFWP. In the event of an observed risk, decide on the actions to cover this risk.	SNCF Passengers	**In March 2024, SNCF Voyageurs responded to the BEA-TT with the commitment to officially request the AFWP to collect the data collected from members concerning their feedback on the use of “SNCF” model brake plates. In the event of a new risk observed, SNCF Voyageurs will decide on risk coverage actions.** **Following this request, no report was submitted and if one was submitted, it would be processed accordingly.** **Closed Follow-up**	C
		R3	Survey AFWP members on feedback on “SNCF” type brake plates. If risks are confirmed and after examining the elements provided by SNCF Voyageurs, decide on a request for a correction to the VPI reference document concerning this brake plate.	AFWP	**As of 12/31/2024, the AFWP's response to the recommendation made by the BEA-TT had not yet been formulated.** **However, as part of the follow-up to recommendation R2, the information received by the EPSF showed that a request from the AFWP to its members took place. The follow-up remains ongoing pending clarification and should be closed at the next follow-up point.** **Open Tracking.**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2023	A dump truck fell onto the railway tracks from a road bridge on June 2, 2022 in Saint-Chamond (42)	R1	Equip the structure on Boulevard de Fonsala in Saint-Chamond with a facility to reduce the risk of a vehicle falling onto the tracks: for example, a retaining device on either side of the structure, over 50 m if possible.	Saint-Étienne Metropolis	**As of 12/31/2024, Saint-Étienne Métropole's response to the recommendation made by the BEA-TT was not yet available. Open tracking**	O
12/2023	A dump truck fell onto the railway tracks from a road bridge on June 2, 2022 in Saint-Chamond (42)	R2	Entrust Cerema 2 with the task of working, with road and rail management partners, on a method for calculating ID (danger index) specific to existing road bridges (all project owners), as an extension of the initial guidelines proposed by BEA-TT in this report.	DGITM	In its response of March 14, 2024, the DGITM informed the BEATT that the danger index of the 2021 CEREMA guide has been calibrated for road infrastructure in the national road network on which the speed is greater than or equal to 70 km/h. CEREMA should be able to carry out an evolution of the method within three years, within the framework of an agreement with the DGITM. **Open Tracking .**	O
		R3	As part of the protection of the national rail network, and using the method that will be proposed by Cerema , obtain for each department a list of structures prioritized with regard to the risk of vehicles falling onto the railways. For the structures most at risk (around fifteen per department on average), act in favor of carrying out a safety point involving road and rail stakeholders to define provisions aimed at limiting the risk.	DGITM	In its response of March 14, 2024, the DGITM informs the BEATT that: For the non-concessionary national road network, the upgrading of the retaining devices of railway crossing structures has been the subject of specific studies by several DIRs: this approach will be completed on a national scale. The upgrading of the most critical devices. **Open tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2023	A dump truck fell onto the railway tracks from a road bridge on June 2, 2022 in Saint-Chamond (42)	R4	In this approach, and following the example of what certain interdepartmental road directorates (DIR) have already undertaken, continue and generalize to the entire non-concessionary national road network the progressive upgrading of the retention devices of the crossing structures of the national rail network tracks.	DGITM	To be carried out gradually depending on the available financial envelope. For the national road network under concession, this upgrade is integrated into contractual investment operations (new developments, widening, etc.) or heavy maintenance on a particular crossing in compliance with the 2021 CEREMA guide. For the non-concessionary national road network, the DGITM does not have authority over local authority project owners to prescribe the safety of their structures. If this is part of its action strategy, the CEREMA could, however, establish a list of structures prioritized with regard to the risk of vehicles falling onto railway tracks at the departmental level to guide local authority action. **Open Tracking**	O
		R5	Act in favor of the existence, at the departmental level, of a partnership mechanism for steering the recommended actions. Without prejudice to organizational responsibilities, the BEA-TT suggests that this could involve expanding the powers of the departmental level crossing commissions.	DGITM	In its response of March 14, 2024, the DGITM informed the BEATT that departmental commissions do not appear to be the most appropriate system. On the other hand, the DGITM will encourage SNCF Réseau to have increased exchanges with the managers of the overpasses. **Open Tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2024

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
02/2024	the derailment of a freight train on August 19, 2020, between Villeneuve-sur-Yonne and Saint-Julien-du-Sault (89).	**R1**	Act with the European Committee for Standardization and the VPI association in order to instruct the modification of standards EN 15 313 and VPI guide (document VPI 01 Annex 21) likely to generalize the carrying out, during maintenance operations in the axle workshop, of the examination of the indices of wheel circularity defects defined in Annex 10 of the Uniform Contract for the Use of wagons. Act with the ERA to raise awareness among ECE "certifying bodies" about this type of dreaded event. This involves making ECEs aware that this type of defect must be taken into account in their "range of possible defects" to be covered by maintenance plans, even for new wheels.	**EPSF**	In its December 2024 response, EPSF undertakes to share with the Bureau de Normalisation Ferroviaire (BNF), at the next meeting, the conclusions of this investigation report, and in particular the request relating to the EN 15313 standard formulated by recommendation R1. As a reminder, this Bureau ensures, by delegation from AFNOR, the participation of French stakeholders in European and international standardization work. In fact, it is to the BNF that potential work topics must be brought. The investigation report on this accident will also be relayed, within 2 months, to the VPI association, the sectoral association of private owners of freight wagons and workshops in Germany. The EPSF will finally propose to the ERA that awareness of this type of dreaded event be put on the agenda of a future meeting of the ECE certifiers group that it leads. **Open Tracking**	**O**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
02/2024	the derailment of a freight train on August 19, 2020, between Villeneuve-sur-Yonne and Saint-Julien-du-Sault (89).	**R2**	Provide freight train drivers with tools to facilitate the inspection of the train in the recognition of hot boxes in order to allow an assessment of the temperature of the boxes, to materialize the location of the damage to the wagon and to allow the driver to identify the axles counted; Complete initial and refresher training for freight train drivers, in order to clarify and practice the different scenarios of simple or danger box alarms. Review the driving guidelines in order to remove potential ambiguities regarding the processing of procedures relating to DBC alarms and inspection of their train. Prescribe that the second Single Alarm on the same axle on a journey must be considered a Danger Alarm. Arrange for a stop, approximately 20 km after restarting following an unconfirmed Single Alarm, for inspection by the driver.	**EPSF**	In its December 2024 response, the EPSF informed the BEA-TT that it had taken two actions in response to this recommendation. First, the EPSF invited the BEA-TT to present the investigation report at the so-called "Event" feedback meeting on June 27, 2024. Then, the EPSF organized an experience sharing session on this subject between railway companies at the so-called "EF" feedback meeting on November 14, 2024. This sharing session allowed for exchanges on the best practices implemented. The presentations made and the memo summarizing the substance of these exchanges will soon be published on the EPSF Voie-Libre platform to enable this information to be shared with as many people as possible over time. **Follow-up Closed.**	**C**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
02/2024	the derailment of a freight train on August 19, 2020, between Villeneuve-sur-Yonne and Saint-Julien-du-Sault (89).	**R3**	Study the possibility of feeding back temperature information and alarms generated by the national rail network's DBCs in order to ensure centralized management in real time. The infrastructure manager's supervision center should thus enable: – to remove doubts and facilitate the application of regulations by field agents, ACs and drivers, as well as the maintenance operations of the infrastructure manager; – to increase the operational availability of DBCs.	SNCF Network	In its response of June 2024, SNCF Réseau informed the BEA-TT that the first part of the recommendation finds a response in the PC STEM program initiated and whose progressive deployment is ensured from 2026. Concerning the infrastructure manager's supervision centre mentioned in the second part of the recommendation, SNCF Réseau specifies that, to date, the 4 supervision centres spread across its territory (1 per production zone) are not intended to supervise the state of traffic but rather that of the network. **Open Tracking.**	**O**
		R4	Review the rules for installing DBCs in light of the residual risk assessment. Current or anticipated line operating conditions and rolling stock characteristics should be taken into account. Where appropriate, narrow the spacing between DBCs or limit the maximum operating speed to ensure the safety level defined by the EPSF.	SNCF Network	In its June 2024 response, SNCF Réseau reiterated its response stating that it did not consider it appropriate to increase the density of the current DBC system. However, occasional additional installations may be considered and carried out locally to improve the network, particularly in areas exposed to fire risk. **Closed Follow-up**	**C**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
03/2024	the fire on the works train, on May 28, 2021, in Saint-Hilaire-Bonneval (87).	**R1**	Review the design processes for factory work trains in order to take cover measures related to the fire risk that may be induced by heating at the wheel/base contact and/or particle projections, with a notion of acceptable limit of duration and temperature to be defined, and to produce the safety demonstration in the authorization files.	Plasser & Theurer	In its May 2024 response, Plasser & Theurer committed to including the additional risk associated with the occurrence of "brakes applied," independent of the design of the construction equipment, in its future risk analyses during the design phase. A prototype should be available within 12 months, followed by validation tests. A definitive solution is possible within 24 months. **Open Tracking.**	**O**
		R2	Create a working group with the manufacturer of factory works trains (an inseparable element of track renewal trains), the operators, SNCF Réseau and EPSF to: – determine the additional elements necessary to improve its performance and, where appropriate, define an AMOR integrating this new data; – identify ways of instrumenting new factory work trains in order to detect as early as possible the occurrence of a problem on the train and to exploit the data produced by the drivers.	Plasser & Theurer	In its response of May 2024, Plasser & Theurer indicated its interest in participating in the working group mentioned but did not consider that the management of such a group was within the prerogatives of a manufacturer among the players in the profession. **Follow-up Closed.**	**C**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
03/2024	the fire on the works train, on May 28, 2021, in Saint-Hilaire-Bonneval (87).	**R3**	Review the regulatory framework governing the conditions for authorising the placing on the market of factory work trains in order to better control the risk of fire from the bogies during transport movements	EPSF	In its December 2024 response, EPSF proposed extending this recommendation to special vehicles as part of an amendment to the Wagon TSI through a modification request CR 669 issued on October 25, 2024. As the organization and schedule of this work are managed by ERA and the European Commission, EPSF cannot commit to a deadline or the output product of this work. Furthermore, EPSF proposes that BEA-TT may intervene at the feedback meeting on December 12, 2024. **Open Tracking**	**O**
		R4	Organize a working group with the professional experts of the railway operators and, where appropriate, the manufacturers, to review the professional reference frameworks of the drivers and define the implementation of additional training for factory works train drivers.	EPSF	In its December 2024 response, EPSF told BEA-TT that it is not its responsibility to determine the content of driver job descriptions or to set requirements for driver training. This role is that of the infrastructure managers operating convoys and railway companies. However, EPSF will support the need for operators to take this survey into account in their decision-making at upcoming feedback meetings, particularly at the one scheduled for December 12, 2024, where the event will be presented. **Follow-up Closed.**	**C**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
03/2024	the fire on the works train, on May 28, 2021, in Saint-Hilaire-Bonneval (87).	**R5**	Organize a working group with railway operators and static recorder manufacturers to study the extension of the scope of recorded information on brake control parameters, without being limited to it.	EPSF	In its December 2024 response, EPSF informed BEA-TT of the initiation of work on the recording of driving events to respond to the European Commission's request concerning the reason for this national rule. A list of parameters to be recorded is in fact harmonized at European level, but Member States retain the possibility of supplementing this list in application of an open point of the OPE TSI. EPSF therefore invites BEA-TT to participate in this work so that it can benefit from its experience and needs in terms of event analysis. The publication of the national rule is planned for October 2025. **Open Tracking**	**O**
		R6	Review the conditions for maintaining the hot box detectors and the brake applied detectors in operational condition in order to guarantee a diagnosis of the fault and an estimate of the expected repair time within 24 hours (in the event that repair cannot be carried out within 24 hours), without ever allowing two successive DBCs to be unavailable. Raise awareness among maintenance services of the importance of these devices which contribute to the safety of RFN traffic.	SNCF Network	In its June 2024 response and in order to limit the occurrence of having 2 successive DBCs unavailable, SNCF Réseau undertakes to review and clarify the maintenance reference systems relating to the DBC to include an estimate of the expected repair time, in the event that the repair cannot be carried out within 24 hours. In order to raise awareness among maintenance agents of the importance of these systems, support for the new versions of the maintenance reference systems will be provided to the establishments by experts from the Production Zones as part of the existing technical facilitation meetings, held every 6 months. **Open Tracking**	**O**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision of two pedestrians by a freight train on November 14, 2022, on a TVP at Donchery station (08)	**R1**	Secure the management and progress of the action plan for preventing pedestrian collisions at TVPs carried out by SNCF. This action plan includes the following actions: ➢ raise awareness among travelers about the risk by conducting revised public communication campaigns; ➢ ensure the complete installation of the new ground signage; ➢ set up audio and visual prevention announcements on station display screens; ➢ deploy the intervention program in middle and high schools; ➢ experiment, on TVP signaling, with sound support to reinforce the alert to travelers; ➢ accelerate the TVP elimination program; ➢ develop a new generation TVP offering an effective physical barrier to the risk of inattention; ➢ experiment with issuing a “crossing train” warning; ➢ provide TVP light signals with means of recording their proof of operation.	SNCF Network SNCF Stations & Connections SNCF Passengers	In its response of October 2024, SNCF Voyageurs committed to the action plan in cooperation with SNCF Réseau and SNCF Gares et Connexions and will provide a progress report on the actions implemented by SNCF Voyageurs. In its November 2024 response, SNCR Réseau informed the BEA-TT that it would not propose any actions other than those already implemented and monitored within the framework of the aforementioned action plan. Furthermore, SNCF Réseau considers that the monitoring within the DSSR and the progress reports conducted twice a year with the EPSF make it possible to guarantee its security. In its November 2027 response, SNCF Gare et Connexions recalls the management and progress of the action plan entrusted to a TVP Security project manager implemented since the first quarter of 2023. SNCF Gare et Connexions undertakes to ensure that progress points are integrated into the biannual reviews carried out between SNCF Réseau (DSSR) and EPSF in order to guarantee its security. **Open Tracking**	**O**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision of two pedestrians by a freight train on November 14, 2022, on a TVP at Donchery station (08)	**R2**	Study how to implement audio announcements in trains delivering a prevention message on the danger of crossing tracks at level in stations as well as absolute compliance with light signals, before each arrival at a station concerned. At the end, implement the chosen solution(s).	SNCF Passengers	In its letter of October 2024, SNCF Voyageurs informed the BEA-TT of the conclusions of an experiment conducted from December 2023 to April 2024 on series of AGC and REGIO2N compatible equipment. This experiment did not lead to the drawing of positive lessons contributing to an improvement in the targeted situation. Consequently, SNCF Voyageurs is not committed to the deployment of audio announcements on board trains. Other solutions continue to be tested, SNCF Voyageurs undertakes to communicate progress points of the reflections and to implement the solutions deemed appropriate. **Open Tracking**	**O**
		R3	Secure, within the action plan for preventing pedestrian collisions with TVPs, the project to develop a new generation TVP offering an effective physical barrier to the risk of pedestrians being inattentive to light signals.	SNCF Network SNCF Stations & Connections	In its response of November 2024, SNCR Réseau specifies in response to the recommendation that the catch-up loop on which SNCF Réseau will work could take the form of a physical barrier only if the results of the study carried out in the different batches of the new generation TVP project, still in progress with an end planned for mid-2026, confirm this possible orientation. In its November 2024 response, SNCF Gare et Connexions stated that the various proposals resulting from the project will integrate the action plan for preventing pedestrian collisions at public transport terminals. In this context, a physical barrier is one of the options being studied, but no conclusions have yet been drawn up. **Open Tracking**	**O**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision of two pedestrians by a freight train on November 14, 2022, on a TVP at Donchery station (08)	**R4**	Request from SNCF Réseau and SNCF Gares & Connexions a presentation of the consistency of the new generation TVP project subject to recommendation R3, as well as a preliminary draft of a "note determining the nature of the modification" which assesses the modification generated by this project (this, even if a project presentation file for authorization was not necessary).	EPSF	In its response of December 2024, the EPSF undertakes to formulate to SNCR Réseau a request for presentation of the consistency of the new generation TVP project as well as a preliminary draft of a "note determining the nature of the modification" which assesses the modification generated by this project during the first quarter of 2025. **Open Tracking**	**O**
		R5	Study the strengthening of resources dedicated to the presence of staff at TVPs at sites and times with the highest passenger traffic and the highest train crossing rates. These reinforcements would be applied on a temporary basis pending improvements in the security of TVP installations.	SNCF Stations & Connections	In its November 2024 response, SNCF Gare et Connexions informed the BEA-TT that the elements of this recommendation are taken into account in the evolution of station attendance and based on local studies. Furthermore, a measurement of the maturity of customer behavior during the crossing has been added and is carried out at the same time as the VxT product evaluations in the field. **Open Tracking**	**O**

