

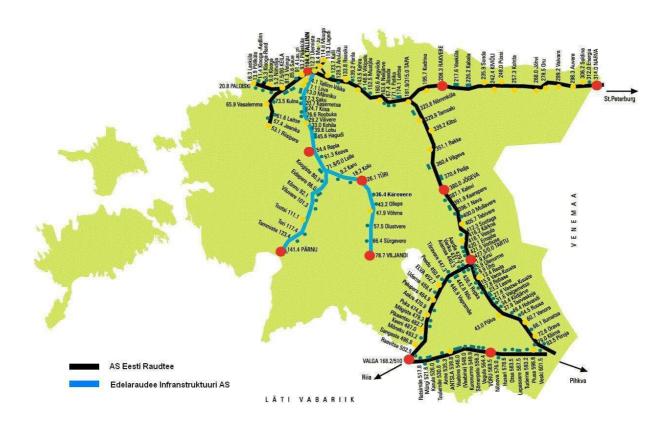
Ministry of Economic Affairs and Communications Estonian Safety Investigation Bureau

Report of the railway accidents investigated in 2012

Tallinn 2013

Annual report 2012





Public railways in the Republic of Estonia



Preface to the report

This annual report is the ninth of its kind, but at the same time it is the first where no investigations which have taken place in the reporting year, are covered. There were no accidents during the year which required an investigation.

In 2012 there were significant changes in the field of Estonian railway accident safety investigation. On the 1st January, a single, multi-modal Estonian Safety Investigation Bureau was formed under the Ministry of Economic Affairs and Communications to investigate accidents in maritime, aviation and railway sectors. In November a new Ministry of Economic Affairs and Communications directive for all three transport types, "Rules for Safety Investigation", came into force; this was drawn up by the colleagues from the new structure. The Directive was signed on the 9th November and came into force on the 17th November 2012.

This annual report is a summary of the experiences from the previous years and the operating principles of the Safety Investigation Bureau.

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1. Introduction to the Investigation Body

1.1 Legal basis

Pursuant to the European Parliament and Council Railway Safety Directive 2004/49/EC, a Unit for Investigation was established by Estonian Ministry of Economic Affairs and Communications on 31st March 2004. In order to apply the directive to the Estonian judicial system, amendments to the "Railways Act" entered into force on 2 March 2007. From then on, all information was communicated between the Unit for Investigation and the European Railway Agency (ERA). As required, the Unit for Investigation started notifying ERA of the launch of each investigation and once the investigation was completed, entered an investigation report to the ERA database.

On the 1st January 2012, amendments to the "Aviation Act", "Maritime Safety Act" and "Railways Act" came into force which enabled the formation of a new structural unit, the Safety Investigations Bureau (SIB) at the Ministry of Economic Affairs and Communications. The Safety Investigations Bureau is a multi-modal structural unit, the task of which is to conduct safety investigations of the marine, aircraft and railway accidents.

According to Subsection 42 (1) of the "Railways Act" the Safety Investigations Bureau organises safety investigations of railway accidents and railway incidents and is independent in conducting these investigations and any subsequent decisions and is guided only by law and other legislation and any international agreements that are binding in Estonia. There is no official monitoring of the safety investigation work done by the Safety Investigations Bureau. Article 21 of the European Parliament and Council Directive 2004/49/EC on Railway Safety provides the independence of the investigative body which is ensured by the aforementioned provision in the "Railways Act".

The framework of the investigations of railway accidents is provided by the "Railways Act" Subsection 41 "Notifying the Technical Surveillance Authority "(5), Subsection 42 "Investigations of railway accidents and railway incidents" and Subsection 43 "Investigation Reports".

Pursuant to Subsection 41 of the "Railways Act" the railway infrastructure manager notifies the Safety Investigations Bureau immediately of a railway accident or rolling stock hitting a person by using a public communication device and subsequently, in writing. The Safety Investigations Bureau is notified of any railway incidents and rolling stock hitting persons by the railway infrastructure manager by the fifth day of the following month. Any incidents



involving rolling stock which are not accidents are presented in a written report by the railway infrastructure manager once the causes and other facts have been established but no later than within five working days following the incident. The Ministry of Economic Affairs and Communications has enacted a directive "Procedures for providing written notification of railway traffic accidents, format for a written notification, a report and a summary of railway incidents and other safety events involving rolling stock." In addition to the format of the written notification, report or summary, the directive requires that the written notification is made to the Safety Investigation Bureau within three working days.

