



# REPUBLIC OF BULGARIA

## MINISTRY OF TRANSPORT, INFORMATION TECHNOLOGY AND COMMUNICATIONS

### SPECIALISED RAILWAY ACCIDENTS AND INCIDENTS INVESTIGATION UNIT (SRAIU)

#### ANNUAL REPORT



2015



**Specialised Railway Accidents and Incidents  
Investigation Unit  
Republic of Bulgaria**

The present report is published in accordance with:

- Directive 2004/49/EC;
- Railway Transport Act, 2000, published, effective from 26.06.2015;
- Ordinance No 59, 2006, published, effective from 31.07.2015

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



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## **Preface**

The present annual report presents the activity of the “Specialised railway accidents and incidents investigation unit”(SRAIU), performed in 2015 as per Directive 2004/49/EC on safety on the Community’s railways.

The report gives information on the current organisational activity of SRAIU at the Ministry of Transport, Information Technology and Communications (MTITC) as well as its status and functions in accordance with the provisions of:

- The Railway Transport Act;
- Ordinance No 59 dated 05.12.2006 on the rail safety management;
- Ordinance No H-32 dated 19 September 2007 on the coordination of activities and information exchange within the rail accidents and incidents investigation with the bodies carrying out pre-trial proceedings;
- Rules of the specialised railway accidents and incidents investigation.

The report includes summarised data on the realised in 2015 railway occurrences and caused damages reported by the National Railway Infrastructure Company (NRIC) and railway undertakings and information and data on the conducted during the year investigations on significant and railway accidents. Included are the identified causes for the accidents occurrence and respective recommendations given for increasing the level of safety in the rail transport, as well as information on the measures undertaken by the addressees for their implementation.

## **1. INVESTIGATION BODY**

### **1.1. Legislation**

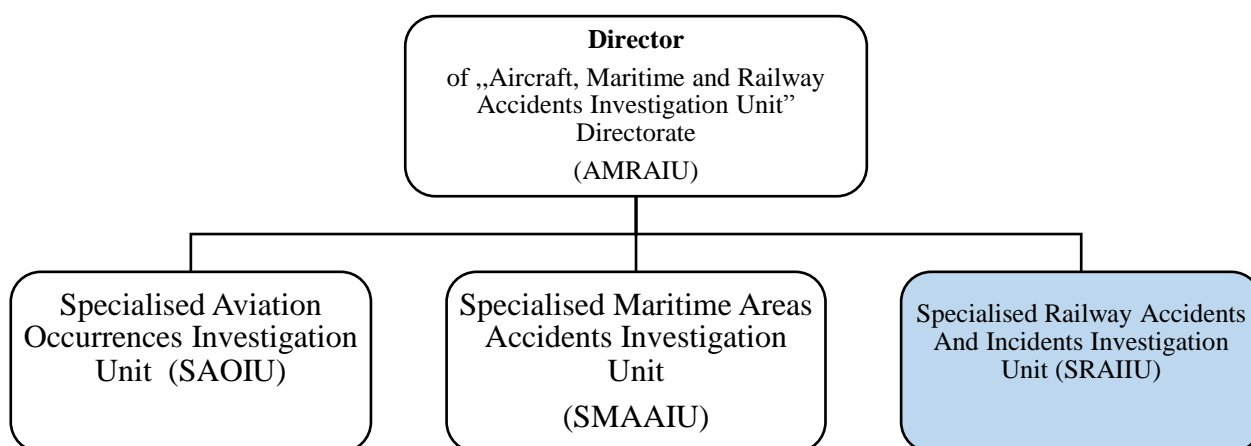
In relation to the requirements of Directive 2004/49/EC of the European Parliament and of the Council dated 29.04.2004 on safety on the Community’s railways, transposed in the Railway Transport Act (RTA) and Ordinance No 59/05.12.2006 on the rail transport safety, by the Council of Ministers Decree No 250 dated 25.11.2005 of the Republic of Bulgaria, in 2006 at the Ministry of Transport, Information Technology and Communications (MTITC) was established the Specialised Railway Accidents and Incidents Investigation Unit (SRAIU).

By the Council of Ministries Decree No 185 dated 28.07.2008 was established „Aircraft, Maritime and Railway Accidents Investigation Unit” Directorate“(AMRAIUD) within the structure of the MTITC. The Directorate represents a multimodal authority, consisting of three independent specialised units for investigation of aviation occurrences, maritime areas accidents and railway accidents and incidents.

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



### Structure of AMRAIU at MTITC



### 1.2. Functions and objectives

The main objective of SRAIIU while performing investigations is to establish the technical causes for the occurred accidents and incidents and to identify, and issue effective recommendations in order to improve the level of railway transport safety.

The role and the activity of SRAIIU are stipulated in details in the national regulations, in which Directive 2004/49/EC of the European Parliament and of the Council on the safety on the Community's railways was transposed.

The main functions and responsibilities of SRAIIU are the following:

- To organise, coordinate and perform technical investigations of significant railway accidents and incidents occurred on the territory and in the border-crossing areas of the Republic of Bulgaria;
- To establish all the technical causes, circumstances and facts related to significant railway accidents and incidents that occurred, incl. identification of evidences, performance of analysis, decision making and preparation of specialised expertise and documentation;
- Coordination of the activities during the performance of technical investigations with the competent investigating authorities of MI, the Prosecutor's office of the Republic of Bulgaria and other state investigation authorities;
- Preparation, submission to all the interested parties and publishing final investigation reports with recommendations to increase the safety level in order to prevent subsequent accidents;
- Participation in the activity of the Network of the national investigation bodies of the EU member-states, coordinated by the European railway agency (ERA);
- Participation in working groups for harmonisation of the national regulations with the European legislation related to the railway accidents and incidents investigation;
- Daily collection and analysis of data on accidents and incidents occurred in the railway transport system;



- Keeping archives of the investigated accidents and incidents, and to maintaining information database;
- Preparation and circulation of a news bulletin of investigated significant rail accidents and incidents.