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision of two pedestrians by a freight train on November 14, 2022, on a TVP at Donchery station (08)	R6	Study a modification of the regulations concerning safety requirements and police rules concerning the crossing of tracks by passengers in stations with non-stop trains, by strengthening the requirement on the level of protection that the installations must provide (at least the presentation of a physical guardrail or equivalent).	DGITM	In its response of September 2024, the DGITM informs that there are no plans to change the relevant texts, but that a railway safety committee is being organized in the coming days where discussions will allow the opportunity to modify the regulations to be studied. **Closed Follow-up**	C
		R7	Study how to set up financial support for SNCF to improve the safety of track crossings for the public at stations as part of national and regional funding for railway development.	DGITM	In its September 2024 response, the DGITM informs that a budget line dedicated to railway safety exists. It is mainly devoted to improving the safety of level crossings and railway tunnels. The opportunity to mobilize credits under this line to finance experiments contributing to the safety of TVP will however be studied. As this is a competence of SNCF Réseau and SNCF Gares et Connexions having defined a multi-year program for the removal of pedestrian crossings, the current update of the performance contracts of SNCF Réseau and SNCF Gares et Connexions, planned for 2025, will be an opportunity to specify the conditions for monitoring the program to improve the safety of pedestrian crossings. **Open Tracking**	O

* C = Close ; O = Open

Railway: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision of two pedestrians by a freight train on November 14, 2022, on a TVP at Donchery station (08)	**R8**	Finalize and implement the project to level the track crossing at Donchery station.	SNCF Network SNCF Stations & Connections	In its November 2024 response, SNCR Réseau specifies that the project to remove the TVP at Donchery station in favor of an underground crossing, managed by SNCF Gare et Connexions with the participation of SNCF Réseau, was planned for commissioning at the end of the first half of 2028. **Open Tracking**	**O**
		R9	Secure, through a contractual act between SNCF and the ESAT, the management of the safety of crossings for people going to the ESAT, pending the implementation of an accessibility project guaranteeing greater safety.	SNCF Stations & Connections	In its response of November 2024, SNCF Gare et Connexions informed the BEA-TT that the agreement referred to in the recommendation was finalized and signed on November 5, 2024. **Closed Follow-up**	**C**

* C = Close ; O = Open

Annexe 2 : Table from the Public Railway Safety Establishment (EPSF) showing the monitoring of the implementation of the recommendations issued by the BEA-TT in the field of level crossings

This document presents the progress as of 12/31/2024 of the implementation of actions following the recommendations issued by the BEA -TT for the attention of stakeholders in the railway sector.

Level crossing: Recommendations issued in 2006

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2006	Collision between a regional express train and a heavy goods vehicle on a level crossing in Saint-Laurent-Blangy (62) on 06/09/2005	R1	Continue the study of solutions (on-site elevation change or new route) to remove this level crossing, in order to reach a decision and completion as soon as possible.	SNCF Network General Council 62	The technical solution concerning the installation of obstacle detection is a work avenue. Several stages are underway, notably concerning the carrying out of a reliability test of the obstacle detection function taking into account the particular situation of this level crossing and the study of the equipment with electric torches. **Monitoring of the actions implemented by SNCF Réseau provides for the commissioning of the obstacle detector solution at the earliest by the end of 2024/beginning of 2025.** **Despite requests from the General Council 62 by the DGITM in February 2023 and March 2024, no additional information on the progress of the implementation of this action could be obtained.** **Open Tracking**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2010

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
09/2010	Collision between a coach and a TER at level crossing n°4 in Nevers (58) on 03/02/2009	R1	Evaluate and study the traffic light regulation system of level crossing No. 4 (as well as level crossing No. 5) to seek simple optimization measures (duration of traffic light cycles, possible coordination of upstream and downstream traffic lights, activation time of the upstream traffic light after detection, effectiveness of the detection loop, etc.) in order to reduce the risk of encroachment onto the railway line by a vehicle stopped at the end of the queue downstream of the level crossing.	Municipality of Nevers	Despite requests from the Municipality of Nevers by the DGITM in February 2023 and March 2024, no new information on the progress of the implementation of this action could be obtained. **If no information reaches the EPSF in 2025, the action will be presumed to have been taken and the follow-up will be closed.** **Open Tracking**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2019

