



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA PROMET

SEKTOR ZA PREISKOVANJE ŽELEZNIŠKIH NESREČ
IN INCIDENTOV

Langusova ulica 4, 1535 Ljubljana

T: 01 478 88 54

F: 01 478 81 46

E: gp.mzp@gov.si

Number: 010-39/2011/70

Ref. No.: 0012317

ANNUAL REPORT BY THE NATIONAL INVESTIGATING BODY OF THE REPUBLIC OF SLOVENIA IN RAILWAY TRANSPORT 2010



Ljubljana, 28 December 2011

INTRODUCTION

In the Republic of Slovenia, the national investigating body in railway transport became operational on 1 June 2008. Prior to this date all railway accidents and incidents were investigated by the manager of the railway infrastructure, but since 1 June 2008 this has been the task of the Railway Accident and Incident Investigation Division, an independent body within the Ministry of Transport.

The national investigating body investigates railway accidents and incidents in order to improve safety and prevent accidents in railway transport.

It operates in line with the Railway Safety Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004, which was transposed into Slovenia's legal order through the adoption of the Railway Transport Act, published in *Uradni list RS* [Official Gazette of the RS], No. 44/2007, on 21 May 2007, and the Safety of Railway Transport Act, published in *Uradni list RS*, No. 61/2007, on 10 July 2007.

The annual report of the national investigating body for 2010 includes a presentation of the investigating authority, the legal basis for its operation, an overview of investigated accidents and recommendations issued in 2010.

The annual report of the investigating body for the period from 1 January 2010 to 31 December 2010 was drafted with a three-month delay and hence not by the deadline prescribed in Article 32(3) of the Safety of Railway Transport Act (*ZVZeIP-UPB1*) published in *Uradni list RS*, No. 36/2010 on 4 May 2010 owing to the absence of the Chief Investigator from 24 June 2010 to 13 December 2010 due to the hospital treatment of injuries he sustained in a car accident on 23 June 2010. He was also often absent in 2011 as he was undergoing rehabilitation.

TABLE OF CONTENTS

Item:	Title:	Page:
	INTRODUCTION	1
1	ABOUT THE NATIONAL INVESTIGATING BODY	3
1.1	Legal basis (legal framework)	3
1.2	Role (description of mandate) and objective (mission).....	3
1.3	Internal structure and units	4
1.4	Flow chart or placement of the national investigating body	4
1.5	Philosophy of conduct in an investigation (philosophy, approach to establishing an investigation in the country and the degree of mobility, readiness and timeliness).....	6
2	INVESTIGATION PROCEDURE	8
2.1	Cases where investigation is obligatory or optional under Articles 19 and 21 of the Railway Safety Directive	8
2.2	Institutions participating in investigations (on a regular or extraordinary basis)....	8
2.3	Investigation procedure or investigating body's approach (identical to 1.5 but more detailed).....	9
3	INVESTIGATIONS	11
3.1	Review of investigations completed in 2010.....	11
3.2	Investigations started and completed in 2010.....	11
3.3	Research studies (or safety studies in case of serious accidents) commissioned and completed in 2010	13
3.4	Summaries of investigations completed in 2010. Brief descriptions, photos, tables and safety studies	13
3.5	Explanation and introduction, or the background to investigations	14
3.6	Accidents and occurrences investigated in the past five years (between 2006 and 2010).....	16
4	RECOMMENDATIONS	18

1 ABOUT THE NATIONAL INVESTIGATING BODY

The national investigating body in railway transport is a body within the Ministry of Transport of the Republic of Slovenia. In terms of organisational structure, the investigating body is directly subordinate to the minister responsible for transport in Slovenia.

Its title is: Railway Accident and Incident Investigation Division.

In its organisation and funding, it is independent from investigating bodies in other transport branches, the national railway safety authority and the regulator of railways.

The Slovenian railway transport investigating body was established on 1 June 2008 with its registered office at the Ministry of Transport, Langusova 4, Ljubljana.