### **1.3. Organisation of the activity**

The SRAIU main activity in its capacity as national investigation body is conducting technical investigation of the railway occurrences classified according to art. 19 of Directive 2004/49/EC. In 2015, the SRAIU performed investigation of railway occurrences consisting of three inspectors, state inspector, Head of Unit with Master's degree qualification - Engineer in Operation and Management of the Rail Transport, Chief Inspector with Master's degree qualification of Engineer in Rail Rolling Stock, and Inspector with Master's degree in Computer Science. The budget of the Unit is provided by the MTITC according to its needs. The Head of the Unit takes the decisions for undertaking of investigation according to the requirements of:

- Directive 2004/49/EC and the current European and national legislation;
- Railway Transport Act (RTA);
- Ordinance No 59/05.12.2006 for safety management in the railway transport.

The SRAIU notifies the European Railway Agency- ERA on each undertaken investigation of a rail occurrence via the ERAIL system. The investigations are finalised with the preparation of a final report, which is made available to the public on the MTITC webpage. The SRAIU reports to ERA for each completed investigation, as it submits a digital copy of the original final report in English. After the ERA validates the final report, it becomes available to public on the Agency's website.

### **1.4. International activity in 2015.**

1. Participation of the Head of the National Investigation Body of the Republic of Bulgaria in two plenary meetings (28<sup>th</sup> and 29<sup>th</sup>) of the Network of National Investigation Bodies (NIB) of accidents and incidents in rail transport, organised by ERA within the period 04 – 05.03.2015, and 20-21.10.2015 in Lille, France;
2. Participation in a common work of the NIB Network on proposals for amendments of Directive 2004/49/EC within the 4<sup>th</sup> railway package;

### **1.5. Participation of SRAIU in other events**

1. Monthly, after receiving statistical information on the common indicators by the railway infrastructure manager and the railway undertakings in connection with Ordinance No 59/5.12.2006, the SRAIU summarises the data and performs analysis on the safety management in the railway undertakings and infrastructure. In this regard, in July was prepared an analysis of the safety management data for 2014 provided in the annual reports of the railway infrastructure manager and the railway undertakings/carriers;



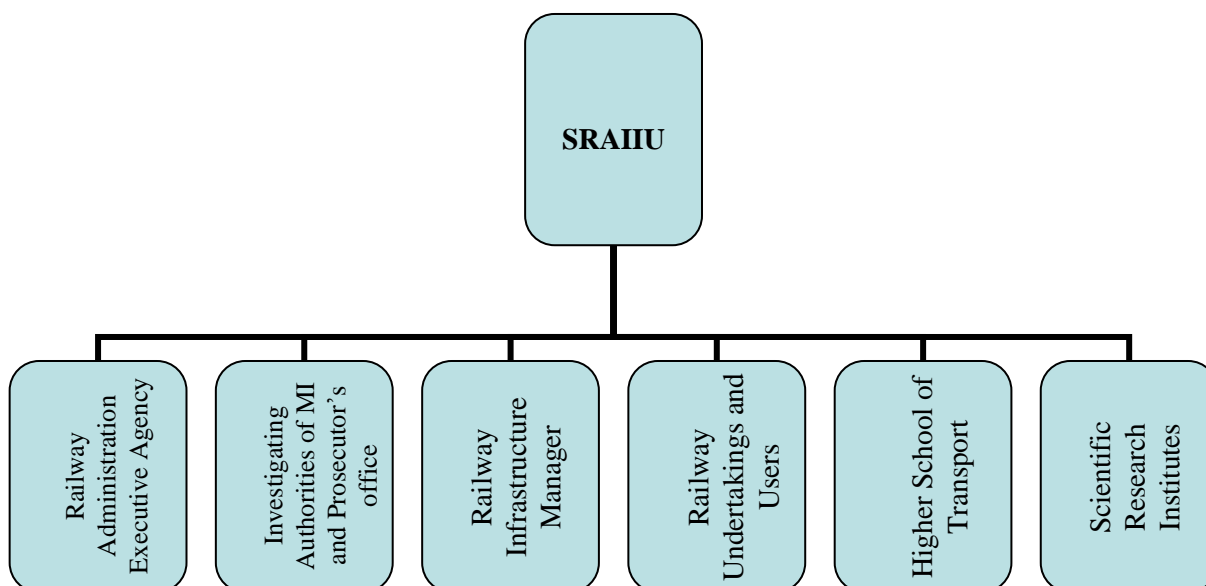
2. The SRAIU daily monitors the reports on the operating situation in relation to the requirements for safe operation;
3. Preparation and publishing an annual activity report for the previous year, which was sent to the European Railway Agency.

### 1.6. Organisational scheme

In order to create the necessary conditions and organisation for timely and effective operational activity in the process of conducting a technical investigation, the SRAIU coordinates its actions with the competent investigating authorities of the MI and the Prosecutor's Office, which conduct a parallel pre-trial investigation. If necessary, it is carried out regulated exchange of information obtained by various investigating bodies under the implementation order of Ordinance No H-32/19.09.2007 for the coordination of the activities and information exchange within the investigation of railway accidents and incidents.

In the process of investigation, the SRAIU establishes working contacts and coordinates its activities with the Railway Infrastructure Manager, railway undertakings/carriers, the National Safety Authority and users of railway services with respect to the investigated accident or incident in order to obtain information related to the investigation, as well as with other independent institutions and specialised administrations for preparation of specialised expertise.

