



REPUBLIC OF BULGARIA

**MINISTRY OF TRANSPORT, INFORMATION
TECHNOLOGY AND COMMUNICATIONS**

**AIRCRAFT, MARITIME AND RAILWAY
ACCIDENT INVESTIGATION UNIT
DIRECTORATE**

**SPECIALIZED RAILWAY ACCIDENTS AND INCIDENTS
INVESTIGATION UNIT**

ANNUAL REPORT



2013



Specialized railway accidents and incidents investigation unit

ANNUAL REPORT 2013

The present report is published in accordance with:

- Directive 2004/49/EC;
- Railway Transport Act, 2000, publ., effective from 21.06.2011;
- Ordinance 59, 2006, publ., effective from 07.06.2013

These legal acts are available at: <http://www.mtitc.government.bg/page.php?category=390&id=2569>



TABLE OF CONTENT

PREFACE	4
Introduction	6
1. INVESTIGATION AUTHORITY	6
1.1. Legislation	6
1.2. Functions and objectives	7
1.3. Organization of the activity	8
1.4. Organizational scheme	9
2. PROCESS OF INVESTIGATION	10
2.1. Events that are subject to investigation	10
2.2. Institutions related to the investigation.	10
2.3. Process of investigation and investigating authority approach	11
2.4. Reports and studies on rail events safety - 2013	12
3. INVESTIGATIONS.....	15
3.1. Summary of completed investigations, including key trends	15
3.2. Investigations started in 2012 and completed in 2013.....	15
3.3. Investigations started and completed in 2013.....	16
3.4. Accidents and incidents investigated during the last six years.	19
4. SAFETY RECOMMENDATIONS	19
4.1. Summary and presentation of the recommendations	20
4.2. Safety recommendations given in 2013	21

TABLES

TABLE 1: RAIL EVENTS IN 2013.....	13
TABLE 2: ACCIDENTS AND INCIDENTS INVESTIGATED IN 2013	15
TABLE 3: INVESTIGATIONS STARTED IN 2012 AND COMPLETED IN 2013.....	15
TABLE 4: INVESTIGATIONS STARTED AND COMPLETED IN 2013.....	16
TABLE 5: ACCIDENTS AND INCIDENTS INVESTIGATED WITHIN THE PERIOD 2008 – 2013.....	19
TABLE 6: ISSUE AND INTRODUCTION OF RECOMMENDATIONS IN THE PERIOD 2008 - 2013.....	20



PREFACE

Operational programme on “Transport” 2007-2013 (OPT) is one of the seven operational programmes of Republic of Bulgaria financed by the Structural Funds and Cohesion Funds of EU. The budget of the Programme is 2 003 481 163.68 EUR.

The general objective of OPT is to develop railway, road and water infrastructure, as well as to stimulate the development of combined transport in harmony with the European Union’s transport policy and the set requirements for the development of the Trans-European transport network for achieving sustainability of the Bulgarian transport system. It is in accordance with the strategic priorities of the national transport policy, set in the Strategy for development of the national transport system of Republic of Bulgaria until 2015:

- Effective maintenance, modernization and development of the transport infrastructure;
- Integration of the Bulgarian transport system into the system of the EU;
- Limiting the impact of transport on the environment and human health;
- Public transport sustainable development and Intermodal transport development.

Specific objective of OPT is integration of the national transport system into the transport network of the European Union. The implementation of Priority Axis 1 - „Development of the railway infrastructure along the Trans-European and main national transport axes”, aims to construct and develop the key rail infrastructure connections of national, trans-border and European importance and improvement of the main rail lines interoperability. Of national and European importance is the priority 22 of the Trans-European transport network (TEN-T) for the interoperability improvement along the main rail lines with positive effect on the environment, which is in compliance with Regulation №1084/2006 of the Council.

RAILWAY PROJECTS IN PROCESS OF IMPLEMENTATION:

○ **Parvomai – Svilengrad section, Phase 2.** The project includes Electrification and reconstruction of Dimitrovgrad-Harmanli rail section, Electrification and reconstruction of Harmanli-Svilengrad rail section and Svilengrad – Greek border, Construction of new traction substations in Simeonovgrad and Svilengrad and extension of the existing substations of Dimitrovgrad, and construction of SCADA signalling and communication systems for the whole line. The performance timeline is 14.08.2014.

○ **Electrification and reconstruction of Svilengrad-Turkish border, Phase 3** - Introduced in service: 05.08.2013.

○ **Rehabilitation of the rail infrastructure along sections of the Plovdiv-Burgas railway:**

- *Rehabilitation of Mihailovo -Kaloianovets section*, deadline – 30.11.2013;
- *Rehabilitation of the rail sections Stara Zagora – Zavoi, Zavoi – Zimnitsa*, deadline – 15.05.2014;
- *Rehabilitation of the rail section Tzerkovski – Karnobat and renewal of the track along Karnobat-Burgas section*, deadline – 15.10.2013;

○ **Modernization of Septemvri-Plovdiv rail section – part of the Trans-European rail network.** Contracts for launching of projects on three positions were signed in 2012, for the performance of which in the months of September and October 2013 were submitted



applications for construction permits. The total value of the concluded contracts is 256 719 764,13 BGN and the deadlines for their implementation expire in 2015.

○ **Construction of intermodal terminal in South-Central district of planning in Bulgaria-Plovdiv.** The project for technical assistance for construction (AF) was approved on 31.10.2013.

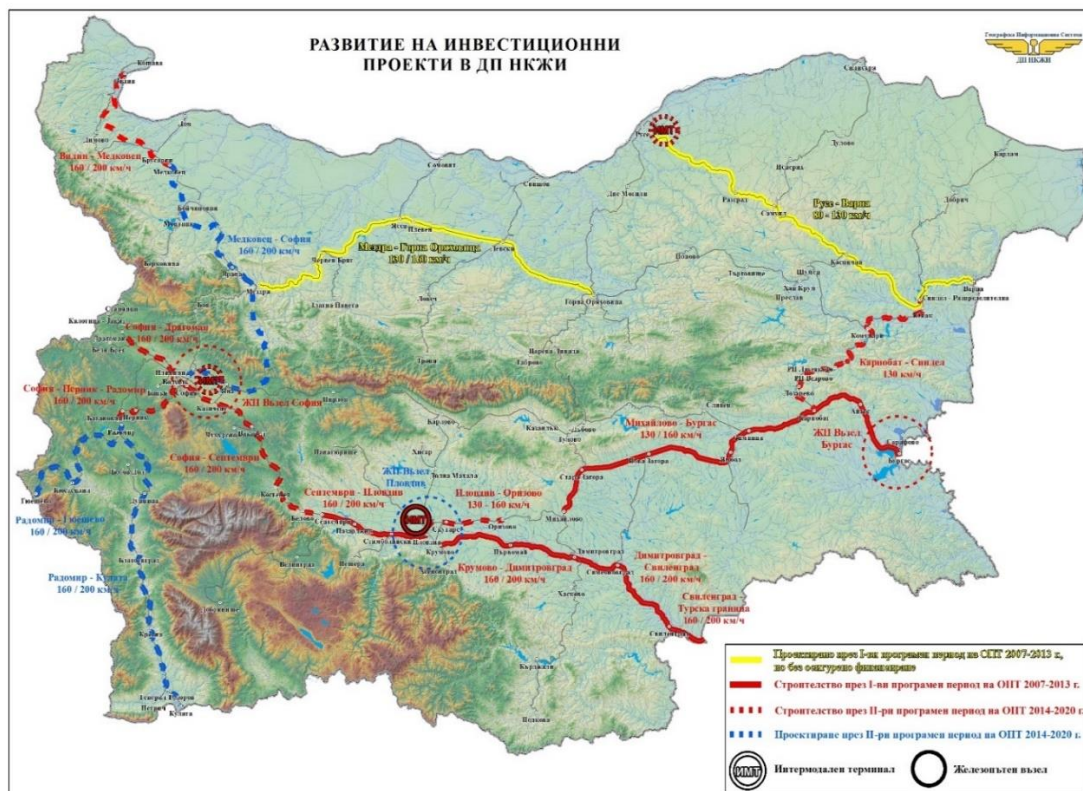
○ **Rehabilitation of station complexes – Sofia Central Station, Pazardzhik Station and Burgas Station** - on 12.08.2013 the AF for the project amounting to 80 792 636,67 BGN was approved and on 23.08.2013 was signed a GA amounting to 45 633 377 BGN.