1.1 Legal basis (legal framework)

The legal basis for the work of the Railway Accident and Incident Investigation Division is provided in Article 26 of the Railway Transport Act (*ZZeIP-UPB6*), *Uradni list RS* [Official Gazette of the RS], No. 11/2011 of 21 February 2011.

The investigating body in railway transport is independent in its organisation, funding and legal structure from any infrastructure manager, railway undertaking, charging body, allocation body and notified body, and from any party whose interests could conflict with the tasks entrusted to the investigating authority. It is also functionally independent from the safety authority and from any regulator of railways.

1.2 Role (description of mandate) and objective (mission)

The national investigating body in railway transport is a permanent body for the investigation of serious accidents, accidents and incidents.

It investigates serious accidents, accidents and incidents with the objective of improving safety in railway transport. It cooperates with the investigating bodies of other railways in the European Union within the network of national investigating bodies that is managed by the European Railway Agency (ERA).

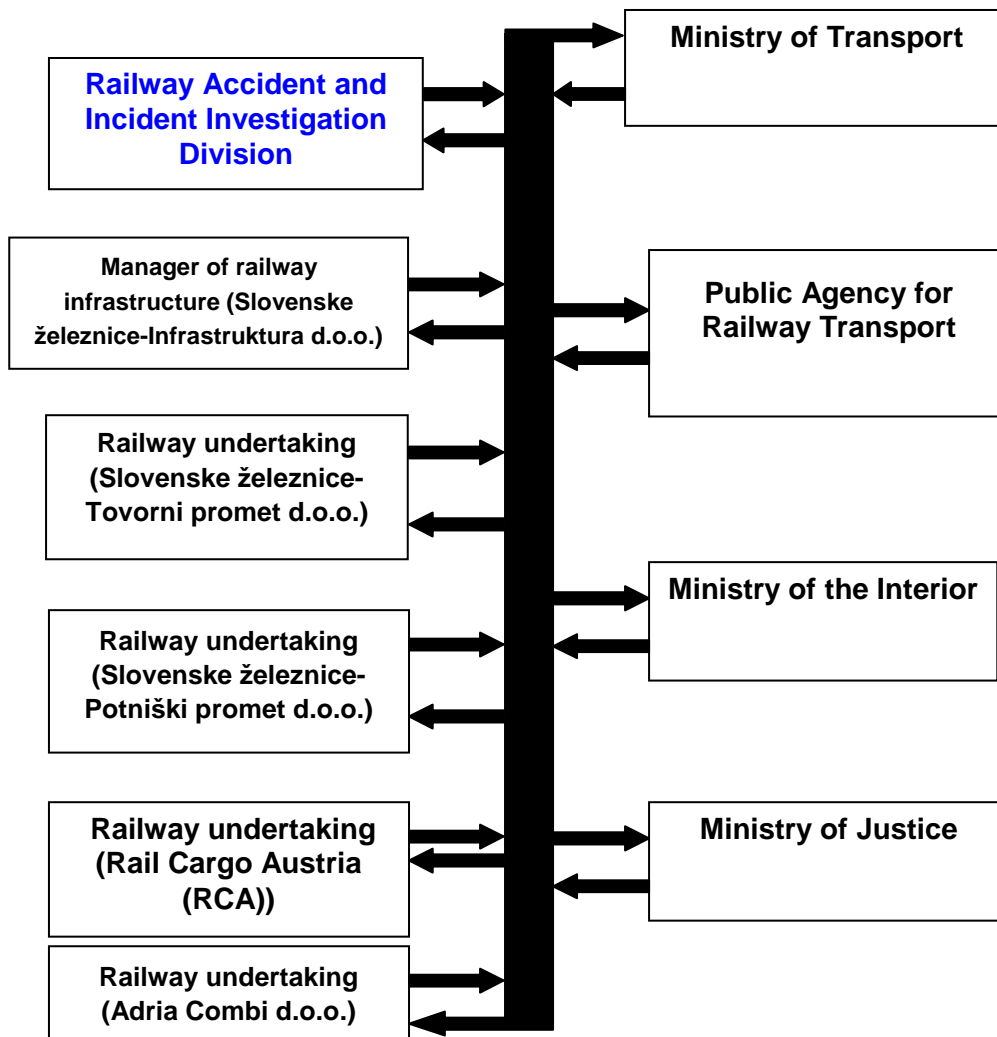
1.3 Internal structure and units

The Railway Accident and Incident Investigation Division is a body within the Ministry of Transport. According to the Ministry's internal classification of positions, three positions are defined in this Division: head of division and two chief investigators. Currently, the Division has only one employee – the Chief Investigator of Railway Accidents and Incidents – who, in addition to conducting investigations of railway accidents and incidents, also acts as the head of the Railway Accident and Incident Investigation Division under the authority of the Transport Minister.

The Chief Investigator has the necessary qualifications to perform all the functions required in an investigation procedure in the event of a railway accident or incident.

1.4 Flow chart or placement of the national investigating body

The railway transport investigating body of the Republic of Slovenia that performs safety investigations of accidents and incidents is an independent body which cooperates with other national investigating and judiciary authorities, the railway safety authority, infrastructure manager and all licensed railway undertakings. Where necessary, it also collaborates with the investigating bodies of other railways in the European Union within the network of national investigating bodies that is managed by the European Railway Agency (ERA).



It collects the information required in an investigation procedure from the authorities listed in this chart. Since investigations of railway accidents are carried out with as much openness as possible, all the parties involved and all stakeholders can give statements and share the investigation results.

