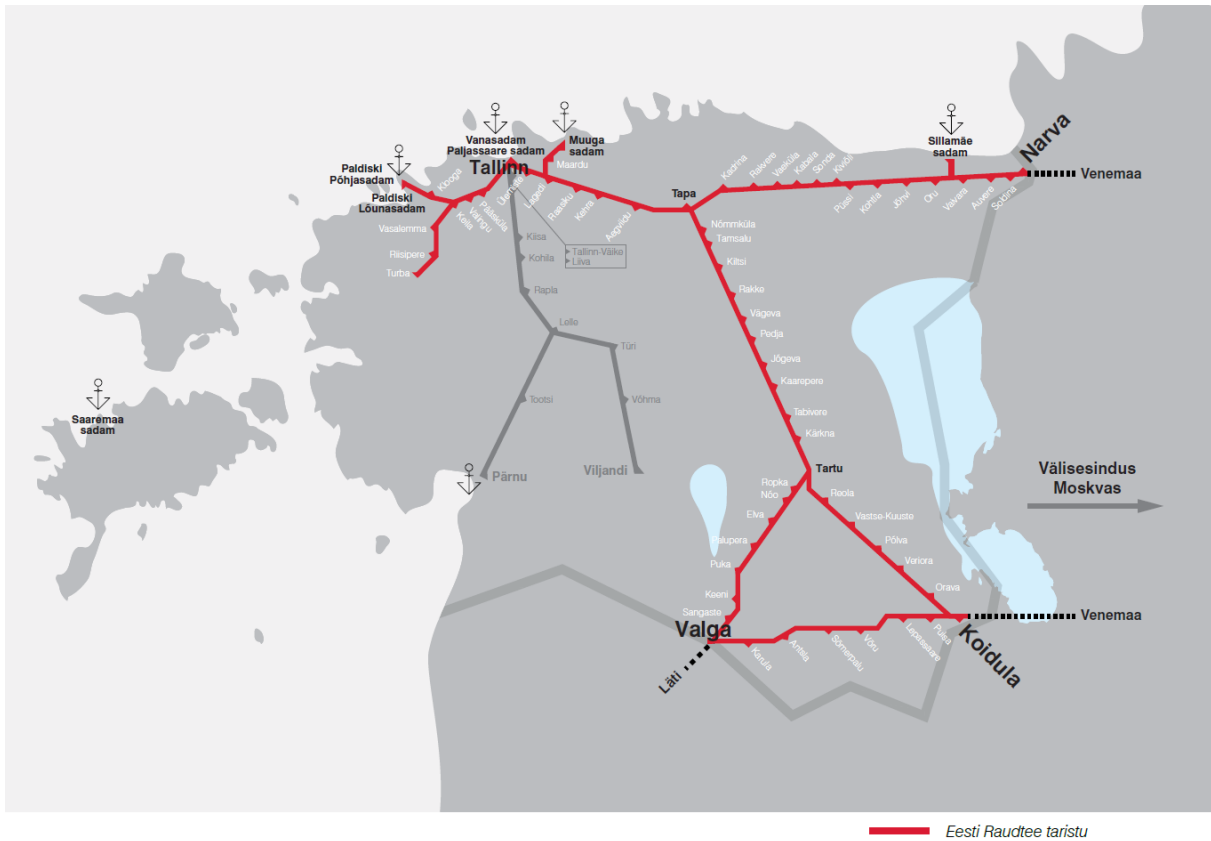




REPUBLIC OF ESTONIA
SAFETY INVESTIGATION BUREAU

Report of the railway accidents
investigated in 2023

Tallinn 2024



Public Railways in the Republic of Estonia

(Source: Estonian Railways Ltd)



Preface to the report

Safety investigations in Estonia have been conducted since 31 March 2004 when the legal provisions stipulated in the "Railway Safety Directive" 2004/49/EC came into force within the Railways Act approved by the Parliament. At that time the safety investigation unit of railway accidents started work at the Crisis Regulation Department of the Ministry of Economic Affairs and Communications. Before that, an investigation unit for aviation accidents had already been operating at the Crisis Regulation Department for several years. Later, an investigation unit for maritime accidents started work at the same department. With this, a single structure for safety investigations of the three transport areas was created in Estonia. Legally safety investigations were only loosely connected to the core function of the Crisis Regulation Department.

Today, the duties of safety investigation agency are performed by the Safety Investigation Bureau (ESIB). Safety investigation units of maritime, aviation and railway accidents and incidents were separated from the Crisis Regulation Department on 1 January 2012 and merged with the Safety Investigation Bureau that had been newly created for this purpose.

The latest bigger changes in the organisation of safety investigations of railway accidents and incidents came when the provisions of the European Parliament and Council Directive (EC) 2016/798 were applied to the Estonian judicial area. These came into force with the Railways Act on 31 October 2020. In Estonia, occurrences considered affecting railway safety are accident, serious accident, and incident which is pursuant to the classification of occurrences affecting railway safety in the Railway Safety Directive. Safety investigations are conducted pursuant to national legislation in accordance with the Safety Directive. Only the Safety Investigation Bureau is competent to conduct safety investigations. Safety investigations of railway accidents and incidents are conducted independently of any other investigation of the same occurrence.

During the year under review the safety investigation of the serious accident that took place on 11 March 2022 at the Ropka level crossing was completed. The annual report discusses the current status of processing the recommendations presented in the investigation report. During the year the ESIB kept account of and analysed all other accidents and incidents they were made aware of. No new safety investigations were launched.



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1. Introduction to the Investigation Body

1.1 Legal basis

The "Railway Safety Directive" 2004/49/EC of the European Parliament and the Council was applied to the legal space of Estonia on 31 March 2004 when the new version of the Railways Act came into force. From this date, a railway accident investigation unit was established in the Crisis Regulation Department of the Ministry of Economic Affairs and Communications. The task of the investigation unit was organising independent safety investigations of railway traffic accidents and incidents.

A single multimodal structural unit - the Estonian Safety Investigation Bureau (ESIB) – was formed on 1 January 2012 when investigation units for maritime, aviation and railway accidents operating in the Crisis Management Department of the Ministry of Economic Affairs and Communications were merged. Legally, the formation of the ESIB was confirmed by amendments to the Aviation Act, Maritime Safety Act and Railways Act. Legal basis for the Safety Investigation Bureau as a whole has been provided in the Aviation Act. Each Act listed provides the legal basis and regulates the safety investigations of the relevant field.

The latest major changes related to safety investigation in the Railways Act came into force on 31 October 2020. In it the Directive (EU) 2016/798 of May 11, 2016, of the European Parliament and of the Council about railway safety has been applied to the Estonian legal space. Estonian legislation is in line with the meaning of the directive. Later changes to the legislation have not been related to the organisation of safety investigations.

Currently Section 2 of the Railways Act titled "Safety investigation" is dedicated to the safety investigations of railway accidents. Here you will find a comprehensive treatment of the entire topic of the safety investigation, which is contained in nine sections (sections 47 - 55).

Section 47 of the Act "Safety Investigation Bureau", establishes that the ESIB, a structural unit of the Ministry of Economic Affairs and Communications, conducts safety investigations of accidents, serious accidents, and incidents. The ESIB is independent in conducting safety investigations and making any related decisions and is guided only by legal acts and other legislation and any international treaties



that are binding in Estonia. There is no supervisory control of the ESIB's investigative activities. The ESIB has the right to involve experts and form committees to clarify circumstances that require specialist knowledge. The official conducting the investigation directs and supervises the experts and committees. Authorities involved in the safety investigation are obligated to provide necessary assistance to the ESIB within their competence. The official conducting the safety investigation must provide their certificate of employment while performing his work duties.

Independence given to the Safety Investigation Bureau has been specified by the additional conditions stipulated in Section 48 (2) of the Aviation Act. The Director of the Safety Investigation Bureau is appointed and relieved of its duties by the Government of the Republic on the recommendation of the relevant minister. The appointment of the heads of other structural units of the Ministry takes place within the Ministry. The employees of the ESIB are appointed and relieved of their duties by the Director of the ESIB who also concludes and terminates the employment contracts with them. In addition, the budget of the Safety Investigation Bureau is independent and has been approved by the Parliament – the Riigikogu of the Republic of Estonia and which in the 2023 State Budget Act was provided with item code 20SE070004. Safety investigations of all modes of transport at the Safety Investigation Bureau are conducted according to the principles that are legally corresponding to sector-specific laws and regulations.