○ **Update of Vidin-Sofia project and preparation of Vidin-Medkovetz rail section** GA was signed on 15.10.2013.

○ **Modernization of Sofia-Septemvri rail section** - on 10.07.2013 was concluded a contract for „Coordination and preparation of technical designs on conformity assessment with the essential requirements for the construction sites of project „Modernization of Sofia – Plovdiv rail line: Sofia – Elin Pelin and Elin Pelin – Septemvri rail sites””.

○ **Instrument for preparation of rail projects along the TEN-T network** – it includes Modernization of rail lines Sofia – Dragoman and Sofia – Pernik – Radomir, Development of rail junctions Sofia and Burgas. On 29.10.2013 was approved the AF for Instrument for preparation of rail projects along the TEN-T network project with total amount of 36 059 994 BGN.

○ **Technical assistance for construction of intermodal terminal in Northern Central area of planning in Bulgaria - Ruse.** The AF on the project was signed on 30.08.2012.





Introduction

This report presents the activities of the “Specialized unit for investigation of accidents and incidents in the rail transport”(SRAIIU) performed during 2013 in accordance with the Directive 2004/49/EC on safety of the Community’s railways.

The annual report contains details on the investigations led by the SRAIIU in its quality of national investigation authority and in accordance with the provisions of the Law for Railway Transport, Ordinance 59 dated 05.12.2006 on the rail safety management, Rules of rail transport accidents and incidents investigation by the specialized unit within the „Aircraft, Maritime and Railway Accident Investigation Unit” Directorate (AMRAIUD) at the Ministry of Transport, Information Technology and Communications (MTITC) and Ordinance H-32 from 19 September 2007 on the coordination of activities and information exchange within the rail accidents and incidents investigation.

During the year in review there were completed one investigation of railway accident occurred in 2012 and two others occurred in 2013 in accordance with art. 19, par. 2, of Directive 2004/49/EC.

The report contains information on the safety recommendations given as a result from the conducted investigations and measures undertaken.

In the preface it is provided information on the progress of the Operational Programme “Transport” financed by the EU Structural and Cohesion Funds for the period 2007 – 2014.

1. INVESTIGATION AUTHORITY

In relation to the requirements of Directive 2004/49/EC of the European Parliament and Council from 29.04.2004 on the safety of rail transport in the Community transposed into "Law for the rail transport" (LRT) and Ordinance 59/05.12.2006 on the management of railway safety, with the Council of Ministers Decree 250 from 25.11.2005, in 2006 it was established a Specialized railway accidents and incidents investigation unit (SRAIIU) at the Ministry of Transport, Information Technology and Communications (MTITC).

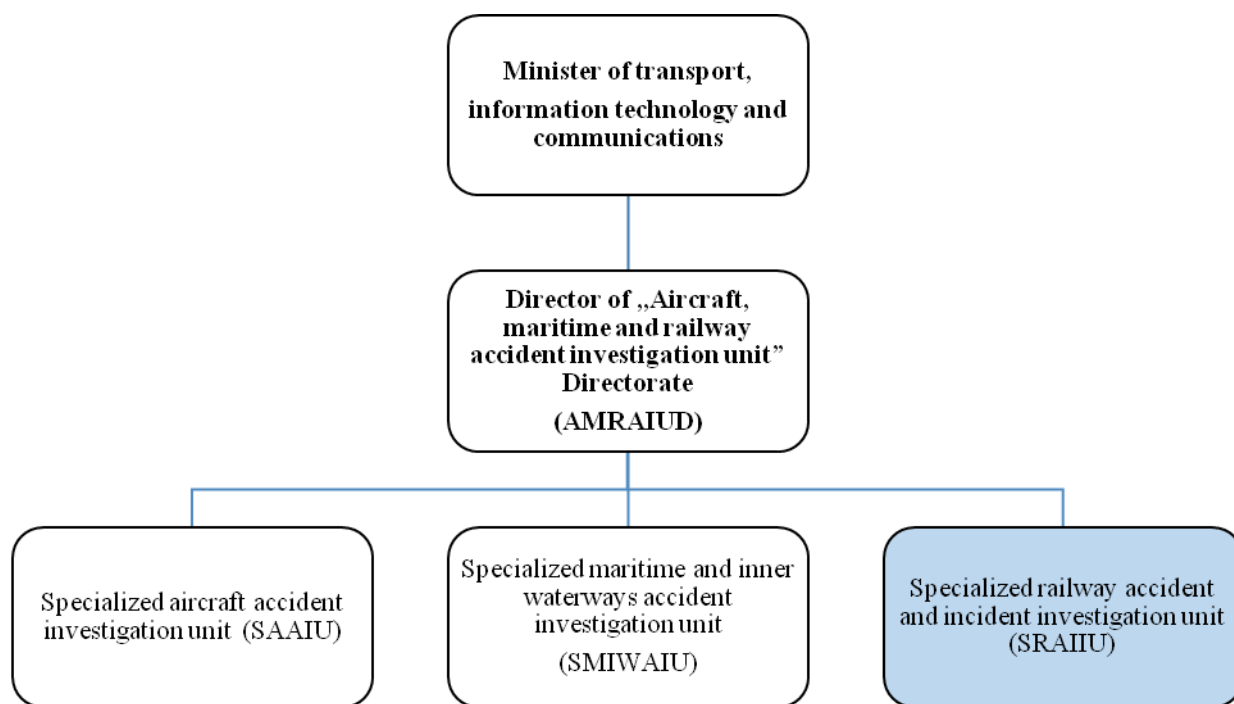
1.1. Legislation

By the Council of Ministries Decree No 185 from 28.07.2008 of the Republic of Bulgaria „Aircraft, Maritime and Railway Accident Investigation Unit” Directorate (AMRAIUD) was established within the structure of the MTITC. The Directorate is a multimodal authority, consisting of three independent specialized units for investigation of aviation occurrences, accidents in the maritime areas and the accidents and incidents in rail transport.