Subsection 42 provides the procedures for launching the investigation, involving experts and the Safety Investigation Bureau's right to form committees as well as the rights of the person conducting the safety investigation and the obligations of institutions involved in the investigation to give assistance to the safety investigation within their limits of competence.

Subsection 43 provides the length of a safety investigation as 12 months, requirements to the report and the presentation of the report to all relevant persons, state authorities and the European Railway Agency. The same subsection provides that the addressees of the recommendations made in the investigation report are to present a report to the Safety Investigation Bureau by the 1st April of the following year on measures which have been implemented or planned based on the recommendations. The Safety Investigation Bureau has the obligation to compile a report of accidents investigated in the previous year, to publish it on the website and forward it to the European Railway Agency in a timely manner.

For the majority of the year in question, the Ministry of Economic Affairs and Communications Directive No 24 "Procedures for Investigating Railway Accidents, Railway Incidents and Collisions" was in force. The directive provided the procedures for launching and conducting the investigation, investigation activities, requirements for drafting the investigation report and storing the investigation materials and the procedure for implementation of recommendations made as a result of an investigation.

Following the formation of the Safety Investigation Bureau, a multi-modal Ministry of Economic Affairs and Communications Directive "Safety Investigation Procedures" was developed and introduced on the 9th November 2012. As well as the other transport sectors, the directive provides the procedures for the safety investigations of railway accidents, railway incidents and collision with railway rolling stock. The directive specifies that the safety investigation will be conducted by an investigator-in-charge or a safety investigation committee, defines the procedures for the safety investigation, raising an alert, preparation and signing of the safety investigation report, closing and, if necessary, re-opening the safety investigation and registration of the cases being investigated.



1.2 Role and aim

The main objective of the Safety Investigation Bureau is to investigate aircraft-, marine- and railway accidents and incidents, determine their causes and make suggestions and recommendations for increasing traffic safety, to participate in the development of legislation regulating its areas of activity and to make recommendations for amendments, to participate in formulation of policies, strategies and development plans related to the SIB areas of activity, to prepare and implement projects, including international projects and to participate in their preparation.

The objective of the safety investigation of railway accidents has been provided by Subsection 42 (3) of the Railways Act and Subsection 1 of Ministry of Economic Affairs and Communications Directive "Safety Investigation Procedures". The objective of the safety investigation is to determine the causes of a railway accident or a railway incident and if necessary, a collision, to make safety recommendations and suggestions in order to prevent the occurrence of such incidents in the future and not to point blame or liability.

Depending on the complexity of the incident and workloads, the safety investigation can be conducted by an investigator-in-charge appointed by the Safety Investigation Bureau or the Safety Investigation Bureau will form a safety investigation committee. Either the investigator-in-charge or the director of the Safety Investigation Bureau will be appointed as the chairman of the committee.

1.3 Organisation

The Safety Investigation Bureau is a structural unit of the Ministry of Economic Affairs and Communications which is independent in conducting safety investigations and making any decisions associated with these. The Ministry ensures the administration and other general issues relating to the work of the Safety Investigation Bureau, that its activities are in accordance to and in cooperation with other structural units of the Ministry. The Safety Investigation Bureau reports to the secretary general and the Minister in its administration and other general issues.

The Safety Investigation Bureau has the right to

1) access the documents and information necessary for fulfilling the tasks set to the Safety Investigation Bureau from the Ministry leadership, other departments, state



authorities within the jurisdiction of the Ministry and legal persons governed by private law;

- 2) Pursuant to regulations and agreements, engage employees of other departments in resolving issues in the Safety Investigation Bureau remit;
- 3) Make proposals for contracts required for fulfilling its tasks;
- 4) Receive additional training in order to improve the professional level of the Safety Investigation Bureau employees;
- 5) Necessary office equipment, resources and literature and technical and information support.

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:

- Immediate access to the scene of the railway accident, railway incident, railway crash or collision, to the rolling stock involved in the accident, incident or other safety event involving rolling stock, railway infrastructure and traffic control and signalling devices;
- 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 the 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) Immediate disposal of the 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 incident and to the analysis results of any samples taken from these persons.