### SRAIU links with other investigation authorities and institutions



## 2. PROCESS OF INVESTIGATION

### 2.1. Events that are subject to investigation

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



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

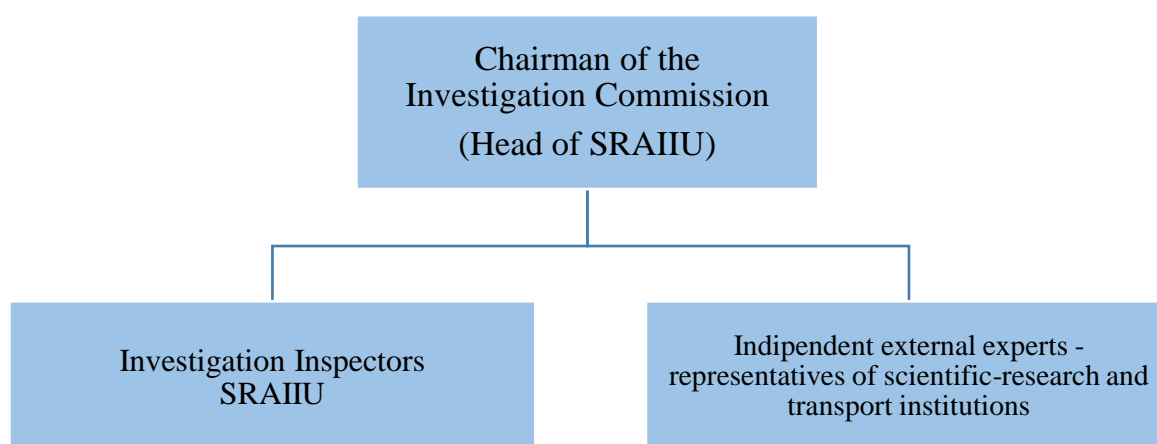
In the event of an accident or incident, the authorised officials of the railway infrastructure manager and railway undertakings shall immediately notify the SRAIU in accordance with the RTA and Ordinance No 59 requirements.

## **2.2. Institutions related to the investigation.**

In accident investigation, classified by the SRAIU under art. 19 of the Safety Directive, Investigation Commission is established, in which are included investigation inspectors from the Unit and independent external experts from the scientific community and transportation universities with specializations according to the specifics of the respective particular investigated event. In the course of and for the purposes of the investigation, the Commission assigns the performance of technical expertise and analysis to:

- 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. Investigation process and approach of the investigation body**

The Head of the SRAIU classifies an occurred railway event, as per the regulations, in any notification on such by the NRIC's duty officers. After a taken decision for investigation, the SRAIU undertakes immediate action to organise it and notifies all the parties that are involved in the event. The investigation inspectors take prompt actions to move to the site of the occurrence. Within a week after initiating an investigation of the railway event SRAIU informs ERA for the examination undertaken by notification in ERAIL.





The Chairman of the Commission- the Head of the Unit, coordinates the activity of the Investigation Commission with the actions of the competent state authorities- Prosecutor's Office, Ministry of Interior, Civil Protection, Emergency Medical Care, Fire Safety and Civil Protection (FSCP) and other institutions to provide the necessary conditions for independent technical investigation. The manager of the railway infrastructure, the railway undertaking, and other legal entities involved in the event provide to the Commission all the records and conversations of the staff involved in the train operation management, as well as any other relevant information on the investigation and documents related to the investigation. At the request of the SRAIU, the NSA provides any important information about the investigated accident or incident. The Commission holds meetings and interviews with the staff involved in the accident, and requires written statements of all the 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 of MI and the Prosecutor's Office, which conduct their own parallel investigation, in accordance with the requirements of Ordinance No 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, which the SRAIU performs, is carried out with maximum transparency with the aim to exchange views and opinions of all the 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 causes for its occurrence.

The Chairman of the Commission prepares final report from the technical investigation of any accident or incident within one year from the date of its occurrence. In the final report sets out are the chronology of the events, personnel actions, detailed description of the findings on fatalities and injured persons, and material damages, included is analysis of the event and the circumstances and are given justified causes for its occurrence. If necessary, recommendations are prepared for increasing the level of safety in order to prevent other events of a similar nature that are addressed to the NSA and the direct contractors - the railway infrastructure manager and railway undertakings involved in the accident and, if appropriate to all other participants involved in the event. The addressees of the recommendations are obliged to inform in written the SRAIU about the measures undertaken for implementation of the recommendations within specified deadlines.

The SRAIU promptly informs ERA on the completion of the investigation, as it enters the required data and information, including the given recommendations, via the interface, and the format of the ERAIL information system of the EC, and encloses an e-copy of the original Final Report in English. The final report is made publicly available on the SRAIU website – on the Internet portal of MTITC.

#### **2.4. Reports and studies on safety in 2015.**

The SRAIU received reports from the railway undertakings on a total of 737 realised rail events of which 301 accidents, including 149 collisions of rail Rolling Stock (RS) with obstacle, 2 with rail vehicle, 49 cases of RS derailment, 20 accidents at level -crossings, as there were recorded 20 fatalities excluding suicides, including 18 caused by RS in motion, and 2 as a result from



accidents with pedestrians at level-crossings, 23 seriously injured persons, including 15 by RS in motion, 7 from accidents at level-crossings, and 1 collision of train with rail vehicle.

The total number of accidents classified by the National Railway Infrastructure Company as significant is 48, including 3 train collisions (including 2 collisions with obstacles within the clearance gauge), 6 derailments, 6 accidents at level -crossings, and 33 accidents with persons caused by Rail Rolling Stock in motion. The summarised data on railway accidents indicate that the majority of them are accidents with persons caused by Rail Rolling Stock in motion, and the collisions at -level crossings with injured and fatalities as the fatalities from suicide are 21.

