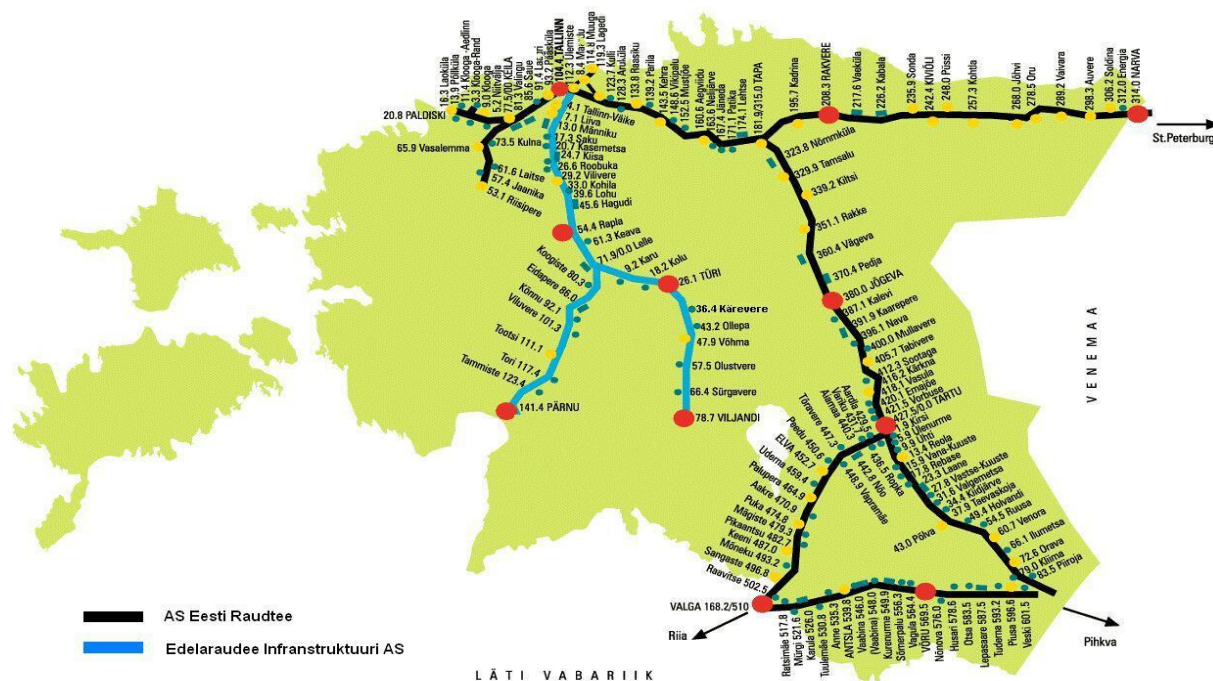




**ESTONIAN SAFETY  
INVESTIGATION  
BUREAU**

Report of the railway accidents  
investigated in 2015

Tallinn 2016



Public railways in the Republic of Estonia



## **Preface to the report**

Pursuant to the European Parliament and Council Railway Safety Directive 2004/49/EC safety investigations into railway accidents have been carried out in Estonia since 31 March 2004. On 1 January 2012 safety investigations of the three different transport sectors were centralised into a unified Safety Investigation Bureau, a unit of the Ministry of Economic Affairs and Communications with special rights.

In Estonia, a classification of cases affecting railway safety is identical to the regulations of the Railway Safety Directive 2004/49/EC. These are accident, serious accident and incident. In 2015 there were no serious accidents. The Safety Investigation Bureau has a legal obligation to investigate all cases that member states are obligated to investigate pursuant to the Safety Directive.

The safety investigations of railway accidents are conducted pursuant to the guidelines set by the legislation of the Republic of Estonia in accordance with the Safety Directive. Safety investigations are independent and their aim is to increase railway safety and decrease the number of railway accidents.

Since the formation of the multimodal Safety Investigation Bureau the officials responsible for conducting safety investigations of maritime, aviation and railway accidents have learned each other's areas of work and if required, work in cooperation with each other, assisting colleagues at the request of the investigator-in-charge.

During the course of 2015 the Safety Investigation Bureau took part in an assessment conducted in the Estonian railway sector at the initiative of the European Commission and carried out by the European Railway Agency; final results of this will be published in the following year, in 2016. During the year the Safety Investigation Bureau made preparations for developing their own positions on the questions raised during the assessment and for implementing necessary additional measures.



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# 1 Introduction to the Investigation Body

## 1.1 Legal basis

The Railways Act came into force in the Republic of Estonia on 31 March 2004 by which a Unit for Investigation of railway accidents was established at the Estonian Ministry of Economic Affairs and Communications. The creation of the Unit for Investigation was timed to coincide with the European Parliament and Council Directive 2004/49/EC on Railway Safety coming into force in member states. Legislation did not provide sufficiently for the cooperation between the Unit for Investigation and the European Railway Agency. The changes in legislation in the spring of 2007 allowed for the cooperation between the Unit for Investigation and the European Railway Agency to become consistent with the concept of the Directive.