The SRAIIU is a national authority for railway events investigation, which is independent from the railway infrastructure manager, railway undertakings and from the national safety authority (NSA) in the rail transport, which is represented by Railway Administration Executive Agency (RAEA) in Republic of Bulgaria.



Structure of AMRAIU Directorate in MTITC



1.2. Functions and objectives

The main objective of SRAIIU in carrying out investigations is establishment of the technical reasons for the accidents and incidents occurred and the identification and issuance of effective recommendations to improve the level of safety in rail transport. The role and function of SRAIIU are described in details in the national regulations, in which Directive 2004/49/EC on the safety on the Community's railways was transposed.

The main functions and responsibility of SRAIIU are the following:

- Organizing, coordinating and carrying out technical investigations of serious railway accidents and incidents occurring on the territory and in the border crossings of the Republic of Bulgaria;
- Establishment of all the technical causes, circumstances and facts related to incurred serious accidents and incidents including identification of evidences, perform analyses, decision-making and production of specialized expertise and documentation;
- Coordination of activities on carrying out technical investigations to the competent investigative authorities of the public prosecutor of the Republic of Bulgarian and other government investigative bodies;
- Drafting, send to all interested parties and publication of final reports on investigations with recommendations for the improvement of safety and prevention of similar serious accidents;



- Participation in the activities of the Network of national investigation bodies of the EU Member States coordinated by the European Railway Agency (ERA);
- Participation in working groups for harmonization of the national regulations with the European legislation related to the railway accidents and incidents investigation;
- Daily collecting and analysing the data on the accidents and incidents occurred in the railway transport system.
- Keeping the archive of the accidents and incidents investigated and maintenance of information Data base;
- Preparation and dissemination of an information bulletin for investigated heavy rail accidents and incidents.

1.3. Organization of the activity

The SRAIU main activity as a national investigation authority is an investigation of railway occurrences, classified according to the art. 19 of the Directive 2004/49/EO. Investigation of the railway events is carried out by SRAIU in the composition of three inspectors with master's degree and with qualifications correspondingly in "Managing and operating movement of trains and capacity", "Railway rolling stock" and "Computer science". The budget of the unit is planned and provided accordingly to its ongoing operating needs by the MTITC. The decisions for undertaking of investigation are made independently by SRAIU in accordance with the requirements of Directive 2004/49/EC and the effective national legislation:

- Law of Railway Transport (LRT);
- Ordinance 59/05.12.2006 for safety management in the railway transport.

The SRAIU notifies ERA on each investigation of a rail event undertaken. Investigations are completed with preparation of final report, which is made publicly available on the website of MTITC. The SRAIU reports to ERA in a specific format each completed investigation, and if possible provides an electronic copy of the original final report in English. After validation from ERA side, the final report becomes publicly available on the website of the Agency.

International activity during 2013

1. Participation of two inspectors in a two-days plenary meeting of the Network of National Investigation Bodies (NIB) organized by ERA within the period 23 – 24.04.2013 in Lille, France, with a subject "Fourth rail package" of measures for the rail transport and discussion of proposed by the EC amendments of Directive 2004/49/EC on the Community's rail safety;

2. 19.06.2013 – participation of two inspectors in a NIB plenary meeting, in Lille, France, with subject „Amendments of 4-th package of measures and preparation of draft proposal for amendment of art. art. 20, 21, 23 and 25 of Directive 2004/49/EC and receiving information about the activities of task forces Assessment, Training and Independence;

3. 19.11.2013 г. – participation in a plenary meeting of the NIB Network with ERA in London.

Participation of SRAIU in other events



1. During July, August and September 2013 the SRAIU performed a detailed analysis of the requirements on the full transposition of Directive 2004/49/EC of the European Parliament and of the Council of Europe on the safety of the Community's railways in the national legislation, prepared its proposals and took part in a Commission for amending the LRT and integration of Ordinance 59/05.12.2006 on the management of rail transport safety;
2. Participation in the work of a committee appointed by the Minister of Transport, Information Technology and Communications to carry out continuous monitoring of the implementation of the public transport services in the field of rail transport in the Republic of Bulgaria signed between the MTITC and „BDZ - Passenger Service" EOOD for a period of 15 years with effect from 01.01. 2010;
3. Monthly, after obtaining statistical information on the overall indicators of the infrastructure manager and railway undertakings in connection with Ordinance 59/5.12.2006, the SRAIU performed analysis and summarized the data on safety management in railway undertakings and infrastructure. In this regard, in July the analysis of the safety management data for 2012 provided in the annual reports of the railway infrastructure manager and railway undertakings;
4. The SRAIU monitored daily the operating environment for implementation of the "Train operation schedule" (TOS) in connection with safety requirements;
5. The SRAIU inspectors participated in the established by the Minister of Transport, Information Technology and Communications „Expert Council for coordination of the activities and the cooperation in the field of the railway transport" between MTITC, RAEA and MI.
6. The SRAIU timely prepared and published an annual report for the previous year, which was sent to the European Railway Agency.

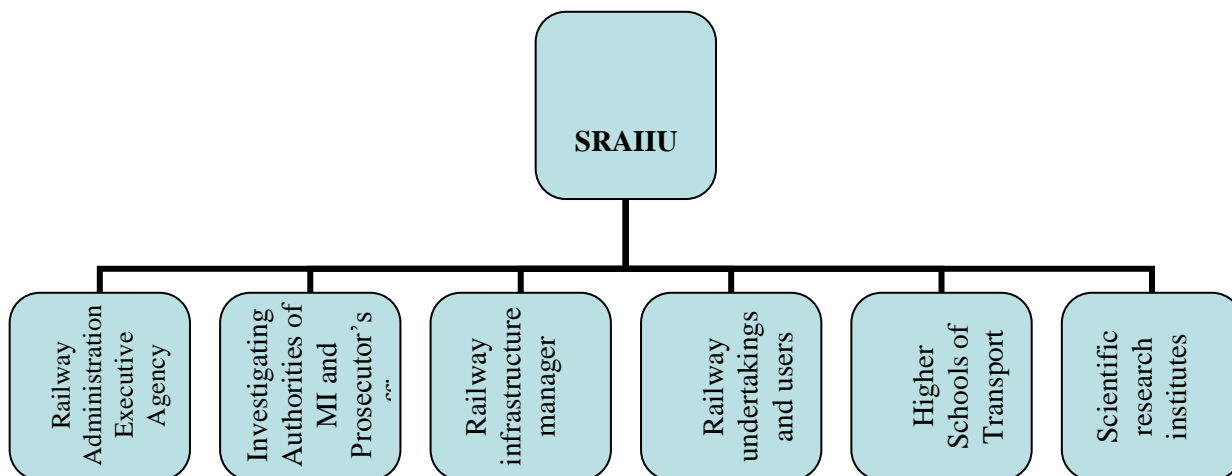
1.4. Organizational scheme

In order to create the conditions and organization necessary for timely and efficient operations in the process of conducting technical investigation the SRAIU coordinates with the MI competent investigating authorities and the Prosecutor's Office, which conduct a parallel pre-trial investigation. If necessary, it is carried out a regulated exchange of information acquired by various investigating bodies.

