LATVIJAS REPUBLIKA
TRANSPORTA NELAIMES GADĪJUMU UN INCIDENTU IZMEKLĒŠANAS BIROJS
Brīvības iela 58, Rīga, LV-1011 Reģ. Nr.90002064522 Tālrunis: +371-67288140 Mob. tālr.: +371-26520082 Fakss: +371-67283339
E-pasts: taiib@taiib.gov.lv www.taiib.gov.lv

REPUBLIC OF LATVIA
TRANSPORT ACCIDENT AND INCIDENT INVESTIGATION BUREAU
58 Brivibas Street, Riga, Latvia, LV-1011 Phone: +371-67288140 Mob. ph.: +371-26520082 Fax: +371-67283339
E-mail: taiib@taiib.gov.lv www.taiib.gov.lv

ANNUAL REPORT 2012

as regards to railway traffic accidents investigation

Riga, 2013

Report summary

In the Republic of Latvia, serious railway traffic accidents and significant incidents are being investigated by the Transport Accident and Incident Investigation Bureau.

The report contains information on activities of the Bureau as regards to railway accident investigation, on investigated accidents and on cooperation between the Bureau and other institutions.

Table of Contents

1. INTRODUCTION

1.1. Legal framework

The requirements of Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways (*Railway Safety Directive*) as regards to establishing an independent railway accident investigating body were implemented on 30 April 2006 by adopting amendments in the Railway Law which introduce the functions and tasks of serious railway accident investigating body and criteria for classifying serious railway traffic accidents and significant accidents. Investigation of serious railway accidents was delegated to the Transport Accident and Incident Investigation Bureau (hereinafter – the Bureau), where a special department – Railway Accident Investigation Department – was established.

In order to fully implement all requirements of Railway Safety Directive and to ensure provisions of the Railway law regarding an independent railway accident investigating body amendments to Cabinet Regulations of 6 October 1998 No. 393 "Procedures for the Investigation of Railway Traffic Accidents" were adopted on 27 March 2007 and new Cabinet Regulations No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents" were issued on 26 October 2010.

By fulfilling the requirements of Article 21 of the Railway Safety Directive the Bureau has been established as an institution that is independent in its organisation, legal structure and decision-making from any infrastructure manager, railway undertaking and railway technical operation controlling and supervising body, as well as from charging body, railway infrastructure capacity allocation body and notified body in the field of railway transport, and from any party whose interests could conflict with the tasks entrusted to the Bureau. The Bureau employs two investigators who in the case of serious railway traffic accident or significant accident are able to carry out functions of investigator-in-charge.

1.2. Authority, role and aim of the Bureau

The Bureau's primary aim is to carry out safety investigation of aircraft accidents and incidents, serious railway accidents and marine accidents. The purpose of investigation is to prevent aircraft accidents and incidents, serious railway accidents and marine accidents in order to improve aviation, railway and marine traffic safety. In any case, investigation has not been carried out for establishment of a personal fault or liability.

Railway accident investigation has been performed by the Bureau in accordance with Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways (*Railway Safety Directive*), the Railway Law, Cabinet Regulations of 20 December 2005 No. 973 "By-laws of the Transport Accident and Incident Investigation Bureau" and Cabinet Regulations of 26 October 2010 No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents".

Pursuant to Latvian legislation the Bureau must investigate all serious railway traffic accidents and significant accidents, after which the railway rolling stock is removed from the rolling stock inventory. The Bureau may in any time take a decision on investigation of any railway traffic incident or any other with railway traffic related incident if such incident adversely impacts railway traffic safety.

The primary target of the Bureau's Railway Accident Investigation Department is independent investigation of serious railway accidents and of significant accidents in order to determine the causes of an accident and to work out recommendations for preventing similar accidents in future.

The Bureau performs investigation independently from law enforcement institutions and does not determine personal liability and guilt.

1.3. Organisation

The Bureau consists of ten staff employees. The Bureau is a direct state administration entity under supervision of Minister for Transport that realizes state administration functions as regards investigation of aircraft accidents and incidents, serious railway accidents and marine incidents. Railway Accident Investigation Department consists of two staff employees, namely head of department and investigator.