Before the formation of the Unit for Investigation of railway accidents, a Unit for Investigation of aviation accidents had been operating at the crisis management department of the Ministry for several years. At the end of 2011 a Unit for Investigation of maritime accidents was formed at the same department. Safety investigations of all three transport sectors were combined at the beginning of 2012 into one multimodal Estonian Safety Investigation Bureau (ESIB). In order to establish the ESIB, necessary amendments were made to the Aviation Act, Maritime Safety Act and Railways Act.

From the safety investigation perspective, the Railways Act was clarified on 1 April 2014 regarding the ESIB's independence and procedures of the safety investigations. The Safety Investigation Bureau which is a structural unit of the Ministry of Economic Affairs and Communications conducts safety investigations of accidents, serious accidents and incidents according to Subsection 42 (1) of the Act. The same subsection provides the independence of the Safety Investigation Bureau in conducting safety investigations and making any subsequent decisions. It is guided only by law and other legislation and any international treaties that are binding in Estonia.

There is no supervisory control of the ESIB's investigative activities. Independence of the Safety Investigation Bureau is also reflected in Subsection 48 (2) of the Aviation Act which provides that the director of the ESIB is appointed and relieved of its duties by the Government of the Republic on the recommendation of the Minister of Economic Affairs and Communications and the ESIB officials are appointed and relieved of their duties by the director of ESIB. An independent budget for the Safety



Investigation Bureau has been approved by the Parliament of the Republic of Estonia in state Budget Act of 2015 with item code 20SE07004.

According to the Safety Investigation Bureau Statutes the ESIB is accountable to the Secretary General and the Minister of Economic Affairs and Infrastructure when using the Ministry's ancillary services. The statutes specify that the Ministry does not have the right to give orders or tasks to the ESIB that hinder the independence of the safety investigation. Neither does the Ministry have the right to demand information from the ESIB that compromises the independence of the safety investigation and may hinder any existing or future safety investigations. When using the Ministry's ancillary services ESIB is guided by the statutes of the departments providing the ancillary services and the rules regulating the ancillary services.

The Safety Investigation Bureau has been established as a permanent structural unit with special rights where the tasks of the investigator-in-charge are performed by the official responsible for conducting railway safety investigations. Safety Investigation Bureau's organisation, legal structure and decision process are independent of any railway infrastructure managers, railway undertakings, tax collection authorities, distribution authorities and notified bodies or any other party whose interests might conflict with the tasks given to the investigative body. It is functionally independent of the safety authority and the railways regulatory body. By fulfilling the aforementioned conditions, the ESIB has ensured that its independence is pursuant to Article 21 of the European Parliament and Council Directive 2004/49/EC on Railway Safety.

The framework for the investigations of railway accidents and incidents is provided by the Railways Act and related legislation. Section 42 of the Railways Act "Safety investigations of accidents, serious accidents and incidents" and Section 43 "Safety Investigation Reports" are nationally two of the most important sections covering the specific nature of safety investigations from a legal perspective. The subject of the safety investigation is specified by Section 40 of the Act "Cases affecting railway safety". Legislation provides authority for two regulations affecting the processes of safety investigation to be enforced which are "Safety investigation procedures" and "Procedures for providing written notification of accidents, serious accidents and incidents and format of written notifications and reports" which came into force on 06.04.2014. The legal framework for conducting safety investigations of railway accidents also includes the Statutes of the Safety Investigation Bureau approved by the Ministry of Economic Affairs and Communications Directive No 14-0320 on 15.10.2014.

Subsection 42 (3<sup>1</sup>) of the Railways Act provides that the railway infrastructure managers or railway infrastructure possessors and railway undertakings have the task of immediately notifying the Safety Investigation Bureau of an accident, serious accident or incident. Notifying the Safety Investigation Bureau of the aforementioned occurrences has been specified by The Ministry of Economic Affairs and



Communications Directive No 26 “Procedures for notifying of accidents, serious accidents and incidents and the format of the written notices and reports” which came into force on 06.04.2014. Pursuant to Subsection 2 (1) of the Directive the immediate first notification of the occurrence will be made by the infrastructure manager to the Safety Investigation Bureau via means of public communication. The same infrastructure manager presents a notification to the ESIB within three working days of the occurrence in the format specified in the annex of the Directive. Pursuant to Subsection 2 (2) of the Directive the same infrastructure manager makes an immediate notification of an incident via email. A written report of an incident in the format specified in the annex of the Directive has to be presented within three working days only if the ESIB requests additional information.

Subsection 42 (2) of the Railways Act provides the Safety Investigation Bureau's right to involve experts to clarify circumstances which require specialist knowledge and form committees. The experts involved in the safety investigation and the committee take part in the investigation under the supervision of the official conducting it. Authorities involved in the safety investigation are obliged to offer necessary assistance to ESIB within their competence.

During the safety investigation there might arise a necessity to issue a safety alert if circumstances and facts have come to light the importance of which exceeds the ongoing investigation. Subsection 42 (11<sup>2</sup>) of the Railways Act provides the conditions when the safety alert is issued. The safety alert includes only facts and descriptions but no recommendations or assessments. The safety alert is issued to those concerned and the European Railway Agency.