In the process of investigation the SRAIU establishes working contacts and coordinates its activities with the railway infrastructure manager, railway undertakings, and users of railway services with respect to the accident or incident investigated in for provision of information related to the investigation, as well as with other independent institutions and specialized administrations for preparation of specialized expertise.



Relation of SRAIU with other investigation authorities and institutions



2. PROCESS OF INVESTIGATION

2.1. Events that are subject to investigation

The railway events that are subject to investigation by the SRAIU are stipulated in Directive 2004/49/EC, RTA and Ordinance №59, as follows:

- Serious railway accidents;
- Accidents and incidents, which within different circumstances could lead to consequences, typical for the serious railway accidents;
- The specialized unit, at his own discretion may also investigate technical damages within the structural subsystems and interoperability components taking into account their importance.

In the event of an accident or incident, the authorized officials of the railway infrastructure manager and railway undertakings shall immediately notify the SRAIU in accordance with the LRT and Ordinance 59 requirements.

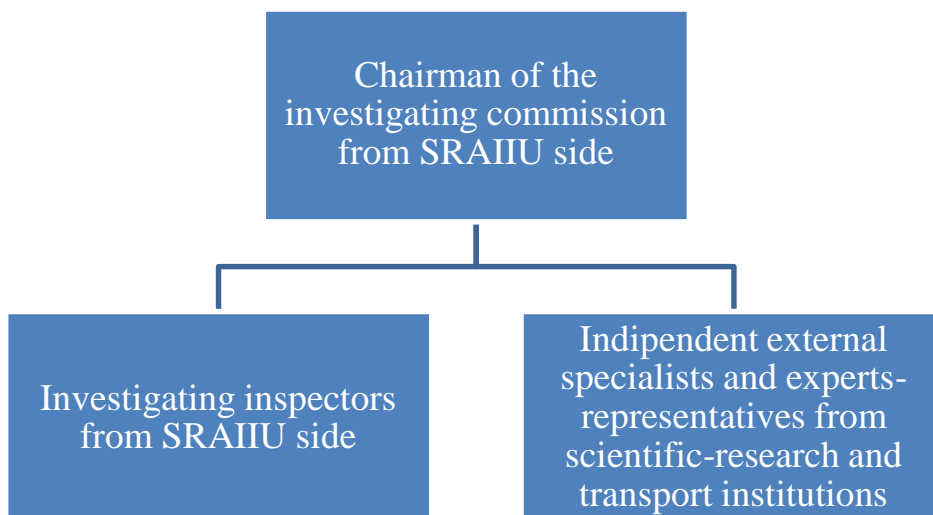
2.2. Institutions related to the investigation.

For investigation of accident categorized by the SRAIU under art. 19 of the Safety Directive, it is established a Commission of inquiry, which includes investigation inspectors from the Unit and independent external specialists and experts from academic circles and transportation universities with specializations corresponding to the specifics of the respective investigation. In the course of and for the purposes of the investigation, the Commission uses specialized services from independent institutions:

- Scientific-research Institute of Transport;
- Sofia Technical University;
- Todor Kableshkov Higher School of Transport;
- Bulgarian Academy of Sciences;
- Other institutions for each specific case.



Structure of the Commission of railway events investigation



2.3. Process of investigation and investigating authority approach

In any notification on occurred railway event from the NRIC's duty officers, it is categorized by SRAIU in accordance with the regulations. After making decision for investigation, the SRAIU takes immediately action to organize it and notifies all parties that are involved in the event. The investigation inspectors take prompt actions to move to the site. After the initiation and establishment of the basic data for the railway event, the SRAIU notifies ERA on the investigation undertaken.

The Chairman of the Commission coordinates its actions with the competent state authorities - Prosecutor's Office, Ministry of Interior, Civil Protection, Emergency Medical Care, Fire Safety and Protection of Population (FSPP) and other institutions for ensuring the necessary conditions for conducting independent technical investigation. The manager of the railway infrastructure, railway undertakings and others involved in the event legal entities provide to the Commission all records and conversations of the staff involved in the train operation management, as well as any other information and documents related to the investigation. At the request of SRAIU, the NSA provides any important information about the investigated accident or incident. The Commission holds meetings and interviews with the involved staff and requires written statements of all legal entities and individuals who are directly and indirectly related to the event. The Commission receives full support and assistance from the competent state investigating authorities, the MI and the Prosecutor's Office, which conduct its own parallel investigation, according to the requirements of Ordinance H-32/19.09.2007 on the coordination of activities and exchange of information in the investigation of railway accidents and incidents.

The technical investigation is carried out with maximum transparency to exchange views and opinions of all parties involved in the event. The Commission analyses the collected documents, materials, prepared opinions and expertise before, during and after the accident in order to clarify the circumstances and reasons for its occurrence.

The Chairman of the Commission prepares a final report on the technical investigation of any accident or incident within one year from the date of its occurrence. The final report sets out the chronology of events, personnel actions and detailed description of the findings on



fatalities and injured persons and material damages. Included is analysis of the event, the circumstances and it is given a justification of the causes for its occurrence. Where appropriate, recommendations are prepared for improving the level of safety in order to prevent other events of a similar nature that are addressed to the NSA and direct implementers - the infrastructure manager and undertakings involved in an accident and, if necessary to other participants involved in the event. The addressees of the recommendations are obliged to inform in writing the SRAIU about the taken measures for implementation of the recommendations within specified deadlines.

The SRAIU informs ERA on the completion of the investigation filling in a specialized format of ERAIL database for final reporting, attaching a copy of the original final report to it. An e-copy of the final report is made publicly available on the SRAIU website – on the Internet portal of MTITC.

2.4. Reports and studies on rail events safety - 2013

In 2013 the SRAIU received reports on a total of 588 realized rail events of which 266 accidents, including 126 collisions of Rolling Stock with obstacle, 41 cases of Rolling Stock derailment, 32 collisions at level crossings, as there are recorded 12 fatalities excluding suicides, including 3 at level-crossings and 9 on Rolling Stock in motion and 21 seriously injured persons, including 12 at level-crossings and 9 on Rolling Stock in motion, excluding suicides. The total number of accidents classified by NRIC as significant is 33, including 2 train collisions (including collisions with obstacles within the clearance gauge), 2 derailments, 11 accidents at level crossings, 17 accidents to persons caused by rolling stock in motion, excluding suicides and one of "other" category. The analysis of the global data on railway accidents indicates that the majority of them are collisions of trains, including collisions to obstacles within the structure gauge, Rolling Stock derailment, and accidents to persons caused by Rolling Stock in motion, collisions at level crossings with injured and fatalities as the fatalities from suicide are 17.

The value of suffered material damages by rolling stock and NRIC's rail infrastructure as a consequence of significant rail accidents amounts to 155 938 BGN (79 730 EUR). The damages suffered by the rail undertakings are as follows:

- BDZ PS - 240 517 BGN (122 974 EUR);
- BDZ Cargo – 77 982 BGN (39 872 EUR);
- BRC JSC – 26 731 BGN. (13 650 EUR);

There are no data on participation of other main railway undertakings in the registered in 2013 accidents and incidents.