The value of suffered material damages by rolling stock and rail infrastructure as a consequence of the occurred significant rail accidents amounts to 987 974.32 BGN (504 506.1 EUR). The damages suffered by the rail undertakings/carriers in 2015 are the following:

- BDZ PS Ltd.	559 924.16 BGN.	(285 923.59 EUR);
- BDZ Cargo Ltd.	65690.64 BGN.	(33544.73 EUR);
- BRC AD –	0.00 BGN.	(0.00 EUR);
- “Cargo Trans Vagon Bulgaria“ AD -	0.00 BGN.	(0.00 EUR);
- „Express Service“ Ltd. -	0.00 BGN.	(0.00 EUR);
- GASTRADE AD	0.00 BGN.	(0.00 EUR);
- “TBD – Freight transport“ JSC	0.00 BGN.	(0.00 EUR);
- Rail Cargo Carrier – Bulgaria Ltd.	0.00 BGN.	(0.00 EUR);
- Bulmarket Rail Cargo EOOD	0.00 BGN.	(0.00 EUR);
- DB Cargo Bulgaria Ltd.	0.00 BGN.	(0.00 EUR);

There are no data on participation of other main railway undertakings/carriers in the registered in 2015 accidents and incidents.

The summarised data on railway events, occurred in 2015, are displayed under type in Table 1

**Table 1: Railway events in 2015.**

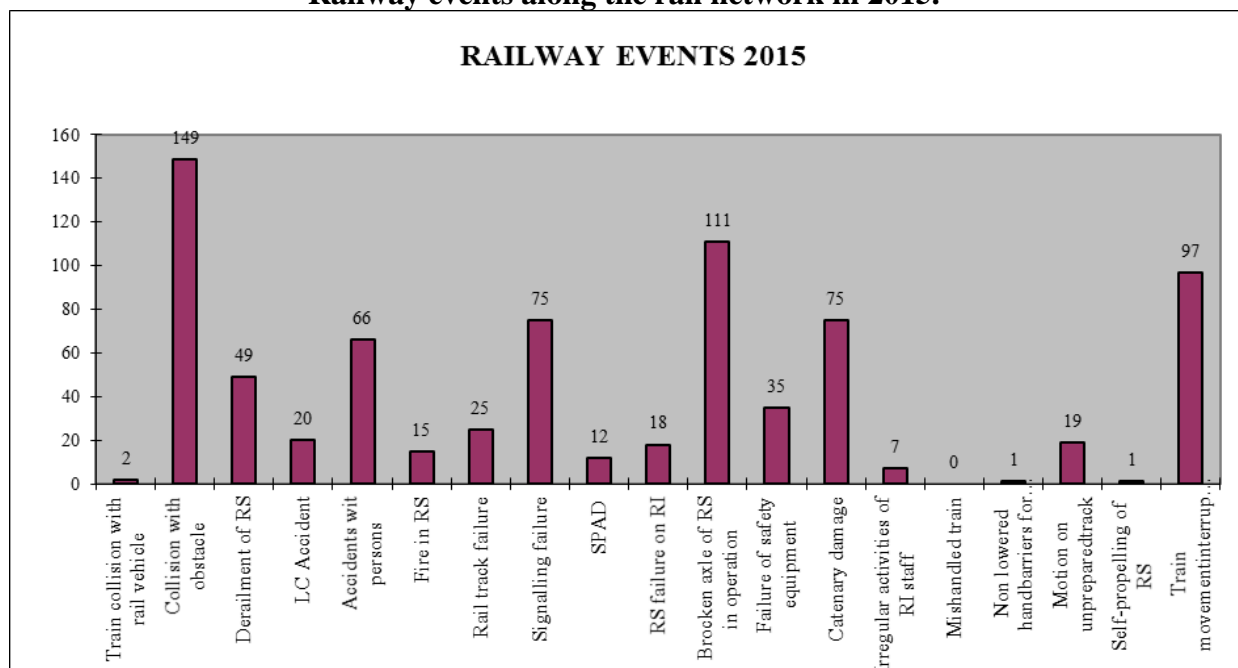
No	TYPE OF EVENTS	NUMBER
<b>ACCIDENTS</b>		
1	Collision of train with rail vehicle	2
2	Collision of train	149
3	Derailment of RRS	49
4	Accident at level-crossing	20
5	Accident with persons	66
6	Fire in RRS	15
<b>Total:</b>		<b>301</b>
<b>INCIDENTS</b>		
1	Broken rail	11
2	Track distortion and other deformations of the track	14
3	Wrong indication of the signalling, which leads to dangerous situation	2
4	Signal passed at danger (SPAD)*	1
5	Signal passed at danger (SPAD)*	11



**Specialised Railway Accidents and Incidents  
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7	Broken wheel of rolling stock in operation	0
8	Broken axle of rolling stock in operation	0
9	Signalling failure**	-
<b>Total:</b>		<b>39</b>
<b>SITUATIONS, SIMILAR TO INCIDENTS</b>		
1	RS failure on RI, caused a delay	18
2	Track failure	104
3	Signalling failure	75
4	Catenary failure	75
5	Irregular or non-coordinated actions by the RI operational staff	7
6	Mishandled train	0
7	Train accepted on an occupied track	0
8	Train dispatched without agreement	0
9	Train dispatched to an occupied interstation	0
10	Train non secured with brake mass	0
11	Non-lowered hand barriers for train	1
12	Movement along unprepared route	19
13	RS failure on RI, leading to derailment	0
14	Self-propelling of RS	1
15	RS left out of distance indicators	0
16	Train movement interruption	97
<b>Total:</b>		<b>397</b>

