

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

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Preface to report

Serious railway traffic accidents and other accidents in the Republic of Latvia are being investigated by the Transport Accident and Incident Investigation Bureau (hereinafter – Bureau).

The report contains information regarding the work of the Bureau in the rail accident investigation, cooperation between Bureau and other institutions, as well as completed and ongoing investigations in 2009.

In 2009 Bureau finished the investigation of one serious accident and started to investigate another rail accident. As a result of this serious accident two persons died, the train driver and driver's assistant.

After the serious accident investigation has been completed 4 safety recommendations were addressed to the infrastructure manager and railway undertaking.

All recommendations issued by the Bureau have been taken into account and implemented.

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1. INTRODUCTION TO THE INVESTIGATION BODY

1.1 Legal Basis (or Legal framework)

Requirements of Railway safety directive in relation to establishment of independent railway accident investigation body were implemented in 30 April 2006 with amendments in Railway law in which functions and tasks of the serious railway accident investigation body and criteria of serious railway accident and accident were prescribed. In accordance with the Cabinet order No.953 of 12 December 2006 "On the serious railway accident investigation institution" the Aviation Accident and Incident Investigation Bureau was appointed as serious railway accident investigation body. So to the previously existed independent state authority – Aviation accident and incident investigation bureau – were assigned new functions – serious railway accident and accident investigation. As a result of this changes in the according legal enactments were made and the name of bureau – Aviation accident and incident investigation bureaus was changed to Transport accident and incident investigation bureau.

In order the requirements of Railway safety directive to be fully implemented and to ensure the compliance of Railway law in relation to the independent railway accident investigation body, in 27 March 2007 amendments to the Cabinet regulation No.393 (adopted 10 June 1998) "Procedures for the Investigation of Railway Traffic Accidents" were made.

Fulfilling the requirements set in Article 21 of Railway safety directive 2004/49/EC, Investigation bureau is established as body, which is organisationally, legally and in the taking of its decisions the Investigation bureau is independent from the railway infrastructure manager, railway undertaking and railway technical operations control and supervision institutions, as well as from institutions, which are responsible for the specification and collection of railway infrastructure fees, the allocation of railway infrastructure capacity or the realisation of State administration in the field of railway transport, and from persons whose interests may be in contradiction with the tasks of the Investigation bureau. There are two investigators employed in the Investigation bureau, who upon occurrence of serious railway accident or accident are capable to carry out the functions of investigator in charge.

1.2 Role and Mission

The objective of Investigation bureau is to implement the public administration functions in the field of investigation of serious railway accidents and other railway accidents, as well as in the field of investigation of aircraft accidents, serious incidents and incidents.

Investigation bureau carries out tasks in accordance with Annex 13 of the Convention on International civil aviation (7 December 1944), Council Directive 94/56/EC of 21 November 1994 establishing the fundamental principles governing the investigation of civil aviation accidents and incidents, Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 Railway safety directive, Aviation law, Railway law, Cabinet regulation No.973 adopted 20 December 2005 „By-laws of the Transport Accident and Incident Investigation Bureau”, Cabinet regulation No.660 adopted 25 November 2003 „Regulations regarding investigation of aviation accidents and incidents” and Cabinet regulation No.393 adopted 10 June 1998 "Procedures for the Investigation of Railway Traffic Accidents".

In accordance with Latvian laws and regulations Investigation bureau must compulsory investigate serious railway accidents and accidents. Investigation bureau in any

time can take decision to investigate all railway traffic accidents and also other accidents related to the movement of trains if they have an adverse impact on the safety of movement.