The Bureau takes decisions to start investigation pursuant to Latvian legislation. Accordingly, the Bureau must obligatory investigate serious railway accidents and significant accidents. Decisions in respect to investigation of other incidents have been taken basing on analysis and collection of information on particular incident and evaluating its impact to overall railway traffic safety. Prior decision-taking the Bureau may cooperate with State Railway Technical Inspectorate, infrastructure manager, railway undertakings and entities in charge of maintenance, but in any case the decision on investigation commencement has been taken independently from the mentioned institutions and undertakings.

Investigation is conducted by the director of the Bureau. The director appoints an investigator-in-charge who is responsible for organization, performance and control of investigation activities of particular railway accident.

The investigator-in-charge may engage independent experts, such as Railway Transport Institute's experts from Riga Technical University, for providing technical expertise and calculations as necessary to ascertain the causes of an accident.

Investigation final report shall be signed by the director and by all members participating in investigation. In case of disagreement regarding the content of report, the final report of investigation shall be prepared accordingly to a version supported by the director. A member who disagrees with a statement given in a final report shall sign it giving a notice on his/her opposing opinion and shall justify such opinion. The date of signing the final report of investigation is considered to be the date of completion of investigation.

1.4. Organizational structure

Activities of the Bureau are supervised by the Minister for Transport. For investigation matters the Bureau cooperates with an infrastructure manager, railway undertakings and with entities in charge of maintenance. Cooperation with the State Railway Technical Inspectorate has been ensured in matters relating to terms of implementation of safety recommendations.

1.5. Budget

Pursuant to Art. 5 Part 4 of the Law on Aviation the aviation accident investigation activities of the Bureau have been funded from a revenue share of air navigation services in the Rīga flight information region, pursuant to Art. 33.1 Part 5 of the Railway Law railway traffic accident investigation activities of the Bureau have been financed from railway

infrastructure funds, and pursuant to Art. 8.1. Part 2 of the Maritime Administration and Marine Safety Law maritime accident and incident investigation activities of the Bureau have been financed from the funds of Maritime Administration of Latvia, which in accordance with tariffs set by the Cabinet of Ministers are earned by providing paid services within the scope of state administration tasks.

Pursuant to Cabinet Order of 26 September 2011 No. 485 on approval of the budget for Transport Accident and Incident Investigation Bureau for the year 2012 the Bureau budget incomes in 2012 were approved in amount of 284 970 LVL (405 476 EUR) where the share of budget for railway accident investigation were estimated in amount of 118 880 LVL (169 151 EUR).

2. INVESTIGATION PROCESS

2.1. Railway accidents subject to obligatory investigation

Investigation process is regulated by the Cabinet Regulation of 26 October 2010 No. 999 “Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents”.

Pursuant to above mentioned Regulation the Bureau must investigate all serious railway accidents and significant accidents, after which the railway rolling stock is removed from the rolling stock inventory.

Serious railway accident is a collision of a train with other railway rolling stock or derailment that has caused one of the following harmful consequences:

- at least one person has died instantly or has died as a result of the serious accident within 30 days thereafter;
- serious injuries have been caused to at least five people who have been hospitalised for more than 24 hours due to the accident;
- damage has been caused to the rolling stock, railway infrastructure or the environment in the amount of at least EUR 2 000 000 according to the foreign exchange rate determined by the Bank of Latvia on the day when the railway traffic accident took place.

A significant accident is an unwanted or unintended sudden event, in which at least one rolling stock in motion is involved with a speed which exceeds 0 km/h, or a specific chain of events with one of the following harmful consequences:

- a person has died or has died within 30 days after the significant accident;
- serious injuries have been caused to a person, due to which he or she has been hospitalised for more than 24 hours;
- serious damage has been caused to the rolling stock, the rail track or other equipment or damage has been caused to the environment which is equivalent to EUR 150 000 or more according to the foreign exchange rate determined by the Bank of Latvia on the day when the significant railway traffic accident took place;
- the movement of trains along the main rail track has been suspended for six hours or more.