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
05/2019	Collision between a TER and a school bus in Millas (66) on 12/14/2017	R1	Establish, in coordination with SNCF Réseau and the road safety delegation (DSR), a technical reference framework setting out the performance and a procedure for assessing the conformity of level crossing equipment, as provided for by road regulations relating to the qualification of road equipment, as well as rules for commissioning and installation based on their characteristics and environmental constraints.	Directorate General for Infrastructure, Transport and the Sea - DGITM	The DGITM has undertaken to set up a working group involving SNCF Réseau and the Road Safety Delegation (DSR), which aims to take stock of the three families of equipment (flashing red lights, barriers and bells). Numerous bilateral exchanges between the DGITM and the departments concerned followed the first meeting of this working group. The work began in 2021 and aims to identify existing benchmarks, define the benchmarks to be implemented, define the desired performance thresholds, etc. The work will then allow the development of an order including the performance thresholds and certificates of conformity for these three families of equipment, in accordance with Articles R. 119-4 and R. 119-7 of the French Highway Code. A detailed inventory of the practices and regulations implemented for these three families of equipment was carried out, including at the European level for barriers. Details on the number of lights and their location were provided in the regulations. **Each of these equipment families is still the subject of future actions in relation to the stakeholders concerned concerning the possibility of defining new benchmarks . Open monitoring.**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2019 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
05/2019	Collision between a TER and a school bus in Millas (66) on 12/14/2017	R5	Study the feasibility and install a front camera at the head of the train, in order to have a recording of events on the infrastructure, usable in the event of an accident, and for a time that can be limited to a few dozen minutes. Study the feasibility and install video camera equipment at least on certain level crossings, allowing the recording of events during the passage of trains with the aim of improving safety.	SNCF Passengers	Consideration was already being given to installing front-facing cameras at the head of the train as part of the response to the technical investigation into the derailment of a TGV train in Eckwersheim on 14 November 2015. Two devices from different suppliers have been under test since the end of 2018. **In March 2024, SNCF Voyageurs informed EPSF of the start of testing the system on certain TER trains in the Hauts-de-France region. The provisional deployment schedule is planned until 2025.** **Follow-up Closed.**	c

* C = Close ; O = Open

Level crossing: Recommendations issued in 2019 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
07/2019	Collision between a TER and a car at level crossing 8 in Bonneville-sur-Touques (14) on 02/11/2017	R1	Install, near level crossing no. 8, located on the Chemin de la Libération in Bonneville-sur-Touques, a device prohibiting access to the level crossing to persons other than those entitled to it.	Municipality of Bonneville sur Touques	As of 12/31/2020, the solution initially envisaged to respond to this recommendation consisting of removing level crossing No. 8 with transfer to level crossing No. 7 was abandoned in favor of automating the two level crossings. In 2023, the EPSF was informed of the intention to prohibit access to the level crossing to persons other than those entitled to it by the installation of a sign. **Following the request by the DGITM in March 2024, proof of the installation of the signs by the municipality was provided in April 2024.** **Closed Follow-up**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2020

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
05/2020	Collision between a TER and a light vehicle on level crossing No. 302 in Saint-Etienne (42) on 05/07/2019	R1	Study improving the readability of level crossing No. 302 from the northern approach, particularly by acting on vertical signage and vegetation.	Saint-Etienne Metropolis	**Following requests from the Departmental Transport Directorate 42 by the DGITM in February 2023 and March 2024, details of the actions planned in response to the recommendations were sent by Saint-Etienne Métropole to the EPSF in a letter received in April 2024.** **Closed Follow-up**	C
		R2	Study the possibilities of reorganizing the allocation of lanes in the direction of traffic from north to south, or even of modifying the entry flows onto level crossing No. 302, for example by creating a right-turn lane. Examine the feasibility of assigning a right-turn signal for users traveling on the boulevard and approaching PN 302 from the north. This signal would remain red when the level crossing is closed.	Saint-Etienne Metropolis		C
		R3	Study the removal of advertising elements present on road rights-of-way which could contribute to distracting road users approaching level crossing No. 302. Eliminate interference between directional signs and warning or police signs by retaining only the elements most essential for safety.	Saint-Etienne Metropolis		C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2021

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code
03/2021	Collision between a train and a light vehicle on level crossing no. 8 in Roissy-en-Brie (77) on 09/15/2019	R3	Physically prevent parking on the roadways leading to the level crossing within 30 meters of arriving at this level crossing, in order to improve the visibility of the level crossing flashing lights.	Roissy-en-Brie Town Hall Roissy-en-Brie Town Hall	In a letter dated June 2022, the town hall of Roissy-en-Brie informed the BEA-TT of the upcoming ban on parking on the roads leading to the level crossing.	C
		R4	Have large advertising panels located in the immediate vicinity of the level crossing on the RD 21 and causing visual distractions that are detrimental to the visibility and readability of the level crossing removed.	Roissy-en-Brie Town Hall Roissy-en-Brie Town Hall	**Following requests from Roissy-en-Brie town hall by the DGITM in February and March 2024, the town hall wrote to the EPSF to remind the public of the location of the advertising devices on private plots. Letters to the owners and the company concerned, explaining that the installations do not comply with the new local advertising regulations adopted in 2022, should lead to the removal of the devices by the end of June 2024. A visit by the BEA-TT to the site confirmed the requested changes.** **Follow-up closed.**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2021 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
11/2021	Collision between a TER and a light vehicle in Bourg-en-Bresse (01) on 09/10/2020	R1	Finalize, in accordance with the conclusions of the diagnosis carried out on October 18, 2018, the study of the possibility of installing a central island bordered on the Bourg - en - Bresse side of level crossing No. 7, in order to deter users from the city center from crossing the PN in a chicane.	City of Bourg-en-Bresse Ain Departmental Council	This recommendation was taken into account by the Ain department after agreement with the town of Bourg-en-Bresse on the technical and financial arrangements. The creation of the central bordered island on the RD 979/avenue Amédée Mercier on the Bourg-en-Bresse side has been included in the 2022 works program for the town of Bourg-en-Bresse, with funding from the Department. **The Ain Departmental Council confirmed the installation of the central island to BEA-TT by email.** **Follow-up Closed.**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
01/2023	Pedestrian hit by train on pedestrian path on November 8, 2021 in Héricy (77)	R1	Taking into account the existing safe level crossings nearby, permanently remove pedestrian level crossing no. 27a.	Héricy Town Hall	Despite the request of the Ain Departmental Council by the DGITM in March 2024, no information on the progress of the implementation of this action could be obtained on this occasion. **In a progress report dated October 2024, the BEA-TT was informed by the Héricy town hall of its decision to reopen** level crossing **27a to the public. A municipal decree was published to this effect. Discussion meetings with the mayor of the commune, the Sub-Prefect of Fontainebleau and SNCF Réseau were held. Development work was carried out, particularly on the decking, fencing, ground markings and signs. PN 27a was opened on June 21, 2024. Follow-up Closed**	C
		R2	As part of the so-called "pedestrian" think tank led by the EPSF, pay particular attention to category 3 level crossings by identifying specific problems and associated solutions, with a view to a possible modification of the decree of March 18, 1991, as amended, relating to the classification, regulation and equipment of level crossings.	DGITM EPSF	The EPSF is committed to ensuring the management and facilitation of this reflection group, which began its work in January 2023. The DGITM will intervene as a stakeholder in these reflections, along with the Assembly of French Departments (ADF), the Bureau of Investigation into Land Transport Accidents (BEA-TT) through the participation of an investigator from your services, the Center for Studies and Expertise on Risks, the Environment, Mobility and Planning (CEREMA), the Road Safety Delegation (DSR), the Technical Service for Ski Lifts and Guided Transport (STRMTG), SNCF Réseau and the International Union of Railways (UIC). **In 2023, the think tank drafted action sheets containing proposed measures to control the risk of pedestrian collisions at level crossings. These sheets were published in December 2024. Follow-up Closed.**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
03/2023	Collision between a TER and a light vehicle, January 15, 2021 on level crossing n° 44 in Péronnas (01)	R1	Regulate and signal in warning and position the rules of priority between road users crossing level crossing No. 44. Study, in association with SNCF Réseau: 1) the increase in the width of the road at level crossing No. 44; 2) the increase in the radii of the last approach road bends on this level crossing, in order to reduce the angle of crossing the road to improve visibility on the railway.	City from Péronnas	The city of Péronnas is committed to studying security arrangements with associated and partner services: SNCF Réseau, the DDT (Departmental Directorate for Transport), and the Ain Departmental Council. Implementation of all measures is planned for September 30, 2023 at the latest. Despite the request of the Ain Departmental Council by the DGITM in March 2024, no precise information on the completion of the work has been obtained. **Through monitoring the implementation of actions in response to recommendation R3 (see below), the EPSF received information on the adjustments which consisted of changing the crossing speed from 80 to 30 km/h. Monitoring open pending confirmation.** **Open Tracking**	O
		R3	In the direction of approach to level crossing No. 44 from the east, taking into account the work carried out since the accident and the level crossing development projects, modify where necessary the orientation of the right-hand flashing red light so that it can be seen right up to it.	SNCF Network	SNCF Réseau undertakes to carry out the work to modify the orientation of the right-hand flashing red light in the direction of approach to level crossing No44 from the East within two months of the date of completion of the speed limitation work on this infrastructure, subject to their completion by the municipality of Péronnas. **At the end of November 2023, SNCF Réseau carried out work at PN 44 to reorient the traffic light in the 3rd quadrant (closed side). This work was carried out after the work to change the road speed rate (from 80 to 30 km/h) carried out by the municipality of Péronnas.** **Follow-up Closed.**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
03/2023	Collision between a TER and a light vehicle, January 15, 2021 on level crossing n° 44 in Péronnas (01)	R4	Raise awareness among drivers of the priority that must be given, when conditions permit, to initializing the ground-to-train radio and, more generally, to carrying out actions that require them to take their eyes off the track and the overhead line, outside of geographical areas with level crossings or any other known risk factor. When designing or reconditioning equipment, take into account the objective of reducing the duration of actions during which the driver is no longer able to observe the track and the overhead line.	All EFs at the date of publication of the report , i.e. 51 EFs SNCF Network	As of 12/31/2024, SNCF Réseau and 14 railway companies responded to the BEA-TT, specifying awareness-raising actions for drivers. **The EPSF has added a specific point on the actions underway on the EF side to the annual safety report framework. Follow-up open pending further details.** **Open Tracking.**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2023	Collision between a freight train and a road train on June 16, 2021 on level crossing No. 17 in Rumigny (08)	R1	Update the regulations on the movement of exceptional transports, so that in the absence of formal designation of the convoy leader, a default convoy leader is provided for by the regulations	**DSR**	In its response letter of February 6, 2024, the DSR indicated that it was in favor of initiating discussions on this recommendation with the DGITM and the national transport federations. A meeting took place in October 2023, at which the main transport federation gave an opinion which does not allow the issues of the recommendation to be addressed.	**C**
		R2	Clarify the status of the various documents sent to the carrier or its agent at the end of the processing phase of the application for traffic authorization (order, annexes, documents sent without annex status) so that all the mandatory requirements incumbent on it are even more clearly identified	DSR	In its response letter of February 6, 2024, the DSR indicated that the traffic authorization order includes a cover page specifying the list of annexes, which include the opinions of the instructing services and managers. In addition, the DSR is already raising awareness among the instructing services of the importance of providing clear and concise instructions. In May 2024, the DSR began work on the creation of version V2 of the new TE authorization instruction application, Mon-Transport-Exceptionnel, which will open in September 2023. V2 aims to integrate managers into the application and the dematerialized instruction process and includes a standard notice format, which will, among other things, standardize managers' opinions. This work, initially planned until the end of 2024/beginning of 2025, has been postponed.	**O**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2023	Collision between a freight train and a road train on June 16, 2021 on level crossing No. 17 in Rumigny (08)	R3	Make available data relating to the longitudinal profiles of road infrastructure in the vicinity of and at the level crossings, so that road transport operators of passengers and goods can more easily assess the crossing capacities of their vehicles over level crossings. In each department, provide this updated data annually to the departmental level crossing safety commission, in addition to the list of level crossings that are difficult to cross.	All GI/GICs as of the date of publication of the report, i.e. 15 GI/GICs	As of 12/31/2024, three infrastructure managers have responded to the BEA-TT. **The EPSF has added a specific point on the actions underway on the EF side to the annual safety report framework. Follow-up open pending further details.** **Open Tracking.**	**O**
		R4	Bring to the international level the full benefit of a shared definition of the minimum performance expected for the attachment of certain portable equipment, such as the short-circuit bar and fire extinguishers, present inside trains and for some of them inside driver's cabs. Pending harmonized international regulations, organize at the national level an exchange between railway equipment manufacturers and railway companies with the aim of developing good practices and technological solutions in the short term.	EPSF	**The EPSF will propose that this topic be included in the European Commission's next work mandate for the European Union Agency for Railways, the terms of which should be prepared in the first half of 2024.** **The EPSF will inform railway equipment manufacturers and railway companies of the contents of the investigation report and the resulting recommendations during a feedback meeting to be held in 2024.** **Open Tracking.**	**O**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2023	Collision between a freight train and a road train on June 16, 2021 on level crossing No. 17 in Rumigny (08	R5	Ask the departmental prefects, during the holding of the departmental commissions provided for by measure 10 of the action plan to improve the safety of level crossings of May 3, 2019, to insist with all stakeholders on the following points: • share the modifications made, in particular the new topographic surveys and the longitudinal and cross-sectional profiles of the infrastructure around and in front of the PN following work; • study before the road reopens following the works the new conditions for crossing the level crossing by road users, in particular exceptional convoys and school transport which may use vehicles with lower crossing capacities than a light vehicle; • take advantage of the updating of diagnostics and the annual update of the list of difficult-to-cross PN to discuss possible changes to the configuration of locations or traffic; • ensure the availability of data relating to the longitudinal profiles of infrastructure near and at the level of national crossings, so that road transport professionals for passengers and goods can more easily study the crossing of national crossings by their vehicles.	**DGITM**	**The DGITM confirms that this request will be addressed to the Departmental Territorial Directorates via the DREAL. Furthermore, the issue will be discussed at the next National Authority on Level Crossings.** **Follow-up Closed.**	**C**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2023 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2023	Incident between a TGV and a coach, May 29, 2022 in Bizanos (64)	R1	In conjunction with SNCF Réseau, study the possibility of privatizing level crossing 238: - by retaining as sole users only the residents living at No. 16 rue de Verdun, while continuing to seek other service solutions with a view to avoiding the use of this PN by these residents; - by reorganizing the routes for cyclists crossing the railway lines via level crossing 239; - by ensuring that public service vehicles are able to serve the homes and infrastructure on rue de Verdun without crossing level crossing 238; - by installing a physical barrier to restore the status of a dead end to rue de Verdun. At the same time, develop the intersection between avenue de l'Yser and rue de Verdun by installing horizontal signage to reinforce the vertical signage, or even by creating one or more islands, to improve the perception of the roads and their status.	Municipality of Bizanos	**As of October 22, 2024, a status report on the follow-up to this recommendation was published on the BEA-TT website.** **Information emails from the Bizanos town hall (including photos) show the installation of signaling equipment and an unsuccessful request for the transfer of a plot of land for the purpose of demolition at the expense of** **Follow-up Closed.**	C