ESIB has the obligation to conduct the safety investigation of an accident or an incident in the shortest possible time and once it has been concluded, publish a report. Subsection 43 (1) of the Railways Act - “Safety Investigation Reports” provides the requirement for the Safety Investigation Bureau to finish compiling a written investigation report and publish it no later than within 12 months of the occurrence. The same provision specifies the obligation to forward the report to all those involved which can be the railway infrastructure managers, railway undertakings, the safety investigation body of another European Union member state, victims and their families, owners and producers of damaged property, Rescue Board, representatives of the employees and passengers and the European Railway Agency. The same Subsection (3) provides the obligation of the Technical Surveillance Authority and other authorities, businesses or organisations that were subject to the Safety Investigation Bureau’s recommendations, to submit a report by the 1st April of the following year on measures that had been implemented or planned based on the recommendations.



A Ministry of Economic Affairs and Communications Directive No 72 “Safety Investigation Procedures” came into force on 6 April 2014 and covers the multimodal ESIB’s all areas of transport. The Directive specifies the objective of a safety investigation, determines areas of a safety investigation and its coordinator, defines the start of a safety investigation and notification, formation of a safety investigation committee and its division of work, procedures for a safety investigation, raising a safety alert, the conditions and format of the safety investigation report, closing the safety investigation, principles of the proceedings of the safety recommendations and proposals and the format of the report for presenting the results to the ESIB, reopening of the safety investigation and procedures for registration of the cases being investigated. The format of “Safety investigation reports of accidents, serious accidents and incidents” specified in the annexes of the Directive is in accordance with the Railway Safety Directive 2004/49/EC annex 5 and the „Report to the ESIB on measures taken or planned based on recommendations presented in the safety investigation report of accidents, serious accidents and incidents“ is in accordance with the ERA “Guidance on Safety Recommendations in terms of Article 25 Directive 2004/49/EC”.

## 1.2 Role and aim

The Safety Investigation Bureau has been formed to fulfil its role in increasing maritime, aviation and railway safety in Estonia. The ESIB helps to increase traffic safety primarily by conducting safety investigations of maritime- and aviation accidents and incidents as well as railway accidents and incidents via the proceedings of the results of the investigations by those involved. In the process of accident and incident investigations they have to determine the causes and if there are relevant connections, make recommendations for increasing traffic safety. It is the task of the ESIB to participate in formulation of legislation related to its areas of activity and if necessary, make recommendations for amending this legislation. ESIB also has the task to participate in formulation and implementation of projects, policies, strategies and development plans related to its areas of activity, and participate in the preparation and implementation of international projects.

The statute has defined the following obligations for the Safety Investigation Bureau:

- 1) Complete all its tasks in a timely manner and to a high standard.
- 2) Ensure the confidentiality of the professional information pursuant to legislation.
- 3) Utilize any assets and resources that it has been allocated purposefully and rationally.





- 4) Ensure it does not violate the principle of independence and confidentiality of the safety investigation, forward to other structural units of the Ministry information that is necessary for them to perform their tasks.

The objective of the safety investigations of railway accidents, serious accidents and incidents is to determine the causes and make recommendations in order to prevent such occurrences in the future and not to appoint blame or liability. The objective of the safety investigation has been provided by Subsection 42 (3) of the Railways Act and Section 1 of the Minister's Directive "Safety Investigation Procedures",

In order to achieve its role and aim the ESIB has the right to

- 1) Access documents and information necessary for fulfilling the tasks assigned to the Safety Investigation Bureau from ministers, secretaries general and deputy secretaries general, other departments, government authorities within the jurisdiction of the Ministry and legal persons governed by private law which are subject to the Ministry's founding, membership, stockholder or shareholder rights.
- 2) Engage employees of other departments in resolving issues within the Safety Investigation Bureau remit.
- 3) Receive relevant ancillary services from the Ministry's departments.
- 4) Work in cooperation with other government and local authorities and legal persons governed by private law and make recommendations to form committees and working groups within its areas of activity.
- 5) Within limits of its competence, communicate information to other authorities and persons.
- 6) Make proposals for contracts required for fulfilling its tasks.
- 7) Get further training in order to improve the professional level of the Safety Investigation Bureau employees.
- 8) Receive necessary office equipment, resources and literature and technical and information support.
- 9) To enter into collaboration agreements with other ministries, government departments and experts.

In the course of 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.
- 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 and the report on the execution of the previous year's budget.
- 5) Develops and implements its development plan and work schedules.
- 6) Monitors, analyses and assesses the situation in its areas of activity and informs relevant bodies, Ministry's departments and other authorities and businesses of its conclusions.
- 7) Performs tests and expert analysis on machinery, engines, equipment, its details and assemblies and other devices to assess their compliance with requirements in order to clarify the circumstances of a case under investigation.
- 8) Makes recommendations and takes decisions within its jurisdiction provided by law.
- 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) Implements measures for witness protection.
- 11) Performs the duties assigned by legislation as a chief or authorised processor of the database of cases investigated.
- 12) Preserves the items, equipment, assemblies and details in its possession that are relevant to ascertaining the causes of the occurrence.
- 13) Organises information days about safety and development activities.
- 14) Possesses, uses and disposes of public property in its possession in cases provided by and in accordance with legislation.
- 15) Advises individuals in matters relating to the Safety Investigation Bureau's areas of activity.
- 16) Performs other tasks assigned by legislation.