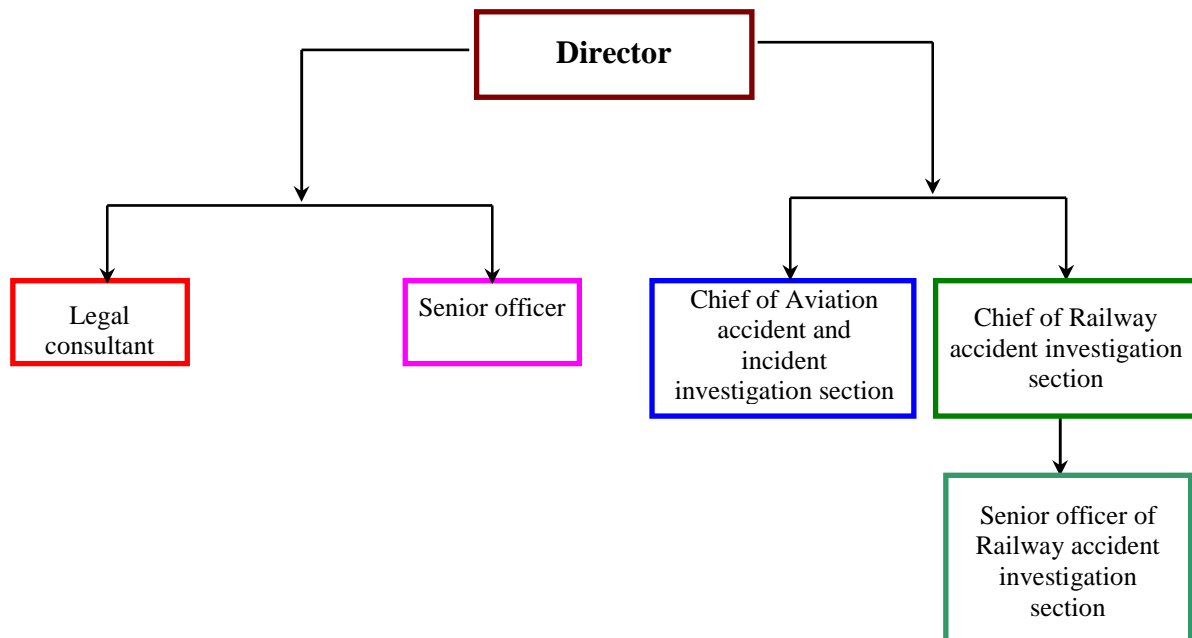
The objective of railway accident investigation section of Investigation bureau is the independent investigation of serious railway accidents and accidents in order to determine the cause of accident and to elaborate recommendations for the prevention of the occurrence in the future of similar railway traffic accidents

Investigation bureau performs investigation independently from the investigation performed by law enforcement institutions, without determining the fault or responsibility of a person.

1.3 Organisation

Railway accident investigation section is a structural unit of the Investigation bureau, which performs railway accident investigation. Investigation bureau is a direct administration authority under the supervision of the Minister for Transport and implements and which implements public administration functions in the field of investigation of aircraft accidents and incidents, as well as in the field of investigation of serious railway accidents and other railway accidents.

There are 6 posts in the Investigation bureau. In the Railway accident investigation section are 2 posts – chief of section and senior officer. The structure of Investigation bureau is shown on Picture 1.



Picture 1. Scheme of structure of the Investigation bureau

The budget of 2009 of the Investigation bureau was 157 628 LVL.

The Investigation bureau takes decision on the commencing of investigation on the basis of Latvian laws and regulations. In accordance with them Investigation bureau must compulsory investigate serious railway accidents and accidents. Decision about investigation of other accidents is taken after the analysis and summarizing of the information on accident and examining its impact on the common safety of train movement. Before decision is taken Investigation bureau can cooperate with State Railway Technical Inspectorate, railway infrastructure manager, railway undertaking and railway maintenance undertakings, but in any case decision to commence investigation is taken independently from the said institutions and undertakings.

