



MINISTERUL TRANSPORTURILOR  
AGENȚIA DE INVESTIGARE FERROVIARĂ ROMÂNĂ - AGIFER



## ROMANIAN RAILWAY INVESTIGATING AGENCY - AGIFER -

### ANNUAL REPORT 2015



## INTRODUCTION

Romanian Railway Investigating Agency AGIFER (hereinafter referred to as AGIFER) was set up on the 4th of September 2015 by the re-organization of Romanian Railway Investigation Body, carrying out all the tasks of it, stipulated in the normative papers in force at the reorganization moment, respectively:

- a) investigation of the railway serious accidents;
- b) investigation of the incidents happened in the train running, coordinated by the investigator in charge, appointed from AGIFER;
- c) investigation of those accidents and incidents that in slight different conditions could lead to serious accidents, including the technical failures of the structural subsystems or of the interoperability constituents, parts of European railway high speed and conventional system;
- d) other tasks specific to its activity field, entrusted by normative papers.

AGIFER objective is the improvement of railway safety and the prevention of accidents, amplitude of the investigations and the procedure to be met, being established according to the lessons to be learnt.

The investigation does not aim to establish the blame or the responsibility and is independent of any legal inquiry.

This annual report is made in accordance with the provisions of art.23(3) from the Directive 2004/49/EC of European Parliament and Council, transposed into Romanian legislation through the Law no.55/2006 on the railway safety.

In this report there are presented:

- summary of OIFR/AGIFER organization;
- AGIFER role and purpose;
- general data about AGIFER
- investigation process;
- investigations performed in 2015;
- situation of the safety recommendations in 2015.

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## 1. PRESENTATION

### 1.1. Brief presentation of OIFR/AGIFER organization

After Romanian Parliament enacted the Law no.55/2006 on the railway safety, and after coming into force of the Government Decision 1560/2006, the body for the railway accident investigation –OIFR was set up.

From its establishment and until May 2010 OIFR was responsible with the investigation of the railway serious accident and of the accidents and incidents that in slight different conditions can lead to railway serious accidents.

Through the enactment of the Government Decision no. 117/2010, one established in detail the procedure for the investigation of the accidents and incidents and OIFR was entrusted, besides the tasks stipulated by the Law no.55/2006, the investigation of all railway accidents and incidents happened in the train running.

OIFR functioned independently within Romanian Railway Authority - AFER until 2015. In 2015, taking into account the motivated notice of European Commission (hereinafter referred to as EC) that established that România did not comply with the obligations resulted from the application of the provisions of art.21 paragraph (1) from the Directive 2004/49/CE, concerning the ensuring of the functional independence of OIFR, Romanian Government enacted the Emergency Ordinance no.33 from the 30h of June 2015 (approved with further amendments through the Law no.42/2016) and the Government Decision 716/2015 that made a series of amendments of the afferent national legislation, concerning the organization and functioning of the Railway Investigation Body:

- AGIFER was set up as special body subordinated to the Ministry of Transports, public legal institution, financed completely from own funds, resulted from partial division of Romanian Railway Authority – AFER;
- AGIFER overtook from AFER the activity, staff structure and the patrimony afferent to Romanian Railway Investigating Body - OIFR;
- Through the Government Decision no.716/2015, the Regulations for AGIFER organization and functioning was approved.

### 1.2 Role and purpose

#### Role of Romanian Railway Investigation Agency-AGIFER

AGIFER role is to carry out investigations of the accidents/incidents and to analyze and study the causes and circumstances that led to their occurrence. AGIEFR can also perform other tasks established by Government Decision for the investigation of other events than the railway accidents and incidents.

According to the provisions of the Safety Directive, to the provisions of Law no.55/2006 on the railway safety and to the Government Decision no.117/02.03.2010 that approves the Regulations for the investigation of the accidents and incidents, for the development and improvement of Romanian railway and metro safety (hereinafter referred to as *Investigation regulations*), in making the decision for the opening of an investigation, AGIFER takes into account:

- seriousness of the accident and incident;
- if it is part of a series of accidents or incidents relevant for whole system;
- its impact on the community railway safety;
- requests of the infrastructure managers, railway undertakings, Romanian Railway Safety Authority or of other member states of European Union.