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision between a TER and a heavy goods vehicle, on February 24, 2022, at level crossing n°22 in Hochfelden (67).	R2	Study the technical and economic feasibility of installing closing sensors on exit barriers on level crossing to SAL 4, which would enable the detection of a vehicle immobilized at the barriers, and the transmission of this information to train drivers via existing railway signaling.	SNCF Network	In its November 2024 response, SNCF Réseau reiterated its reservations regarding the recommended solution and informed of the approval of the obstacle detection device at the level crossing. A deployment policy on the first 15 level crossings, including level crossing 22 in Hochfelden, is already planned. **Open Tracking**	O
		R3	Study, depending on the available rights-of-way and the direction of rail traffic, the conditions for lateral separation of the catenary support poles closest to the decking of a level crossing, with the aim of preventing a road vehicle or its load from becoming trapped after an impact between these poles and the train. If this is not possible, study a longitudinal separation of the catenary poles closest to the decking.	SNCF Network	In its November 2024 response, SNCF Réseau committed to modifying the basic plan applicable to all its overhead line collections for any new infrastructure study. For existing installations, a case-by-case relevance analysis is required. **Open Tracking**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
08/2024	the collision between a TER and a heavy goods vehicle, on February 24, 2022, at level crossing n°22 in Hochfelden (67).	**R4**	Study the possibility of modifying the requirements for rolling stock to reduce the risk of the automatic coupler passing under the train following a particularly violent impact. In particular, examine the possible addition of a restraining device (chains, cables or other) on the external part of the automatic coupler. Encourage at European level the inclusion of these requirements in the approval documents.	**EPSF**	In its response of January 6, 2025, the EPSF undertakes to relay the information to rolling stock manufacturers via the Fédération des Industries Ferroviaires (FIF). Following the studies that would be conducted and depending on the conclusions, the EPSF undertakes to implement any follow-up measures. **Open Tracking**	**O**
		R5	With railway companies and rolling stock manufacturers, define a list of safety or comfort equipment for which the power supply must continue after the possible destruction of the automatic coupling following a collision with an obstacle. Encourage at European level the inclusion in approval documents of the requirements for maintaining the power supply on the identified equipment.	**EPSF**		**O**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a train and a road vehicle, on December 26, 2022, at level crossing n° 13 in Ayse (74).	R1	Emphasize during initial and ongoing training of train drivers, and during online support, the absolute priority of paying attention to railway signaling and the immediate external environment. Given the presence of numerous screens and lights/indicators in the driver's cab and the risk of distraction that this creates, remember that observing railway signalling and the environment constitutes the main foundation of railway traffic safety entrusted to train drivers.	SNCF Passengers	In its February 2025 response, SNCF Voyageurs committed to incorporating the clarification sought by the recommendation into the driver reference guide by June 2025. This point will also be incorporated into a continuing training initiative in 2026 and will be assessed by managers. Regarding initial training, this point will also be taken into account in 2026. **Open Tracking**	**O**
		R2	Complete the driving guide to clarify emergency evacuation rules	SNCF Passengers	In its response of February 2025, SNCF Voyageurs undertakes to clarify this point in the driving guidelines from June 2025. **Open Tracking**	

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a train and a road vehicle, on December 26, 2022, at level crossing n° 13 in Ayse (74)	**R3**	Provide passenger train drivers and train sales staff with a training sequence on the practical handling of the equipment required for the emergency opening of passenger area doors systematically for all the traction units they are required to use. Consider adding instructions (label, diagram, text, etc.) for the emergency door opening device.	SNCF Passengers	In its February 2025 response, SNCF Voyageurs undertakes: - for train drivers, to add this point to the educational file for initial training and to additional training in 2026; - for Régiolis self-propelled vehicles , to provide trainers and drivers with an educational film to revise knowledge; - for support agents, to send a letter to the activities for consideration in each business unit during job adaptation training. **Open Tracking**	**O**
		R4	Remind train drivers of the rules and precautions for responding to fires. Drawing on the experience of this accident to recall the decision-making process that must be respected with regard to requests from the emergency forces.	SNCF Passengers	In its response of February 2025, SNCF Voyageurs committed to integrating the two points of the recommendation into continuing training in 2026. **Open Tracking**	**O**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	*Status of actions*	Follow up
12/2024	Collision between a passenger train and an exceptional road convoy occurred on June 19, 2023 at level crossing no. 51 in Clerjus (Vosges) (47)	R1	Remind departmental prefects of the regulatory obligation for railway infrastructure managers to send them each year the updated list of level crossings presenting crossing difficulties. Ask them to check the existence of this annual update and, if it is not available, to request it from these managers .	D SR	Recommendation R1 has been taken into account: a letter was sent to the departmental prefects to remind them of the regulatory elements linked to updating the list of level crossing presenting crossing difficulties. These provisions are described in Article 4 of the decree of May 4, 2006 relating to the exceptional transport of goods, machinery or vehicles and vehicle combinations comprising more than one trailer.	C

Level crossing: Recommendations issued in 2024 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a passenger train and a heavy goods vehicle carrying part of a wind turbine mast, on June 19, 2023, at level crossing No. 51 in Clerjus (88).	R5	Study and implement, on X73500 series machines in service, the reinforcement of the fixings of the short-circuit bar installed in the driver's cab in order to help it stay in place in the event of a collision. Study the need for similar reinforcement for other portable equipment located in the cab (fire extinguishers, safety equipment, etc.).	SNCF Passengers	In a March 2025 response, SNCF Voyageurs committed to studying the feasibility of reinforcing the portable equipment installed in the driver's cab of the X73500s before the end of June 2026. At the end of the study, a decision will be made on possible implementation. Regarding the tablet, SNCF Voyageurs expressed its unfavorable opinion on imposing a single position in the driver's cab given the disparity in its use in practice. **Open Tracking**	**O**
		R6	For all types of motor vehicles, study and install on the driver's cab consoles a fixing device for the driver's professional telephone, on equipment operating on lines equipped with the GSM-GFU link, as well as for the tablet.	SNCF Passengers	In a response of March 2025, SNCF Voyageurs undertook to study the feasibility of a fixing device for the telephone on equipment operating on lines equipped with the GSMGFU link before the end of June 2026 without calling into question the studies in progress in response to the R2 recommendations of the Boulzicourt accident (08). **Open Tracking**	**O**