The employees of the Safety Investigation Bureau are confirmed by the Minister, their functions are specified in the job descriptions confirmed by the secretary general on the recommendation of the director of the Safety Investigation Bureau.

In 2012, the year in question, there were altogether three officials in the Safety Investigation Bureau to investigate incidents in the three different areas of transport. There was an expert for conducting safety investigations of aircraft accidents, a chief specialist for conducting safety investigations of marine accidents and a chief specialist for conducting safety



investigations of railway accidents. The Head of the Safety Investigation Bureau is appointed by the Government of the Republic. In 2012 the Government of the Republic did not appoint a Head of the Safety Investigation Bureau.

The Safety Investigation Bureau prepares a draft budget and a report on the execution of the previous year's budget. The Safety Investigation Bureau's budget is an organic part of the Ministry of Economic Affairs and Communications' budget.

Tasks of the Safety Investigation Bureau include participating in international projects related to its areas of activity and in preparation of these projects and, in concordance with the Ministry, representing the country in international organisations. The Safety Investigation Bureau takes part in fulfilling any duties of the Republic of Estonia pursuant to the international agreements relating to its areas of activity.

The decision as to which incident to investigate is made by the Safety Investigation Bureau in accordance to the conditions stipulated in the Railways Act. The safety investigation report which is the final act of the safety investigation is signed by the investigator-in-charge or, in the case of an investigation committee, the chairman and all the members of the committee. The safety investigation report is approved by the Head of the Safety Investigation Bureau. The report is published on the Safety Investigation Bureau website 12 months after the incident at the latest. If it is not possible to publish the investigation report within this time frame, an interim report is published.

1.4 Organisational flow

In Estonia the duties of a ministry of transport are performed by the Ministry of Economic Affairs and Communications. The Safety Investigation Bureau is a structural unit of the Ministry which performs a specific task. There are no additional structural units within the Safety Investigation Bureau. It has three areas of activity: safety investigation of marine accidents, safety investigation of aircraft accidents, safety investigation of railway accidents. Each area has an official engaged in its activities who is independent in his work. The officials communicate with each other regarding general and common issues which creates a greater synergy. The work has been organised in a wane official can cover for the other if required but not in substantive issues of the work.



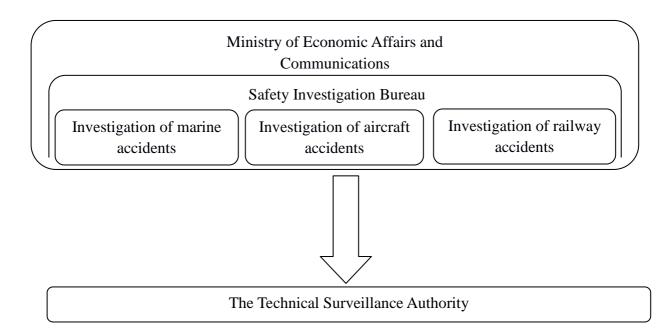


Figure 1. The Safety Investigation Bureau (NIB) and Surveillance Authority (NSA) within the structure of the Ministry.

All officials involved in transport safety investigations are based in the Safety Investigation Bureau except for the maritime safety investigations which have been divided between Estonian Maritime Administration and the Safety Investigation Bureau. There are other structures and bodies which are involved in transport safety investigations but their tasks and objectives of the investigation are different.

The function of the railway safety authority (NSA) in Estonia is performed by the Technical Surveillance Authority. The Technical Surveillance Authority is an independent division of the Ministry of Economic Affairs and Communications with a separate budget.

Railway infrastructure managers and rail operators are independent manufacturing enterprises acting as legal persons. The relationship between the Safety Investigation Bureau and railway undertakings has been regulated by legal acts and directives.



2. Investigation process

2.1 Cases to be investigated

The Railways Act provides the duty of the Safety Investigation Bureau to investigate accidents where at least one of the following consequences has occurred:

- 1) loss of one or more lives; (except in cases where rolling stock runs down a person on the railway and there are no other consequences);
- 2) physical harm to five or more people;
- 3) extensive fire;
- 4) damages to the rolling stock, railway infrastructure or environment to the extent of at least 200 000 Euros;
- 5) interruption to railway traffic for more than 12 hours.

The Safety Investigation Bureau is also obliged to investigate accidents that lead to a necessity to make amendments to railway safety regulations or changes in ensuring railway safety.