Section 48 of the Railways Act “Cases affecting railway safety” defines the concept of a case affecting railway safety. Cases affecting railway safety are serious accident, accident, and incident. All definitions are identical to those presented in Section 3 of the Directive 2016/798. This section establishes a requirement that the driver involved in a serious accident or accident is prohibited from consuming alcohol, narcotic, psychotropic or psychotoxic substances immediately after the occurrence. The railway infrastructure company or owner is obliged to eliminate the consequences of the occurrence and restore railway traffic as soon as possible. At the same time, he must check the efficiency of the restoration work and if necessary, implement measures to improve organisation of the work. If necessary, the local government and the state must provide assistance to the restoration. The right of the supervisory authority to process the relevance of the reasons for the time taken to restore railway traffic after a traffic interruption lasting more than 12 hours is also stipulated. Reference has been made to the obligation of the railway transport company to provide victim assistance in accordance with Regulation No. 1371/2007 of the European Parliament and of the Council.

The railway infrastructure managers or other railway infrastructure owners and railway undertakings, as well as in the case of having been notified in the process of surveillance activities, the Consumer Protection and Technical Regulatory Authority, are obliged to immediately notify the Safety Investigation Bureau of an occurrence affecting railway safety. The notification is made via means of public communication.



This has been specified by Section 49 of the Railways Act “Cases affecting railway safety”. The same Section also specifies submission of a written notification of an accident and a serious accident with clarified and verified facts within three working days. The written notice contains specified and verified facts about the occurrence. Additional information about an accident or serious accident is also provided verbally immediately, and in writing within three working days of receiving the information. A report regarding incidents is submitted within three working days if the ESIB requests it. The obligation of the railway undertaking to take all necessary measures to find out the causes of an occurrence affecting railway safety is stipulated. Subsection 7 of the same Section provides the delegating authority for the establishment of a ministerial regulation on reporting incidents affecting railway safety. Pursuant to the delegating authority the latest version of the Minister of Economic Affairs and Infrastructure Directive No. 83 “Safety Management System, Safety Indicators, Verification of Compliance with Railway Infrastructure, Traffic Management and Safety Requirements, their Reporting, Forms and Deadlines and Notification of Incidents Affecting Railway Safety” entered into force on 14 August 2023. Annex 11 of the Directive provides the format for written notification of a serious accident or an accident. Annex 12 of the Directive provides the format for reporting an incident.

The obligation of the Safety Investigation Bureau to immediately initiate a safety investigation in the case of a serious accident is provided by Section 50 of the Railways Act “Initiation of a safety Investigation”. To initiate a safety investigation in other cases, the conditions for making a discretionary decision have been legalised. The discretionary decision must consider the seriousness of the accident or incident, whether it is one of a series of accidents or incidents affecting the system as a whole, and its impact on rail safety. The ESIB may initiate a safety investigation in the event of an accident or incident which, under certain conditions, could have caused a serious accident, as well as in the event of a technical failure of a subsystem of the pan-European railway system or a component of the interconnection. When initiating a safety investigation, the ESIB takes into account the requests submitted by the safety authority of another member state, the Consumer Protection and Technical Regulatory Authority as well as the railway infrastructure undertaking and the railway transport undertaking. The same section stipulates that a decision to initiate a safety investigation is to be made within 2 months of receiving the notification of an accident or incident. The ESIB notifies the European Union Agency for Railways within one week of initiating the safety investigation. The principal legal aim of the safety investigation is to determine whether the occurrence affecting railway safety was caused by an action, inaction, an event, a circumstance, or a combination thereof and propose recommendations to prevent such occurrence in the future and to improve railway safety.

The obligation for railway infrastructure managers and third persons to provide any relevant information they hold, when requested by the ESIB, has been established by Section 51 “Proceedings of a Safety Investigation”. It is stipulated by legislation that



the railway undertaking is obligated to submit to the ESIB the materials collected on all serious accidents and accidents. The railway undertaking presents the materials about an incident if ESIB demands it. The Safety Investigation Bureau organises the investigation of the scene within the shortest possible time in order to avoid obstacles for reopening of railway traffic. The safety investigation is conducted as publicly as possible with the parties being given the opportunity to provide explanations. Subsection 6 of the same Section stipulates the delegating authority for establishing the format for safety investigations by the Minister's Directive.

The procedural rights of the Safety Investigation Bureau are established in Section 52 of the Railways Act. It stipulates the right of the official conducting the safety investigation to access the following: the scene, vehicle, infrastructure, traffic control and signalling equipment, as well as information and documents, other equipment, recordings, results of expert examinations, other materials of investigations of the same case. The right of the official conducting the safety investigation to demand the restriction of the access of outsiders to the accident site, to prohibit the moving, removal and destruction of objects at the accident site has been established. The same person has the right to question the employees of the railway companies involved in the case, to demand confirmation or provision of the necessary information. In the event of non-cooperation, the official conducting the safety investigation may issue a precept to the obligated person to ensure compliance with the obligations related to the safety investigation activities. In case of failure to comply with the precept, the official conducting the safety investigation has the right to impose a fine of up to €1,500 on a natural person and up to €60,000 on a legal person in accordance with the same section.

During the safety investigation the Safety Investigation Bureau has the right to issue a safety alert, the conditions of which have been stipulated in Section 53 of the Railways Act "Safety Alert". In order to issue a safety alert, the circumstances and facts that have come to light during the investigation of the case must have significance to more than one railway infrastructure manager or railway undertaking or one or more European Union member states. When issuing the alert, the ESIB assesses the determined circumstances affecting the safety of the relevant rolling stock, railway infrastructure installations, railway traffic regulation, maintenance arrangements, handling processes and technical and legal guidelines. The safety alert includes only facts and descriptions but no recommendations or assessments. The safety alert is issued to those concerned and the European Union Agency for Railways.

Organisation of a safety investigation of an occurrence affecting railway safety at a border facility or in its vicinity is provided by Section 54 of the Railways Act "Cooperation with the safety investigation and safety authorities of other countries". The same section also applies to instances where the exact location of the occurrence cannot be determined. In these cases, according to the agreement, a



safety investigation can be organised either jointly or only by one safety investigation agency. If a railway undertaking established or licensed in another Member State is involved in an occurrence affecting railway safety, and the rolling stock involved in the occurrence is registered or maintained in the same country, the investigation body of that Member State shall be invited to participate in the safety investigation. They will be ensured complete access to all relevant data. If necessary, the European Union Agency for Railways can be asked to cooperate using special expertise without compromising the independence of the safety investigation. The exchange of experiences and opinions with the safety investigation authorities of other member states has been established for the purpose of improving work efficiency and innovative development. Cooperation with third countries is based on a special agreement between countries. The Safety Investigation Bureau participates in the peer review programme as stipulated in the Article of Directive 2016/798.

The Safety Investigation Bureau compiles two different types of reports, the composition of which is specified in Section 55 of the Railways Act "Reports Relating to a Safety Investigation". A written report of the safety investigation must be completed by the Safety Investigation Bureau in the shortest possible time and published immediately but not later than 12 months after the occurrence. The safety investigation report does not assess anyone's blame or liability. The safety investigation report is forwarded to all parties involved, such as the railway infrastructure managers, railway undertakings, the safety investigation bodies of other European Union member states, victims and their families, owners and manufacturers of damaged property, Rescue Board, representatives of the employees and passengers and the European Union Agency for Railways. The requirements of the Commission's Implementing Regulation 2020/572 for the content of the report are listed as a summary. The same Section provides the obligation of the Consumer Protection and Technical Regulatory Authority, other authorities, businesses, or organisations that were subject to the ESIB's recommendations, to submit a report to the ESIB annually by the 01 April about the measures taken or planned based on the recommendations made the previous year. Pursuant to the same Section the Safety Investigation Bureau publishes an annual report on the cases investigated in the previous year, the recommendations, and proceedings, on its website by 30 September each year. A copy of the annual report is forwarded to the European Union Agency for Railways.

During the initial assessment of accidents and incidents, it is sometimes appropriate to pay more attention to some cases than usual, but still not to the point of initiating a safety investigation. Depending on requirements, the Safety Investigation Bureau formulates an opinion during the proceedings of such cases and forwards it to the parties involved. The opinion is drawn up based on Appendix R3 of the "Safety Investigation Manual" "Characteristics for adopting a decision to initiate a safety investigation of railway accidents and incidents or formulating an opinion". The opinion does not include recommendations.