**Railway events along the rail network in 2015.**





### Railway events with caused damages

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

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

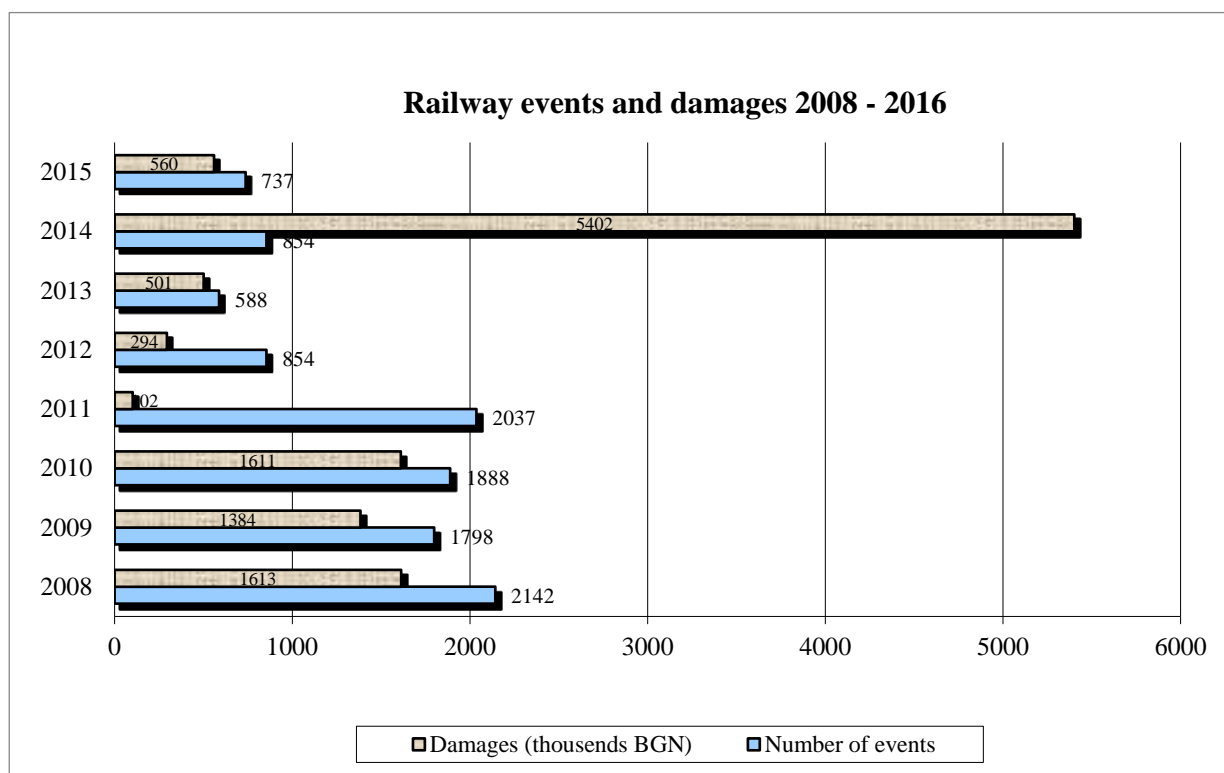
In 2012 compared to 2011 the deviation damages /BGN is +192 266 BGN (+98 304 EUR)

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

In 2014 compared to 2013 the deviation damages/BGN is +5 402 000 BGN (+2 762 000 EUR)

In 2015 compared to 2014 the deviation damages/BGN is -4 842 076 BGN (-2 472 591 EUR)

### Railway events and caused damages along the railway network in the period 2008 - 2015



## 3. INVESTIGATIONS

### 3.1. Summary of the completed investigations including key trends

In 2015, the SRAIU performed the investigation of three railway accidents, one of which was classified as a significant accident under art. 19, par. 1, and two as accidents under art. 19, par. 2, under Directive 2004/49/EC. There was also completed the investigation (art.19, par.2) of another one railway accident that occurred on 23.12.2014.

The summarised data from the investigations are displayed respectively in it. 3.2 and 3.3.

**Table 2: Investigated accidents and incidents in 2015.**



Type of investigated accidents and incidents	Number of accidents	Number of victims		Damages	
		Fatalities	Seriously injured	BGN	EURO
Collision of train with rail vehicle	1	-	1	1 692.02	865.13
Fire in RS	1	-	-	730.00	373.25
Derailment of RS	2	-	-	563 777.59	288 259.32
<b>TOTAL:</b>	<b>4</b>	<b>-</b>	<b>1</b>	<b>566 199.61</b>	<b>289 497.70</b>

### 3.2. Investigations started and completed in 2015.

**Table 4: Investigations started and completed in 2015.**

Date of the event	Visit card of the investigation	Legal base	Completed on:
23.12.2014	Technical investigation of railway accident – derailment of locomotives from freight train No 30561 during departure from fourth track at switch No 11 in Zimnitsa station.	Directive 2004/49/EC, art. 19, par. 2 and Order of MTITC, art. 5, it. 6 of RTA, art. 78, par. 1 of Ordinance No 59	28.04.2015
01.02.2015	Technical investigation of railway accident – derailment of passenger train No 30111, during entering in Stryama station.	Directive 2004/49/EC, art. 19, par. 2 and Order of MTITC, art. 5, it. 6 of RTA, art. 78, par. 1 of Ordinance No 59	17.04.2015
09.08.2015	Technical investigation of significant railway accident – collision of diesel locomotive No 07032.6 with international fast train No 493 during coupling on fifth track in Plovdiv station.	Directive 2004/49/EC, art. 19, par. 2 and Order of MTITC, art. 5, it. 6 of RTA, art. 78, par. 1 of Ordinance No 59	30.10.2015
13.10.2015	Technical investigation of railway accident – fire occurred in electrical locomotive No 44169.1, which serviced fast train No 1621 in Elin Pelin – Vakarel interstation.	Directive 2004/49/EC, art. 19, par. 2 and Order of MTITC, art. 5, it. 6 of RTA, art. 78, par. 1 of Ordinance No 59	17.12.2015

#### 3.2.1. Derailment of the locomotives of freight train No 30561 during departure from fourth track in Zimnitsa station.