The following rights have been established to define the jurisdiction of the official appointed by the Safety Investigation Bureau to conduct the safety investigation of a railway accident or incident:

- 1) Immediate access to the rolling stock, railway infrastructure and traffic control and signalling devices involved in an accident, serious accident or incident.
- 2) Restrict unauthorised access to the scene of the accident and prohibit handling, removing or destroying items from the scene of the accident.
- 3) Ensure immediate inventory of all evidence and controlled removal of the wreck, rolling stock, infrastructure equipment or components for investigation or analysis.
- 4) Immediate access to the on-board and other recording equipment and their recordings and to subject them to their control.
- 5) Immediately receive into their disposal autopsy reports of the casualties and the results of the analysis of any samples taken from the deceased.



- 6) Question witnesses and persons who might have important information regarding the safety investigation and demand confirmation or provision of information necessary for the safety investigation.
- 7) Access to all relevant information and documents independently or in cooperation with the authority conducting the preliminary criminal investigation.
- 8) Immediate access to the testimony of persons associated with the occurrence and to the analysis results of any samples taken from these persons.

### 1.3 Organisation

As a structural unit of the Ministry of Economic Affairs and Communications the Safety Investigation Bureau performs specific tasks and therefore has a special organisational status compared to other structural units. For its work the ESIB utilizes the Ministry's ancillary services but is independent in conducting safety investigations and making any decisions associated with these. The ESIB's activities are conducted according to an annual work schedule. Cooperation with other structural units of the Ministry is in accordance with the Ministry's work schedule.

The letterhead, website, logo and budget all reflect the ESIB's distinctive organisational nature. In addition, there is an ESIB official's certificate of employment.

In 2015 four officials worked at the Safety Investigation Bureau - a director, an aviation accident investigation expert, a chief specialist in marine accident investigation and a chief specialist in railway accident investigation.

The decision whether to begin or not a safety investigation of an accident or an incident is made by the Safety Investigation Bureau. A safety investigation is completed by the safety investigation report which is signed by the members of the committee or the investigator-in-charge and the director of the Safety Investigation Bureau. The report is planned so it would be completed 12 months after the occurrence at the latest and immediately published on the ESIB website as well as forwarded to those concerned. If it is not possible to publish the investigation report within this time frame, an interim report is published.

### 1.4 Organisational flow

Organisationally, the Safety Investigation Bureau is one of the structural units of the Ministry of Economic Affairs and Communications fulfilling a specific task. From a



legal and functional perspective, by possessing additional special rights the Safety Investigation Bureau is more separate and therefore, more independent than the other structural units – departments of the Ministry. Structurally the ESIB forms a single unit the work of which is organised, within his competence, by the director. The staff officials are responsible for the accurate, lawful and timely completion of the duties assigned to them.

The duties of each of the officials include conducting safety investigations of accidents and incidents of one transport sector. An official conducting safety investigations of maritime, aviation or railway accidents is independent in his activities but if necessary, will work in cooperation with the other officials. Instances of safety investigators assisting colleagues from another transport sector have been increasing year-on-year. If one of the officials is away the others will cover his work to a certain extent. All officials of the Safety Investigation Bureau are required to take turns to be on call for 24 hours.

The Safety Investigation Bureau conducts safety investigations of accidents and incidents of all three transport sectors. In the meantime, this is the final year when the Estonian Maritime Administration have the right to conduct a safety investigation of any maritime accident where the ESIB did not deem it necessary. Other investigations and proceedings related to the accidents and incidents that are being conducted by law enforcement, surveillance authorities or other authorities, institutions or undertakings are not related to the safety investigations conducted by the Safety Investigation Bureau.