Based on the statutes of the Ministry of Economic Affairs and Communications, in 2023 the Minister of Economy and Infrastructure updated the statutes of the Safety Investigation Bureau with his Directive. The statutes specifies the rights and obligations established by law, regulates the relations, relationships, tasks of the ESIB. The Safety Investigation Bureau is a structural unit of the Ministry that is independent in conducting safety investigations and making any related decisions. The activities of the ESIB are conducted in accordance with the Ministry's work schedules unless specified differently by legislation. The ESIB has its own letterhead and its postal address is Tartu maantee 85, 10115 Tallinn. The objective of the ESIB is to organise safety investigations in the relevant field of transport, including the development of legislation regulating its fields of activity and making proposals for changes, participation in the preparation and development of policies, strategies and development plans related to the fields of activity of the ESIB, as well as national and international projects. In fulfilling its main objective and within its framework, the Safety Investigation Bureau cooperates with other institutions, organisations, associations, companies, private individuals and other countries and international organisations.

The Minister approves the list of the employees on the proposal of the Director of the Safety Investigation Bureau. The duties of employees are determined in the job descriptions. The job descriptions are approved by the Director of the Safety Investigation Bureau. Every ESIB employee is responsible for the legal, accurate and timely fulfilment of their duties. The Safety Investigation Bureau Statutes forms a part of the legal framework affecting the work of railway safety investigations.

The Safety Investigation Bureau is functionally independent of the safety authority and the railway regulating authorities. The ESIB's organisation, legal structure and decision-making process are independent of all parties whose interests might conflict with the duties assigned to it, including railway infrastructure managers, railway undertakings, the charging body, the capacity allocation body, and the conformity assessment body. When conducting a safety investigation, the official responsible for railway accident safety investigations performs the tasks of the investigator-in-charge. Nationally the ESIB's independence is pursuant to Article 22 of the Directive on Railway Safety 2016/798.

Pursuant to the Directive 2016/798 requirements the Minister of Economic Affairs and Communications Directive No 72 "Safety Investigation Procedures" has been established for the organisation of safety investigations. The latest revision of this came into force on 06.02.2022. The safety investigation procedures are common to all three ESIB's areas of transport. Compared to the previous one, there are no changes related to the railway sector in the latest revision. The Directive draws attention to the field-specific exceptions provided in the Aviation Act, the Maritime Safety Act and the Railways Act, the Safety Investigation Bureau organises safety investigations taking these into account. The Directive determines areas of a safety



investigation according to modes of transport and its coordinator. It stipulates the procedures for initiating a safety investigation and notification of those involved. Depending on the complexity and workload associated with the occurrence, inclusion of experts and formation of a safety investigation committee is provided. The Directive establishes the procedures for a safety investigation and the tasks of the investigator-in-charge, issuing a safety alert, the format, signing, confirmation and publication of the safety investigation report, completing the safety investigation, proceedings of the safety recommendations, if necessary, the reopening of the safety investigation and procedures for registration of the cases being investigated. Pursuant to the Directive the safety investigation will find out the causes of the occurrences. During the safety investigation, recommendations are developed and presented in the report, the aim of which is to prevent similar occurrences in the future. The Directive contains annexes of which Annex 3 provides the format "Report to the Safety Investigation Bureau on the action taken or planned in response to a recommendation in an accident, serious accident or incident safety investigation report". The safety investigation report is prepared in accordance with the European Commission Implementing Regulation 2020/572 on the reporting structure to be followed when compiling investigation reports on railway accidents or incidents.

1.2 Role and aim

The Safety Investigation Bureau is one link in the transport network. Its role in increasing traffic safety is defined by recommendations made via safety investigations of individual cases. The purpose and task of each individual safety investigation of an accident or incident is to determine the circumstances and causes of the occurrences investigated. The safety investigation ascertains the connections between causes and traffic safety. Based on the circumstances, direct and other causes of the case under investigation, a sequence is constructed through logical connections to various circumstances and causes. Recommendations are formulated to avoid such causes in the future. Every recommendation is case-specific, and its implementation will help to reduce or even prevent cases with similar causes in the future. The role of safety investigations is realised through reports of safety investigations of maritime, aviation and railway accidents. The report completed at the end of the safety investigation presents recommendations for improving traffic safety in the relevant transport sector. In addition to conducting safety investigations, it is the task of the Safety Investigation Bureau to contribute to the formulation of legislation related to maritime, aviation and railway safety. The ESIB has the authority to make recommendations for additions or amendments to current legislation. Within its areas of activity ESIB has a role in formulation and implementation of projects, policies, strategies, development and international projects and plans.



The objective of the safety investigation has been provided by Section 1 of the Minister's Directive "Safety Investigation Procedures". The objective of the safety investigations of accidents and incidents is to determine the causes and make recommendations and proposals to prevent such occurrences in the future. The purpose of a safety investigation is not to appoint blame or liability.

The Safety Investigation Bureau Statutes approved by the Minister on 21.03.2023 specifies the role and aim as follows:

- 1) To receive documents and information necessary for the fulfilment of the tasks assigned to the Safety Investigation Bureau from the Ministry, state institutions under the Ministry's jurisdiction and private legal entities in respect of which the Ministry exercises founder, member, shareholder or partner rights.
- 2) In accordance with arrangements or agreements, engage employees of other departments in resolving issues within the Safety Investigation Bureau remit.
- 3) Work in cooperation with other government departments, local authority agencies and private legal entities.
- 4) Within limits of its competence, forward information to other authorities and persons.
- 5) Make proposals for contracts required for fulfilling its tasks.
- 6) Receive further training to improve the specialist, occupational or professional level of the Safety Investigation Bureau employees.
- 7) Receive necessary office equipment, resources and literature and technical and information support.

Pursuant to the Statutes, while fulfilling its main objective, The Safety Investigation Bureau

- 1) Works in cooperation with other government departments, local government units, foundations, non-profit associations, business and consumer organisations, businesses, private persons and respective authorities of other countries and international organisations.
- 2) Represents the state in the international organisations related to its areas of activity in agreement with the Ministry.
- 3) Takes part in fulfilling any duties of the Republic of Estonia pursuant to the international agreements relating to the ESIB areas of activity.
- 4) Prepares the draft budget for ESIB.
- 5) Develops and implements its development schedules.
- 6) Monitors, analyses, and assesses the situation in its areas of activity and informs other authorities and businesses responsible for the relevant area of its findings.
- 7) Performs tests and expert analysis on machinery, engines, equipment, their details and assemblies and other devices to assess their compliance with requirements to clarify the circumstances of a case under investigation.



- 8) Makes recommendations and takes decisions within its jurisdiction provided by legislation.
- 9) Ensures the confidentiality of information containing business and technical details and personal data if legislation does not provide that it should be published.
- 10) Performs the duties assigned by legislation as a chief or authorised processor of the database of cases investigated.
- 11) Preserves and stores the items, equipment, assemblies, and details in its possession that are relevant to ascertaining the causes of the occurrence for the whole duration of the safety investigation.
- 12) Organises information days about safety and development activities.
- 13) Possesses, uses, and disposes of public property in its possession in cases provided by and in accordance with legislation.
- 14) Advises individuals in matters relating to the Safety Investigation Bureau's areas of activity.
- 15) Performs other tasks assigned by legislation.

1.3 Organisation

The Safety Investigation Bureau is one of many structural units of the Ministry of Economic Affairs and Communications. Since the start of 2023 the ESIB is located in a separate building from the other structural units. The special status granted to the ESIB enables it to perform specific tasks. To ensure the special status in practice, the ESIB officials have their workplaces in offices, while other officials of the Ministry mostly work in an open office in the main building. Legally the ESIB's special status has been guaranteed by relevant articles of the Aviation Act, Maritime Safety Act and Railways Act. The ESIB utilises other departments' competencies and work in cooperation with them but maintains complete independence in decisions relating to the requirement of cooperation and the extent of utilising of their competencies. Other structural units of the Ministry have the role of providing ancillary services to the ESIB. The ESIB's work schedule forms a part of the Ministry's work schedule, and it reflects its main activities.

The Safety Investigation Bureau has its own logo, letterhead, website www.ojk.ee, and an independent budget that has been approved by the Parliament. All other departments use the Ministry's relevant general attributes. An ESIB official has a certificate of employment. The certificate of employment enables its carrier to exercise the special rights granted to him by legislation while carrying out his official tasks. The certificate of employment can be used as a form of identification and includes a brief list of the sites which it grants access to in Estonian as well as



English. The certificate of employment of a railway accidents investigator is valid until January 2027.