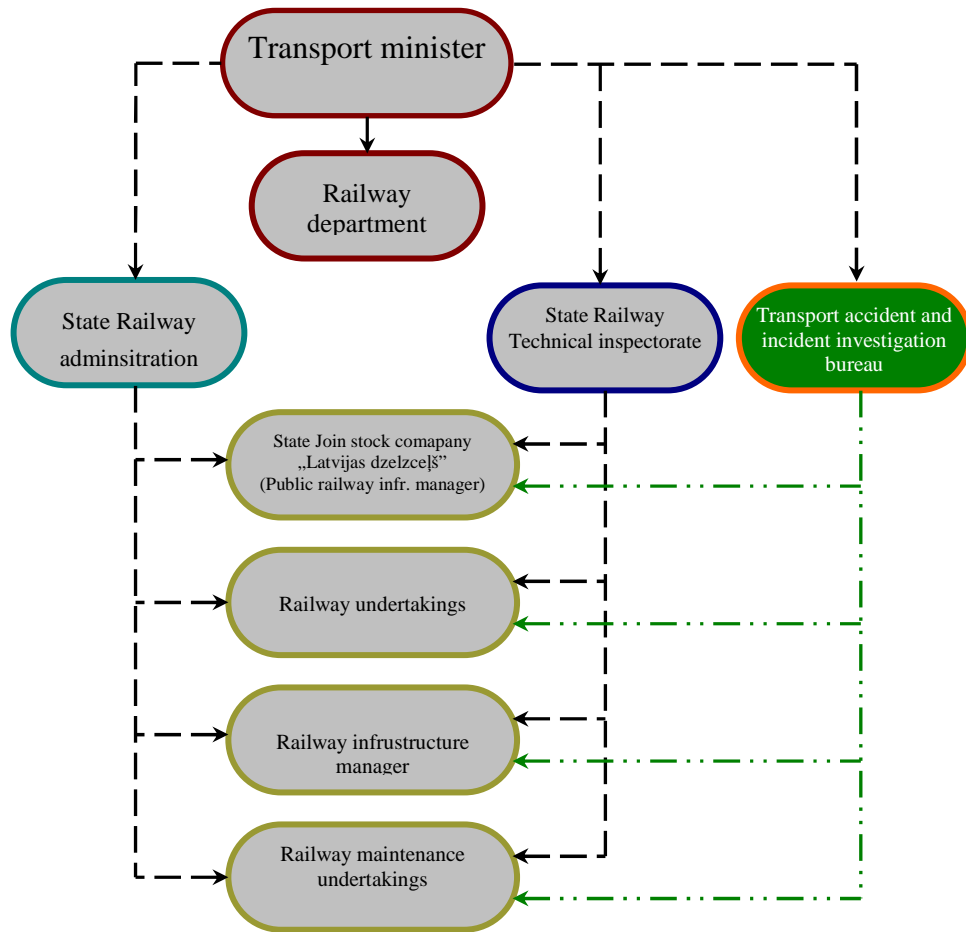
Investigation is led by director of Investigation bureau, who for the investigation of railway accident appoints investigator in charge who is responsible for organisation, performance and control of the investigation activities.

Investigator in charge can involve independent experts, for example, experts of Railway transport Institute of Riga Technical University in order to perform technical expertise and calculations necessary for the determination of causes of accidents.

The final report of the investigation shall be signed by the investigator in charge and all the participants in the investigation. If a dispute occurs regarding the content of the report, the final report of the investigation shall be prepared in the version approved by the investigator in charge. The participant in the investigation, who disagrees with the content of the final report shall sign it with a note regarding his or her differing opinion and shall substantiate this opinion. The date of signing of final report of the investigation shall be considered to be the final day of the investigation.

1.4 Organisational flow

The work of Investigation bureau is supervised by Transport minister. The annual budget of Investigation bureau is adopted by the Cabinet until the 15 September in accordance with the Budget and finance management law. Investigation bureau shall cooperate with Railway infrastructure manager, railway undertakings and railway maintenance undertakings. Investigation bureau shall cooperate with State Railway Technical Inspectorate in the matters concerning the harmonization of the date for the implementation of the safety recommendations. Cooperation with other institutions and bodies is shown in Picture 2.



Signs:

← - - - - under supervision; ← - · - · - cooperation in investigation matters

Picture 2. Scheme of cooperation with other institutions

2 INVESTIGATION PROCESSES

2.1 Cases to be investigated

Investigation process is regulated by the Cabinet regulation No.393 adopted 10 June 1998 “Procedures for the investigation of railway traffic accidents”.