AGIFER does not investigate:

- railway incident that are not relevant for the railway transport system;
- level crossing collisions between the running trains and road vehicles, that are not generating by the non-closing of the barrier or the non-working of the signaling equipment;
- hit of the persons by the railway vehicles in movement;
- suicides;

For any of these above-mentioned cases, an investigation can be started taking into account those mentioned in the previous paragraph.

#### AGIFER purpose

Through the investigation of the accidents and incidents, AGIFER aims the improvement of the railway safety and prevention of some accidents and incidents similar to those investigated.

The investigations, if necessary, have as final result safety recommendations, that are AGIFER proposal for the improvement of the railway safety

### **1.3 General data about AGIFER**

#### Employees at the end of 2015

At the end of 2015, AGIFER had 41 employees, that is:

- 1 general manager;
- 1 deputy general manager;
- 1 economic director;
- 4 department heads;
- 1 general manager councillor;
- 20 investigators;
- 2 psychologists;
- 1 legal adviser;
- 1 auditor;

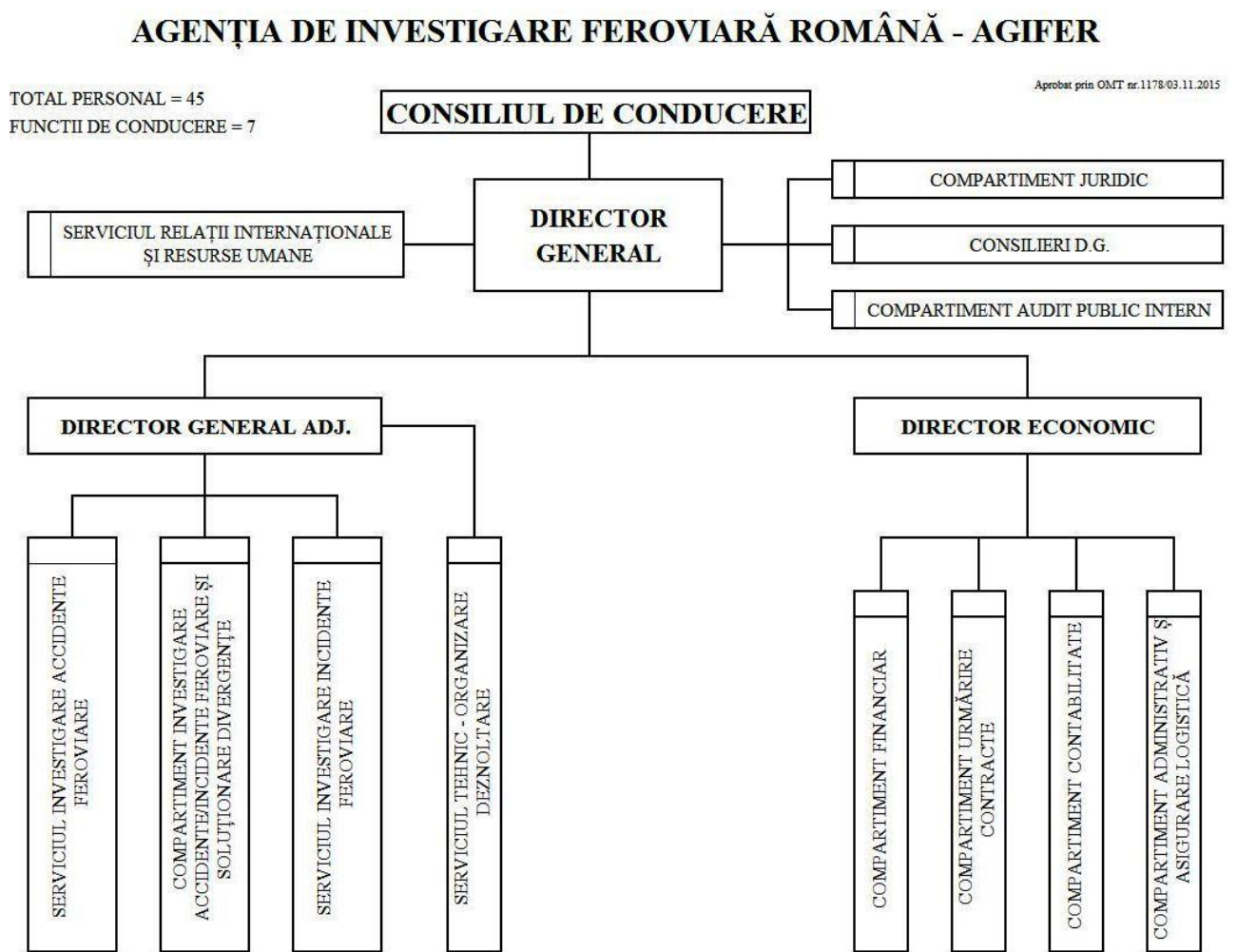
- 5 experts;
- 1 technician;
- 1 referent;
- 2 economists.