The Safety Investigation Bureau's work is led by the Director. There are three officials working under him, an aviation accident investigation expert, a chief specialist in maritime accident investigation and a chief specialist in railway accident investigation. At the end of 2022, the officials responsible for safety investigations were appointed senior investigators in the relevant field. Additionally, a separate working committee of officials was formed in 2021 whose task is to give an initial assessment of the circumstances of the sinking of the passenger ferry "Estonia" in an autumn storm of 1994.

Only the Safety Investigation Bureau has the right to make the decision whether to initiate a safety investigation of an accident, serious accident, or an incident. The safety investigation must be conducted within 12 months during which an investigation report must also be completed. The report is signed by all members of the committee or in the absence thereof, the investigator-in-charge who conducted the investigation. The report is signed off by the Director of the ESIB. The report is then forwarded to all relevant parties and published on the ESIB website. An interim report is published after 12 months if during this time the safety investigation has not been completed.

1.4 Organisational flow

The Safety Investigation Bureau is an organic part of the Ministry of Economic Affairs and Communications. The Safety Investigation Bureau is the only structural unit within the Ministry that does not bear the name of a department. Larger departments are divided into services. With just a few officials the Safety Investigation Bureau does not have services. At the same time, due to its specific duties the ESIB has more rights and is legally more independent than other departments.

Based on the decision made by the Government of the Republic, in 2023 the preliminary assessment of the circumstances of the sinking of the passenger ferry "Estonia" in September 1994 continued. The assessment of the circumstances of the sinking of "Estonia" is carried out using a separate budget and was not completed during the reporting year. Instead of the 8 specialists as on the previous year, there are now 3 on a fixed-term contract work in cooperation with the relevant working groups from the Finnish and Swedish safety investigation agencies. The "Estonia" working group works separately from the other ESIB officials.



The building with the address Suur-Ameerika 1 that houses the Ministry of Economic Affairs and Communications is also home to several other ministries which are the Ministry of Finance, Ministry of Justice, Ministry of Social Affairs, Ministry of Regional Affairs and Agriculture and Ministry of Climate. This has enabled a common service to be established in the interest of rational financial costs and work organisation. This joint department is formally a structural unit officially part of the Ministry of Finance. The joint department includes the administrative service, real estate service, the document management service, and the legal service. All services serve the Ministry of Economic Affairs and Communications, Ministry of Finance, Ministry of Justice and the Ministry of Social Affairs. The administrative service of the joint department serves the Ministry of Regional Affairs and Agriculture but does not serve the Ministry of Climate and the legal service serves the Ministry of Climate but does not serve Ministry of Regional Affairs and Agriculture.

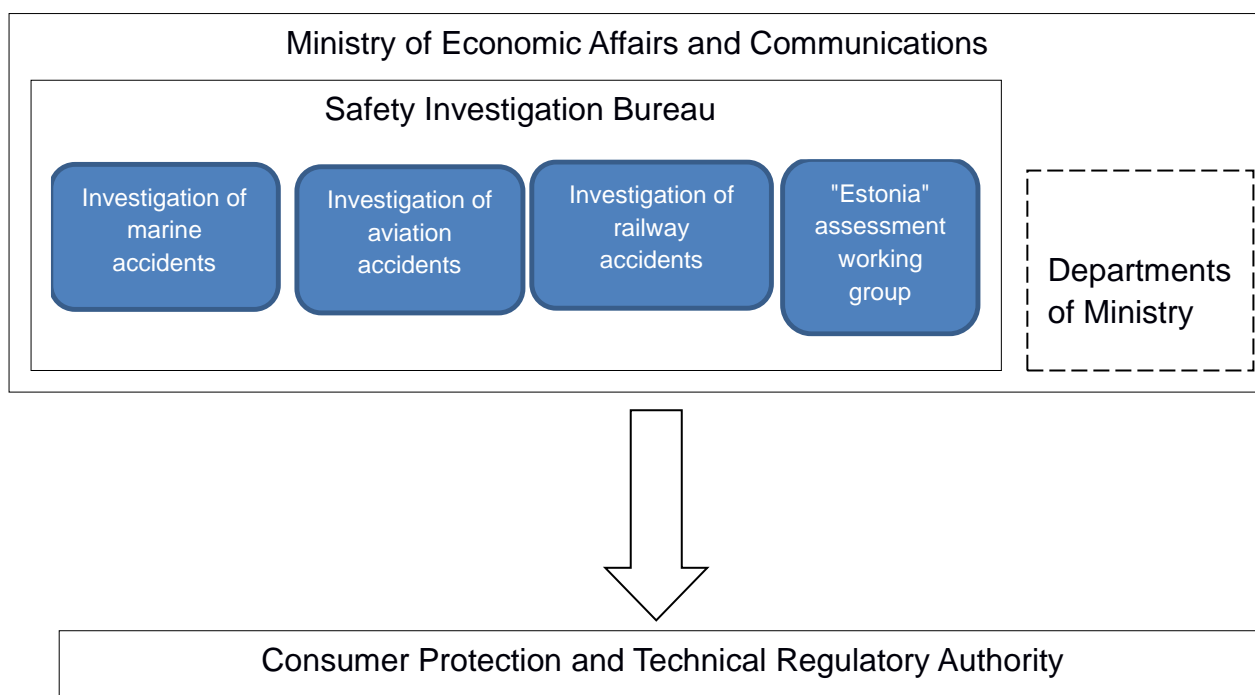


Figure 1 The Safety Investigation Bureau in the organisational structure of the Ministry

The Safety Investigation Bureau is not located in the main building of the Ministry in Tallinn. It is based around 3 km away with the address Tartu maantee 85. The Safety Investigation Bureau's work is managed by the Director. Officials who work at the ESIB are permanent staff. Each official is responsible for conducting safety investigation of the specific area of transport assigned to them.



The title of each official contains the name of the transport sector within which they are responsible for conducting safety investigations. An official is independent in conducting safety investigations within his field and must complete the tasks assigned to him on time and with high quality. The legislation stipulates the confidentiality of certain official information. Officials of the other sectors of transport may assist their colleague in their investigation if necessary. During absence from work all officials can be substituted by a colleague to a certain extent. The substitution is documented in digital document management. At the end of their absence, the official shall receive all relevant information in order to continue and complete the work.

Only the Safety Investigation Bureau has the right to conduct safety investigations in Estonia.

A safety investigation is independent of any other investigation or procedures of a given case that might be taking place in parallel. The safety investigation is a completely independent process. The independence of the safety investigation must be maintained even in the event of possible cooperation with other proceedings of the same case. No other investigation or proceedings conducted by law enforcement, surveillance authorities or other authorities and institutions are related to the safety investigation. Only the ESIB decides the content and results of a safety investigation.

The Consumer Protection and Technical Regulatory Authority (CPTRA) is an independent state agency in the administrative area of the Ministry of Economic Affairs and Communications with a separate budget, structure, and management. The CPTRA performs the function of the railway safety authority and a regulator in Estonia.

All railway infrastructure managers and rail operators and other undertakings that manage or own other railway infrastructure or rolling stock are independent manufacturing enterprises acting as legal persons. After the parliamentary elections that took place in the spring of 2023 the Ministry of Climate was formed. As of 1 July 2023 three public railway companies were transferred to the administration of the Ministry of Climate, which also holds their shares. These are the railway infrastructure manager Estonian Railways Ltd, railway freight transport undertaking AS Operail and the railway passenger transports undertaking AS Eesti Liinirongid (Elron). The Estonian state does not participate in the ownership of the rest of the infrastructure and freight companies. The relationships between the Safety Investigation Bureau and railway undertakings are regulated by legal acts and directives.



2. Investigation processes

2.1 Cases to be investigated

Mandatory safety investigations of occurrences affecting railway safety by Safety Investigation Bureau are specified by the Railways Act. In Estonia there is a list of occurrences affecting railway safety in effect which is identical to the classification presented in the European Parliament and Council Directive (EC) 2016/798 from 11 May 2016 on railway safety. The terminology concerning railway safety is in accordance with that used in the Directive.