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a passenger train and a heavy goods vehicle carrying part of a wind turbine mast, on June 19, 2023, at level crossing No. 51 in Clerjus (88).	R7	Remind driving agents and traffic officers that the driver's assurance of the effective implementation of obstacle protection can only result from explicit confirmation from the CA; that this confirmation is therefore imperative; and that a simple acknowledgement of receipt of a request for obstacle protection does not in any way imply its implementation.	SNCF Passengers SNCF Network	SNCF Réseau responded in April 2024 by committing to completing two texts (DC1503 and DC3791) to specify that obstacle protection must be formally confirmed to the applicant, once its implementation has been completed. In its response of March 2025, SNCF Voyageurs committed to carrying out action during the 2026 training sessions to clarify the points covered by the recommendation. **Open Tracking**	O
		R8	Identify the most relevant frequency for training drivers in emergency procedures, in warnings to be given when an obstacle is encountered on the track and in assessing situations requiring the implementation of the obstacle coverage procedure, and include this frequency in their ongoing training schedule. During online support by local management, regularly train driving agents in emergency actions and the warnings to be given when an obstacle is present on the track, and to assess situations requiring the implementation of the obstacle coverage procedure.	SNCF Passengers	In its response in March 2025, SNCF Voyageurs committed to ensuring that a training scenario addressing obstacle protection would be covered in 2026 as part of the certification (three-year cycle) of drivers. **Open Tracking**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a passenger train and a heavy goods vehicle carrying part of a wind turbine mast, on June 19, 2023, at level crossing No. 51 in Clerjus (88).	R9	Establish a watch over the entire supervision of train drivers to ensure that any local variations of established rules do not degrade the level of safety guaranteed by the regulatory texts. Identify local initiatives modifying a prescribed rule as a hazard in the company's hazard register, determine and implement risk coverage measures to ensure that the level of safety does not deteriorate.	SNCF Passengers	In its response in March 2025, SNCF Voyageurs analyzed the situation and committed to sending a formal letter from the Safety Director reminding them that a local rule cannot override the applicable texts and must not, under any circumstances, degrade the level of safety. This letter will be sent to the Activity Directors before the end of June 2025. **Open Tracking**	O
		R10	Given the security issues, review the organization of, on the one hand, the establishment of the preparation document for the “D+1” meetings, and on the other hand, the validation of the causal analysis report, to ensure that an external perspective not locally involved in the context of the event can contribute to identifying avenues for improvement. For events involving the presence of an obstacle to train traffic, systematically assess, as part of the “D+1” meetings and the RACs, the measures taken by those involved from the perception of the presence of the obstacle until obtaining assurance that the obstacle is protected.	SNCF Network	SNCF Réseau responded in April 2025 by recalling the principles for triggering “D+1” meetings, specifying in particular the principle of the external perspective provided by the invited participants. **Open Tracking**	O

* C = Close ; O = Open

Level crossing: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by EPSF at the end of 2024	Code *
12/2024	the collision between a passenger train and a heavy goods vehicle carrying part of a wind turbine mast, on June 19, 2023, at level crossing No. 51 in Clerjus (88).	R11	Amend the "DPX Portal" application to ensure that any refusal of a first version of the feedback document by a safety expert is explicitly reported to the decision-maker in this application along with the second version proposed for approval, and reported in parallel to the safety expert's hierarchy. When the event in question has a high potential for seriousness or learning, or is likely to be of interest to management, implement a sharing of feedback with all management of the entity headed by the decision-maker.	SNCF Passengers	In its March 2025 response, SNCF Voyageurs committed to modifying the tool to send an automatic notification to the decision-maker in the event of a comment on the analysis by the safety expert. This development is planned to be put into production before the end of 2025. Regarding the sharing of feedback with management, information will be provided to territorial experts before the end of 2025. **Open Tracking**	O
		R12	Check without delay the suitability of level crossing no. 51 for the various standard profiles defined in Article 12 of the amended decree of 4 May 2006. - In the event of non-suitability, immediately send to the investigating department of the Vosges prefecture an update of the list of difficult-to-cross level crossings in the department incorporating level crossing no. 51.	SNCF Network	In response to this immediate recommendation, SNCF Réseau confirmed the inadequacy of the road profile of the level crossing considered to the different standard profiles defined in article 12 of the decree of May 4, 2006. Consequently, an update of the list of PNs with difficult crossing including PN 51 was sent to the Vosges prefecture on August 21, 2023. **Closed Follow-up**	C

* C = Close ; O = Open

Annexe 3 : table showing the monitoring of the implementation of the recommendations issued in the report on the fire that occurred on board a Eurotunnel freight shuttle on 17 January 2015

No.	Wording of the BEA-TT recommendation	Entity	Status of actions monitored by the CIG at the end of 2020	Code *
R2	**Continuous monitoring of improvements to fire detection systems** Conclude the ongoing consultation with various manufacturers seeking innovative systems to more quickly and reliably detect any fire outbreak, including when it is still confined to the cabin of the vehicle concerned. Where appropriate, establish a program for implementing the new systems thus identified. Establish a sustainable technical monitoring system to detect any avenues for progress in terms of speed and reliability of fire detection.	Eurotunnel	Eurotunnel finally responded to this request on 26 October 2023 and, after reviewing the additional information, the IGC considers that it does not allow for progress on this matter, with regard to the specific requirements of the recommendation or the specific requests of the IGC. The document provided by Eurotunnel is essentially the same as that which has already been reviewed on several occasions, and does not contain any details of any direct discussion between fire detection system manufacturers and Eurotunnel or its contractor, SETEC. In view of the inadequate responses provided over the years to requests from both the IGC and the national investigating bodies, which were based on Eurotunnel concluding activities that it itself had indicated in 2016 that it would undertake, the IGC considers that Eurotunnel has not sufficiently demonstrated that direct consultation with manufacturers has been carried out to satisfactorily close Recommendation 2. **Open tracking**	O

* C = Close ; O = Open

Annexe 4 : Table of the Technical Service for Ski Lifts and Guided Transport (STRMTG) presenting the monitoring of the implementation of the BEA-TT recommendations in the field of guided transport (Metro and RER)

Metro and RER: Recommendations issued in 2019

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Derailment of a metro train running on line 2 of the Paris metro 2/12/2016 at the Barbès-Rochechouart station in Paris (75)	R1	Submit to the French standardization commission UC9XB "Railway electrical applications - On-board electromechanical equipment", which monitors the relevant European and international work, a request intended for the IEC/TC 9 committee "Railway electrical equipment and systems" of the International Electrotechnical Commission aimed at extending to self-induced vibrations the scope and requirements of the IEC 61373 standard, adopted in France as the NF EN 61373 standard.	BNF	02/28/20	BNF indicated in its response that it had fully implemented this recommendation. Thus, as part of an international consultation on the scope of a revision of the IEC 61373 standard decided in November 2018, the competent French standardization committee, for which the BNF provides the secretariat, asked the IEC/TC 9 committee on June 13, 2019, to examine the possibility of including self-induced vibrations in the scope of the next edition of the international standard. This request explicitly referred to the aforementioned technical investigation report. A "MT 61373" working group has since been set up within the IEC/TC 9 committee to prepare the scheduled revision. It was led by a French expert, and three other experts were appointed by the same French committee to participate in the work. The T 61373 group met for the first time on December 19, 2019. It is now up to it to draft a revised standard and to examine the French proposal in this context, among other developments envisaged, before the draft it will have prepared is submitted for approval to the national members of the IEC/TC 9 committee. During this work, the BNF will continue to support initiatives aimed at ensuring that the request cited is properly taken into account. The publication of the new edition of the IEC 61373 standard was planned for October 2022, but this does not yet appear to have been done by early 2023.	EC
	R2	As with the use of air transport, study a change in regulations aimed in particular at making mandatory: ➢ the exchange of information between the owner, manufacturer, operator and maintainer of passenger rolling stock, or even the infrastructure manager, when one of them identifies a risk to safety from the rolling stock; ➢ the provision of a solution by the manufacturer.	DGITM	09/26/19	The DGITM provided the following responses: We share the view that information sharing is an important tool for improving safety. However, care must be taken to ensure that its implementation results in proportionate feedback that allows us to identify elements useful for preventing incidents and accidents. Consultation work with representatives of all stakeholders in guided public transport systems will therefore have to be carried out in this regard, in order to examine the revision of the current system and to determine the nature and volume of the feedback to be put in place. Such an update may be considered during a future revision of decree no. 2017-440 of March 30, 2017 relating to the safety of guided public transport, in particular to take into account feedback on its application since its entry into force on April 1, 2017. At the same time, the issue of improving current procedures for exchanging information will be addressed during feedback meetings organized by the STRMTG. A drafting proposal has been made as part of the future update of the STPG decree. Pending consultation and validation. 10/1/24: Consultation carried out Dec. 23 pending consultation and validation. Proposal for closure	C

Annexe 5 : Table of the Technical Service for Ski Lifts and Guided Transport (STRMTG) presenting the monitoring of the implementation of the BEA-TT recommendations in the field of guided transport (trams and tram-trains)

Trams and tram-trains: Recommendations issued in 2020

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Collision between a tram on line T7 and a coach 02/27/2019 in Paray-Vieille-Poste (91)	R4	Encourage their members to provide drivers of public transport vehicles powered by compressed natural gas with training on the specific risks associated with this type of engine, and on the behavior to adopt in the event of an incident or accident on the road.	UTP & GART	07/16/20	The UTP indicated that it had taken note of the BEA-TT recommendation and wanted to raise awareness among its members.	EC
Pedestrian hit by tram Quay of Chartrons in Bordeaux (33) 02/22/2019	R2	Establish, in coordination with the General Directorate of Transport and Maritime Infrastructure (DGITM) and the profession, an instruction standardizing the fixed horizontal and/or vertical signage of pedestrian crossings on tramway sites, informing users of the danger and notifying them that they do not have priority.	DSR	12/23/2020	WG launched in December 2020 (15 meetings held, last meeting 04/03/2023). Study concerning the signaling of pedestrian crossings on tramway platforms launched by STRMTG/CEREMA (cch validated by DSR by email dated 03/11/2020) Experiments and observations carried out on 4 agglomerations, at the end of which a horizontal marking was selected. Summer 2024: survey questionnaire on the possible reinforcement of pedestrian crossings by vertical signage. Arbitration in progress on a horizontal signaling proposal.	EC