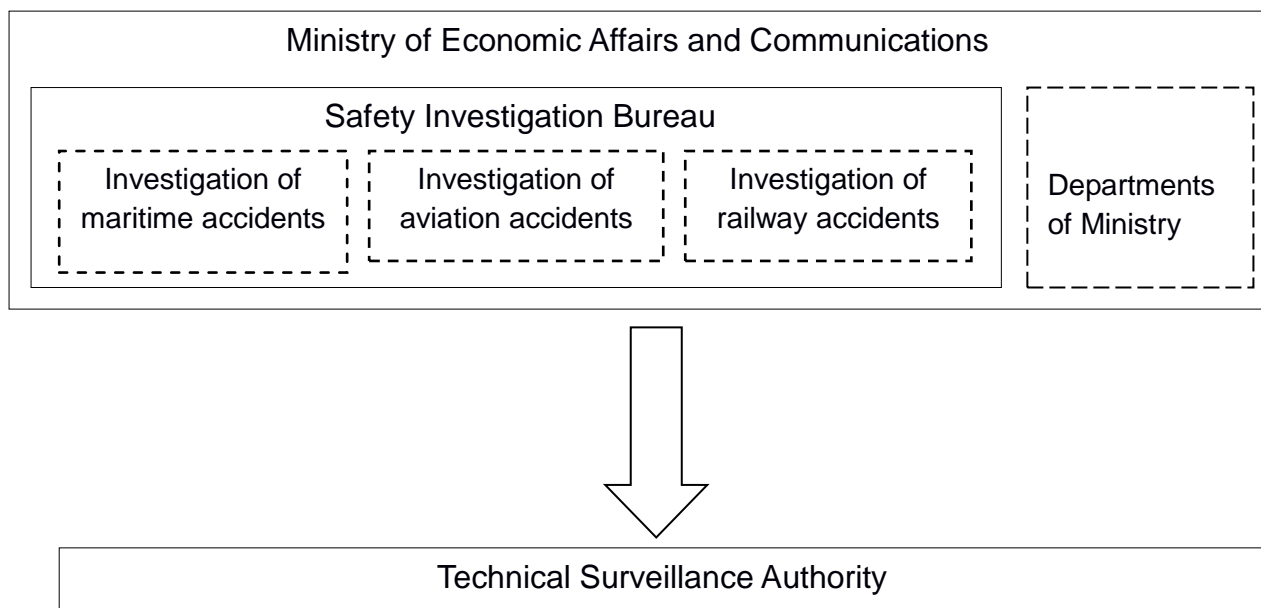


Figure 1 The Safety Investigation Bureau in the organisational structure of the Ministry



The Technical Surveillance Authority which performs the function of the railway safety authority in Estonia is an independent department of administration of the Ministry of Economic Affairs and Communications with a separate budget, structure and management.

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. The Ministry of Economic Affairs and Communications is a shareholder for three of them. These are the railway infrastructure manager Estonian Railways Ltd, railway undertakings AS EVR Cargo and AS Eesti Liinirongid (Elron). The state does not participate in the ownership of the rest of the infrastructure and freight companies. The relationship between the Safety Investigation Bureau and railway undertakings is regulated by legal acts and directives.



## 2. Investigation processes

### 2.1 Cases to be investigated

Since 2015, a classification of occurrences affecting railway safety is identical to the Railway Safety Directive 2004/49/EC; these are an accident, a serious accident and an incident.

The “Railways Act“ provides the Safety Investigation Bureau’s obligation to conduct safety investigations. The Safety Investigation Bureau is obligated to begin a safety investigation in case of a serious accident.

The Safety Investigation Bureau has the legal right to investigate accidents or incidents if the circumstances that arose or similar circumstances might have caused a serious accident, including significant physical harm to five or more people, at least one death, also technical failure in the subsystem of the Trans-European conventional or high-speed rail system or interoperability constituent. When making the decision the Safety Investigation Bureau takes into account the severity of the case, including from the pan-European perspective and other important circumstances. In making its decision the Safety Investigation Bureau relies on its previous experience but in its assessment of an accident or incident also considers applications submitted by a safety investigation body of another European Union member state, the Technical Surveillance Authority and infrastructure managers and railway undertakings. In 2015, the ESIB also started to develop more specific criteria for making the decision in regards to beginning a safety investigation.

Estonian national legislations use the same wording, vocabulary and standards when characterising and describing the cases investigated as Articles 19 and 21 of the Safety Directive.

### 2.2 Institutions involved in investigations

Principles of involvement of all parties in safety investigations are specified in the Railways Act. All institutions involved in the investigation are obliged to provide assistance to the Safety Investigation Bureau within the limits of their competence. The ESIB makes the decision whether railway undertakings and third persons are required to cooperate; the latter are obliged to present any relevant information in



their possession if requested by the ESIB. Third persons may be natural or legal persons. The Safety Investigation Bureau has the right to involve experts and set up committees to determine circumstances requiring specialist knowledge. Experts or committees involved in the safety investigation take part in the safety investigation under the guidance and supervision of the official conducting the safety investigation – the investigator-in-charge.

The Directive “Safety Investigation Processes“ provides the function of the investigator-in-charge as an organiser of cooperation and information exchange between the various individuals, authorities, committee members, experts and advisors.

Based on previous experience, practice has evolved where relevant institutions and persons have been involved in the interests of the safety investigation in order to pass information to the investigator-in-charge. A few specialists and experts from various institutions have been included short-term in the investigation. Integration of fact-based information with the rest of the investigation material has always been the task of the investigator-in-charge.

Direct information is obtained at the scene and from the railway infrastructure managers and railway undertakings or other undertakings that are involved in the case. Information from the Technical Surveillance Authority, the police and the Rescue Board are used for cross-referencing and additional information.

In the spring of 2015, a cooperation agreement was signed between the Police and Border Guard Board, the Office of the Prosecutor General, the Rescue Board, the Emergency Centre, and the Safety Investigation Bureau. The purpose of the agreement was to ensure the coordinated activities of the various authorities when fulfilling the duties assigned to them by legislation. If criminal proceedings are initiated in addition to a safety investigation in relation to an accident or an incident, all parties ensure that the proceedings do not hinder each other. The Emergency Centre sends a SMS to the Safety Investigation Bureau’s 24-hour helpline. If possible, the police and the Rescue Board offer their skills in ensuring safety at the scene as well as conducting investigations after the rescue operations have finished. All parties allow access to evidence and factual information, except where it is forbidden by law. It is the decision of the prosecutor’s office whether to share data collected as part of criminal proceedings. 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. The parties work in cooperation but the safety investigation and criminal proceedings are kept separate.