The Safety Investigation Bureau has the right to conduct investigations of railway accidents, crashes and collisions with people if the circumstances which occurred could have caused an accident with aforementioned consequences, including in a case of technical component failure in Trans-European conventional or high-speed rail system or interoperability. The Safety Investigation Bureau makes a decision on the commencement of the investigation after determining the severity of the accident, incident or collision, including approaching the severity from the pan-European perspective and other important circumstances. The Safety Investigation Bureau consults the Technical Surveillance Authority and railway undertakings in order to determine the severity of such incidents.

Pursuant to the requirements of Article 19 of Railway Safety Directive 2004/49/EC, investigative bodies of the member state are required to investigate serious railway accidents. The definition of a serious accident has not been defined by the Estonian legislation. In Estonia there is an obligation to investigate all accidents which have the characteristics of a serious accident. In addition to serious accidents, according to Article 19 of the Directive they can also investigate accidents and incidents which, in different circumstances, might have caused serious accidents, including technical component failure in Trans-European conventional or high-speed rail system or interoperability. The Railways Act and the Ministry of Economic Affairs and Communications Directive "Classification of Railway Accidents and Railway Incidents, Safety Indicators and Procedures for Notification" have provided the



characteristics of railway accidents and other incidents and conditions which are pursuant to the requirements of Article 19 of the Directive. Article 21 of the Directive provides the right of the member states to trust the investigative bodies to investigate other incidents in addition to serious accidents. The Railways Act of Estonia also provides this.

2.2 Institutions involved in investigations

Other institutions are allowed to be involved in the investigation to the extent which does not compromise its independence. The Railways Act requires that institutions involved in the investigation provide assistance to the Safety Investigation Bureau within the limits of their competence. The Safety Investigation Bureau has the right to involve experts and set up committees to determine circumstances requiring specialist knowledge.

Practice so far has shown that all institutions, enterprises and persons have only been involved in investigations in order to obtain additional information and expert assessments. All the institutions involved in the investigation were approached by the investigator-in-charge personally. The institutions and experts have explained the information available to them within the limits of their competence. Analysis of the information and integration with the rest of the investigation material has been the task of the investigator-in-charge and the investigation committee.

Depending on the specific characteristics of the case, the Safety Investigation Bureau has worked in cooperation with the Technical Surveillance Authority (the national safety authority) in order to utilise the information available to them in the investigation process. Information has also been collected from the railway infrastructure manager and the railway operator whose rolling stock was involved in the accident. If the incident has been subject to police investigation, the safety investigation has worked in cooperation with the prosecutor's office and the police in order to obtain additional information. Detailed information about the rescue work and activities of the emergency services at the scene of the accident has been provided by the alarm centre. Assessment of the physical condition of the injured has been based on the information from the medical institutions. If there is reason to believe that the weather conditions could have influenced the circumstances of the incident under investigation, the exact weather conditions have been clarified by using the information from the meteorological service. The safety investigation has worked in cooperation with other enterprises and institutions if there has been any connection between these and the incident under investigation.



None of the institutions have attended the meetings of the investigation committee or influenced the analysis of the information, conclusions or recommendations in any other way. Neither has the investigation committee or the investigator-in-charge been part of supervision or misdemeanor proceedings of the Technical Surveillance Authority, internal investigations of the railway undertaking or in a police criminal investigation.

There has not been a situation during the safety investigation where an institution has regularly been involved in an investigation of any incident. Communications have been more frequent with the safety authority and larger railway undertakings whose infrastructure or rolling stock have inevitably been involved in the accidents more often. The emergency services have more often been involved in dealing with the consequences of the accidents and this has resulted in the need for cooperation in order to obtain relevant information.

Cooperation or involvement in the safety investigation of other institutions to obtain information about the incident depends on the characteristics of each incident and the necessity to work in cooperation with this particular institution.