### Budget

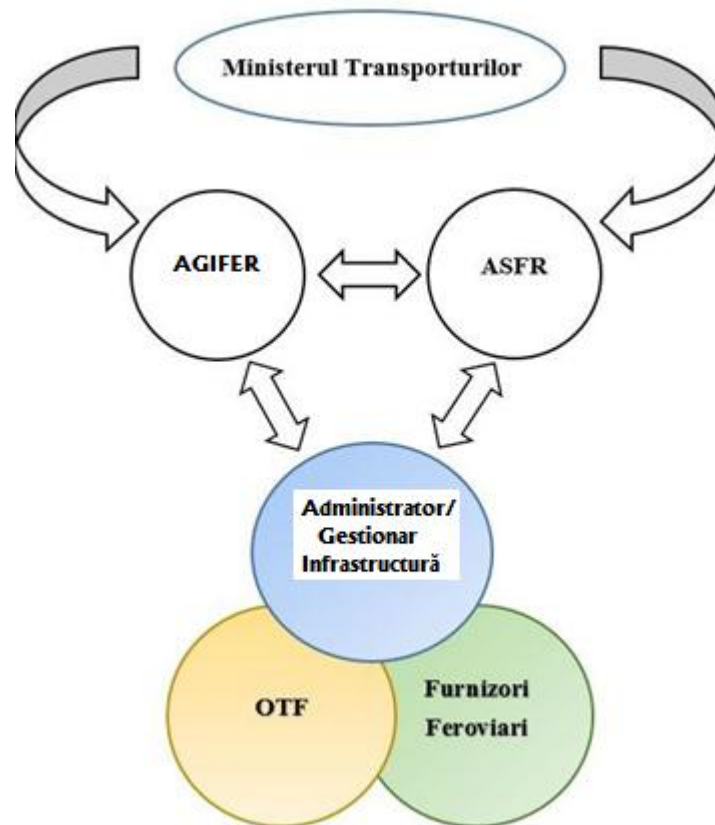
In 2015, AGIFER had for its activity a budget of 2.706.626 lei, that is 601.472 euro (considering an exchange rate 1 €= 4,5 lei).

## 1.4 Organization

In 2015, through the Minister of Transports' Order no.1178/03.11.2015 AGIFER organization chart was approved, being presented below:



## 1.5 Organization chart



## 2 INVESTIGATION PROCESS

The investigation aims to prevent the accidents and incidents and includes gathering and analyzing of the information, establishment of the conditions, including the determination of the causes and, if case, the issuing of some safety recommendations.

The investigation is from the legal point of view an administrative act, allowing the main investigators to fulfill their tasks as efficiently as possible and as soon as possible. The investigation is independent of any legal inquiry. The investigation does not aim in any way the establishment of the degree of guilty or the responsibility.