Trams and tram-trains: Recommendations issued in 2021

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Collision by catching up between two trams 11 , 2019 in Issy-les-Moulineaux (92)	R1	Make improvements to operating instructions related to the following topics: - Confirm night-time entries to the SMR via the East access during the critical end-of-rush hour period. - Align the 200-meter distance between trams with the visibility available between the Jacques-Henri Lartigue and Les Moulineaux stations . The analysis could usefully be extended to the entire RATP tram network. - Specify the actions to be taken by the regulators in the event of a lack of collation, and consider potential failure cases including those of the RST and the HMI.	RATP	12/05/21	The RATP indicated the following elements in its response: - the new organization was ratified with the new schedule implemented from 01/10/2020 on T2. - RATP is studying the adequacy of speeds in relation to visibility distance and static masks, and is checking the relevance of speed indication signs. The definition and implementation of possible corrective actions is planned for the end of 2021. The analysis will be extended to the other lines of the RATP tramway network by the end of 2021. - an update of the regulations was carried out in November 2020 to clarify the rules for collating messages related to safety and traffic management. In the event of a potential breakdown, including that of the RST or the HMI, any anomaly must be transmitted to the regulator by other means of communication available to the driver.	EC
	R4	Implement actions to assess and then improve the reliability of the ground-train radio, and ensure that of the HMI, given that these are the means of rapid alert transmission by the PCL to T2 drivers.	RATP	12/05/21	The RATP indicated the following elements in its response: The reliability of the ground-train radio is monitored as part of equipment maintenance. A quarterly report allows for verification of the level of reports and removals, and for triggering actions in the event of deviation. The reliability of the HMI is also monitored as part of equipment maintenance. No downtime has been observed on this equipment. The SAE On-Board Post project, which will soon be deployed on the T2 line equipment, will improve communication between PCL and the train via the screen installed in the cabin. Developments to the on-board operating assistance system (SAE) to improve communication between the PCL and drivers: Short-term deployment on line T2, and as part of the new SAE on T1 in 2026	EC

Trams and tram-trains: Recommendations issued in 2022

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Technical investigation into the collision of two trams occurred on December 2, 2019 in Montpellier (34)	R7	As part of a new market for the acquisition of tramway rolling stock, define the level of safety associated with the anti-skid function and define the braking performance objectives in degraded grip, drawing inspiration from current best practice.	Alstom	09/30/22	Process in progress, meeting scheduled between Alstom and STRMTG on 04/27/2023 The methodology presented at the meeting between Alstom and STRMTG on 27/04/2023 has been incorporated into the Nantes project. Alstom plans to respond to the BEA-TT in this regard.	EC

Trams and tram-trains : Recommendations issued in 2025

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Technical investigation into the collision between two trams that occurred on January 11, 2025 in Strasbourg	Immediate recommendation	As part of a new market for the acquisition of tramway rolling stock, define the level of safety associated with the anti-skid function and define the braking performance objectives in degraded grip, drawing inspiration from current best practice.	CTS		The CTS responded to the BEA-TT by email on 02/11/2025 but the BEA-TT requested an official letter to be sent within three months. Official CTS letter received on 04/30/2025.	EC

Annexe 6 : Table of the Technical Service for Ski Lifts and Guided Transport (STRMTG) presenting the monitoring of the implementation of the BEA-TT recommendations in the field of guided transport (secondary, tourist and rack railways)

Secondary, tourist and rack railways: Recommendations issued in 2022

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Train derailment on 01/25/2021 at Fontpédrouse (66) on the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol	R1	In driver training, emphasize the specific risks of this line (steep slopes, lubrication issues, weather conditions, etc.) and include this in the educational response. Strengthen driving reflexes, adapted to these risks, in particular driving gestures in the event of a brake jam.	SNCF Passengers	03/14/23	SNCF Voyageurs provided the following responses: The educational response has been adapted and highlights the different risks on this line. Training for drivers operating on this line has already begun with these new elements. The completion of training for drivers is carried out during support provided by the management line. However, this verification could only be carried out through questioning in almost all cases, since there have been very few situations exposing the risk of a breakdown since the new training courses.	C
	R2	On the Z150s, study lowering the threshold for automatic emergency braking (currently 80 km/h) by adapting it to the maximum authorized speeds of the line. Request for the rolling stock that will replace the Z150s on the Yellow Train in the future, a speed limit threshold triggering emergency braking at the maximum authorized speeds of the line.	SNCF Passengers	03/14/23	SNCF Voyageurs provided the following responses: Technically, lowering the speed threshold on Z150 equipment is feasible. The feasibility study was therefore forwarded to a competent company. The company provided an initial response, which was not accepted, and the process for this service is still ongoing. We [the BEA-TT] remain at your disposal if you would like to consult the documents. Furthermore, the specifications for future equipment have been amended to take into account the recommendation on lowering the speed limit threshold.	C

Secondary, tourist and rack railways: Recommendations issued in 2022 - continued

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Train derailment on 01/25/2021 at Fontpédrouse (66) on the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol	R3	Continue improving the rail lubrication system using the Z100s, by completing the installation of the flange lubricators.	SNCF Passengers	03/14/23	SNCF Voyageurs provided the following responses: Initially, a study was initiated with a view to modifying the current lubrication system (GRR type) into a GRB system coupled with the 3rd rail system. The various tests on the Z104 have demonstrated that this solution was not reliable and consequently the Material Engineering Centre (CIM) has proposed two possible alternatives. - Solution 1: Lubrication of the wheel-rail contact with the stick type system and 3rd rail lubrication with the current modified system (removal of the GRR part) - Solution 2: Implementation of a complete GRB system that would operate independently of the 3rd rail lubrication system (current system modified). The technical and economic study carried out by the CIM reveals that solution no. 2 would be the most relevant for this type of equipment. The file is being finalized in order to be able to present the draft modification (OM) to the DGTER and the BU TER Occitanie by July. The outcome of the decision will be forwarded to the Passenger Security Department along with the schedule of changes, if applicable.	EC
	R4	Improve the quality of implementation of existing devices for monitoring the condition of rail lubrication on the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol and adapt them if necessary . - Identify which monitoring tour must check the rail lubrication condition. - Improve detection of excess lubrication during tours. - Improve the traceability of tour monitoring in order to analyze the evolution of lubrication by rolling stock. - Decide on the application of 4-week monitoring, in light of the basic frequency given by the maintenance reference for 1-meter gauge tracks.	SNCF Network	03/16/23	SNCF Réseau provided the following responses: The rewriting of the MT02070 reference document “Monitoring of rails laid on main tracks” will redefine and update the lubrication qualification criteria; the notion of acceptable will be removed because it is subject to confusion between what is close to “excessive lubrication” and what is close to “insufficient lubrication”. The method of assessing the presence of grease on the rolling fillet using the handkerchief method will be specified. The application of I'lN038l8 "Maintenance of 1 meter gauge tracks" states in its article 5.2.8 a frequency of 4 weeks for monitoring the lubrication control points. On the line connecting Villefranche - Vernet-les-Bains to Latour-de-Carol, the maintenance references of the | nfrapôle Languedoc INFP LR MT00181 and lNFP LR MT000ó based on these two national references will be modified accordingly.	EC

Secondary, tourist and rack railways: Recommendations issued in 2022 - continued

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Train derailment on 01/25/2021 at Fontpédrouse (66) on the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol	R5	On the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol, conduct a study on the transposition of existing rail cleaning rules on the National Rail Network, whether in preventive or corrective maintenance in order to improve cleaning.	SNCF Network	03/16/23	SNCF Réseau provided the following responses: SNCF Réseau is initiating a feasibility study aimed at implementing a mechanized grease cleaning system adaptable to metric gauge.	EC
	R6	On the line connecting Villefranche – Vernet-les-Bains to Latour-de-Carol, improve the process of reporting and handling jams, and in particular: - Systematize the reporting of information by drivers to line managers in the event of jamming and slippage, who in turn transmit it to the infrastructure and rolling stock maintainers. - Ensure that the definition of "significant" jams is correctly understood by drivers and line managers and improve their handling. Specify what actions are expected of maintainers once informed. - Strengthen communication between the various operating, track maintenance and rolling stock maintenance entities. - Ensure that these new measures are taken into account in a reliable and auditable manner.	SNCF Network and SNCF Passengers	03/16/23	SNCF Réseau provided the following responses: The weekly teleconference between the operating, track maintenance and rolling stock maintenance entities of the line connecting Villefranche-Vernet-les-Bains to Latour-de-Carol will systematically include a lubrication and major brake issues section in its agenda. A decision report will be systematically produced at the end of these teleconferences to track the actions decided. This will strengthen communication between these entities in a reliable and auditable manner and specify maintenance measures where appropriate. A joint safety day will be offered to the various entities concerned by the line to remind, among other things, the concepts of rail lubrication and major jams. For SNCF Réseau, a process of supporting the new lubrication quotes included in the future version of MT02070 will be provided by Infrapôle . SNCF Voyageurs provided the following responses: The notion of significant blocking is integrated into the educational response in line with recommendation number 1. Several avenues of reflection are underway in order to respond to these 3 points in a synthetic format and allowing for better traceability. They are based on a benchmark carried out with different units. For example, a form called "DEDA " for lack of adhesion which could help drivers and be forwarded to the line manager. The decision on the arrangements to be put in place will be made by July 2023.	EC