Rail events with caused damages

In 2008 compared to 2007 the deviation damages/BGN was + 232 845 BGN (+119 412 EUR)

In 2009 compared to 2008 the deviation damages /BGN was -227 792 BGN. (-116 816 EUR)

In 2010 compared to 2009 the deviation damages /BGN was -226 396 BGN (-116 100 EUR)

In 2011 compared to 2010 the deviation damages /BGN was -102 290 BGN. (-52 457 EUR)

In 2012 compared to 2011 the deviation damages/BGN was +192 266 BGN. (+98 304 EUR)

In 2013 compared to 2012 the deviation damages/BGN was +206 902 BGN. (+105 787 EUR)



The rail events occurred in 2013 are registered by type as follows:

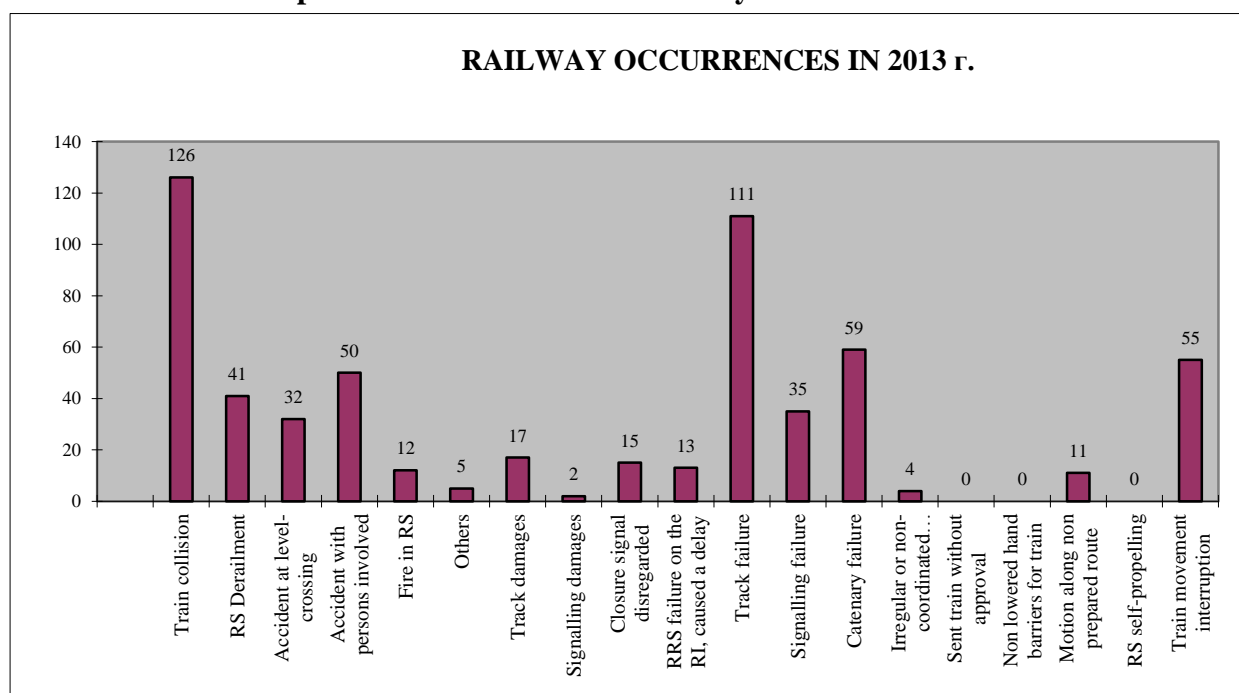
Table 1: Rail events in 2013

No	TYPE OF EVENTS	SOFIA DISTRICT	PLOVDIV DISTRICT	GORNA ORYAHOVITSA DISTRICT	TOTAL
ACCIDENTS					
1	Train collision	40	37	49	126
2	RS Derailment	17	8	16	41
3	Accident at level-crossing	10	12	10	32
4	Accident with persons involved	22	20	8	50
5	Fire in RS	2	7	3	12
	Others	1	2	2	5
	Total:	92	86	88	266
INCIDENTS					
6	Track damages	8	7	2	17
7	Signalling damages	0	2	0	2
8	Closure signal disregarded	5	6	4	15
9	Break of RS wheel	0	0	0	0
	Total:	13	15	6	34
SITUATIONS, CLOSE TO INCIDENTS					
10	RRS failure on the RI, caused a delay	6	4	3	13
11	Track failure	68	18	25	111
12	Signalling failure	10	7	18	35
13	Catenary failure	21	20	18	59
14	Irregular or non-coordinated actions by the RI operational staff	0	2	2	4
15	Missed train	0	0	0	0
16	Accepted train on occupied track	0	0	0	0
17	Sent train without approval	0	0	0	0
18	Sent train to an occupied interstation	0	0	0	0
19	Non assured with a brake mass train	0	0	0	0
20	Non lowered hand barriers for train	0	0	0	0
21	Motion along non prepared route	3	6	2	11

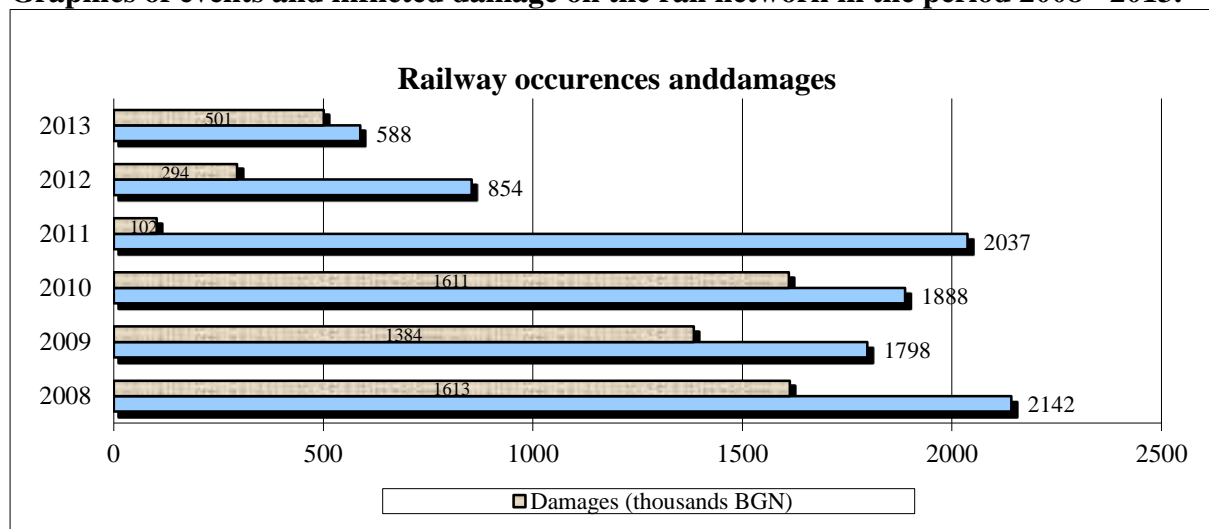


22	RS failure on the RI, leading to derailment	0	0	0	0
23	RS self-propelling	0	0	0	0
24	RS left out of distance indicators	0	0	0	0
25	Train movement interruption	11	29	15	55
TOTAL:		119	86	83	288

Graphics of the events on the railway network in 2013.



Graphics of events and inflicted damage on the rail network in the period 2008 - 2013.