The Bureau may in any time take a decision on investigation of other railway traffic incident or any other with railway traffic related incident if such incident adversely impacts railway traffic safety.

2.2. Institutions that are involved in investigation

Institutions and organisations that are involved in investigation are defined by the Railway Law and by the Cabinet Regulation of 26 October 2010 No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents".

In accordance with above mentioned Regulation, serious railway accidents and significant accidents shall be investigated by the Bureau.

The representatives of the State Railway Technical Inspectorate, of railway infrastructure manager and of railway undertaking can be involved in investigation considering independence principles of the Bureau.

Depending of the nature of an accident the Bureau may invite competent experts other than the Bureau's employees to participate in investigation, as well as representatives of the EU member state investigating body, if a railway undertaking which is registered and licensed in respective member state is involved in an accident.

The Bureau may seek assistance to investigating bodies of other EU member states or to European Railway Agency to obtain expert opinions or to carry out technical examinations, analysis or to provide evaluations.

2.3. Investigation process

Investigation means collection of information on consequences and circumstances of a railway traffic accident, analysis of this information and preparation of an opinion.

Once a day investigators of the Bureau from the infrastructure manager receive information on all railway traffic safety incidents. The Bureau's staff immediately receives information about serious railway accidents and significant accidents from a railway infrastructure manager by phone. Upon notification on an accident investigators of the Bureau immediately arrive to an accident site and start investigation.

Within seven days after commencing an investigation the Bureau informs about that the European Railway Agency, the State Railway Technical Inspectorate, the State Police, particular railway infrastructure manager and a railway undertaking involved in a traffic accident.

The Bureau regularly informs the State Railway Technical Inspectorate, the railway infrastructure manager involved in the railway traffic accident, the railway undertaking, the injured persons and their relatives, the owners of the damaged property, the manufacturers, the relevant emergency services, the representatives of personnel and users regarding the investigation process of the accident and gives them an opportunity to provide their opinions and comments regarding the information provided in the draft reports.

3. INVESTIGATION

3.1. The number of completed investigations and definition of most significant tendencies

Accident type	Number of accidents	Number of injured persons		Material damages in EUR (approximate)	Tendency in relation to previous years
		fatal casualties	seriously injured		
Collision	-	-	-	-	Reducing
Derailment	1	-	-	1 896 123	Increasing
Other	-	-	-	-	Reducing

3.2. Investigations carried out in the year 2012

Investigations that had been completed in 2012

Accident occurrence date	**Investigation title** (Type of accident, place)	**Legal frame**	**Completed** (date)
8 January 2012	Significant railway accident, freight train derailment due to rail breakage (Railway section Daugavpils – Indra – state border at the Road Post 401 km)	i ii	20 December 2012

Legal frame for investigation: i = in accordance with the Safety Directive, ii = in accordance with national legislation (including scopes as indicated in Art.2 par. 2 of the Safety Directive), iii = voluntary – other criteria (National regulatory acts/requirement is not included in the Safety Directive).

Investigations that had been commenced in 2012

Accident occurrence date	**Investigation title** (Type of accident, place)	**Legal frame**
8 January 2012	Significant railway accident, freight train derailment due to rail breakage (Railway section Daugavpils – Indra – state border at the Road Post 401 km)	i ii

Legal frame for investigation: i = in accordance with the Safety Directive, ii = in accordance with national legislation (including scopes as indicated in Art.2 par. 2 of the Safety Directive), iii = voluntary – other criteria (National regulatory acts/requirement is not included in the Safety Directive).

3.3. Summary on investigations that had been completed in 2012

Significant railway accident (hereinafter – accident) occurred on January 8, 2012 at 22:10 on the railway section Daugavpils - Indra - State border at the Road Post (hereinafter – RP) 401 km on a switch No1. A freight train with 58 loaded tanks and one gondola loaded with coal was in the way from the state border to the Daugavils station.