It is also inevitable that cooperation is required from hospitals to determine the extent of injuries and insurance companies in order to ascertain the losses incurred to



private persons. If necessary, weather conditions are specified with the meteorological service and other circumstances with local authorities, government departments, other authorities, businesses and organisations.

The investigator-in-charge is engaged in analysis of the information gathered during the investigation, making connections between the various events and activities and developing conclusions and recommendations. During the safety investigation the investigator-in-charge contacts the persons involved and a summary of the drawn up conclusions will be presented to the authorities, institutions and private persons that were involved in the case in order for them to express their opinions. The investigator-in-charge or a member of the investigation committee has never been part of an internal investigation of an infrastructure manager, police criminal investigation, or supervision or misdemeanour proceedings of the Technical Surveillance Authority. Neither have the representatives of the aforementioned institutions participated in the safety investigation.

The safety investigation is organised pursuant to legislation and relies on the experience of the investigator-in-charge. The investigator-in-charge assesses each case individually and decides the help of which institutions is required and which to cooperate with in the course of the safety investigation. When beginning the safety investigation, the investigator-in-charge drafts a plan for the investigation proceedings where the more significant stages are outlined.

## 2.3 Investigation process and approach of the Investigation Body

The Safety Investigation Bureau has signed an agreement by which the Emergency Centre notifies the ESIB by email and via the public 24-hour helpline of all occurrences in air, water and rail that it is aware of. Railway infrastructure managers and possessors and railway undertakings call either the 24-hour helpline or the official conducting the railway safety investigation directly immediately after an accident, a serious accident or an incident to make the initial notification of the occurrence. A written, updated notification of an accident or a serious accident is made in an agreed format within three working days. They will make a written notification of an incident in an agreed format within the same timeframe if the Safety Investigation Bureau requests this. All written documents will be stored within a digital document management system.

If the verbal notification of a railway accident or incident is received by another one of the officials, it will be forwarded to the investigator-in-charge conducting safety investigations of railway accidents. Upon receiving the verbal notification, the case





proceedings will begin. The investigator-in-charge will clarify the initial circumstances of the case, analyse them, if necessary, will obtain additional information and eventually make a conclusion whether the characteristics of the case necessitate attendance at the scene or not. Based on the verbal information the investigator-in-charge draws up a written summary of the occurrence, assesses it from the safety investigation aspect and forwards these to the Director of ESIB along with his recommendations regarding whether to begin an investigation or not. In the case of a serious accident the investigator-in-charge notifies the Director of the Safety Investigation Bureau immediately by telephone. The Director of the Safety Investigation Bureau maintains records of notifications received and if necessary, requests additional information. The Director's position on whether to begin or not to begin a safety investigation is final and binding to the investigator-in-charge.

Pursuant to the Railway Safety Directive 2004/49/EC and Subsection 42 (8) of the Railways Act, the Safety Investigation Bureau must make a decision whether to begin an investigation or not maximum one week after receiving notification of an occurrence. If the ESIB has decided to begin a safety investigation of the occurrence it will notify the European Railway Agency within a week. The investigator-in-charge enters the relevant information to the European Railway Agency database.

The Safety Investigation Bureau has developed a unified multi-modal approach to the organisation of safety investigations of maritime accidents, aviation accidents and railway accidents which has been provided by the Ministry Directive "Safety Investigation Procedures". Based on the Ministry Directive the ESIB Director has approved a "Safety Investigation Manual" which has been drawn up by the officials. Usually the investigator-in-charge of the specific area of transport leads the safety investigation and is responsible for the success of the safety investigation. The investigator-in-charge has to conduct the proceedings at the scene of the accident in a shortest possible time so as not to delay the process of reopening of the rail service. Once the decision has been taken to begin the safety investigation the investigator-in-charge informs the relevant parties of the decision, drafts an investigation plan and sets out to fulfil it. The investigator-in-charge coordinates the gathering, storage and analysis of data and evidence and the contracting of experts as well as any other necessary activities.

The investigator-in-charge communicates with natural as well as legal persons via various methods and means of communication. The first are usually the victims and their families. In order to ascertain the circumstances of the occurrence the investigator-in-charge works in active cooperation with state and local government authorities, businesses and organisations. The more important verbally forwarded information is recorded; according to the procedures written information is stored within a document management system. Upon receiving notification of the investigation the railway undertakings retain all evidence and details of items, technical circuits, 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, these must be presented to him. Information about the safety investigation is generally issued by the investigator-in-charge, or, with prior agreement, a member of the investigation committee or the Director of the Safety Investigation Bureau. If circumstances indicating persistent high risk become evident, the organiser of the safety investigation makes a safety alert on behalf of the Safety Investigation Bureau.