The result of an accident or incident investigation is the object of the investigation report prepared according with the seriousness of the accident or incident.

The report presents the investigations objectives and includes, if case, safety recommendations.

Before the drawing up of the investigation report ( the final investigation report) one works out a draft report, that according to the provisions of the art 22(3) of the Law 55/2006 is submitted to the infrastructure administrator, involved railway undertakings, Romanian Railway Safety Authority, victims and their relatives, owners of the damaged goods, manufacturers, involved emergency services and the representatives of the staff and the users in to order to inform them about the investigation and its course and to give them the possibility to present their opinions on the investigation and to express their comments on the information of the draft report.

If the opinions and comments from the draft report are relevant for the investigation, they will be taken into account in the drawing up of the final report.

After its ending, the investigation report is submitted to Romanian Railway Investigating Agency - AGIFER for the approval and publishing on its site.

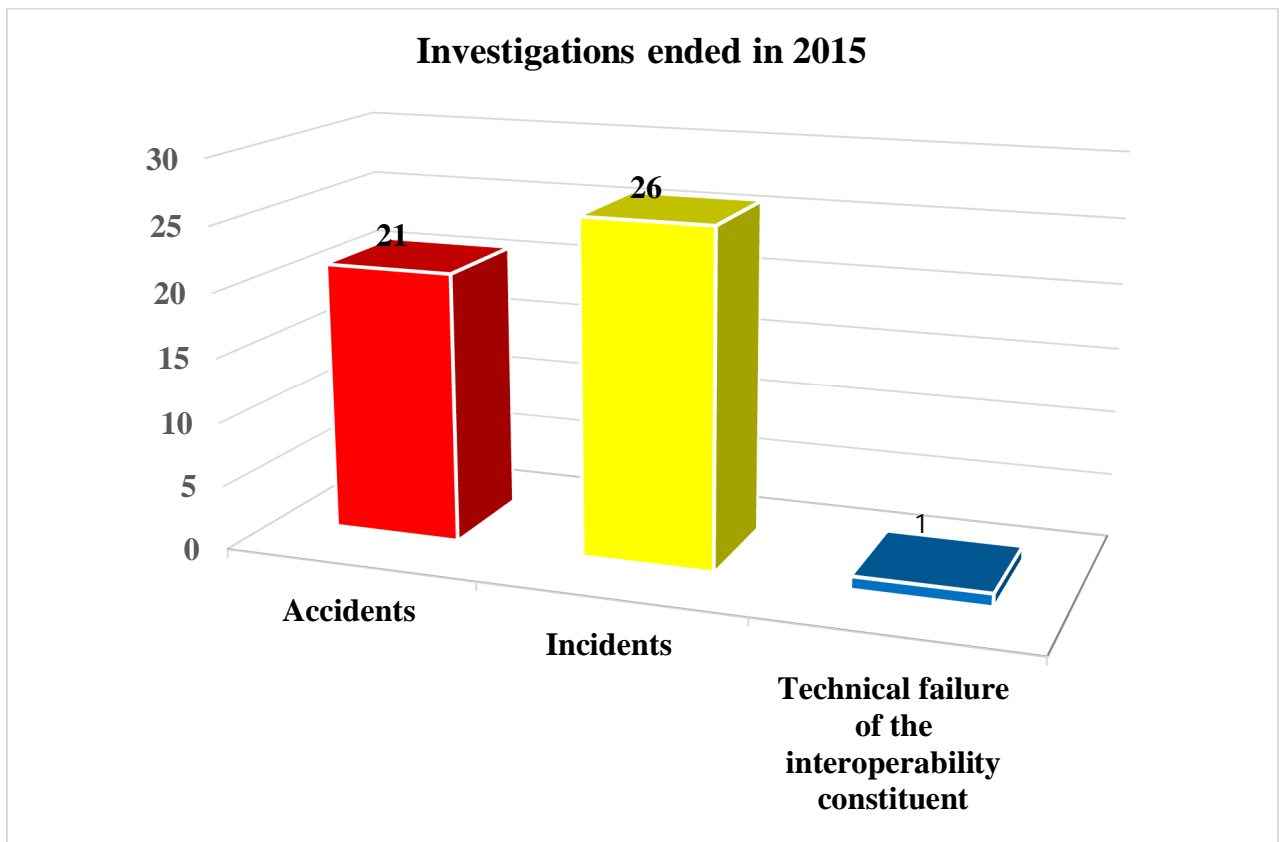
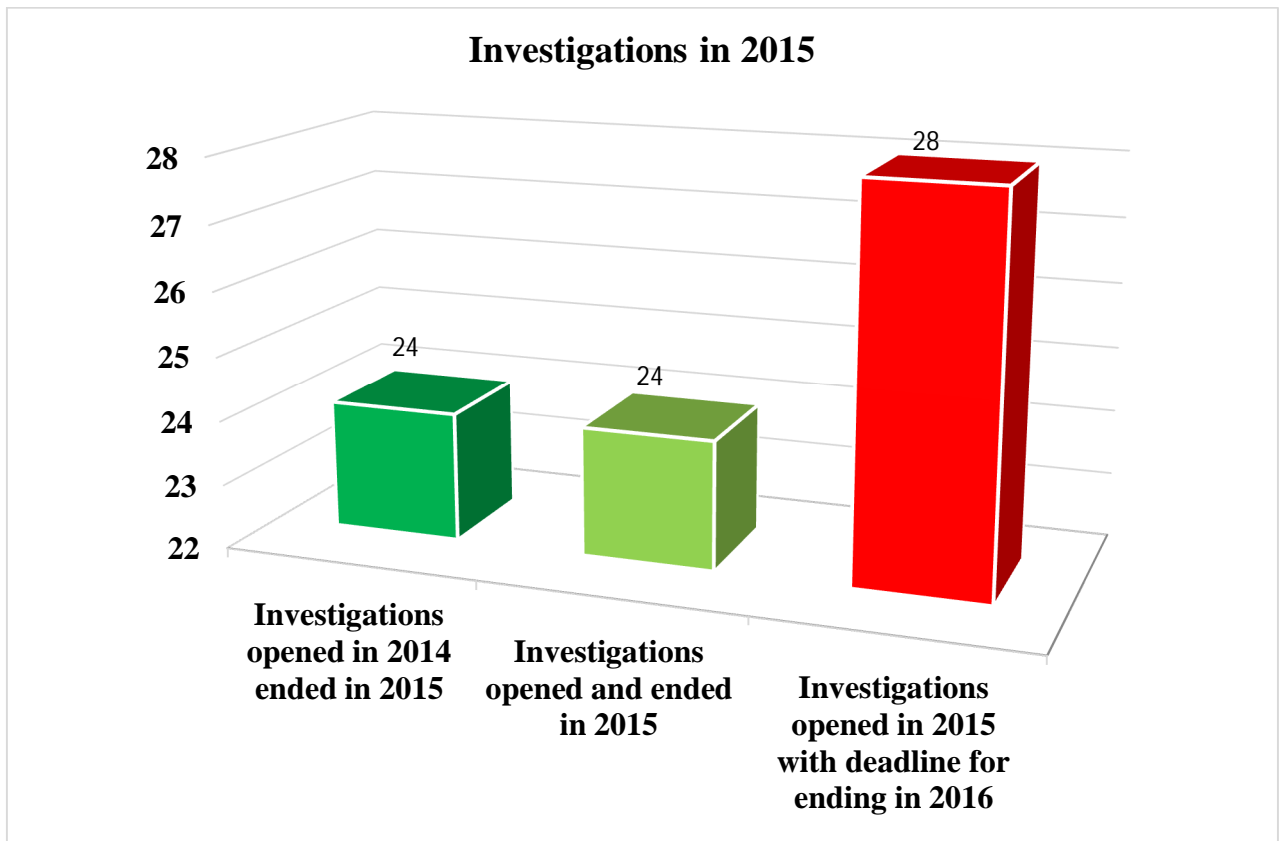
## 2.1 Investigated cases