3. INVESTIGATIONS

3.1. Summary of completed investigations, including key trends

In 2013 the SRAIU performed and completed investigation of two railway events categorized as serious accidents, including one started on 19/12/2012 and performed a technical investigation of event involving technical failures in the structural subsystem, which under different circumstances could lead to a serious accident.

The summarized data from investigations are displayed respectively in p. 3.2 and 3.3.

Table 2: Accidents and incidents investigated in 2013

Type of investigated accidents and incidents	Number of accidents	Number of victims		Damages (EUR) (approx.)
		Fatalities	Seriously injured	
Fire in RS	2	-	-	111 509
RS derailment	1	-	-	3 665
TOTAL:	3	-	-	115 174

3.2. Investigations started in 2012 and completed in 2013

Table 3: Investigations started in 2012 and completed in 2013

Event data	Investigation visit card	Legislation	Completed on
19.12.2012	Technical investigation of rail accident occurred in Shumen Station – fire of electrical locomotive no. 42081.0 of passenger train no. 90101.	Directive 2004/49/EC, art. 19, par. 2 and order of the Minister of MTITC, art. 5, i. 6 from the LTA, art. 78, par. 1 of Ordinance 59	17.05.2013

3.2.1. Fire of electrical locomotive no. 42081.0 of passenger train no. 90101 in Shumen station.

Summary

On 19/12/2012 passenger train PT 90101 was serviced with electrical locomotive no. 42081.0 by locomotive and carriage brigades of "BDZ Passenger Services" EOOD from Ruse station - Marshalling yard to Shumen station. The train arrived at Shumen station on second reception-departure track at 11:33 a.m.

Five minutes after disembarking of the passengers from the train during the time of waiting for shunting of the train composition, the assistant train driver smelled something burning and noticed smoke low down at the rear of the locomotive. He switched off immediately the main air switch and together with the train driver started inspection. There was found a thick smoke emitting from the rear cabin and flames from the intermediate corridor in which situation they switched off the accumulation battery, activated the fixed fire extinguishing installation and began firefighting with the fire extinguishers available.

The fire was extinguished at 12:50 with the assistance of Fire safety and population protection service – Shumen.



Consequences

There are no fatalities and injured. Caused are damages to the electric locomotive, a coach and rail infrastructure amounting to a total of 45029.38 BGN.

Causes

Immediate technical cause of the occurred accident - ignition of electric locomotive no. 42081.0 located on the second track of Shumen station, is the primarily electrical short circuit incurred in the operating wires connected to the switch control 370 mounted on the control panel column in the first cabin of the locomotive.

Investigation status

The investigation was completed on 17.05.2013 г.

3.3. Investigations started and completed in 2013

Table 4: Investigations started and completed in 2013

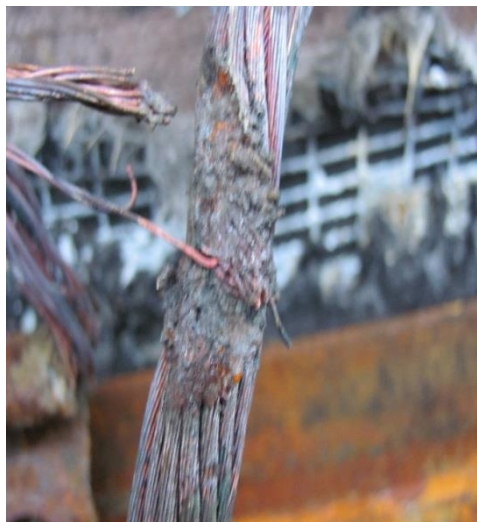
Date of Event	Investigation Information card	Legal basis	Completed on
26.06.2013	Technical investigation of rail accident occurred in Ohrid halt – fire of electrical locomotive no. 44074.3 of passenger train no. 70200.	Directive 2004/49/EC, art. 19, par. 2 and order of the Minister of MTITC, art. 5, i. 6 from the RTA, art. 78, par. 1 of Ordinance 59	29.11.2013
03.09.2013	Technical investigation of rail accident – derailment of coach, part of international fast train no. 465 while passing transit on third track of Raduntzi station.	Directive 2004/49/EC, art. 19, par. 2 and order of the Minister of MTITC, art. 5, i. 6 from the RTA, art. 78, par. 1 of Ordinance 59	18.12.2013



3.3.1. Fire in electric locomotive no. 44074.3 of passenger train No. 70200 at Ohrid halt

Summary

On 26.06.2013, the passenger train (PT) no. 70200 in 2 cars and electric locomotive no. 44 074 composition run along Mezdra – Montana direction. After the departure of the train from Palilula halt, the train accelerated and at 7:43 the main air switch of the locomotive switched off at 28-th position of the controller with indication on the control panel of the locomotive "H 812" - "Ground Control", "N806" - "stop ". On decision of the train driver, the train continued to move freely and after its establishment at Ohrid halt at 07:46 a.m. through the open door of the corridor into the locomotive cabin invaded thick, black and suffocating smoke. The driver left the locomotive and noticed that the smoke developed into fire and at 7:57 a.m. gave signal for help at 112, telephone. The train master took action for uncoupling the burning locomotive from the composition and with the help of passengers the cars were separated and distanced at 10- 15 meters.



At 10:30 a.m. the fire was extinguished with the help of fire-extinguishing vehicle of the Regional office "Fire safety and protection of the population".

Consequences

Fatalities and seriously injured persons – none.

Damages were inflicted to the locomotive and rail infrastructure amounting to 123 887 BGN. Following the fire and the need to carry out restoration work, movement of the trains in Rakevo - Boichinovtsi section was suspended at 07:50 AM and restored at 4:45 PM. The carrier's losses from delayed trains totalled to 49 451 BGN.

Causes

The immediate technical cause of the occurred accident - ignition of fire in electric locomotive no. 44074.3 at Ohrid halt was a breakthrough of the insulation and occurrence of primary electrical short circuit between the operating conductors 850, 851, 853 of the accumulation battery mounted in the metal cabinet and its corpus (conductor 999).

Status of the investigation – The investigation was completed on 29.11.2013.



3.3.2. Derailment of a wagon from the international fast train No 465 during transit passing along third track of Raduntzi station.

On 03.09.2013, the international fast train IFT No 465 consisting of three cars and electric locomotive No 44085.9 is moving in direction Bucharest-Istanbul.

At 9: 28 AM the train enters and passes through the Radunci station on the third reception-departure track (RDT) with regular signalling at a speed of 25 km/h. At 21: 29 hours, upon the release of the train from third RDT before the exit semaphore at km. 212 157, his speed slumps and the train stops. It was found is a derailment of car no 51755040012-4 with both wheel sets on the first bogie in front of arrow № 3 of the station, as well as a piece of rail from the switch tongue with a length of 3.5 m cut through the floor of the car in compartments № 8 and № 9.



The IFT No 465 was reduced with the derailed and the attached with its buffers to it wagon of the Romanian administration and departed with one coach from Raduntzi to Istanbul with a delay of 86 minutes.

Consequences

There were no fatalities and seriously injured persons.

Damages were caused to the passenger car no 51755040012-4, type Bcm owned by TCDD (Turkish State Railways) and to the railway infrastructure, amounting in total to 7176 BGN.