##### Brief description

Around 07:03 a.m. on 23.12.2014, freight train No 30561 in a composition of 24 wagons, 3 full and 21 empty, 1112 tonnes, and locomotive No 92027 in non-working condition, hauled by electrical locomotive No 92034 in Pirdop–Karlovo–Burgas direction, derailed at switch No 11 during departure from fourth track in Zimnitsa station. Locomotives No 92034 and No 92027





derailed with all wheelsets. The train was regularly assigned under the train operation schedule (TOS).

There were no injured and fatalities. Failures and damages were inflicted to the rolling stock and to the railway infrastructure.

The train operation along current track No 1 and No 2 between Zimnitsa and Straldzha stations was suspended at 07:46 a.m. and was restored on current track No 1 at 18:05 p.m. with a speed of up to 25 km/h. along the damaged section. At 16:21 p.m. on 24.12.2014, after an overall completion of the repair-rehabilitation works on the rail track, the operation was restored under TOS on current track No 1 and No 2.



### Consequences

There were no injured and fatalities. Damages were inflicted to the railway infrastructure amounting to 25 366 BGN, and to the locomotives with total amount of 350 593.36 BGN. The costs for rehabilitation works amount to 9 859 BGN.

### Causes

The immediate technical cause for the occurred accident - derailment of locomotives from freight train No 30561 during departure from fourth track in Zimnitsa station on 23.12.2014, was the cross fragile breakage of the left deviation pawl of switch No 11, occurred in the rail crown (rail head), as a result from created external concentrator of tense and existence of an internal micro-crack.

### Investigation status

The investigation was completed with final report on 28.04.2015.

## **3.2.2. Derailment of passenger train No 30111 during entrance in Stryama station.**

### Brief description

At approximately 09:10 a.m. on 01.02.2015, passenger train No 30111 of "BDZ-Passenger Services" Ltd. in composition of 2 carriages, 8 axles with 94 tonnes mass, hauled by electrical locomotive No 44179, operating in Sofia-Karlovo direction, derailed at switch No 2, while entering in Stryama station. There were derailed the electrical locomotive No 44179, the first coach with the two bogies and the second carriage with the first bogie.



There were no injured and fatalities. Failures and damages were inflicted to the RS and to the railway infrastructure.

Due to the derailment of PT No 30111, the train operation between Koprivshitsa – Stryama stations was suspended from 09:10 a.m. on 01.02.2015 to 00:50 a.m. on 02.02.2015.



#### Consequences

There were no fatalities and injured. The damages caused to the rolling stock and the rail infrastructure, including the costs for alteration of the Train Operation Schedule amount in total to 114 212.58 BGN.

Due to the derailment of PT No 30111, the train operation between Koprivshitsa and Stryama stations was suspended from 09:10 a.m. on 01.02.2015 to 00:50 a.m. on 02.02.2015.

#### Causes

Immediate cause for the occurred railway accident – derailment of electrical locomotive No 44-179 and two coaches from the composition of train No 30111, occurred on 01.02.2015 at 09:10 a.m., within entrance route ordered by the traffic manager on duty for the train acceptance with acceptance signal on the second acceptance-departure track on switches No 2 and No 4 in Stryama station is: wrongly prepared route by the traffic manager on duty in Stryama station for acceptance of passenger train No 30111 on the second acceptance-departure track in the station with acceptance signal, with visibly semi-opened switch No 2. The train entered with a speed of 25 km/h and derailed between the stock rails of the switch.

#### Investigation status

The investigation was completed with a final report on 17.04.2015.

**3.2.3. Collision of diesel locomotive No 07032.6 in international fast train No493 during coupling on the fifth track in Plovdiv station on 09.08.2015.**

#### Brief description

During shunting on the 5<sup>th</sup> track in Plovdiv station for coupling, diesel locomotive No 07032.6 collided in the coach of international fast train No 493 around 21:47 p.m. on 09.08.2015. The



coach was with the automatic train brake held, and as a result from the collision was moved 7 meters away.

During the collision, nine of the Bulgarian and international passengers present in the coach were injured with contusions. After being provided with specialised medical care in hospital, one of the passengers was hospitalised, and the remaining eight were released for home treatment.

Buses, provided by BDZ PS Ltd., transported the passengers to Dimitrovgrad, Svilengrad and Kapikule.

#### Consequences

9 persons were injured with traumas.

The caused failures and damages to the coach B4 amounted to 110.00 BGN. No damages were caused to the locomotive and the railway infrastructure. The expenditures for the transport of the passengers by buses from Plovdiv station to Kapikule station and vice versa under cancelled IFT No 493 amounted to 1582,02 BGN.

#### Causes

Immediate technical cause of the occurred significant railway accident – collision of diesel locomotive No 07032.6 during coupling to the composition of international fast train No 493 on the fifth track in Plovdiv station on 09.08.2015, was the movement of the locomotive to the composition of IFT No 493 with a speed of 18 km/h instead of the permissible speed up to 3 km/h as per the requirements of the normative acts that regulate the rules of train operation and shunting activity.

#### Investigation status

The investigation was completed on 30.10.2015.

### **3.2.4. Fire occurred in electrical locomotive No 44169.1, which serviced fast train No 1621 in Elin Pelin - Vakarel interstation**

#### Brief description

Around 08:55 a.m. on 13.10.2015, during movement fire arised the in electrical locomotive No 44169.1, which serviced fast train (FT) No 1621 in Sofia-Plovdiv direction,

After the train passed Sectional point (SP), Pobit kamak, the main air switch of the locomotive (MAS) turned off, the light indicator "STOP" activated and it was heard a wham in the engine compartment. While opening the door to the engine compartment, the engine driver saw thick black smoke, going out from the auto-transformer switch (ATS). The locomotive crew undertook quick stopping of the train, and then activated the fire-extinguishing installation of the locomotive and by the means of a couple of portable fire extinguishers from the locomotive and from the coaches succeeded to suppress the fire.