In accordance with the said regulation Investigation bureau must compulsory investigate serious railway accidents and accidents.

A serious railway accident shall be a collision of the railway rolling stock with other railway rolling stock or derailment that has caused the following consequences:

- at least one person has died;
- moderate bodily injuries have been caused for at least five people;
- damage has been caused to the rolling stock, railway infrastructure or the environment in the amount of at least two million euro according to the foreign exchange rate determined by the Bank of Latvia on the day when the railway traffic accident took place.

An accident shall be a collision of the railway rolling stock with other railway rolling stock or derailment that has caused the following consequences:

- serious bodily injuries have been caused for at least one person;
- the railway rolling stock has been damaged and the technical state thereof does not conform with technical regulations, does not guarantee safe exploitation and should be deleted from the rolling stock inventory.

Investigation bureau in any time can take decision to investigate other railway traffic accident, as well as investigation of other accidents related to the movement of trains if they have an adverse impact on the safety of movement.

2.2 Institutions involved in investigations

Institutions involved in investigation are determined by Railway law and Cabinet regulation No.393 of 6 October 1998 "Procedure for investigation of railway traffic accidents".

In accordance with the said laws and regulations serious railway accidents and accidents shall be investigated by Investigation bureau.

The traffic safety violations referred to in Sub-paragraphs 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8 and 7.9 of the Cabinet regulation No.393 of 6 October 1998 "Procedure for investigation of railway traffic accidents" (see Annex 2) shall be investigated by the commission established by the State Railway Technical Inspectorate, the railway infrastructure manager and the railway undertaking. The Chairperson of the commission shall be a representative of the State Railway Technical Inspectorate.

The accidents referred to in Sub-paragraph 8.2 of Cabinet regulation No.393 and such traffic safety violations to which the railway undertaking is related (except for the traffic safety violations referred to in Sub-paragraphs 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8 and 7.9 of the Cabinet regulation No.393 of 6 October 1998 "Procedure for investigation of railway traffic accidents" (see Annex 2) shall be investigated by the commission established jointly by the railway undertaking and the railway infrastructure manager. The commission shall consist of at least two representatives of the railway infrastructure manager and at least two representatives of the railway undertaking. The Chairperson of the investigation commission shall be a representative of the railway infrastructure manager.

Such traffic safety violations to which the manager is not related and the accident referred to in Sub-paragraph 8.1 of Cabinet regulation No.393 of 6 October 1998 "Procedure for investigation of railway traffic accidents" (see Annex 2) shall be investigated by the commission established by the railway infrastructure manager. The commission shall consist of at least three members of the commission.

Competent experts, who are not the employees of the investigation body, may be invited to participate in investigation in conformity with the character of an accident, as well as representatives of another European Union Member State investigation body to participate in the investigation of an accident, if the railway undertaking that is registered and licensed in the relevant Member State is involved in the accident

Investigation bureau may ask for assistance of another European Union Member State investigation body or European Railway Agency in order to receive the opinions of experts or to perform technical inspections, analyses, or to provide assessments.

If an accident or traffic safety violation is being investigated, the Investigation bureau or the relevant commission shall co-ordinate the activity thereof with representatives of the Office of the Prosecutor or the police.