Following the accident and the need of rehabilitation works, the train operation on all the tracks was suspended from 09:29 p.m. to 03/09/2013 till 00:15 a.m. on 09.04.2013, as the traffic on the fourth track of Raduntzi station was recovered at 5:15 a.m.

Causes

The immediate technical reason for the derailment of the coach of the international fast train No 465 in transit through the third RDT before switch No 3 at Raduntzi station with regular open entrance and exit signal was the incorrectly laid joint under the rails, non-radial railway fishplates within the area of ascension and uneven subsidence in the vertical plane of the railway superstructure laden point at kilometre 212 +220.

Investigation status – The investigation was completed on 18.12.2013.

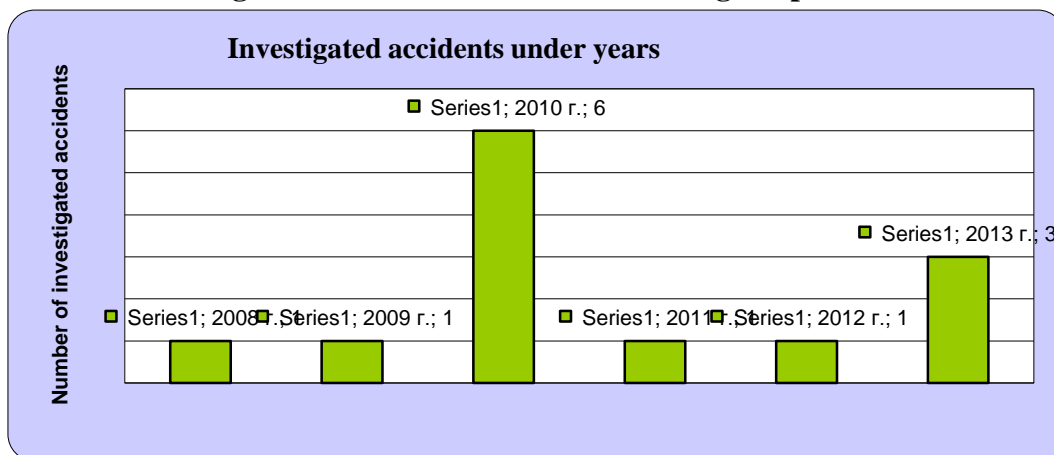


3.4. Accidents and incidents investigated during the last six years.

Table 5: Accidents and incidents investigated in the period 2008 – 2013.

Grounds	Investigated occurrences	2008	2009	2010	2011	2012	2013	Total
Significant accidents (art.19, 1 and 2, of Directive 2004/49/EC)	Train collision	-	-	1	-	-	-	1
	Collision with obstacle	-	-	-	-	-	-	0
	Train derailment	-	-	1	-	-	1	2
	Accident at level-crossing	-	-	2	-	-	-	2
	Accident with person caused be RRS in motion	-	-	-	-	-	-	0
	Fire in rolling stock	1	1	1	1	1	2	7
	Accident related to dangerous goods	-	-	-	-	-	-	0
Others (art. 21.6)	no	-	-	-	-	-	-	0
Incidents		-	-	1	-	-	-	1
Total:		1	1	6	1	1	3	13

Chart of investigated accidents and incidents during the period 2008 – 2013.



4. SAFETY RECOMMENDATIONS

The recommendations given by the SRAIU are with the purpose to improve the safety and to avoid serious rail accidents. In accordance with the requirements of art. 23 (3) and (4) of the Rules for investigation of accidents and incidents in rail transport by a specialized unit at „Aircraft, Maritime and Railway Accident Investigation Unit” Directorate at the Ministry of Transport, Information Technology and Communications, art. 93 and 94 of Ordinance 59 dated 5.12.2006 on the management of railway safety and art. 25 (1) (2) of Directive 2004/49 /EU, the SRAIU gives recommendations to improve safety and prevent the occurrence of other accidents and incidents of a similar to the investigated nature. The recommendations are



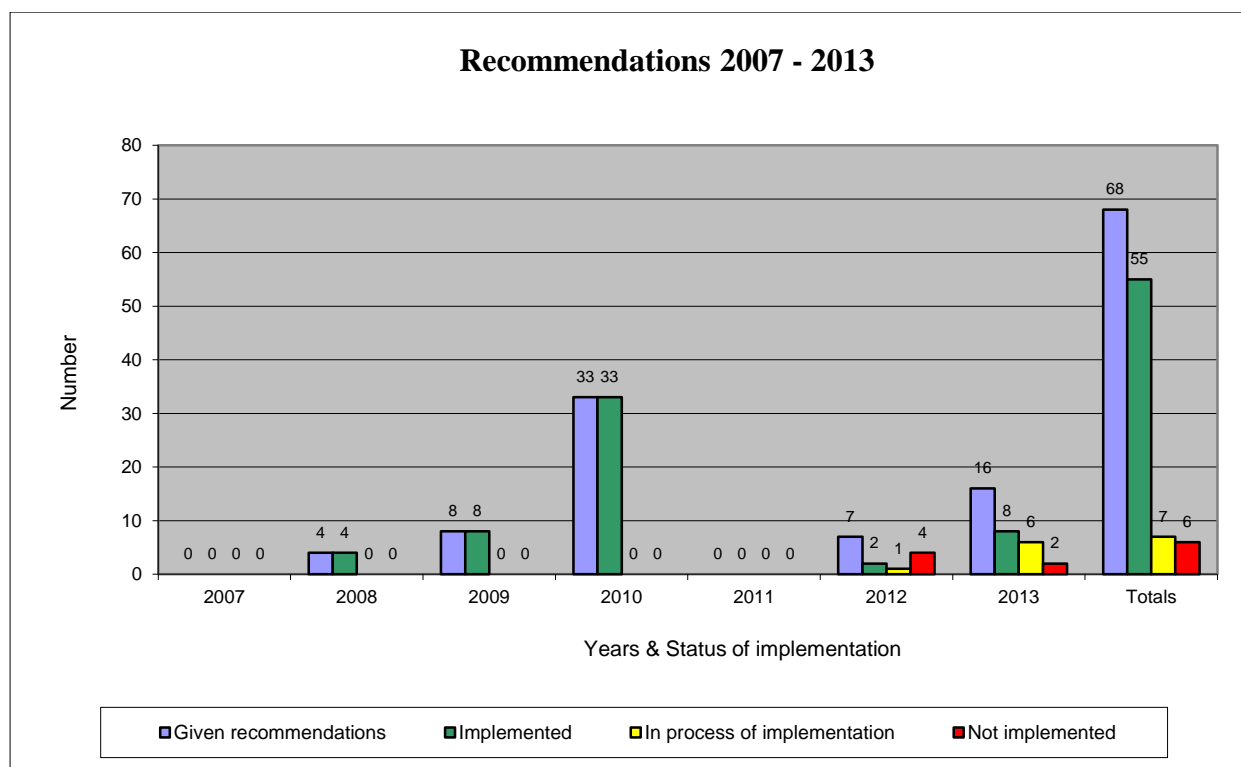
addressed to the National Safety Authority, railway infrastructure manager, railway undertakings and others with their own rail transport and/or transceiver business in order to take measures and actions in ensuring the safety.