There were no injured passengers and staff. The train was cancelled in the Belovo-Plovdiv section, and the passengers were transported by bus.

#### Consequences

There were no fatalities and injured with traumas. No damages were caused to the rail infrastructure. The damages caused to the locomotive amounted to 730 BGN.

#### Causes

Immediate technical cause for the occurred rail accident – fire in electrical locomotive No 44169.1, which serviced fast train No 1621 in Elin Pelin – Vakarel interstation on 13.10.2015,





is: Due to a changed profile of the hump of contact S2, the power contactor unit 0155 of auto-transformer switch remained turned on. As a result of that the arms of the disc selector of the ATS performed commutation under load and that created a voltaic arc. That led to escalation of the oil pressure in the ATS tank, because of which its body shell was explosively destroyed. The high temperature ignited the leaked transformer oil, which led to the emergence of a fire in the locomotive.



#### Investigation status

The investigation was completed on 17.12.2015.

In implementation of article 23, paragraph 2 of Directive 2004/49EC of the EP and of the Council, the data and the final reports of all the investigations mentioned above were processed into the ERAIL Information system of the ERA in English.

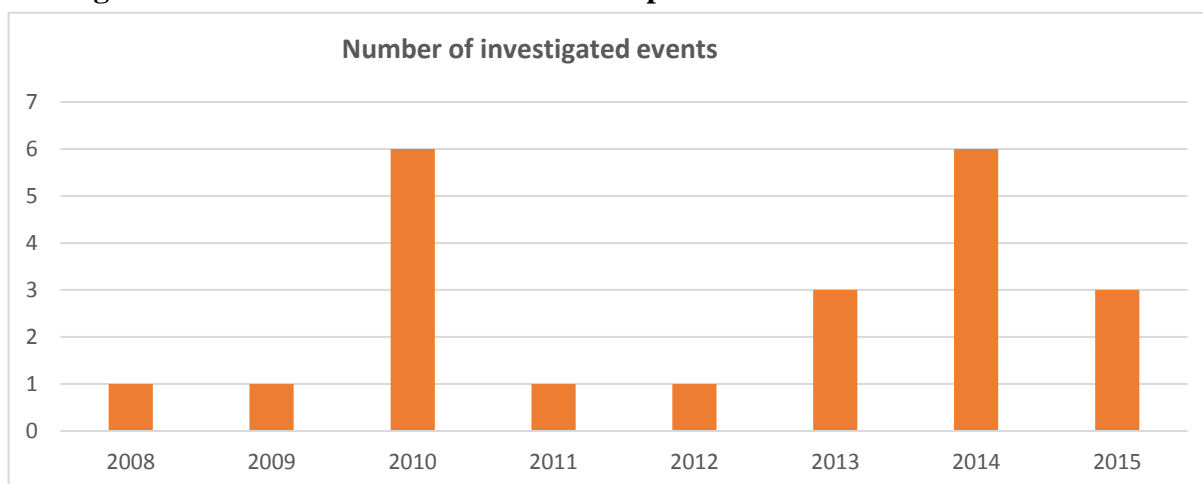
### **3.3. Accidents and incidents, investigated in the recent eight years.**

**Table 5: Accidents and incidents, investigated in the period 2008 – 2015.**

<b>Investigated events</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Total</b>
Collision of trains	-	-	1	-	-	-	-	1	<b>2</b>
Collision with obstacle	-	-	-	-	-	-	-	-	<b>0</b>
Train derailment	-	-	1	-	-	1	2	1	<b>5</b>
Accident at rail level-crossing	-	-	2	-	-	-	2	-	<b>4</b>
Accident with person caused by RS in motion	-	-	-	-	-	-	-	-	<b>0</b>
Fire in rolling stock	1	1	1	1	1	2	2	1	<b>10</b>
Accident related to hazardous cargo	-	-	-	-	-	-	-	-	<b>0</b>
Incidents	-	-	1	-	-	-	-	-	<b>1</b>
<b>4</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>22</b>



#### Investigated accidents and incidents within the period 2008 – 2015.



## 4. SAFETY RECOMMENDATIONS

The recommendations given by the SRAIU are to prevent and improve the level of safety and to avoid other rail accidents. The recommendations are addressed to the National Safety Authority in the rail transport, railway infrastructure manager, railway undertakings /carriers and others with their own rail transport and/or forwarding/shipping business to undertake measures and actions in ensuring the safety.