The safety investigation of a severe or serious accident must be initiated by the Safety Investigation Bureau without delay. If in certain circumstances an accident or incident might have caused a serious accident, as well as a technical failure of a sub-system or component of the inter-European railway system, the ESIB has a right to initiate a safety investigation. In making the decision the ESIB must consider the severity of the accident or incident and whether it is part of a series of accidents or incidents that affect the system as a whole and its effect on railway safety. When initiating a safety investigation of an accident or incident the ESIB also considers applications submitted by a safety investigation body of another European Union member state, the Consumer Protection and Technical Regulatory Authority and infrastructure managers and railway undertakings.

In addition to legislation and the Minister's Directive the Safety Investigation Bureau also has developed and introduced an organisational "Safety Investigation manual". In 2023 the ESIB reviewed and updated the manual. The document was registered in the document management system Delta on 06 November 2023. The manual contains a cross-sector appendix AMR1 "Hearing, questioning and taking statements". The manual contains 7 appendices about the railway sector that are marked by the letter R and the relevant serial number. The appendices carry the following headings: Safety instructions for the ESIB associate working on the railway network in the railway danger zone, Dataset of technical evidence that needs to be collected (Checklist) in case of an occurrence on the railway, Characteristics of a railway accident or incident for making the decision to begin a safety investigation or formulating an opinion, Analysis of the safety management system in the safety investigation of railway accidents and incidents, Causes of the occurrence and follow



up on recommendation process, Analysis of the human factor in the safety investigations of railway accidents and incidents, Manual of initiating railway accident investigations. The appendices of the handbook give the person conducting the safety investigation practical guidelines on how to form his position in one or another situation, and what to pay attention to.

Appendix R3 of the manual is called “Characteristics of a railway accident or incident for making the decision to begin a safety investigation or formulating an opinion”. It describes the process of making the decision to initiate or not a safety investigation and what will be addressed in the process. At the same time, in addition to the legal bases, a risk-based assessment of the case, which is part of the decision-making process, is provided for. While collecting additional information about the occurrence the ESIB assesses the potential risk of the occurrence, the number of fatalities or injuries, railway infrastructure manager’s equipment failure, fatality of a person who was known to the railway infrastructure manager to be present or work at the railway, obvious mistake or oversight of the railwayman as a probable cause of the occurrence, circumstances of similar cases, collision of rolling stock with a group of people, depending on the number of injuries and fatalities.

2.2 Institutions involved in investigations

Involvement of institutions, companies, agencies or individuals in safety investigations is regulated by the provisions in the Railways Act and the Minister’s Directive on organisation of safety investigations. Involvement and cooperation take place under the direction and supervision of the investigator-in-charge of the specific safety investigation. The duties of the investigator-in-charge are performed by the senior official of the relevant field at the ESIB. The rules and principles of involvement are common to all parties. It is prohibited by law to interfere with the decision-making process of safety investigations, in case of anyone's possible interest to influence it. The purpose of inclusion is first and foremost to obtain the necessary information about the occurrence and the circumstances surrounding it and to achieve the required standard of safety investigation. Infrastructure managers and third parties are obliged to provide the relevant information they hold when requested by the ESIB. If a safety investigation committee has been formed, the safety investigation may be conducted by several officials who have the right to question railway employees and other witnesses involved in the case. The official conducting the safety investigation has a legal right to make a precept to the person under obligation to fulfil the obligations related to the safety investigation. In the event of non-compliance, the official conducting the safety investigation has the right to impose a



penalty charge of up to 60 000 euros to a legal person and up to 1500 euros to a natural person.

A cooperation agreement between the Safety Investigation Bureau and the Police and Border Guard Board, the Office of the Prosecutor General, the Rescue Board and the Emergency Centre was signed in the spring of 2015. The cooperation agreement stipulates coordinated activities in the processing of cases of common interest to the parties. Cooperation partners mutually ensure that criminal investigations and safety investigations are not interfered with. According to the cooperation agreement the Emergency Centre sends an immediate notification to the ESIB email address of any occurrence they have been informed of which will arrive in the inbox of all the ESIB officials. In 2023, the Emergency Centre sent case reports to the ESIB selectively. The Safety Investigation Bureau did not receive information from the Emergency Centre about all the occurrences on the railway known to it. If possible, the Police and Boarder Guard and the Rescue Board ensure safeguarding of the scene. If necessary, they will assist the ESIB with the investigation once the rescue operations have finished. All parties allow access to evidence and information, unless forbidden by law. Disclosure of data collected as part of the criminal proceedings is decided by the prosecutor's office. Ensuring access and disclosure of evidence cannot hinder the safety investigation or criminal proceedings. If necessary, the parties consult each other and where possible, exchange information. Criminal proceedings and the safety investigation are conducted separately even if they work in cooperation with each other.

Based on practical experience, pragmatic cooperation methods with various businesses, authorities, institutions, and private individuals have been developed during safety investigations. The Safety Investigation Bureau has signed cooperation agreements with the safety investigation authorities of European Union member states Finland, the northern neighbour, and Latvia, the southern neighbour.

If an accident involves a railway infrastructure manager established and licensed in another Member State of the European Union and a railway rolling stock that has been involved in an occurrence affecting railway safety that has been registered or maintained in that Member State, the legislation provides an obligation to invite investigative bodies of that country to participate in the safety investigation and they are given access to the relevant information. Thus far, there has been no requirement to use this provision. Neither has it been necessary to ask for help from the safety investigation bodies of other countries or the European Union Agency for Railways with specialist knowledge, technical inspection, performing analysis and giving assessments although legislation allows this.

When conducting a safety investigation, the investigator-in-charge has all the powers to decide on inclusion, interpretation of the information obtained and systematic treatment of facts, knowledge, and circumstances. The information obtained in the safety investigation and the results obtained from its use are reflected in the content



of the investigation report. During the investigation, the investigator-in-charge contacts all parties involved, listens to their viewpoints and opinions and if necessary, asks clarifying questions. Before the end of the investigation the investigator-in-charge provides the parties concerned a draft of the safety investigation report marked 'official use'. The draft or preliminary version of the safety investigation report contains all the material in accordance with Commission Implementing Regulation 2020/572, for which the final discussion will take place at an agreed time with the stakeholders who are representatives of agencies, companies, institutions and, if interested, individuals. During the discussion, all the opinions and positions of the parties involved are heard, and led by the investigator-in-charge, positions are expressed in the safety investigation. As a result of the last discussion, a few possible inconsistencies are clarified in the investigation report. After the discussion, the investigator-in-charge prepares the final safety investigation report which is then published.

Since 2004 when the safety investigations of railway accidents and incidents began, neither the investigator-in-charge nor members of the investigation committee have ever been part of a police criminal investigation, railway company internal investigation, misdemeanour proceedings of the Consumer Protection and Technical Regulatory Authority or any other proceedings or investigation of the given case conducted by another authority. Neither has any person involved in the investigation of a given case participated in a safety investigation.

2.3 Investigation process and approach of the Investigation Body

The proceedings of all accidents, serious accidents and incidents start from the moment a railway undertaking sends an initial verbal notification to the Safety Investigation Bureau. The immediate initial notification arrives from the Emergency Centre into the ESIB information mailbox. The first verbal notification from the railway undertaking is usually made by telephone a little later. By this time, the railway undertaking already has a preliminary internal overview of the occurrence. The Emergency Centre notifies the ESIB 24 hours a day by email of all occurrences in air, water, and rail that it has become aware of. In the railway sector, railway infrastructure managers and owners and railway undertakings, and if they have been informed during regulatory activities, the Consumer Protection and Technical Regulatory Agency, notify the Safety Investigation Bureau by means of public communication immediately. The publicly available means of communication is the phone that the investigator of railway accidents has access to 24 hours a day. In the case of an accident or a serious accident the infrastructure manager makes a written



notification to the ESIB in the agreed format within three working days of the initial notification. The written notice contains the location of the occurrence, specified, and verified factual details about the rolling stock, casualties, victims, and measures taken. In addition, it contains a short summary of the occurrence and the causes that have been established by the time the notice was drawn up. A written report with additional information about the incident will also be made within three working days in an agreed format if the ESIB requests it. The incident report is similar in content to the accident notification. All written documents received by the ESIB are systematically stored within the digital document management system Delta as part of the ancillary services.