Due to an accident 17 tanks carrying dangerous goods derailed, 16 of them overturned and a partial leakage of substance occurred from five tanks. In total, about 180 tons of dangerous freight leaked in environment. Leakage of dangerous substance were localised by emergency services in cooperation with a railway infrastructure manager.

Train traffic on sections Krauja – RP 401 km and RP 401 km – Naujene was closed for 35 hours and 50 minutes, but on a section RP 401 km – RP 524 km for 90 hours 10 minutes.

By arriving to an accident site the Bureau's investigators found out the breakage of left rail blade of the switch in two places which was a cause of derailment of the tanks.

Further investigation showed that flaws in the left blade of the switch were registered in a defectogram of the ultrasonic defectoscope, however infrastructure manager had not detected them in time.

Due to an accident 180.179 tons of dangerous substance was released into environment, including 122.206 tons of technical solvent R-1 and 57.973 tons of mineral lubricant. Freight damage costs were LVL 75,090.30.

An accident related environmental impact elimination costs were LVL 782,997.03.

Total damage costs were LVL 1,332,595.41 or EUR 1,896,123.23 as converted by official exchange rate of the Bank of Latvia.

Immediate cause of an accident was a breakoff of a particle from left rail blade when freight train was running on the switch, due to a flaw that resulted from a metal fatigue.

During the investigation four underlying causes of an accident were detected:

- when providing defectoscopy of a switch No. 1 on particular line section detecting specialists did not discover any defects in the left rail blade;

- when defectoscopy data were decoded in an office detecting specialists still did not discover any left blade defects which were registered in a defectogram;

- when decoded data of defectogram were controlled by detecting group leading specialist even then no any left blade defects of switch No. 1 were found;

- infrastructure manager had no responsible staff appointed for independent decoding of defectograms saved in database.

Root causes of an accident were the following:

- no any independent decoding of defectograms is prescribed in infrastructure manager's internal regulatory documents;

- no additional working hours were prescribed in the work schedule of detecting specialists for defectogram decoding;

- obligation to decode defectograms was not prescribed in job (operation) descriptions of defectoscopy leading specialist and of defectoscopy operational staff;

- in defectoscopy staff training courses it was not provided course quality evaluation form.

3.4. Serious railway traffic accidents and significant accidents investigated in 2006–2012

Railway accidents investigated in 2006–2012

Investigated accidents		2006	2007[1]	2008	2009	2010	2011	2012	Total
Serious railway traffic accidents and significant accidents, Art. 19 par. 1+2)	Collision of trains	-	-	1	1	1	-	-	3
	Derailment	-	-	-	-	-	-	1	1
Total									4

[1] The Bureau provides railway accidents investigation activities from April 1, 2007.

4. RECOMMENDATIONS

4.1. Brief overview and introduction to recommendations

Pursuant to Latvian national legislation (Cabinet Regulations of 26 October 2010 No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents"), in order to prevent the causes and circumstances of a serious railway accident or a significant accident, as well as to guarantee the railway traffic safety, the Bureau, basing on the conclusions drawn during the investigation, shall develop safety recommendations.

The presumption of guilt or liability of a person in relation to a railway traffic accident shall not be established in the safety recommendations.

The Bureau shall send the safety recommendations to the State Railway Technical Inspectorate, indicating the final implementer of the safety recommendations, as well as in respective cases – to institutions which were involved in the works for liquidation of the consequences of the railway traffic accident. The State Railway Technical Inspectorate shall evaluate whether it is necessary to widen the circle of final implementers of the safety recommendations and, if necessary, shall also send the safety recommendations to other companies of the railway sector.

If necessary, the Bureau may send the safety recommendations to the railway safety institutions of another Member State.

The State Railway Technical Inspectorate shall monitor the implementation of the safety recommendations.

Institutions, to which the safety recommendations are addressed, after coordination with the State Railway Technical Inspectorate, may also perform other measures in order to achieve the targets referred to in the safety recommendations.

The railway infrastructure manager, the railway undertaking and other companies of the railway sector, which are the final implementers of the safety recommendations, shall at least once a year notify the State Railway Technical Inspectorate of performed or planned measures in relation to the safety recommendations.