4.1. Summary and presentation of the recommendations

Table 6: Issue and introduction of recommendations in the period 2008 - 2013

Year	Issued recommendations	Status of implementation		
		Implemented	In process of implementation	Accepted and not implemented
2008	4	4	0	0
2009	8	8	0	0
2010	33	33	0	0
2011	0	0	0	0
2012	7	2	1	4
2013	16	8	6	2
Total:	68	55	7	6

Diagram of the recommendations given by the SRAIU in the period 2008 – 2013.





4.2. Safety recommendations given in 2013

2013 г.
<p>Occurrence: Fire of electrical locomotive No 42081.0 of passenger train No 90101 at Shumen station on 19.12.2012</p> <p><i>Safety recommendations:</i> (17.05.2013)</p> <ol style="list-style-type: none"> 1. The RAEA shall order: <ol style="list-style-type: none"> 1.1. Conduction of extraordinary instructions to the locomotive brigades on the order and way of acting in case of fire in traction rolling stock. Deadline: 28.06.2013. 1.2. The portable fire extinguishers shall be unified under type and location plans for all series of electric locomotives in service. Deadline: 28.06.2013. 1.3 A single check to be performed to all electric locomotives of "Holding BDZ" EAD for compliance with the requirements of art. 623, art. 624, art. 625 and art. 626 of the "Rules of depot repair and maintenance of electric locomotives of BDZ" from 1979 and art. 743 -art. 748 of "Rules of factory repair of electric locomotives series 41000, 42000, 43000" dated 1991. Deadline: 08/30/2013 1.4 A single check to be performed on the functional life-cycle of the fire alarm and fire-extinguishing systems of all electric locomotives of "Holding BDZ" EAD. Deadline: 28.06.2013 1.5. To organize and carry out control checks on compliance with the requirements of art. 24, par. 4 and art. 28, par. 2 and par. 3 of Ordinance No 54 dated 02.06.2003 on the medical and psychological requirements for operating personnel, who performs railway transport of passengers and cargo and associated activities, and to conduct pre-travel (pre-shift) medical examinations. Deadline: 28.06.2013 2. Pursuant to art. 427, par. 1, p. 7 of Ordinance No 13 dated 30.12.2005 for ensuring healthy and safe working conditions in the rail transport, the Executive Director of "Holding BDZ" EAD shall take measures to comply with and implement the requirements of the ordinance. Deadline: 31.07.2013 3. The Executive Director of "Holding BDZ" EAD shall order a study for further placing of advanced aerosol fire extinguishing means, providing timely and reliable extinguishing of occurred fire during the movement in the cabin and the engine room of the traction rolling stock. Deadline: 09/30/2013 <p><i>Measures undertaken</i></p> <ol style="list-style-type: none"> 1. On 12.06.2013 the RAEA addressed Prescription № 2013/001/10 to the railway undertakings for undertaking of measures on the implementation of the given by the SRAIU recommendations under i. 1 above. The procedures on the implementation were completed within the deadlines indicated; 2. In a letter of the Executive Director of "Holding BDZ" EAD it was reported on the steps undertaken in regards to the recommendations given in i. 2 and 3 above, which were not implemented to 05.02.2014.
<p>Occurrence: Fire of electrical locomotive No 44074.3 of passenger train No 70200 at Ohrid halt on 26.06.2012.</p> <p><i>Safety recommendations:</i> (29.11.2013)</p>



1. „Holding BDZ" EAD shall perform extraordinary instruction and conduct specialized training of personnel directly related to the operation of the electric locomotives and train service, for actions in case of emergency situations (fire in Rolling Stock) so that they can effectively work with the fire-fighting installations and appliances, fire alarm and fire extinguishing installations fitted;

2. To examine all the electric locomotives of 44000 and 45000 series, exploited by „Holding BDZ" EAD under the requirements of art. 664, art. 667, art. 680 and art. 681 of Prescription for locomotive stock 127/05 "Regulations for factory repair of electric locomotives of 44000 and 45000 series" and the results from the checks shall be presented in a protocol of findings;

3. „Holding BDZ" EAD shall explore the possibility and to place additionally temperature sensors or optical smoke detectors for fire alarm installations in the accumulation battery cabinets, which shall be connected to the fire alarm system of the electric locomotives;

4. „Holding BDZ" EAD shall explore the possibility to install a system for monitoring the insulation resistance of the power and auxiliary control circuits allowing continuous control and signalling with indicating lamp on the control panel in real time;

5. „Holding BDZ" EAD shall introduce carrying out diagnostics of the contact connections temperature with thermal imaging cameras in each small periodic maintenance of the electric locomotives;

6. Departments "Safety" at „Holding BDZ" EAD shall carry out continuous monitoring in compliance with the requirements of art. 24 and art. 28 of Ordinance no. 54 from 02.06.2003 on the medical and psychological requirements to personnel operating the railway transport of passengers and goods and associated activities, and conducting pre-travel (pre-shift) medical examinations.

Measures undertaken

1. The instructions and training were held in September - October 2013 period;

2. By order of the "BDZ PS" dated 17.01.2014 single inspection was carried out of 55 electric locomotives for compliance with the "Regulations for factory repair of electric locomotives of 44000 and 45000 series";

3. In a process of implementation to 21/07/2014;

4. At 22/04/2014, there was reported inability to build and implement a system for monitoring of the insulation resistance;

5. In progress to 21/07/2014;

6. On 21/07/2014 it was reported conducting of systematic control.

Occurrence: Derailment of a coach from international fast train No 465 by transit passing along third track at Raduntzi station on 03.09.2013.

Safety recommendations: (18.12.2013)

The Railway Administration Executive Agency shall order NRIC to implement the safety recommendations given:

1. The Director General of NRIC shall order a check of the track in the section from Gorna Oryahovitsa to Dabovo stations along the interstation and station areas in order to determine where no measuring and benchmarking of the track exist, or they do not correspond to the actual state. Along these sections shall be performed measuring



performance and benchmarking of the track as required by the regulations for superstructure and track maintenance, in order to monitor and optimize the parameters of its components.

2. With the intention to make appropriate decisions on the track maintenance and repair based on the accumulated information from the track recording and measuring laboratory, the Director General of NRIC shall order the laboratory to check the geometry of the rail threads in plan and profile, not only on the main tracks, but also on all the reception - departure tracks in station areas where passenger and freight trains run.

3. The Control authority in NRIC shall carry out continuous monitoring of the measured parameters of the on-going track maintenance in unloaded condition for compliance with the legal basis for the superstructure of the track.

In connection with art. 94, paragraph 3 of Ordinance No 59 from 5.12.2006 on the management of railway safety of the Minister of Transport, the Railway Administration Executive Agency and NRIC shall notify in written the AMRAIU Directorate at MTITC on the appropriate actions undertaken on the implementation of the safety recommendations not later than 10.17.2014.

Measures undertaken

To 05.08.2014, the status of the recommendations given is „In process of implementation“.

The Ordinance No 59 from 05.12.2006 requires the addressees of the recommendations issued to inform the SRAIU in written on the measures undertaken for their implementation within indicated deadlines.

Boycho Skrobanski

State Expert at AMRAIU Directorate