2.3 Investigation process and approach of the Investigation Body

The Safety Investigation Bureau will launch the investigation of an incident after receiving notification from the railway infrastructure undertaking. Initial notification of the accident is made as soon as possible, around the clock, by telephone to the Safety Investigation Bureau telephone number which has been provided to the undertakings. Once the information has been clarified, a written notification of the incident is made to the Safety Investigation Bureau in an agreed format. Upon receiving the verbal notification the investigator-in-charge analyses the circumstances of the incident, asks clarifying questions form the person who made the notification Bureau needs to attend the scene or not. Based on the verbal information the investigator-in-charge presents his observations and opinions and makes his recommendations regarding the incident in writing by e-mail to the Head of the Safety Investigation Bureau. In the case of a more serious accident the investigator-in-charge notifies the Head of the Safety Investigation Bureau immediately by telephone.

Before taking the decision to launch an investigation, the investigator-in-charge will gather additional information about the incident from the parties concerned and the safety authority. Pursuant to the Railway Safety Directive 2004/49/EC and the Railways Act, the Safety Investigation Bureau must make a decision whether to launch the investigation maximum one week after receiving notification of the railway accident, railway incident or other safety event involving rolling stock. During this time a decision is made as to whether the incident



will be investigated by an investigator-in-charge or an investigation committee. The Safety Investigation Bureau shall notify the European Railway Agency within a week of the decision to launch an investigation by the investigator-in-charge entering the relevant information to the agency database.

The Ministry Directive "Safety Investigation Procedures" provides an integrated multi-modal approach to the organisation of safety investigations of marine accidents, aircraft accidents and railway accidents. The investigator-in-charge of the specific incident leads and is responsible for the successful execution of the safety investigation. The investigator-in-charge coordinates the investigation activities, gathering and analysis of data and evidence and the contracting of experts. The investigator-in-charge conducts the investigation of the scene of the accident in a shortest possible time so that the railway infrastructure undertaking can restore the railway infrastructure and open it to the railway transport services.

Upon receiving notification of the investigation until the order from the investigator-incharge, the railway undertakings will retain, and if requested, present to the investigator-incharge, 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 incident. Information about the safety investigation can generally only be issued by the investigator-in-charge, or, in special circumstances with prior agreement, a member of the investigation committee or the director of the Safety Investigation Bureau. To identify the circumstances of the case to be investigated, the investigator-in-charge or the investigation committee work, if necessary, in cooperation with state and local government authorities, railway undertakings and other persons in order to use information and materials at their disposal during the course of the investigation. If circumstances indicating persistent high risk become evident, the organiser of the safety investigation makes a danger alert.

The safety investigation is conducted as publicly as possible to ensure the hearing of all persons concerned. The organiser of the safety investigation regularly informs the undertakings concerned, the safety investigation authority of another member state, victims and their families, owners of any damaged property, manufacturers, rescue authority and the representatives of the employees and the passengers of the safety investigation and its developments and gives them an opportunity to present their opinions on the proceedings of the safety investigation and the safety investigation report. Disclosure is done to the extent which does not jeopardize the basic requirement which is to establish the causes of the incident and to develop recommendations to increase safety. Information, the disclosure of which has been limited by legislation will not be subject to disclosure.

The investigator-in-charge is responsible for ensuring that the investigation report and, if required, the interim report comply with the internationally agreed format, are completed published on time.

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When forming the safety investigation committee, specialists of safety investigation or a narrower field of expertise will be appointed as members of the committee. 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 Safety Investigation Bureau will appoint the investigator-in-charge or the Head of the Safety Investigation Bureau as the chairman of the committee. The Safety Investigation Bureau will also appoint the members of the committee and assign their duties. The meetings of the committee will be called by the chairman. All meetings are recorded in minutes which records the progress of the safety investigation, questions or versions which have arisen, decisions taken, instructions given by the chairman and differences between the members of the committee. The minutes are signed by all members of the committee who took part in the meeting. If a foreign safety authority has assigned a representative to the investigation, he has the right to participate in the work of the committee.



3. Investigations

3.1 Overview of completed investigations

During 2012 there were no accident safety investigations completed. In the previous year, investigation of one incident, a train collision, was completed. Therefore we can note a decrease in the number of incidents investigated in a year. None of the railway accidents or incidents had characteristics which would have required a safety investigation to be carried out.

3.2 Investigations completed and commenced in 2012.

There were no railway accidents during the report year for which the Safety Investigation Bureau launched an investigation and the investigation of which would have continued the following year. Neither were there any accident safety investigations which would have been conducted in its entirety within the same year following the accident.

3.3 Comments on investigations

During 2012 no safety investigations were launched and no safety investigations were suspended.