During the course of the safety investigation it is ensured that all individuals and parties concerned are heard in order to guarantee that the safety investigation is conducted as publicly as possible. For this, the investigator-in-charge turns to the businesses concerned, and if there are any connections with the occurrence, the safety investigation authority of another member state, victims, their families, owners of any damaged property, manufacturers, rescue authority, insurance company and the representatives of the employees and the passengers to find out their view of the occurrence and an opportunity to present their attitude, position and opinions on the proceedings of the safety investigation and its results. The investigator-in-charge is allowed to disclose the details and developments of the safety investigation to those concerned to the extent where it does not jeopardize the basic requirement which is to establish the causes of the case and to develop recommendations to increase safety. Information that has restricted access pursuant to cases specified by The Public Information Act is not disclosed during or after the safety investigation.

All safety investigations that have been conducted in Estonia since 2004 have been completed within the prescribed one-year time limit. If the safety investigation was not completed within a year, an interim report will be compiled instead of a final report. The investigator-in-charge is responsible for the investigation report to be completed in a timely manner and in the prescribed format.

If necessary, the Director of the Safety Investigation Bureau forms a safety investigation committee consisting of relevant specialists. It is not allowed to appoint any of the following as members of the committee: representative or employee of the manufacturer, operator or insurer connected to the accident, representative of the casualties or the victims or any other person who has conflicting interests with the safety investigation; also a person who is involved in the proceedings to establish blame or responsibility for the accident. The investigator-in-charge or the Director of the ESIB will be appointed as the chairman of the committee. Duties will be assigned to the members of the committee. The meetings of the committee will be called by the chairman. All meetings are recorded in the minutes which record the progress of the safety investigation, questions or versions which have arisen, decisions taken, instructions given by the chairman and differences of opinion between the members of the committee. The minutes of the meeting are signed by all members of the committee who took part in the meeting. A designated representative of a foreign safety authority has the right to participate in the work of the committee.



### 3. Safety Investigations

#### 3.1 Overview of completed investigations

During 2015 the Safety Investigation Bureau was notified of 26 accidents and 11 incidents. The Safety Investigation Bureau assessed the circumstances of all occurrences and heard the various opinions about them. Based on their characteristics, none of the occurrences qualified for a safety investigation. In summary, no safety investigations were conducted in the reporting year.

#### Summary of the safety investigations completed in 2015

Table 1

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

In the previous couple of years, the Safety Investigation Bureau conducted a safety investigation of one accident per year that resulted in a fatality. Furthermore, the investigation in 2014 was of a serious accident. Comparing the last year to the previous we notice a reduction in the number of safety investigations but in longer retrospective there is no persistent trend so the changes in the number of safety investigations can be considered incidental.

#### 3.2 Safety investigations completed and commenced in 2015

Immediately prior to the end of 2015 there was a sudden and considerable drop in air temperature in Estonia. As a result of this, there were track breakages in thermit



welds before and after the year end. The track breakages did not lead to any dangerous traffic situations and therefore there was no requirement to begin a safety investigation but the Safety Investigation Bureau monitored the situation and drew up their position which was forwarded to the railway infrastructure manager and the Technical Surveillance Authority.

No safety investigations were commenced or completed during the reporting year.

### Safety investigations completed in 2015

Table 2

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

Basis for investigation: i = pursuant to the safety directive

In the reporting year there were no accidents where the Safety Investigation Bureau began a safety investigation which would have continued into the following year. Also, no safety investigations from the previous year remained incomplete.

### Safety investigations commenced in 2015

Table 3

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

Basis for investigation: i = pursuant to the safety directive

## 3.3 Summary of the safety investigations completed in 2015

The Safety Investigation Bureau's position broken rails that took place at late 2015 and early 2016 was completed in 2016 and hence the summary of this will be presented in next year's report.

### 3.4 Comments of investigations

When assessing the number of fatalities in the cases investigated over the past five years we can observe that there has been no change in the numbers. The number of fatalities remains between zero and two. Equally, there is no tendency for change in the number of injuries. However, it is worth mentioning the serious accident with a passenger train that took place in 2014 where 12 people sustained minor injuries as this was the most severe for several years.

#### Total number of deaths and injuries

Table 4

Year	Deaths	Injured in road vehicle / of them seriously	Injured in rolling stock / of them seriously
2011	1	-	1/-
2012	-	-	-
2013	1	-	-
2014	2	-	12/-
2015	-	-	-
<b>Total</b>	4	-	13/-

#### Breakdown of the injured and deaths

Table 5

Breakdown by type of persons		Year, number				
		2011	2012	2013	2014	2015
Deaths	Passengers	-	-	-	1	-
	Staff	1	-	-	-	-
	Third parties	-	-	1	1	-
	<b>Total</b>	1	-	1	2	-
Injured	Passengers	-	-	-	12	-
	Staff	1	-	-	-	-
	Third parties	-	-	-	-	-
	<b>Total</b>	1	-	-	12	-

### 3.5 Accidents and incidents investigated during the past five years (2011 – 2015)

#### Breakdown of investigated cases by years

Table 6

Title of the case		Year, number of investigations					
		2011	2012	2013	2014	2015	Total
Art 19.1,2	Train collision	1	-	-	-	-	1
	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	-	-	1	-	-	1
	Accident to person caused by RS in motion	-	-	-	-	-	-
	Fire in rolling stock	-	-	-	-	-	-
	Accident involving dangerous goods	-	-	-	-	-	-
Incident	-	-	-	-	-	-	
<b>Total</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>3</b>	

## 4. Recommendations

### 4.1 Short review and presentation of recommendations

During the past five years several recommendations have been made in the safety investigation reports to various recipients. The recommendations have been developed based on the circumstances that have come to light as a result of the investigation and the classification of these is reflected in the following table.