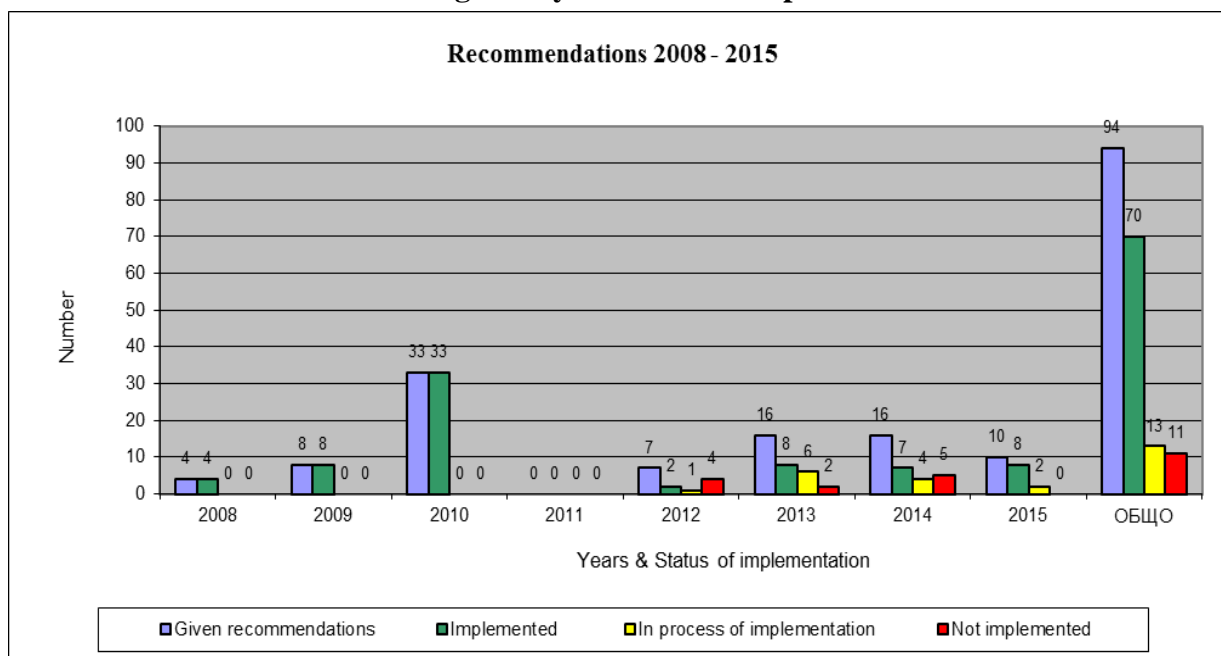
### 4.1. Brief summary and presentation of the recommendations

**Table 6: Given and implemented recommendations in the period 2008 – 2015.**

Year	Given recommendations	Status of recommendations 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
2014	16	7	4	5
2015	10	8	2	0
<b>Total:</b>	<b>84</b>	<b>62</b>	<b>12</b>	<b>10</b>



### Recommendations given by SRAIU in the period 2008 – 2015.



### 4.2. Safety recommendations given in 2015.

**2015**

**Event: Derailment of the locomotives from freight train No 30561 during departure from the fourth track at switch No 11 in Zimnitsa station.**

Safety recommendations: (28.04.2015)

1. SE NRIC shall study the possibility and supply equipment for non-destructive testing with opportunities to find precisely defects on the profile of the switch parts and rail track components.
2. The railway undertaking DB Schenker Rail Bulgaria Ltd. shall organise and perform training and shall issue new certificates of qualification to the locomotive personnel, who operate the respective locomotive series from a licensed educational institution as per the requirements of art. 18, it. 6 of the Professional Training and Education Act.

Railway Administration Executive Agency shall perform control on fulfilment of the requirements for the issuance of documents for qualification of the locomotive drivers as per the normative documents.

*Undertaken measures*

1. Implemented;
2. Implemented;



**Event: Derailment of passenger train No 30111 during entrance in Stryama station at switch No 2.**

*Safety recommendations:* (17.04.2015)

1. With reference to the requirements of art. 7, par. 1 and par. 2 of Ordinance No 56 dated 14 February 2003, Railway Administration Executive Agency shall conduct an extraordinary exam to the persons with positions Head of station, Traffic manager on duty and Switchman/on-point who work in Koprivshtitsa and Stryama stations.

2. As per art. 22, par. 3, it. 13 of Ordinance No 59, The Director General of SE NRIC shall organise and elaborate training programmes that guarantee the technical competence of the personnel, also including action in case of damaged Signalling equipment in the stations and interstations along the section on 3<sup>rd</sup> main railway line from Pirdop station to Sopot station including staff holding the following positions:

- Head of station;
- Traffic manager;
- Switchman/on-point and/or Switchman/level-crossing guard.

***Undertaken measures***

1. Implemented;
2. Implemented.

**Event: Collision of diesel locomotive No 07032.6 with international fast train No 493 during coupling on the fifth track in Plovdiv station**

*Safety recommendations:* (30.10.2015)

1. "BDZ-Passenger Services" Ltd. shall organise a training of the locomotive personnel who service the international passenger trains along Plovdiv-Kapikule-Plovdiv section and shall hold an extraordinary exam as per art. 7, par. 1 of Ordinance No 56 dated 14.02.2003.

2. Railway Administration Executive Agency shall carry out control on the complete and precise implementation of the regulations.

3. "BDZ-Passenger Services" Ltd. shall equip the command cabins of the traction rail rolling stock with devices for video surveillance and registering the actions of the locomotive personnel during operation.

***Undertaken measures***

1. Implemented;
2. Implemented;
3. Planned inclusion in PP for delivery and installation of cameras.

**Event: Fire occurred in electrical locomotive No 44169.1, which serviced fast train No 1621 in Elin Pelin-Vakarel interstation.**

*Safety recommendations:* (17.12.2015)



1. „Holding BDZ“ Ltd and the railway undertakings operating electrical locomotives with auto-transformer switch (ATS) shall perform visual inspection of the contactor unit of ATS during the performance of technical inspections (48 hours).

2. After performed inspection and possible repair, there shall be mandatorily prepared and taken angle diagram, respecting the standards of the periodical overhaul (PO)

3. There shall be elaborated technical requirements for delivery of contact elements prepared of material with characteristics similar as much as possible to those installed by the manufacturing factory of ATS as per the TSI.

*Undertaken measures*

1. Implemented;
2. Implemented;
3. Accepted, a Public procurement notice is being prepared for contact elements delivery.

In implementation of Ordinance No 59, dated 05.12.2006 the addressees of the issued recommendations shall inform in written the SRAIU on the implementation of the given recommendations.

**Boycho Skrobanski**

*State inspector at AMRAIU Directorate*

*Head of SRAIU*