The national investigating body is a body within the Ministry but since it is independent in its work, the Ministry only provides administrative support and funds for its operation. The Ministry of Transport does not interfere with the independence of the investigating body. Considering the size of the railway system in Slovenia, this organisational set-up is rational and economical.

In accordance with Article 35 of the Safety of Railway Transport Act (*ZVZeIP-UPB1*) published in *Uradni list RS* [Official Gazette of the RS] No. 36/2010 on 4 May 2010, the infrastructure manager and railway undertakings must immediately notify the investigating body of any serious accident, accident or incident in railway transport.

The investigating body is first notified via a telephone call and later in writing on a special form.

1.5 Philosophy of conduct in an investigation (philosophy, approach to establishing an investigation in the country and the degree of mobility, readiness and timeliness)

Article 29 of the Safety of Railway Transport Act (*ZVZeIP-UPB1*), published in *Uradni list RS* [Official Gazette of the Republic of Slovenia] No. 36/2010 on 4 May 2010, stipulates that the competent authorities, railway undertakings, the infrastructure manager and other parties involved must enable the investigating body to perform its tasks in an efficient, speedy and independent manner. On the basis of past experience, the investigating body assures that all the parties involved have complied with the provisions. The Chief Investigator identifies himself with a special service card or badge. The service card is prescribed by the Transport Minister.

Under Article 26 of the Railway Transport Act (*ZZeIP-UPB6*), *Uradni list RS* [Official Gazette of the RS] No. 11/2011 of 21 February 2011, the investigating body must investigate serious accidents.

The investigating body may, at its discretion, also decide to investigate those accidents and incidents which in similar conditions might have led to accidents, including technical failures of the structural subsystems or of interoperability constituents of rail systems. In its decision, it takes the following issues into account:

- a) the seriousness of the accident or incident;
- b) whether it forms part of a series of accidents or incidents relevant to the system as a whole;
- c) its impact on railway safety on the Community level; and

d) requests from infrastructure managers, railway undertakings and the safety authority or EU Member State.

The investigating body complies with all the provisions of the said Act, but it must carefully examine whether an accident or incident warrants an investigation, since only one of the positions envisaged in the Railway Accident and Incident Investigation Division is occupied, which imposes an additional restriction.

The work in the Division is organised in such a way that, outside his regular working hours, the Chief Investigator is permanently on call.

For the purposes of mobility, the Chief Investigator has his own vehicle – a passenger vehicle – or he may use public transport.