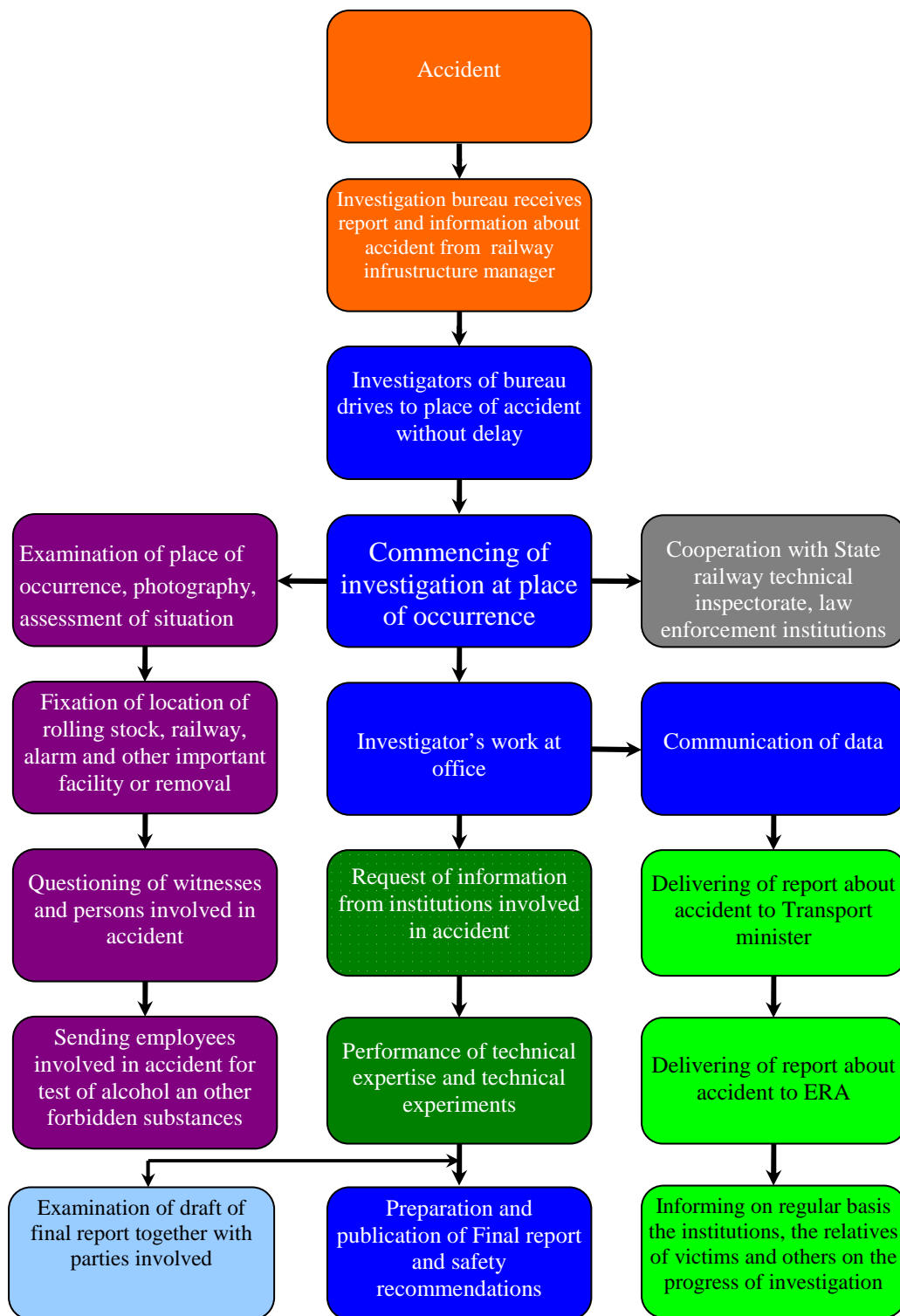
2.3 Investigation process

The investigation is the collection of information regarding the circumstances of a railway traffic accident, the analysis thereof and the preparation of an opinion.

Investigators of Investigation bureau once a day receives from the railway infrastructure manager an information via e-mail about all railway traffic accidents. About serious accidents and accidents railway infrastructure manager informs without delay investigators of Investigation bureau by phone call. After the receipt of notification about accident investigators arrives at the accident site and shall commence investigation without delay. Investigation process schematically is shown on Picture 3.

Within a period of seven days after the commencement of the investigation, the investigation body shall inform thereof the European Railway Agency, the State Railway Technical Inspectorate, the Railway Police, the railway infrastructure manager and the railway undertaking, involved in the railway traffic accident.

Investigation bureau regularly informs the State Railway Technical Inspectorate, the railway infrastructure manager, involved in the railway traffic accident, the railway undertaking, the victims and their relatives, the possessors of the damaged property, the manufacturers, the relevant emergency services, the representatives of personnel and users regarding the investigation process of the accident and, as far as it is possible, shall provide them with an opportunity to provide their opinions and views, as well as commentaries regarding the information provided in the draft reports.