Over the years of cooperation, a pragmatic and rational agreement has developed with the undertakings and that enables the safety investigator to be notified faster without needlessly burdening the ESIB 24-hour emergency phone line. The railway infrastructure manager is immediately informed of any railway accidents and incidents through its internal information channels. He forwards the notification by phone to the official dealing with safety investigations of railway accidents. It is not practical to use an intermediate link in the form of a helpline telephone since occurrences affecting railway safety are rare. In addition, the official dealing with the safety investigation of railway accidents must give his assessment to the received notification anyway. Information is relayed to the helpline if the caller does not know the phone number of the official conducting the safety investigation. Since 2004, this has only happened a few times. The official dealing with safety investigations of railway accidents acknowledges the initial notification, assesses the circumstances, asks additional questions, and if necessary, requests clarification of any circumstances and takes note of the initial notification. In accordance with the Railways Act and the safety investigation manual, the official dealing with the safety investigation makes an initial assessment of the occurrence and makes a proposal to the Director of the ESIB either to initiate a safety investigation or not. If gathering necessary additional information requires more time, the official makes a proposal to the Director of the ESIB to defer the decision of initiating an investigation. The decision about a requirement to visit the scene is based on the verbal notification. If based on the initial verbal notification the occurrence turns out to be a serious accident, the official notifies the Director of the Safety Investigation Bureau immediately by telephone, in other cases an email is sufficient. The official responsible of conducting investigations of railway accidents maintains records of notifications received. He collects and stores concentrated information as a table in his database. If necessary, the official conducting the safety investigation and the ESIB Director keep in regular contact to clarify the initial circumstances. The Director's position on whether to initiate a safety investigation is final and binding to the official dealing with the railway accident investigations.

The decision whether to initiate an investigation of an accident, serious accident or incident is made within two months after receiving notification of the occurrence. The



time criterion for deciding to initiate a safety investigation is stipulated in Section 50, Subsection 5 of the Railways Act, which is based on the Directive 2016/798 on railway safety. At the latest one week after the decision to initiate the safety investigation has been made, the railway accident investigator will forward the information to the European Agency for Railways (ERA) in the correct format. The format for forwarding the information has been established by ERA. The obligation to notify the ERA has been specified in Section 50 (7) of the Railways Act. Up till now the deadline for notifying the European Union Agency for Railways has never been missed.

The safety investigations of all accidents and incidents of different modes of transport organised by the Safety Investigation Bureau are conducted based on a unified multimodal approach. The unified approach has been confirmed by The Ministry of Economic Affairs and Communications Directive No 72 "Safety Investigation Procedures" and the ESIB Director has approved the "Safety Investigation Manual" of work procedures. The manual consists of a common main part and annexes which can be common to all three areas of transport or can be area specific.

The whole safety investigation is usually conducted by the official responsible for investigating accidents in the relevant field who performs the duties of investigator-in-charge. The investigator-in-charge informs all relevant parties of the launch of a safety investigation and drafts an investigation plan. He may make changes and clarifications to the draft during the safety investigation but is fully responsible for conducting of the entire safety investigation as well as its quality and compliance. The investigator-in-charge coordinates the gathering, storage and analysis of data and evidence as well as the contracting of experts and communications with relevant individuals or organisations. The investigator-in-charge organises and performs all necessary activities relating to the investigation. If necessary, in case of particularly serious accidents, the Director of the Safety Investigation Bureau may form a committee to conduct a safety investigation. An appropriate format has been developed for the formation of the committee. The division of work between the members of the committee and the planned investigation directions are decided by the committee.

In the autumn of 2023, the Safety Investigation Bureau compiled the list of freelance experts for different areas of transport. For this purpose, a work organisation manual for the involvement of experts was developed. The involvement of an expert is decided by the senior investigator of the field or the Director of the ESIB if there is an urgent and operational need for this. The expert is employed using a mandate agreement. Before formalising the contract, on each occasion the potential expert must give their consent to apply their knowledge to the occurrence. In the railway sector 7 individuals gave their consent to be included in the list of experts.

The investigator-in-charge is free to choose the working style and methods most suitable to him. The correctness of the choice depends on the most suitable methods



for the given context and how skilfully and rationally they have been applied to reach the goal. The investigator-in-charge is an active party in the selection of communication tools and methods, as well as in communication with natural and legal persons. The objective is to ascertain the causes and circumstances of the occurrence in cooperation with the victims, state and local government authorities, businesses, and organisations. The more important verbally obtained information is recorded and written information is stored within the document management system Delta. Railway undertakings retain all evidence and details of items, technical assemblies, documents, recordings of the data recording equipment and other information which might be important in determining the causes of the occurrence. If requested by the investigator-in-charge, they would present this to the ESIB. The safety investigation identifies the causes and circumstances of the case, which shall be in accordance with the requirements established by the European Commission Implementing Regulation 2020/572 regarding the reporting structure to be followed when compiling the investigation reports. The provisions of Annex R5 of the Safety Investigation Manual are also considered when determining the causes of the occurrence. Information about the safety investigation is usually issued by the investigator-in-charge. By prior agreement, a member of the investigation committee or the Director of the ESIB may also do this. An alert is issued on behalf of the Safety Investigation Bureau in the event of a persistent high risk.

The joint Annex (AMR1) of the Safety Investigation Manual includes instructions for hearing, questioning, and taking statements from all individuals and parties concerned, specifies the objectives, planning, conducting, and documenting the activities. Safety investigations are conducted as publicly as possible. Disclosure must not start hindering identification of causes or development of recommendations necessary for increasing safety. All parties concerned whom the investigator-in-charge approaches or who turn to the investigator-in-charge themselves have an opportunity to present their opinions, attitude, position and understanding of the proceedings of the safety investigation and its results. Information that has restricted access pursuant to cases specified by The Public Information Act is not disclosed during or after the safety investigation. Restrictions on disclosure are stipulated by law with defined deadlines.

Human behaviour plays usually an important part in the circumstances of occurrences affecting railway safety. Analysis of human factors during the safety investigation is based on the implementation regulation 2020/572 and the guidelines set out in Annex R6 of the Safety Investigation Manual.

The effect and impact of the infrastructure manager's safety management system in the context of the case under investigation is important for ensuring railway safety. The safety investigation assesses the aspects of the safety management system that are connected to the case under investigation. Guidelines on what to concentrate on are provided in Annex R4 of the Safety Investigation Manual. In cases that are not



related to the management of infrastructure managers, an assessment is given to the operation of the infrastructure manager's safety management system as part of the ascertainment of the causes of the occurrence and elimination of consequences. As a rule, the safety management of other companies involved in the case does not fall under the competence of the safety investigation.

The investigator-in-charge is responsible for the investigation report to be completed in a timely manner and in the prescribed format. The recommendations presented in the report are subject to proceedings by the addressees of these recommendations. Once a year, the addressee submits a report to the ESIB on the status of the proceedings or the final results based on the recommendations made to him in the previous year. The report will form the basis of the summary of the previous year's safety investigations. The ESIB monitors the proceedings that take place prior to the report being presented. For this purpose, the investigator-in-charge contacts the recipient of the recommendation. Monitoring of the proceedings by the investigator-in-charge is set out in Annex R5 of the Safety Investigation Manual.



3. Safety Investigations

3.1 Overview of completed investigations

During the year, the Safety Investigation Bureau received 12 notifications of accidents and 6 notifications of incidents. Of the accidents, 7 took place on level crossings, 5 cases were of a train hitting a person. No serious accidents took place. The report does not contain information about suicides that took place on the railway.

In the previous year, 2022, the Safety Investigation Bureau received notifications of 17 accidents and 7 incidents. In 2021 and 2020 the ESIB was notified of 8 and 10 accidents, respectively. The number of notifications of incidents in the same years was 5 and 1. In the pre-Covid years of 2019, 2018 and 2017 the ESIB received 19, 33 and 24 initial notifications of train accidents, respectively. There were 5, 9 and 3 notifications of incidents in the same years.

At the end of the first month of the year, on 30 January, the safety investigation of the serious accident that took place at Ropka level crossing on 11 March 2022, was completed. The safety investigation report was presented to the safety authority Consumer Protection and Technical Regulatory Authority, the railway infrastructure manager Estonian Railways Ltd, the railway transport company AS Eesti Liinirongid (Elron) and the Emergency Centre for the proceedings of recommendations.

Summary of the safety investigations completed in 2023

Table 1

Type of case investigated	Number of cases	Casualties		Estimated losses (EUR)	Trend compared to last year
		Deaths	Seriously injured		
Level crossing accident	1	-	2	2 000 000	increase



3.2 Safety investigations completed and commenced in 2023

The safety investigation of one serious accident that began the previous year was completed by the Safety Investigation Bureau in the reporting year. The safety investigation was concluded within the normal one-year period. All safety investigations to date have also been concluded within the prescribed one-year period.