The on-call arrangement and mobility described above guarantee that investigation procedures are launched in the proper time. It takes the Chief Investigator up to two hours by car to reach the farthest location on the railway network from the place of his residence or work, which in his case are both located in the centre of Slovenia.

2 INVESTIGATION PROCEDURE

2.1 Cases where investigation is obligatory or optional under Articles 19 and 21 of the Railway Safety Directive

The investigating body carries out investigations of serious accidents, accidents and incidents in railway transport. Under the Railway Transport Act (*ZZeIP-UPB6*), *Uradni list RS* [Official Gazette of the RS] No. 11/2011 of 21 February 2011, the investigating body must investigate all serious accidents. The investigating body may, at its discretion, decide to investigate also those accidents and incidents which in similar conditions might have led to accidents, including technical failures of the structural subsystems or of interoperability constituents of rail systems.

According to the Safety of Railway Transport Act (*ZVZeIP-UPB1*), *Uradni list RS* [Official Gazette of the RS] No. 36/2010 of 4 May 2010, a serious accident means any train collision or derailment of trains, resulting in the death of at least one person or serious injuries to five or more persons or extensive damage to rolling stock, infrastructure or the environment, and any other similar accident with an obvious impact on railway safety regulation or the management of safety. Extensive damage means damage that can immediately be assessed by the investigating body to cost at least EUR 2 million in total.

The national investigating body in railway transport complies with the provisions of the aforementioned Acts and investigates all serious accidents, accidents and incidents which in similar conditions might have led to serious accidents or accidents. The investigating body decides to investigate accidents and incidents at its discretion.

2.2 Institutions participating in investigations (on a regular or extraordinary basis)

The investigating body always includes in its investigation the reports of the Ministry of the Interior and occasionally also the reports of judicial authorities.

Where analyses of chemical substances or other materials are required, the Jožef Stefan Institute and the Institute for

Research of Materials participate in the investigation procedure.

The Institute of Forensic Medicine participates in the investigation procedure when a post mortem examination of a victim is required.

For the purposes of reproducing recordings of verbal communication, the Chief Investigator collaborates with experts of the infrastructure manager and railway undertakings using the relevant recording devices.

2.3 Investigation procedure or investigating body's approach (identical to 1.5 but more detailed)

Article 29 of the Safety of Railway Transport Act (*ZVZeIP-UPB1*), *Uradni list RS* [Official Gazette of the Republic of Slovenia] No. 36/2010 of 4 May 2010, stipulates that the competent authorities, railway undertakings, the infrastructure manager and other parties involved must enable the investigating body to perform its tasks in an efficient, speedy and independent manner. All the parties involved have complied with this requirement. The Chief Investigator identifies himself with a special service card or badge. The service card is prescribed by the Transport Minister.

Article 29 of the Safety of Railway Transport Act (*ZVZeIP-UPB1*), *Uradni list RS* [Official Gazette of the Republic of Slovenia] No. 36/2010 of 4 May 2010, defines the duties of the competent authority, railway undertakings, the infrastructure manager and other parties involved in relation to the investigating body, which must be provided with:

- a) unlimited access to the site of the serious accident, accident or incident as well as to the rolling stock involved, the related infrastructure and traffic control and signalling installations;
- b) the right to an immediate listing of evidence and controlled removal of wreckage, infrastructure installations or components for examination or analysis purposes;
- c) access to and use of the contents of on-board recorders and equipment for recording of verbal messages and

registration of the operation of the signalling and traffic control system;

- d) access to the results of examination of the bodies of victims;
- e) access to the results of examinations of the train staff and other railway staff involved in the accident or incident;
- f) the opportunity to question the railway staff involved and other witnesses;
- g) access to any relevant information or records held by the infrastructure manager, the railway undertakings involved and the safety authority.

Under Article 26 of the Railway Transport Act (*ZZeIP-UPB6*), *Uradni list RS* [Official Gazette of the RS] No. 11/2011 of 21 February 2011, the investigating body must investigate serious accidents.