Picture 3. Investigation process

3 INVESTIGATIONS

3.1 Overview of investigations completed, identifying key trends

Type of accidents investigated	Number of accidents	Number of victims		Damages in € (approximation)	Trends in relation to previous years
		Deaths	Ser.Injur		
Collisions	1	2	-	3 312 819	Stay the same
Derailments	-	-	-	-	-
etc	-	-	-	-	-

3.2 Investigations completed and commenced in 2009

Investigations completed in 2009

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Completed (date)
20 December 2008	Investigation of the causes of collision of two freight trains (Serious Accident, Ventspils station)	i ii	11 November 2009

Basis for investigation: i = According to the Safety Directive, ii = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), iii = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

Investigations commenced in 2009

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis
16 December 2009	Collision of freight train with railway crane KDE (Accident, railway section Indra – state border)	i ii

Basis for investigation: i = According to the Safety Directive, ii = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), iii = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

3.3 Research studies (or Safety Studies) commissioned and completed in 2009

Safety Studies completed in 2009

Date of commission	Title of the Study (Occurrence type, location)	Legal basis	Completed (date)
-	-	-	-

Safety Studies commenced in 2009

Date of commission	Title of the Study (Occurrence type, location)	Legal basis
-	-	-

3.4 Summaries of investigations completed in 2008

Ventspils 20.12.2008



Serious railway accident occurred 20 December 2008 at 9.29 a.m. in the Ventspils station park „station Ventspils-IP”. At 9.29 a.m. freight train No.2445 (locomotive 2TE10M-3453 and 59 loaded wagons) entered Ventspils-II railway track No.2 from Elkskenes station side, which at that time was occupied with standing freight train No.1703 (locomotive 2TE10M-3422 and 61 loaded wagons). As a result locomotive of train No.2445 collided with last wagon of train No.1703.

As result of collision the crew (2 people) of locomotive of train No.2445 died, locomotive of train No.2445 and its first two wagons, 8 wagons of train No1703 loaded with fuel and six wagons standing on the way No.3 burst into flames. As result of fire the locomotive of train No.2445 was completely damaged (not repairable), 21 wagons damaged (13 wagons not repairable) and completely destroyed freight (fuel) from three wagons.

After collision the rolling stock of train No.2445 cover around 40m until complete stop place. Last three wagons of train No.1703 were released from rolling stock to the direction of railway track No.1 and five wagons derailed with two wheel sets. Also locomotive of train No.2445 and four wagons derailed – in movement direction from twentieth to twenty third (two with two wheel sets and two with all wheel pairs).

Five meters behind exit signal light P2 of railway track No.2 to direction of accident site (48 meters before collision place) traces of sand feed were detected, which testifies about possible sudden use of brakes before the collision or about the work of automatic brakes.

Human remains of train driver were found in the diesel room of lead section „A” of locomotive above compressor KT7, human remains of train driver assistant – outside locomotive on the left side of train movement direction at the fuel tank of section „B”.

In the cabin of train locomotive was guard, which sustained light bruise and left cabin of locomotive on his own.

As result of collision and fire locomotive of train No.2445 was completely damaged, speed recorder was burnt, speed measuring instrument melted due to high temperature, control devices of locomotive and control devices of alertness were completely damaged and to detect its condition until the moment of collision is not possible.

Infrastructure manager for the prevention of the consequences of accident involved fire-fighting train of Ventspils station and assistance train of Jelgava station. The quenching of fire was lead by Ventspils brigade of State Fire and rescue service.

Train traffic along railway track No.5 resumed at 23.30 20 December 2008. Train movement was interrupted for 14 hours.Prevention of the consequences of accident were completed at 14.10 21 December 2008, but the works for reconstruction of infrastructure were completed at 12.00 24 December 2008.

The direct cause of accident was human mistake: crew of the locomotive of the train No.2445 had lost vigilance and did not control the train, as a result of which the train passed by entrance signal light N of Ventspils-II with restrictive signal and collided with freight train No.1703 standing on the railway track No.2.