Recommendations implemented in 2007–2012

Issued recommendations		Implementation status					
		Implemented		Implementation is in process		Not implemented	
Year	Number	Number	[%]	Number	[%]	Number	[%]
2007	0	0	0	0	0	0	0
2008	8	7	87,5	1	12,5	0	0
2009	4	0	0	4	100	0	0
2010	4	9	225	0	0	0	0
2011	0	0	0	0	0	0	0
2012	3	0	0	3	100	0	0
Total	19	16	84	3	16	0	0

4.2. Safety recommendations issued in 2012

After completion of investigation of significant railway traffic accident occurred on January 8, 2012 on the line section Daugavpils – Indra – state border at the Road Post 401 km, there were issued three safety recommendations which had been addressed to railway infrastructure manager.

The aim of recommendations was to improve the work of infrastructure manager's defectoscopy unit in order to prevent occurrence of similar cases in future.

Recommendation **2012-1**

Railway infrastructure manager shall analyse organisation of defectoscopy unit's work and ensure independent continuous decoding of defectograms.

Recommendation **2012-2**

Railway infrastructure manager shall improve internal regulatory documentation in respect to defectogram decoding procedures, defectoskopy staff work time schedule and staff training.

Recommendation **2012-3**

Railway infrastructure manager shall consider possibility to put into service technical means that reduce effects of faults created by human factor on rail defectoscopy and on decoding of defectograms.

Annex
to Annual Report of 2012
prepared by the Transport Accident and Incident
Investigation Bureau
in respect to railway traffic accidents

Recommendations

Date and time:	8 January 2012 at 22:10		
Place	Railway section Daugavpils – Indra – state border at the Road Post 401 km		
Type of accident:	Freight train derailment due to breakage of a rail		
Train type and number	Diesel locomotive 2TE10M No. 3553 freight train No. 2851		
Automotive transport	-		
		in a train	***in a vehicle***
Number of persons:	***Crew:***	2	-
	Passengers:	-	-
Fatal casualties:	***Crew:***	-	-
	Passengers:	-	-
Seriously injured:	***Crew:***	-	-
	Passengers:	-	-
Slightly injured:	***Crew:***	-	-
	Passengers:	-	-
Damages of rolling stock	14 tanks are damaged so seriously that cannot be renewed, but 3 tanks need capital repairs		
Damages of railroad equipment	In result of an accident there has been damaged 216 m of railroad, including switches No. 1 and No. 3, electric drive for a switch No. 3, switch heating cabinet, rail chains and cables.		
Other damages	Due to an accident 180.179 tons of dangerous substance was released into environment, including 122.206 tons of technical solvent R-1 and 57.973 tons of mineral lubricant.		
Summary: Due to a breakoff of left rail blade of a switch 17 tanks carrying dangerous goods derailed, 16 of them overturned and a partial leakage of substance occurred from five tanks.			
Final report issued on:	December 20, 2012		

Recommendation 2012-1	In order to reduce possibility of faults admitted by a staff	
	Railway infrastructure manager shall analyse organisation of defectoscopy unit's work and ensure independent continuous decoding of defectograms.	
Date	***Status***	***Comments***
20.12.2012.	Implemented	Infrastructure manager has accepted this recommendation and has implemented it in May 2013.

Recommendation 2012-2	In order to improve internal regulatory documentation
	Railway infrastructure manager shall improve internal regulatory documentation in respect to defectogram decoding procedures, defectoskopy staff work time schedule and staff training.

Date	***Status***	***Comments***
20.12.2012.	Implemented	Infrastructure manager has accepted this recommendation and has implemented it in February 2013.
Recommendation 2012-3	In order to reduce effects of faults occurred due to human factor	
	Railway infrastructure manager shall consider possibility to put into service technical means that reduce effects of faults created by human factor on rail defectoscopy and on decoding of defectograms.	
Date	***Status***	***Comments***
20.12.2012.	Implemented	Infrastructure manager has accepted this recommendation and has implemented it in February 2013.