When comparing the statistics of the past five years, it is noticeable that the number of deaths in the investigated accidents has remained between zero and three. The largest number of deaths and injuries was in 2010. In the years prior and since then the number of injuries and deaths was smaller.



Total number of deaths and injuries

Table 1

Year		Injured in road vehicle / of them seriously				
2008	1	_	-			
2009	2	-	-			
2010	3	1/-	2/-			
2011	1	- 1/-				
2012	-	-	-			
Total	7	1/-	3/-			

The breakdown of injuries and deaths over the past five years is presented in the following table:

Breakdown of the injured and deaths

Breakdown	by type of	Year, numb	er			
persons		2008	2009	2010	2011	2012
Deaths	Passengers	-	-	-	-	-
	Staff	-	-	-	1	-
	Third	1	2	3	-	-
	parties					
	Total	1	2	3	1	-
Injured	Passengers	-	-	1	-	-
-	Staff	-	-	1	1	-
	Third	-	-	1	-	-
	parties					
	Total	-	-	3	1	-



3.4 Accidents and incidents investigated during the past five years (2008 - 2012)

In Estonia, between 2008 and 2012, the decisions to launch 8 out of 9 safety investigations have been based on Article 21 of the Railway Safety Directive 2004/49/EC. In 2011 the investigation was conducted pursuant to Article 19 of the same directive.

Only one serous railway accident and one railway incident have been investigated in the past five years. Out of the remainder of the railway accidents which have been investigated, 6 have taken place on level crossings and 1 was a derailment.

The classification of the investigated cases by years is reflected in the following table:

Breakdown of investigated cases by years

Title of t	he case	Year, number of investigations						
		2008	2009	2010	2011	2012	Total	
Art 19.1,2	Train collision	-	-	-	1	-	1	
Art 21.6	Train collision	-	-	-	-	-	-	
	Train collision with an obstacle	-	-	-	-	-	-	
	Train derailment	-	1	-	-	-	1	
	Level crossing accident	1	2	3	-	-	6	
	Accident to person caused by RS in motion	-	-	-	-	-	-	
	Fire in rolling stock	-	-	-	-	-	-	
	Accident involving dangerous goods	-	-	-	-	-	-	
Incident		-	1	-	-	-	1	
Total		1	4	3	1	-	9	



4. Recommendations

4.1 Short review and presentation of recommendations

Throughout the years, the railway accident investigation reports have contained recommendations to various fields for improvement of railway safety. As there were no railway accident safety investigations conducted in 2012, there were also no recommendations made to improve safety.

The following table gives an overview of recommendations made during the past five years:

Recommendations for improvement of safety

Field of activity of	Year, number of recommendations						
recommendation	2008	2009	2010	2011	2012		
Maintenance and care of	1	-	-	-	-		
railway infrastructure							
Care, maintenance and	-	1	-	1	-		
managing of rolling stock							
Organisation of	1	5	1	4	-		
supervision							
Road traffic management,	-	-	3	-	-		
road traffic control devices							
Winter maintenance of	-	-	-	-	-		
roads							
Dissemination of information	-	-	1	-	-		
concerning traffic, training							
Amendments to legal acts	2	5	1	4	-		
and regulating instructions							
Operation of traffic lights,	-	4	-	-	-		
railway traffic control							
Organisation of operation	-	-	-	1	-		
of railway communication							
devices							
Use of information	-	-	-	2	-		
recording equipment							
Professional qualifications	-	1	-	3	-		
of railwaymen							
Other arrangements	-	7	8	3	-		

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Total		4	23	14		18		

Pursuant to Estonian law, all authorities, enterprises and institutions have to submit a yearly report by 1 April of how they implemented the recommendations made in the previous year's report. The following table reflects implementations of recommendations during the past five years:

Implementation of recommendations

	Recommendation implementation status										
Recommendations issued		Implemented		In prog	In progress		Not to be implemented		entation ed		
Year	No	No	%	No	%	No	%	No	%		
2008	4	4	100	-	-	-	-	-	-		
2009	23	6	26,09	17	73,91	-	-	-	-		
2010	14	5	36,00	9	64,00	-	-	-	-		
2011	18	8	44,44	8	44,44	2	11,12	-	-		
2012	-	-	-	-	-	-	-	-	-		
Total	59	23	38,98	34	57,63	2	03,39	-	-		