Secondary, tourist and rack railways: Recommendations issued in 2023

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Two vehicles derail and collide with a steam locomotive on the Coni'fer tourist train 06/04/2022 in La Cluse-et-Mijoux (25)	R5	Coni'fer operating staff : ➢ Carry out a complete analysis of an accident when it occurs, before resuming operations. ➢ Improve communication to association agents about the accident, the analysis carried out and the corrections to be made. ➢ Ensure that the most comprehensive technical documentation possible is provided when purchasing or lending a new vehicle (construction plans, calculation notes, previous use of the equipment, history of maintenance actions). ➢ Make the RSE, the RT CFT and all technical documentation relating to the system, particularly rolling stock, accessible to agents (digital and paper formats). ➢ Any agent authorized to perform a security function must certify that they have read the decision on their authorization, the applicable rules and the technical documentation. ➢ Carry out in-depth training reminders for agents in order to improve knowledge retention (example of the complete brake test procedure, the maximum tolerated proportion of unbraked vehicles compatible with regulations, the presence of emergency braking levers, etc.). Track the completion and attendance of all safety-related training. Ensure that participants have understood the important concepts. ➢ Regularly check the correct and proper application of safety procedures (example of refoulement). ➢ Prohibit gravity maneuvers and ensure that they are no longer carried out. ➢ Distinguish the function of operations manager from that of safety referent, by assigning it to two different people	CFTPV Association of Coni'fer		The operator indicated in its response published on the BEA-TT website that it had put in place several measures to respond to recommendation R5. A follow-up meeting took place on 01/30/2024 between the operator and the STRMTG, to verify that the implementation of the action plan is continuing, in accordance with what was announced.	EC
	R6	In the Technical Reference for Tourist Railways, encourage the distinction between the role of operations manager and that of safety officer by assigning it as much as possible to two different people, thus distributing the issues and establishing different responsibilities.	STRMTG	1/09/23	Corresponding provisions have been included in the draft revision of the Technical Reference Framework for Tourist Railways drawn up by the STRMTG. A final review of the draft is currently underway with the profession. Validation of the new version of the reference framework is planned for June 2024.	C

Secondary, tourist and rack railways: Recommendations issued in 2023 - continued

Two vehicles derail and collide with a steam locomotive on the Coni'fer tourist train 06/04/2022 in La Cluse-et-Mijoux (25)	R7	Make the entry into service of a new vehicle on a tourist railway network conditional on the transmission of the most comprehensive technical documentation possible (original or established on site), compliance with the RT CFT, in particular the verification of braking performance and a training certificate for agents authorized to perform safety functions on this rolling stock.	STRMTG	1/09/23	Corresponding provisions have been included in the draft revision of the Technical Reference Framework for Tourist Railways drawn up by the STRMTG. A final review of the draft is currently underway with the profession. Validation of the new version of the reference framework is planned for June 2024.	C

Annexe 7 : Table of the Technical Service for Ski Lifts and Guided Transport (STRMTG) presenting the monitoring of the implementation of the BEA-TT recommendations in the ski lift field

Ski lifts: Recommendations issued in 2018

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Immobilization and late evacuation of the “Panorama Mont Blanc” cable car on September 8, 2016 in Chamonix	R4	Establish the minimum list of risks to be taken into account in safety studies for integrated recovery cable cars, and make it available to design offices and operators. Require, in these safety studies, the consideration of provisions	STRMTG	11/30/18	The principles of the response to the recommendation were defined during the professional meeting of 11/13/2018 and were given in the STRMTG response to the BEA-TT dated 11/30/2018. For the "minimum list of scenarios" section, a list was drawn up by the STRMTG based on the integrated recovery files already validated and feedback from cases involving cable car immobilization. It is currently being communicated on a case-by-case basis to professionals concerned by cable car projects with integrated recovery. It was decided in early 2023 to integrate the topic of integrated recovery into the European standard EN1909 (evacuation/recovery). The STRMTG is the facilitator of the European working group, which began work on developing the new evacuation/recovery standard at the end of 2023. Several meetings are planned between the end of 2023 and the end of 2024. The revised standard will not be published before 2025 at the earliest. The STRMTG has already proposed integrating a minimum list of risks to be taken into account into the standard. Regarding the final provisions, the DGITM has been contacted and has contacted the Ministry of the Interior (DGSCGC). Two meetings have already taken place between our services, and the DGITM and the STRMTG are currently preparing draft texts to create the legal framework within which these final plans will be included. These drafts will then be submitted for consultation with the DGSCGC on the one hand and professionals, mainly operators, on the other.	EC

Ski lifts: Recommendations issued in 2018 - continued

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Immobilization and late evacuation of the “Panorama Mont Blanc” cable car on September 8, 2016 in Chamonix	R5	Implement a plan to sustainably strengthen the management of safety in the operation of the Panoramic Mont-Blanc by : - ensuring the completeness of safety documentation, and the correct information of personnel and external contacts who must apply it; - ensuring traceability and monitoring of operating faults, as well as the implementation of actions taken to remedy them, - ensuring exhaustive traceability of incidents and accidents to consolidate feedback; - ensuring a plan for controlling service provider interventions during operating periods.	CMB	07/12/18	The CMB has implemented a safety management system in accordance with Article R342-12 of the Tourism Code. It has chosen to have this system audited by a third party in order to ensure a continuous improvement process. However, and without waiting for the results of these audits, it has initiated, for the specific case of the Panoramic Mont-Blanc cable car, a specific analysis process aimed at strengthening for this device: - technical and safety documentation (instructions, procedures). - traceability of events and interventions as well as feedback. - control of service provider interventions. The CMB has indicated that it wishes to limit such interventions as much as possible during operating periods.	EC

Ski lifts: Recommendations issued in 2024

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Investigation into the collision of two cabins with stations on the La Saulire cable car which occurred on September 29, 2021 in Courchevel (Savoie)	R1	In order to check and improve the management of the interfaces between the linings and the braking system, carry out the following actions on cable car and funicular installations: - With the profession, set up a process for verifying the suitability of brake linings with the corresponding installation when changing the lining reference. - Have operators check the risk of reaching a mechanical stop on the brake calipers (identify if stop, check the appropriate settings, cover the risk if necessary). - Finally, when modifying or replacing a braking system on an existing installation, favor the installation of a pad wear detection device.	STRMTG	04/10/24	The STRMTG plans to set up a working group with the profession to: - define a qualification process to be implemented for any new type of pad fitted to a safety brake on a cable car (or funicular) if this type is different from that previously installed; - to carry out an analysis to identify among the different designs implemented in the French fleet those which would present a possible risk of the safety brake hitting the stop and, if necessary, eliminate this risk; - to carry out an analysis and an inventory concerning the feasibility of installing a pad wear detection device on existing brakes. An internal specification to clarify the organization of the working group was drawn up at the beginning of 2025 and discussions with the profession will be launched in the summer of 2025.	EC
	R2	For cable car projects, require the recording of the installation speed, date and time, distance traveled or location, status (open/closed) of brakes F1 and F2, and any other relevant parameters to be determined in addition to faults and alarms – even when they have not yet been acknowledged.	STRMTG	04/10/24	On 28/3/2025, the STRMTG brought together certain electrical manufacturers and representatives of French ski areas to discuss the provisions to be included in the RM1 and RM2 guides in order to provide the desired information in the future. This preliminary work will be finalized in 2025.	EC

Ski lifts: Recommendations issued in 2024 – continued

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Investigation into the collision of two cabins with stations on the La Saulire cable car which occurred on September 29, 2021 in Courchevel (Savoie)	R3	In order to check and improve the management of the interfaces between the linings and the braking system, carry out the following actions on cable car and funicular installations: - With the profession, set up a process for verifying the suitability of brake linings with the corresponding installation when changing the lining reference. - Have operators check the risk of reaching a mechanical stop on the brake calipers (identify if stop, check the appropriate settings, cover the risk if necessary). - Finally, when modifying or replacing a braking system on an existing installation, favor the installation of a pad wear detection device.	STRMTG	04/10/24	The STRMTG plans to set up a working group with the profession to work on redefining the roles and responsibilities of those involved in the management of annual inspection tests, as well as on the framework of the operational arrangements to be planned. An internal specification to clarify the organization of the working group was drawn up at the beginning of 2025 and discussions with the profession will be launched in the summer of 2025.	EC
	R4	As part of the Safety Management System, improve the traceability of documents, products and actions carried out throughout the operation and maintenance of the ski lifts under its responsibility	SV3	10/17/24	S3V indicated that it had established an action plan to take this recommendation into account, integrating two areas of work: - consideration of the purchasing process, traceability, provision of safety components in the context of maintenance and modifications, - management and provision to operational teams of up-to-date instructions for the various park installations.	EC

Ski lifts: Recommendations issued in 2024 – continued

recommendation closed:	***C***
current recommendation:	***EC***
continuation unknown:	***NC***

Title of the survey	No.	Wording of the recommendation	Entity	Response date	Follow-up and progress	Code
Investigation into the collision of two cabins with stations on the La Saulire cable car which occurred on September 29, 2021 in Courchevel (Savoie)	R5	Improve the training of agents, particularly regarding good knowledge of the installations and their limits; and improve the analysis of incidents (detection of precursors, perception of abnormal situations, depth of analysis, evaluation of corrective actions).	SV3	10/17/24	S3V indicated that it had established an action plan to take this recommendation into account, incorporating three actions: - strengthening the technical skills of teams - strengthening of tutoring concerning the specificities of the installations - improvement of the management of feedback relating to operating/maintenance incidents	EC

Annexe 8 : Table showing the monitoring of the implementation of the recommendations issued by the BEA - TT in the field of road transport

Recommendations issued in 2015

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
09/2015	A motorcyclist fell between two lines of vehicles on April 8, 2014, on the A6 motorway in Savigny-sur-Orge (91)	R2	Promote within the European Union and the United Nations Economic Commission for Europe (UNECE) the fitting of goods transport vehicles and their trailers with sufficient side protection to prevent vulnerable road users who have fallen to the ground from sliding under their wheels under all circumstances.	DGEC	A study was conducted to propose an evolution of Regulation No. 73 with a view to defining new rules for the installation and resistance of side protections with adapted deformation parameters. Proposals have been made and discussions are underway with all stakeholders. The issue of compliance verification during roadside inspections appears to be a blocking element. This issue is still ongoing.	In progress

Road transport: Recommendations issued in 2022

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
08/2022	Pedestrian hit by heavy goods vehicle on May 4, 2021 in Clichy (92)	R1	To initiate a study on the performance of vulnerable user detection systems intended to equip heavy vehicles, covered by UNECE regulations No. 151 and 159, with a view in particular to defining a protocol for assessing the proportion of false alarms and then applying this protocol to a panel of marketed systems	DGEC DSR	In response to this joint recommendation, the DSR and the DGEC commissioned a study from UTAC, within the framework of the UTAC 2023-2024 agreement. The report of this study on the evaluation of false positives VRU VS PL (for vulnerable road users and heavy goods vehicles) has been received and recommends an amendment to UNECE regulations R151 and R159 relating to VRU detection systems. The DGEC may propose an amendment to these regulations to WP29, the UNECE group responsible for monitoring technical regulations.	Fence