Contributing factors :

- > from experts opinion can be concluded, that crew of locomotive of train No.2445 had lost vigilance and leading the train disregarded communication regulation – did not repeat mutually signals of traffic lights;
- > Ventspils-II station master did not warn crew of train No.2445 about holdup at the entry traffic lights;
- > Ventspils – Jelgava section railway traffic controller due to intensive train traffic, did not have complete information about occupation railway track in Ventspils-II;
- > Ventspils – Jelgava section railway traffic controller did not manage to take rapidly the right decision, when Ventspils-II station master on duty on the telephone asked the help to resolve the nonstandard situation occurred;
- > Due to uncoordinated conduct of Ventspils Nafta-Austrumu park station master on duty occurred situation that two trains from opposite directions were approaching Ventspils-II, but only one railway track was free;
- > Ventspils-II station master on duty was new employee and the accident day for her was only seventh day without any assistance, therefore she did not have enough skills how to act in nonstandard situations;
- > Railway section Ventspils-Tukums-II is not equipped with uninterrupted type automatic locomotive signalling devices, therefore in this section train driver’s vigilance control devices operates only in time mode, but is not connected with signals of traffic lights.

3.5 Comment and introduction or background to the investigations

Investigations commenced in 2008 and not followed

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Reason of non following or suspension of investigations	Who, why, when (decision)
-	-	-	-	-

3.6 Accidents and incidents investigated during last five years (in 2004–2009)

Rail investigations in 2004–2009

Accidents investigated		2005	2006	2007 ¹	2008	2009	TOT
Serious accidents (Art 19, 1 + 2)	Train collision	-	-	0	1	1	2
							0
							0
							0
							0
							0
							0
Total							2

¹ Investigation bureau the work in the field of railway accident investigation commenced in 2007

4 RECOMMENDATIONS

4.1 Short review and presentation of recommendations

Latvian laws and regulations (Cabinet regulation No.393) prescribes, that State Railway technical inspectorate and other institutions to whom the safety recommendations are addressed shall ensure that safety recommendations issued by Investigation bureau for the prevention of the causes and circumstances of railway traffic accident, as well as for securing the safety of railway traffic are taken into consideration and implemented. State Railway technical inspectorate and other institutions to whom the safety recommendations are addressed at least once a year shall report to the Investigation bureau about the fulfilment of the measures referred in the safety recommendations.

Implementation of recommendations during 2007 –2009

Recommendations issued		Recommendation implementation status					
		Implemented		In progress		Not to be implemented	
Year	[No.]	[No.]	[%]	[No.]	[%]	[No.]	[%]
2007	0	0	0	0	0	0	0
2008	8	7	87,5	1	12,5		
2009	4	0	0	4	100	0	0
TOTAL	12	7	58,3	5	41,7	0	0,0

4.2 Safety recommendations made in 2009

After completion on 11 November 2009 of the investigation of the serious accident on 20 December 2008 at Ventspils station, four safety recommendations were issued and there were addressed to infrastructure manager and railway undertakings.

Taking into consideration that safety recommendations were issued at the end of 2009, the implementation of them are provided in the year of 2010-2011. Safety recommendations and their implementation is shown in the Annex.

The purpose of the safety recommendations was to improve the safety devices of main lines (1520mm) locomotives of railway infrastructure and freight and passenger trains, as well as for undertakings to carry out audit of their safety management system with objective to improve the effectiveness of this system.

Recommendation 2009-1

For infrastructure manager – State Joint Stock company „Latvijas dzelzceļš” should consider possibility to ensure main lines (1520 mm) railway infrastructure with automatic locomotive signalling (coding of rail circuit) devices.

Recommendation 2009-2

For railway operators – should consider possibility to equip locomotives of freight and passenger train main lines (1520 mm) with train drivers vigilance control devices, which

operates not only periodically requesting the confirmation of train driver, but also stops the train, if it has passed the restrictive signal, but which operation should allow:

- to control continuously the capacity for work of train driver;
- to stop the train, if the speed would not be in due time reduced when approaching the traffic lights with restrictive signal.