The investigating body may, at its discretion, decide to investigate also those accidents and incidents which in similar conditions might have led to accidents, including technical failures of the structural subsystems or of interoperability constituents of rail systems. In its decision, it takes the following issues into account:

- a) the seriousness of the accident or incident;
- b) whether it forms part of a series of accidents or incidents relevant to the system as a whole;
- c) its impact on railway safety on the Community level; and
- d) requests from infrastructure managers, railway undertakings and the safety authority or EU Member State.

The investigating body complies with all regulatory provisions. Because it is understaffed, the investigating body must carefully examine whether an accident or incident warrants an investigation.

3 INVESTIGATIONS

3.1 Review of investigations completed in 2010

In 2010, the Railway Accident and Incident Investigation Division investigated only one accident:

– collision of freight train no. 42772 with a passenger vehicle, a Renault Clio, on 5 September 2009 at 02:40 in Vnanje Gorice at a level crossing of the local road with the double-track railway line between Brezovica and Preserje stations that is protected with half-barriers; the driver of the passenger vehicle died of injuries sustained in the accident.

Type of investigated accidents	No. of accidents	Human consequence		Damage in € (estimated)	Trend compared to 2009
		Fatalities	Seriously injured		
collision	0	0	0	0	> 1
derailment	0	0	0	0	0
other	1	1	0	€ 4,500.00	> 5

3.2 Investigations started and completed in 2010

In 2010, six investigations of accidents were started, of which two were completed in 2011. One investigation started in 2009 was completed in 2010.

Title: Investigations completed in 2010				
Date of accident	Type of accident	Site of accident	Legal basis	Date of completion
05.09.2009	collision of freight train with passenger vehicle	between Brezovica and Preserje stations	Article 26 of Railway Transport Act (ZZelP)	14.05.2010

In 2010, the Railway Accident and Incident Investigation Division launched investigations of one incident and five accidents pursuant to Article 19(2) of Directive 2004/49/EC of 29 April 2004.

Title: Investigations started in 2010				
Date of accident or incident	Type of accident or incident	Site of accident or incident	Legal basis	Envisaged date of completion of investigation
27.01.2010	incident – locomotive train passes at danger the US-C signal and collides with passenger vehicle	at Maribor Studenci station	Article 26 of Railway Transport Act (ZZeIP)	09.06.2011
25.02.2010	collision of freight train with passenger vehicle	between Dankovci and Murska Sobota stations	Article 26 of Railway Transport Act (ZZeIP)	01.12.2011
01.04.2010	incident – incorrect connection of points during maintenance works	at Lesce Bled station	Article 26 of Railway Transport Act (ZZeIP)	28.02.2012
10.06.2010	collision of passenger train with passenger vehicle	between Brezovica and Preserje stations	Article 26 of Railway Transport Act (ZZeIP)	31.03.2012
10.06.2010	collision of passenger train with passenger vehicle	between Ljubljana Šiška and Ljubljana Vižmarje stations	Article 26 of Railway Transport Act (ZZeIP)	31.03.2012
14.07.2010	collision of freight train with passenger vehicle	between Straža and Novo mesto stations	Article 26 of Railway Transport Act (ZZeIP)	14.07.2012

3.3 Research studies (or safety studies in case of serious accidents) commissioned and completed in 2010

No investigation procedures requiring research studies of safety on the railway network in Slovenia were launched in 2010. No serious railway accidents occurred in this period on the railway network in Slovenia – all accidents occurred at level crossings. Four accidents with fatalities occurred at level crossings protected with half-barriers, and one accident at a constructed level crossing marked with road signs.

3.4 Summaries of investigations completed in 2010. Brief descriptions, photos, tables and safety studies

Collision of a freight train with a passenger vehicle at a level crossing protected with half-barriers between Preserje and Brezovica stations

On 5 September 2009, at 02:40, combined freight train no. 42772 hit the right-hand side of a passenger vehicle, a Renault Clio 1.2, at a level crossing of the local road with the railway line which is protected with half-barriers. The accident occurred on Podpeška cesta in Vnanje Gorice at the level crossing of the local road with the double-track railway line Ljubljana–Sežana.