Road transport: Recommendations issued in 2023

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
04/2023	Collision between a coach and a heavy goods vehicle on May 27, 2021 on the A62 motorway in Mas -d'Agenais (47)	R1	Introduce into UNECE Regulation R131 minimum performance requirements for the AEBS system in conditions that are as close as possible to real-life configurations, in both urban and inter-urban areas . Propose regulations requiring manufacturers to inform users about the limits of use of installed systems.	DGEC	From the next WP29 rapporteur group, responsible for this regulation, my services will propose, in conjunction with the technical services with expertise in this field and notified to the UNECE for regulation R131, to work on an evolution of the test conditions. In light of technological progress and tests carried out in other bodies, in order to ensure better representation of the conditions encountered in real situations, attention will be paid in particular to the concept of offset between the vehicle and the target to be detected. The subject has been proposed and is currently being examined by UN bodies.	In progress
		R2	Continue and strengthen actions to inform motorway users about the so-called “safety corridor” rule.	DSR	*No response letter from the DSR sent to the BEA-TT following the sending of the report* An experiment with information signage on the safety corridor rule took place until April 2025 (decree of April 5, 2022). The decree of April 4, 2025 integrated this new signage into the permanent framework: signs SR53a, SR53b, SR53c. An awareness campaign on the safety of road workers was launched on May 15, 2024. The safety corridor rule is recalled at the end of the film “Protecting Lives” by Jean-Xavier de Lestrade . In addition, measure 15 of the CISR 2023 aims to study the technical, legal and organizational feasibility of a new system that would ultimately enable the detection and sanctioning of non-compliance with the safety corridor. The DSR and the DGITM are working on evolving the regulations, with the aim of enabling automated control and encouraging users to slow down when approaching emergency vehicles.	Fence

Road transport: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
04/2023	Collision between a coach and a heavy goods vehicle on May 27, 2021 on the A62 motorway in Mas -d'Agenais (47)	R3	Enter into an agreement with navigation service providers so that road safety events originating from operators are the subject of real-time information and alerts by private navigation service providers. These alerts must be notified to the driver separately from alerts issued by other users. A second visual and audible alert on the navigation interface must be sent to the driver when approaching the event area.	DGITM	Awaiting response for 2023	In progress

Road transport: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
12/2023	Accident involving a minibus on July 12, 2022, rue de Vaugirard in Paris	R2	Provide and provide in existing training courses for driving public transport vehicles (driving licence, FIMO, FCO), specific modules on driving electric vehicles and the risks inherent in category A or moderate regenerative braking with the accelerator pedal. Generally speaking, it is important to ensure that drivers are trained in braking systems in a theoretical manner and then in a practical manner through real braking tests applied to the type of vehicles they will potentially be driving.	AFTRAL	AFTRAL proposes to expand its training materials to include a more specific and detailed section on regenerative braking. This will allow trainers to raise driver awareness about the use of this device, particularly as part of preventive driving, which helps to optimize the range of electric vehicles. Indeed, driver anticipation allows for optimal use of regenerative braking, just like the retarder, to reduce the use of the service brake system without avoiding it. In the event of a very sharp slowdown or even a complete stop of the vehicle, the service brake remains the device to use. Drivers are not always, or even rarely, aware of the type of vehicles they will be driving in the company. These theoretical contributions will allow future drivers to be aware of driving this type of vehicle, before taking charge of their assigned vehicle in the company. A specific offer that can be implemented outside of regulated and in-house training could also be developed in the second half of 2024.	In progress

Road transport: Recommendations issued in 2023 – continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
12/2023	Collision between a HGV and a minibus on September 2, 2021 on the A75 motorway in Saint -Poncy (15)	R1	Establish specific national instructions for the use of minibuses (or even personal vehicles) in order to remind the various organizers (collective reception of minors – ACM, associations in particular) using them to transport a group of people of the associated responsibilities and the safety and prevention rules to be taken for the preparation and carrying out of these trips. Implement, for the attention of the aforementioned organizers and their drivers, a large-scale awareness campaign on the risks of hypovigilance and lack of attention when driving, including the risks when traveling on the motorway and linked in particular to lack of sleep and the use of cruise control.	DJEPVA	Response received on 03/06/2024 https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/saint-poncy_djepva.pdf	In progress
		R2	Supplement the Highway Code to make explicit the obligation to use hazard lights when the driver is forced to travel at a reduced speed due to a ramp configuration, with a threshold characterizing a slow speed on the motorway, as practiced for example in Spain.	DSR	The opportunity analysis allows for consideration of a discussion with the DGITM and the DGEC on a modification of the highway code.	In progress
		R4	Update and complete the doctrinal elements on steep road sections, by continuing the process of revising SETRA note no. 21, so that these sections are subject to monitoring, taking into account accident and incident studies , and better reporting of the risk of collision with slow-moving vehicles. The discussions could be conducted in the same way as the guide on the development of steep slopes and allow for the emergence of intermediate solutions to address this risk in the absence of VSVL.	DGITM	Response received on https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/saint-poncy_dgitm.pdf	In progress

Road transport: Recommendations issued in 2024

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
10/2024	Fire involving two electric buses in Paris on April 4 and 29, 2022	R1	Anticipate the measures provided for in series of amendments No. 3 to Regulation No. 100 regarding driver warnings of faults likely to lead to a fire.	BLUEBUS	BLUEBUS response received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/bluebus_reponse_au_bea-tt_avril_2025.pdf)	EC
		R2	Initiate discussions with the UN aimed at revising Regulation No. 100 to adapt the requirements and tests to all types of technologies, particularly in terms of fire resistance.	DGEC	DGEC response received in February 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/reponse_dgec_incendies_bus_ratp.pdf)	EC
		R3	Ensure that the SRSEE have fire resistance performance comparable to that required only for those containing liquid electrolytes and, where appropriate, provide appropriate operating measures.	BLUEBUS	BLUEBUS response received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/bluebus_reponse_au_bea-tt_avril_2025.pdf)	EC
		R4	Reinforce the thermal protection on the roof, in order to delay or even prevent its melting and thus allow complete and safe evacuation of passengers.	BLUEBUS	BLUEBUS response received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/bluebus_reponse_au_bea-tt_avril_2025.pdf)	EC
		R5	Develop and implement a technical solution to limit the projection of molten metal during fires, particularly at vehicle exits.	BLUEBUS	BLUEBUS response received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/bluebus_reponse_au_bea-tt_avril_2025.pdf)	EC
		R6	Ensure national management of the distribution of research into firefighting involving new technology vehicles (electric, hydrogen, compressed gas, etc.)	DGSCGC		EC

Road transport: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
10/2024	Fire involving two electric buses in Paris on April 4 and 29, 2022	R7	Initiate discussions with the EU aimed at imposing within a reasonable timeframe the application of Regulation 2015/758 to all categories of motor vehicles.	DGEC	DGEC response received in February 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/reponse_dgec_incendies_bus_ratp.pdf)	EC

Road transport: Recommendations issued in 2024 - continued

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
11/2024	Electric vehicle accident on 11/12/2021 on Avenue d'Ivry in Paris	R1	Propose to the UNECE bodies an increase in the duration and frequency of event data recording, as well as an extension of the minimum recording ranges preceding an impact; Propose integrating, in addition to the so-called safety systems in accordance with EU regulation 2019/2144, system parameters that may have an effect on the vehicle's control components.	DGEC	Response from the DGEC received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/beatt_2021_14_reponses_dgec.pdf)	EC
		R2	Ensure effective and complete recording of parameter data according to their periodicity; for those with continuous values, set the frequency to 10 Hz.	TESLA	TESLA response received in February 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/beatt_2021_14_reponsestesla.pdf)	EC
		R3	Do not make it possible to cancel AEBS activation by pressing the accelerator.	TESLA	TESLA response received in February 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/beatt_2021_14_reponsestesla.pdf)	EC
		R4	Propose to the UNECE ad hoc working group an amendment to Regulation No. 152 aimed at removing the possibility for the driver to interrupt automatic emergency braking of the AEBS.	DGEC	Response from the DGEC received in April 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/beatt_2021_14_reponses_dgec.pdf)	EC
		R5	Consider providing additional information to that already present in the manufacturer's manual on the vehicle's acceleration capabilities and on the operation, performance and limitations of the main driving aids that affect the vehicle's controls.	TESLA	TESLA response received in February 2025 (https://www.bea-tt.developpement-durable.gouv.fr/IMG/pdf/beatt_2021_14_reponsestesla.pdf)	EC

Annexe 9 : Table monitoring the implementation of recommendations issued by the BEA-TT in the field of river transport

River: Recommendations issued in 2022

Report date	Title of the survey	No.	Wording of the BEA-TT recommendation	RECIPIENT	Status of actions	Follow up
12/2022	Collision of two bridges by the ship ANDRE MICHEL1 on October 2, 2021 on the Rhône diversion canal in Donzère (26)	R1	Bring to the European framework the approach aimed at ensuring that the provisions applicable to vessels operating on the Rhine (art 25.01 ES-TRIN) are extended, for the most relevant, to vessels operating in inland waters and, moreover, are supplemented so as to include certain of the specific rules for height-adjustable wheelhouses which apply to boats.	DGITM	It had been proposed that France submit a request to amend the chapter relating to sea-going vessels in the work programme of the European committee for the development of navigation standards for the 2024-2028 programme: this proposal was made but was not favourably received by the European authorities.	To close
		R2	Study the possibilities of improving navigation safety in the area of the two Donzère bridges, during poor visibility conditions, by means of signaling and beaconing (alignment of lights or other device to mark the direction of the channel, spars topped with radar reflectors and lights, bridge lighting, reflective materials).	CNR	An initial discussion with the navigators took place within the framework of the safety subcommittees. The signage and markings currently in place are satisfactory for the navigators. Once the conclusion of the Promofluvia study has been delivered, a more in-depth consultation will take place with the navigators with the aim of establishing a coherent signage scheme if the study so requires. The navigation study (R3) is a prerequisite for defining the signage improvements that could be implemented.	In progress
		R3	Carry out, in conjunction with Voies Navigables de France and the departmental territorial directorate of the Rhône department (both responsible for supporting prefects in matters of navigation policing), a trajectory study, in order to ensure that the reversal of the direction of navigation in the area of the two Donzère bridges remains relevant in view of the current and the strong wind on this section.	CNR	The history of the current navigation pattern could be reconstructed (search for contextual elements that led to it). Simulations in different navigation conditions with the Promofluvia simulator are planned for the second quarter of 2025. The conclusions will then be shared in a sub-committee with the navigators (R2) to possibly develop the navigation plan based on the conclusion of the simulation.	In progress

Bureau d'Enquêtes sur les Accidents de Transport Terrestre

Grande Arche - Paroi Sud
92055 La Défense cedex
Téléphone : 01 40 81 21 83
bea-tt@developpement-durable.gouv.fr
www.bea-tt.developpement-durable.gouv.fr