Safety investigations completed in 2023

Table 2

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Completed (date)
11.03.2022	Collision between a passenger train and a truck on the Ropka automated level crossing on the Estonian Railways Ltd infrastructure km 436,018.	i	30.01.2023

Basis for investigation: i = pursuant to the safety directive

The preliminary assessment of all notified accidents and incidents has taken place during the year. No safety investigations were initiated.

Safety investigations commenced in 2023

Table 3

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis
-	-	i

Basis for investigation: i = pursuant to the safety directive

The collision between the passenger train and a truck at the Ropka level crossing was classified as a serious accident since the Safety Investigation Bureau assessed the damages to be in excess of 2 million euros.



3.3 Summaries of the safety investigations completed in 2023

Ropka 11.03.2022

On Friday, 11 March 2022 at 17:35 on the Estonian Railways Ltd (EVR) infrastructure in a rural area on a single-track road section, on the automated (active) Ropka level crossing (km 436,018), there was a collision between an AS Eesti Liinirongid (Elron) Tartu - Valga passenger train no. 0334 and OÜ Reinpaul truck Scania 450 semi-trailer KNAPEN K100. As a result of the collision 2 passengers sustained serious bodily injuries and 6 passengers received minor injuries. The train derailed. The rolling stock, infrastructure and the truck with the trailer were damaged.



Photo 1. Scene of the accident after the collision

The Elron two-carriage diesel rolling stock Stadler Flirt DMU no. 2233 is equipped with B-class ALSN-type signalling-control-command system VEPS. ALSN codes



move the locomotive signal along the track circuit. The train was approaching the Ropka station passenger platform situated 470 m from the level crossing where a planned stop was taking place. The speed of the train was 79.5 km/h at the time of emergency braking before reaching the crossing, when the permitted speed is 120 km/h. The driver of the rolling stock was guided according to the regulations by the traffic lights for some time before reaching the level crossing, because the shunt had suddenly disappeared. ALSN codes did not reach the locomotive signal.

On approach to the level crossing, the driver of the truck Scania R450 with a semi-trailer KNAPEN had gradually started to reduce speed. The automatically set traffic light did not transmit a prohibitive red signal to the driver. At the time of the collision the truck's speed was 65 km/h, the permitted speed was 90 km/h. The shunt was restored, and the traffic light started showing the prohibitive signal to the driver when the train was 33 m from the level crossing and the vehicle was 2 seconds from entering the level crossing. The vehicle Scania managed to clear the crossing before the collision, but the train collided with the semi-trailer KNAPEN. The train hit the trailer, which took him with it and derailed the train.

Train traffic was stopped for 25 hours and 06 minutes. Emergency services and paramedics were called to the scene. Passengers were transported to their destinations by bus. Once the Safety Investigation Bureau had estimated the damages in excess of 2 million euros the ESIB initiated a safety investigation of a serious accident.

3.4 Comments of investigations

Based on safety investigations conducted over the last five years, the following table shows the deaths and injuries.

Total number of deaths and injuries

Table 5

Year	Deaths	Injured in road vehicle / of them seriously	Injured in rolling stock / of them seriously
2019	-	-	-
2020	-	-	-
2021	-	-	-
2022	-	-	8/2
2023	-	-	-
Total	-	-	8/2



Breakdown of the injured and deaths

Table 6

Breakdown by type of persons		Year, number				
		2019	2020	2021	2022	2023
Deaths	Passengers	-	-	-	-	-
	Staff	-	-	-	-	-
	Third parties	-	-	-	-	-
	Total	-	-	-	-	-
Injured	Passengers	-	-	-	8	-
	Staff	-	-	-	-	-
	Third parties	-	-	-	-	-
	Total	-	-	-	8	-

3.5 Accidents and incidents investigated during the past five years (2019 – 2023)

During the past five years there has been one accident where a safety investigation was initiated.

On March 11, 2022, a serious railway traffic accident took place at an automatically set level crossing in Ropka in southern Estonia. The safety investigation was concluded in 2023.

The Safety Investigation Bureau gathers information about every accident it has been notified of. For this it works in cooperation with infrastructure managers and other institutions. During the initial assessment the ESIB evaluates the impact of the occurrence on the safety situation in general. Due to the relatively small total number of accidents each year, five-year statistics do not always show a trend in the long term. Numerical fluctuations that may occur during this time are not reliable for making larger generalizations. The number of accidents that occurred in individual years and the safety investigations conducted reflect the current situation in railway traffic as a whole. The trends reflected in the safety of railway traffic are expressed by the statistics on railway accidents studied, which are much longer than five years.



Breakdown of investigated cases by years

Table 7

Title of the case		Year, number of investigations					
		2019	2020	2021	2022	2023	Total
Art 19.1,2	Train collision	-	-	-	-	-	-
	Train collision with an obstacle	-	-	-	-	-	-
	Train derailment	-	-	-	-	-	-
	Level crossing accident	-	-	-	-	1	1
	Accident to person caused by RS in motion	-	-	-	-	-	-
	Fire in rolling stock	-	-	-	-	-	-
	Accident involving dangerous goods	-	-	-	-	-	-
Art 21.6	Train collision	-	-	-	-	-	-
	Train collision with an obstacle	-	-	-	-	-	-
	Train derailment	-	-	-	-	-	-
	Level crossing accident	-	-	-	-	-	-
	Accident to person caused by RS in motion	-	-	-	-	-	-
	Fire in rolling stock	-	-	-	-	-	-
	Accident involving dangerous goods	-	-	-	-	-	-
Incident	-	-	-	-	-	-	
Total		-	-	-	-	1	1

In the previous table, there is no data on other procedures limited to a preliminary evaluation by the Safety Investigation Bureau's cases where the safety investigation was not initiated. For example, it does not include the opinion formulated about the incidents that took place in December 2021 in Klooga and Paldiski.



4. Recommendations

4.1 Short review and presentation of recommendations

Recommendations are formed during the safety investigation, and they are formulated at the end of the safety investigation report. The report is forwarded to the safety authority (CPTRA) regardless of whether the report even includes recommendations about railways. The report is also always forwarded to railway transport as well as the infrastructure manager involved in the accident. The latter are often the final executor of recommendations. The final executor can also be the safety authority. The recommendations could be aimed at any other authority or institution responsible for resolving the given issue relating to railway safety. All addressees of recommendations submit an annual report on the status of the proceedings. The first report on the status of the proceedings is presented to the ESIB by 1 April of the year following the completion of the safety investigation report. The proceedings conclude with a presentation of a report if the recommendation has been accepted and fulfilled, rejected, or the proceedings have been suspended. The Consumer Protection and Technical Regulatory Authority monitors and directs the proceedings of recommendations addressed to railway undertakings. The CPTRA also presents a summary report of the proceedings of the recommendations to the ESIB.

Recommendations for improvement of safety

Table 8

Field of activity of recommendation	Year, number of recommendations				
	2019	2020	2021	2022	2023
Maintenance and care of railway infrastructure	-	-	-	-	1
Care, maintenance and managing of rolling stock	-	-	-	-	-
Organisation of supervision	-	-	-	-	-
Road traffic	-	-	-	-	-



management, road traffic control devices					
Winter maintenance of roads	-	-	-	-	-
Dissemination of information concerning traffic, training	-	-	-	-	-
Amendments to legal acts and regulating instructions	-	-	-	-	2
Operation of traffic lights, railway traffic control	-	-	-	-	-
Organisation of operation of railway communication devices	-	-	-	-	-
Use of information recording equipment	-	-	-	-	-
Professional qualifications of railwaymen	-	-	-	-	1
Other arrangements	-	-	-	-	1
Total	-	-	-	-	5

Implementation of recommendations

Table 9

Recommendations issued		Recommendation implementation status							
		Implemented		In progress		Not to be implemented		Implementation suspended	
Year	No	No	%	No	%	No	%	No	%
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-	-
2023	5	4	80	-	-	1	20	-	-
Total	5	4	80	-	-	1	20	-	-



4.2 Recommendations made in 2023

The safety authority Consumer Protection and Technical Regulatory Authority to direct

Estonian Railways Ltd

1. To further develop a culture of communication as part of the safety culture in order to supplement Estonian Railways Ltd instructions for the safe organisation of train traffic and shunting work, by adding a requirement to immediately inform the train dispatcher in the event of an unannounced change in the locomotive traffic light reading on a line with automatic blocking and automatic locomotive signalling.
2. To supplement the company's work management instructions with the requirement to check the circumstances of the sudden change in the reading of the locomotive signal received by the dispatcher, and as feedback to give the necessary instructions to the locomotive driver to ensure the safety of railway traffic.
3. Until the traffic centralisation of Ropka station is rebuilt and the equipment at the level crossing is upgraded in 2024, pay special attention to the operation of the equipment. Considering the age of the equipment, intensify its technical inspection.