The driver of the passenger vehicle, a Renault Clio 1.2, was driving along the local road from the direction of Brezovica pri Ljubljani towards Vnanje Gorice.

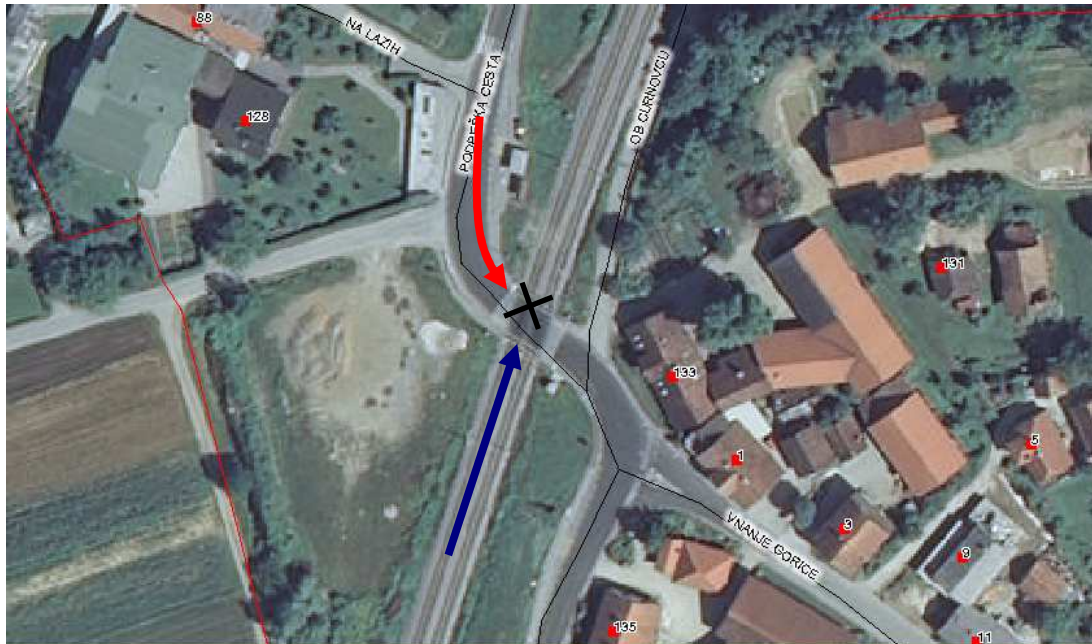
Combined freight train no. 42772 was travelling from Koper to Ljubljana along the correct right-hand side track of the double-track railway line.

The level crossing between Brezovica and Preserje stations at km 575+460 is protected for road users with the Iskra DK (remote control) signalling and safety device.

The driver of the passenger vehicle stopped by the side of the road in front of the level crossing, where the passenger stepped out of the vehicle, and the driver immediately proceeded onto the opposite lane, circumventing the lowered half-barrier, and drove across the level-crossing at the moment when combined freight train no. 42772, which was travelling along the correct right-hand side track, entered the level crossing to the right of the vehicle.

At a speed of 75 km/h, train no. 42772 hit the right-hand side of the passenger vehicle with the front of its locomotive, pushing the vehicle a distance of 327.8 m before it stopped. The passenger

vehicle became attached to the fender and the coupler of the front of the locomotive and ended up wedged under it.



View of travelling direction of the train and the passenger vehicle, and the site of the collision

The driver was seriously injured and was trapped in the passenger vehicle. The locomotive driver of the train involved in the accident gave first aid to the driver until the arrival of a rescue team.

Due to the fatal injuries sustained in the accident, the driver of the passenger vehicle died in the Emergency Unit of Ljubljana University Medical Centre on 6 September 2009.

Recommendation:

Since lowered half-barriers are often circumvented at level crossings where the lowered half-barrier protects only half of the road, i.e. the lane in the travelling direction and not the opposite lane, a gradual modification of protection at this type of level crossings with half-barriers for both lanes from both directions or barriers extending over the entire width of the road is recommended.

The investigations of the accidents and the incident described above did not require any special studies or diagrams.