Recommendation 2009-3

For „LDZ Cargo” Ltd. and other operators - should carry out the audit of its safety management system with purpose to improve efficiency of this system, paying particular attention to observation and control of the mutual communication regulation of train drivers and their assistants.

Recommendation 2009-4

For infrastructure manager – State Joint Stock company „Latvijas dzelzceļš” should update procedure how station master on duty or railway traffic controller delivers in time information, using radio communication, to train driver concerning the holdup of train at traffic lights, unexpected stop or in other nonstandard cases.

Recommendations

Date and time:	20 December, 2008, 09:29		
Location:	Ventspils station park „station Ventspils-II” on the railway track No2.		
Type of occurrence:	Collision of two loaded freight trains; serious railway accident		
Train type and number:	Weight of freight train No.2445 - 4877 tonnes, 236 axles, train - locomotive 2TE10M-3453 and 59 loaded wagons; Weight of freight train No.1703 - 4929 tonnes, 244 axles, train - locomotive 2TE10M-3422 and 61 loaded wagons.		
Road vehicle:	-		
		In the train	In the road vehicle
Persons on board:	Crew:	4	-
	Passengers:	-	-
Fatally injured:	Crew:	2	-
	Passengers:	-	-
Seriously injured:	Crew:	-	-
	Passengers:	-	-
Slightly injured:	Crew:	-	-
	Passengers:	-	-
Damages of rolling stock:	Completely damaged locomotive No.2TE10M-3453 (not reparable), 21 wagons damaged (13 wagons not reparable)		
Damages on track equipment:	Damaged 485 metres of rail track, also signalling and communication devices, cable 400 metres and four transformers		
Other damages:	-		
Summary: Freight train passed by entrance signal light N of Ventspils-II with restrictive signal and collided with freight train No.1703 standing on the railway track No.2. As result of collision the crew (2 people) of locomotive of train No.2445 died, locomotive of train No.2445 and its first two wagons, 8 wagons of train No1703 loaded with fuel and six wagons standing on the way No.3 burst into flames.			
Final report issued:	11 November 2009		
Recommendation 2009-1	To improve the safety of train traffic		
	For infrastructure manager – State Joint Stock company „Latvijas dzelzceļš” should consider possibility to ensure main lines (1520 mm) railway infrastructure with automatic locomotive signalling (coding of rail circuit) devices.		
Date	Status	Comments	
15.01.2010.	Is being implemented	Infrastructure manager has accepted recommendation and is planning to implement it in 2011.	
Recommendation 2009-2	To improve the control of locomotive drivers		
	<p>For railway operators – should consider possibility to equip locomotives of freight and passenger train main lines (1520 mm) with train drivers vigilance control devices, which operates not only periodically requesting the confirmation of train driver, but also stops the train, if it has passed the restrictive signal, but which operation should allow:</p> <ul style="list-style-type: none"> - to control continuously the capacity for work of train driver; - to stop the train, if the speed would not be in due time reduced when approaching the traffic lights with restrictive signal. 		
Date	Status	Comments	

15.01.2010.	Is being implemented	Railway undertakings has accepted recommendation and are planning to implement it in 2010-2011.
Recommendation 2009-3	To carry out the audit of safety management system. For „LDZ Cargo” Ltd. and other operators - should carry out the audit of its safety management system with purpose to improve efficiency of this system, paying particular attention to observation and control of the mutual communication regulation of train drivers and their assistants.	
Date	Status	Comments
15.01.2010.	Implemented	Recommendation implemented in the first quarter of 2010
Recommendation 2009-4	To improve the work of station master For infrastructure manager – State Joint Stock company „Latvijas dzelzceļš” should update procedure how station master on duty or railway traffic controller delivers in time information, using radio communication, to train driver concerning the holdup of train at traffic lights, unexpected stop or in other nonstandard cases.	
Date	Status	Comments
01.03.2010.	Implemented	Recommendation implemented on 1 March 2010