AS Eesti Liinirongid

1. To use the materials of the serious railway traffic accident in Ropka on 11.03.22 in the training of railway rolling stock drivers, to form an attitude for the development of their communication culture with the railway traffic managers with the aim of forwarding information about the changes characterising the traffic if it is unexpected, and the reasons or connections may not have been fully clarified.

Emergency Centre

1. To analyse all the characteristic features of the term "information holder". Bring the use of the term "information holder" in line with the meaning of the Rescue Act, the Railways Act and the Regulation on the establishment of a database for the processing of emergency notifications and the basic regulations for maintaining the database.



Annexes

Annex 1

Proceeding of recommendations – Ropka, 11.03.2022

Date and time	11.03.2022 at 17:35		
Location	The Ropka level crossing (km 436,018) on the Estonian Railways Ltd (EVR) infrastructure in a rural area on a single-track road section. The geographic coordinates are N58.317359° and E26.6337598°.		
Type of occurrence	Serious accident		
Train type and number	Passenger train No 0334		
Road vehicle	Truck Scania 450 with a semi-trailer KNAPEN K100		
		On the train	In the road vehicle
Number of persons (on board the train and vehicle)	Crew	2	1
	Passengers	94 ¹	-
Fatally injured	Crew	-	-
	Passengers	-	-
Seriously injured	Crew	-	-
	Passengers	2	-
Slightly injured	Crew	-	-
	Passengers	6	-
Damages to rolling stock	Undercarriages of the diesel rolling stock, body and coupling of the B-car, connections of the diesel unit and the B-car, glass of the B-car cabin.		
Damages to track equipment	Track 75 m, 1 turn, 22 reinforced concrete sleepers, turn frame rails, 23 turn beams and other turn superstructure materials, turn automation equipment cabinet, level crossing traffic light		



	"B".	
Other damages	Reinforced concrete and asphalt covering of the railway crossing, 2 signposts, electric mast LR-135; deformations and other external damage to the truck Scania cab, its equipment and frame; the KNAPEN semi-trailer had become a wreck.	
Summary: The level crossing traffic light changed to prohibitive red signal 2 seconds before the Scania truck reached the level crossing. The semi-trailer of the truck was struck by the train. The train interlocked with the trailer and derailed.		
Final report issued	30.01.2023	
Recommendation No 01	Following an unexpected change in the reading of the locomotive traffic light, the driver, in accordance with the regulations, followed the example of the traffic lights from then on. The train dispatcher did not receive any information about the sudden change in the reading of the locomotive signal. The train dispatcher thought that the traffic situation was normal.	
	To further develop a culture of communication as part of the safety culture in order to supplement Estonian Railways Ltd instructions for the safe organisation of train traffic and shunting work, by adding a requirement to immediately inform the train dispatcher in the event of an unannounced change in the locomotive traffic light reading on a line with automatic blocking and automatic locomotive signalling.	
Date	Status	Explanation
27.03.2023	Accepted and fulfilled.	Estonian Railways Ltd Director of Traffic operational order No. 18-2/28 "Procedure of action in the event of a sudden white light at a locomotive signal on a line with locomotive automatic signalling" stipulates the actions of railway rolling stock drivers when a white light suddenly turns on at a locomotive signal and the traffic controller's actions upon receiving a corresponding notification from the railway rolling stock driver. The requirements established by the order entered into force on 01.04.2023.
24.11.2023		Order No. 18-2/28 was supplemented with the obligation to register unexpected changes in locomotive traffic light readings and loss of codes through the Estonian Railways Ltd control centre in



		the case register.
Recommendation No 02	The railway rolling stock driver must be aware of possible dangers that might occur in traffic if the reading of the traffic light changes unexpectedly.	
	To supplement the company's work management instructions with the requirement to check the circumstances of the sudden change in the reading of the locomotive signal received by the dispatcher, and as feedback to give the necessary instructions to the locomotive driver to ensure the safety of railway traffic.	
Date	Status	Explanation
27.03.2023	Accepted and fulfilled	Operational Order No. 18-2/28 stipulates the obligation of drivers to register notifications of unexpected changes in the locomotive signal in the case register of the company's information system Pony, and the obligation of the driver to transmit the same notification to the railway transport company.
24.11.2023		Order No. 18-2/28 was supplemented by the locomotive driver's obligation to reduce the speed to 40 km/h in order to better ensure the possibility of stopping the train in the event of a possible obstacle appearing on the crossing.
Recommendation No 3	One way to prevent the shunt from disappearing is to modernize traffic centralization. Before that, it is wise to increase attention and control over the operation of the equipment.	
	Until the traffic centralization of Ropka station is rebuilt and the equipment at the level crossing is upgraded in 2024, pay special attention to the operation of the equipment. Considering the age of the equipment, intensify its technical inspection.	
Date	Status	Explanation
Since March 2022	Accepted and fulfilled	Estonian Railways Ltd has implemented the following maintenance activities at the Ropka station and the Ropka level crossing: During maintenance, the tension of the rail circuit in the approach area is checked and the necessary adjustment is



	communication culture with the railway traffic managers with the aim of forwarding information about the changes characterizing the traffic if it is unexpected, and the reasons or connections may not have been fully clarified	
Date	Status	Explanation
Applied immediately	Accepted and fulfilled	Instructor locomotive drivers have periodically stressed the importance of the locomotive driver's actions when the white light is lit in the area equipped with automatic blocking and the locomotive's automatic signalling, both at the lectures of the general training of locomotive drivers and at the supplementary training of the additional certificate of the locomotive driver. This malfunction may have a direct connection with traffic safety, which requires the locomotive driver to act immediately and provide information.
Applied immediately		Instructor locomotive drivers, in cooperation with EVR safety department employees, have agreed that reports made by locomotive drivers about the lighting of a white light in an area equipped with automatic signalling of the locomotive will be recorded by train dispatchers in the EVR notification system PONY and simultaneously transmitted to Elron traffic management and safety employees.
Recommendation No 5	<p>The ESIB proceeds pursuant to the Commission's Implementing Regulation 2020/572, according to which safety recommendations can also be made regarding additional observations that did not cause or contribute to the incident in question.</p> <p>Pursuant to the Railways Act, third persons are obligated to present any relevant information they hold if requested by the Safety Investigation Bureau.</p> <p>For the Emergency Centre to analyse all characteristic features of the term "information holder". Bring the use of the term "information holder" in line with the meaning of the Rescue Act, the Railways Act and the Regulation on the establishment of a database for the processing of emergency notifications and the</p>	



Date	Status	Explanation
25.03.2024	Rejected	<p>basic regulations for maintaining the database.</p> <p>There is no reference to the Emergency Centre in the list of Section 3(3) of Regulation No. 72 "Safety Investigation Procedure" of the Minister of Economic Affairs and Communications of 9.11.2012.</p> <p>According to Article 2 of Directive (EU) 2016/798, the Directive will not be applied to the Emergency Centre.</p> <p>The recommendation addressed to Emergency Centre in the 11.03.2022 event report is not related to an occurrence affecting railway safety as an incident and is not related to how to prevent such an accident in the future. In the report of the event, the Safety Investigation Bureau has gone beyond the goal of providing safety recommendations defined by legislation and treated the term "recommendations" in a broad sense.</p> <p>The Emergency Centre forwarded the 19.04.2022 Safety Investigation Bureau's appeal to the Rescue Board and the ambulance service provider, informing the Safety Investigation Bureau about this in its 19.04.2022 response, thus fulfilling the obligation of comprehensive assistance arising from Section 15 of the Public Information Act.</p> <p>The Emergency Centre understands the need for the Safety Investigation Bureau to receive the requested data, which is why the Emergency Centre has proposed to the Ministry of the Interior to add the Safety Investigation Bureau as a recipient of legitimate data from the database of emergency notifications and assistance and information notifications.</p>



¹ On journey 0334 Tartu-Valga, on 11.03.22, a maximum of 94 passengers were on the train at any given time