3.5 Explanation and introduction, or the background to

investigations

The Railway Accident and Incident Investigation Division was not able to complete investigation procedures started in 2010 by the prescribed deadline owing to the long-term sickness leave.

Title: Investigations started in 2010 but not completed					
Date of accident	Type of accident	Site of accident	Legal basis	Reason for not completing or abandoning investigation	Who, why, when (decision)
27.01.2010	incident – locomotive train passes at danger the US-C signal and collides with passenger vehicle	at Maribor Studenci station	Article 26 of Railway Transport Act (<i>ZZelP</i>)	investigator on sick leave	completed on 09.06.2011
25.02.2010	collision of freight train with passenger vehicle	between Dankovci and Murska Sobota stations	Article 26 of Railway Transport Act (<i>ZZelP</i>)	investigator on sick leave	completed on 01.12.2011
01.04.2010	incident – incorrect connection of points during maintenance works	at Lesce Bled station	Article 26 of Railway Transport Act (<i>ZZelP</i>)	investigator on sick leave	investigator on sick leave; envisaged for 28.02.2012
10.06.2010	collision of passenger train with passenger vehicle	between Brezovica and Preserje stations	Article 26 of Railway Transport Act (<i>ZZelP</i>)	investigator on sick leave	investigator on sick leave, envisaged for 31.03.2012

10.06.2010	collision of passenger train with passenger vehicle	between Ljubljana Šiška and Ljubljana Vižmarje stations	Article 26 of Railway Transport Act (ZZelP)	investigator on sick leave	investigator on sick leave, envisaged for 31.03.2012
14.07.2010	collision of freight train with passenger vehicle	between Straža and Novo mesto stations	Article 26 of Railway Transport Act (ZZelP)	investigator on sick leave	investigator on sick leave, envisaged for 14.07.2012

3.6 Accidents and occurrences investigated in the past five years (between 2006 and 2010)

Overview of investigated railway accidents between 2006 and 2010: serious accidents, accidents, occurrences and safety studies, including information for the period from 2006 to 2010, according to types – train collision with another train, train collision with an obstacle, derailment, accidents involving persons and rolling stock in motion, fire in rolling stock, accidents involving dangerous goods, and other accidents (item 3.1 should be supplemented with trends established in investigations of accidents).

Investigated accidents		2006	2007	2008	2009	2010	Total
serious accidents	collision						
	derailment						
Article 19 (1+2) of Railway Safety Directive	level crossing						
	persons and rolling stock in motion						
	fire in rolling stock						
	other						

	dangerous						
other accidents Article 21(6) of Railway Safety Directive	collision				1		1
	derailment						
	level crossing			1	4	5	10
	persons and rolling stock in motion				1		1
	fire in rolling stock						
	other						
	dangerous						
TOTAL				1	6	5	12

Since the Slovenian railway transport investigating body became operational on 1 June 2008, the presentation of accident investigation trends is not complete for the past five years. Only one accident was investigated in 2008, six accidents and one incident were investigated in 2009 and, similar to 2008, only one accident was investigated in 2010 owing to the long-term sickness leave of the Chief Investigator.

No special safety studies of railway transport were made in the period 2006–2010 since the investigating body became operational on 1 June 2008. From this date until the end of 2010, accidents of a similar type requiring a special study did not occur on the railway network in Slovenia.

4 RECOMMENDATIONS

In 2010, the Railway Accident and Incident Investigation Division issued three recommendations:

- all three recommendations refer to the upgrading of signalling devices and protection at level crossings.

Recommendations issued:		Follow-up of recommendations					
		implemented		being implemented (or are prepared)		will not be implemented (rejected)	
YEAR	no.	no.	%	no.	%	no.	%
2005							
2006							
2007							
2008	2	2	100				
2009	16	14	87.5	2	12.5		
2010	3	2	66.7	1	33.3		
TOTAL	21	18	85.7	3	14.3		

Daniel Lenart,
Undersecretary
Chief Investigator of
Railway Accidents and
Incidents