#### Recommendations for improvement of safety

Table 7

Field of activity of recommendation	Year, number of recommendations				
	2011	2012	2013	2014	2015
Maintenance and care of railway infrastructure	-	-	-	-	-
Care, maintenance and managing of rolling stock	1	-	-	-	-
Organisation of supervision	4	-	-	-	-
Road traffic management, road traffic control devices	-	-	1	1	-
Winter maintenance of roads	-	-	-	-	-
Dissemination of information concerning traffic, training	-	-	-	1	-
Amendments to legal acts and regulating instructions	4	-	-	-	-
Operation of traffic lights, railway traffic control	-	-	1	2	-
Organisation of operation of railway communication devices	1	-	-	-	-
Use of information recording equipment	2	-	-	-	-



Professional qualifications of railwaymen	3	-	-	-	-
Other arrangements	3	-	-	-	-
<b>Total</b>	18	-	2	4	-

Pursuant to Estonian Railways Act all addressees who received recommendations in the safety investigation report have to submit by 1 April an annual report of the status or results of the proceedings of the recommendations made. If the recommendation proceedings continue an annual report on the status of the proceedings will be submitted in the subsequent years until the proceedings have been completed.

The following table reflects the results of the recommendation proceedings based on data from 1 April 2016. As there were no recommendations made in 2015 the corresponding line on the table has no data. Proceedings of one of the recommendations made in 2014 continued in the reporting year and were concluded. Therefore, the data in the table of this report is different from the table about 2014 presented last year.

### Implementation of recommendations

Table 8

Recommendations issued		Recommendation implementation status							
		Implemented		In progress		Not to be implemented		Implementation suspended	
Year	No	No	%	No	%	No	%	No	%
2011	18	8	44,44	8	44,44	2	11,12	-	-
2012	-	-	-	-	-	-	-	-	-
2013	2	2	100	-	-	-	-	-	-
2014	4	4	100						
2015	-	-	-	-	-	-	-	-	-
<b>Total</b>	24	14	58,34	8	33,33	2	08,33	-	-

The requirement to present a report about the recommendation proceedings every year until the conclusion of the proceedings was established in 2014. The table does not reflect proceedings from previous years that were concluded in the following years.





## 4.2 Recommendations proceeded in 2015

Proceedings of one of the recommendations made in the previous year continued in the reporting year. In 2014 the following recommendation was made to non-profit association Operation Lifesaver Estonia:

- Develop educational materials for addressing railway safety as part of driving instruction.

NPA Operation Lifesaver Estonia (OLE), in cooperation with its partners, developed a training programme and educational materials for the driving schools called „Safety on railway crossings. Training programme for drivers of motor vehicles“ which helps to explain the issues around safety on railway level crossings. In addition to the legal regulations the training materials explain the risks involved with railway crossings. Drivers are offered recommendations of how to cross railways safely and what to do in a dangerous situation. Staff conducting theory instruction in driving schools have the right to use the materials developed by OLE after relevant training has been carried out. The materials consist of discussion topics, safety requirements, definitions, legal provisions relevant to drivers, slides illustrating the whole material and explaining the definitions.



## Annexes

### Annex 1

#### Proceeding of recommendations – Raasiku, 16.04.2014

Date and time	16.04.2014 at 15:19		
Location	Estonian Railways Ltd infrastructure, Raasiku station, II main track, rural area, km 134,582.		
Type of occurrence	Level crossing accident, serious accident		
Train type and number	Passenger train No 0290		
Road vehicle	MAN truck with BENALU trailer		
		On the train	In the road vehicle
Number of persons (on board the train and vehicle)	Crew	2	1
	Passengers	129	-
Fatally injured	Crew	-	1
	Passengers	1	-
Seriously injured	Crew	-	-
	Passengers	-	-
Slightly injured	Crew	-	-
	Passengers	12	-



Damages to rolling stock	Damage to the roof, side wall, frame, bogie and passenger compartment of A- and D- carriages. Minor damage to the engine unit and M- and C-carriages.	
Damages to track equipment	15 m of track, 421 concrete sleepers, 71 tons of aggregate, 1 point, 257 m of plant for transforming and carrying electric power for train haulage, 4 throttle transformers and 1 electric drive of the communication system.	
Other damages	MAN TGA01 truck and BENALU SPT34C trailer were deformed and became wreckage.	
Summary: Ignoring the prohibiting traffic lights on a level crossing a MAN truck drove into the side of the third carriage of 4-carriage Stadler Flirt DMU 2428 diesel passenger train.		
Final report issued	27.10.2014	
Recommendation No 03	The truck driver was competent and very knowledgeable of the Traffic Act but did not adequately estimate the dangers of the railway when electing a manner of driving.	
Date	Status	Explanation
01.04.2016	Accepted and implemented	NPA Operation Lifesaver Estonia has developed training materials for driving schools that have been approved by the Estonian Road Administration and the Technical Surveillance Authority.