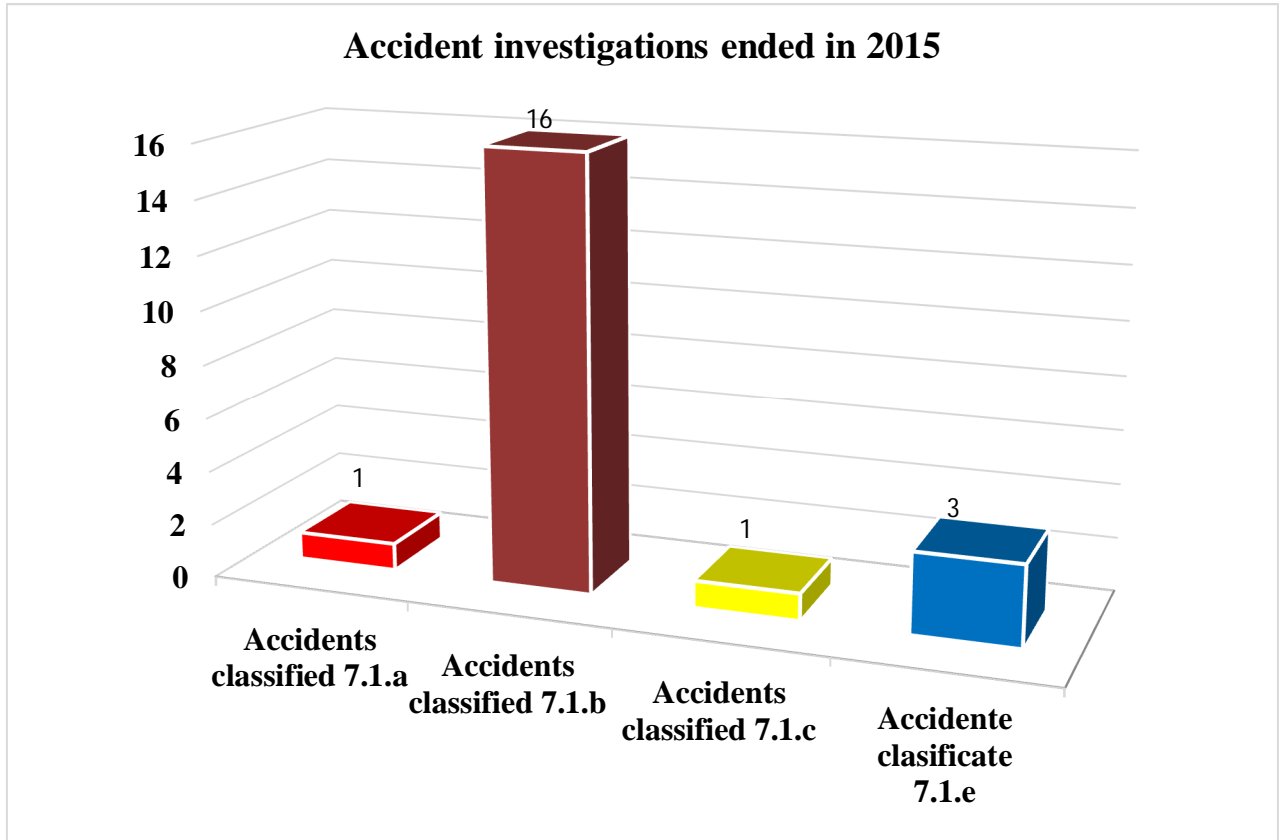
In 2015 staff of AGIFER (OIFR) investigated **76** accidents/incidents, according to the provisions of *Law no.55/2006 on the railway safety and of the Regulations for investigation of accidents and incidents, or the development and improvement of Romanian railway and metro safety* approved by *Government Decision 117/2010* – hereinafter referred to as *Investigation regulations*. From those 76 investigations, 24 were opened in 2014, and the other ones 52 were opened in 2015.

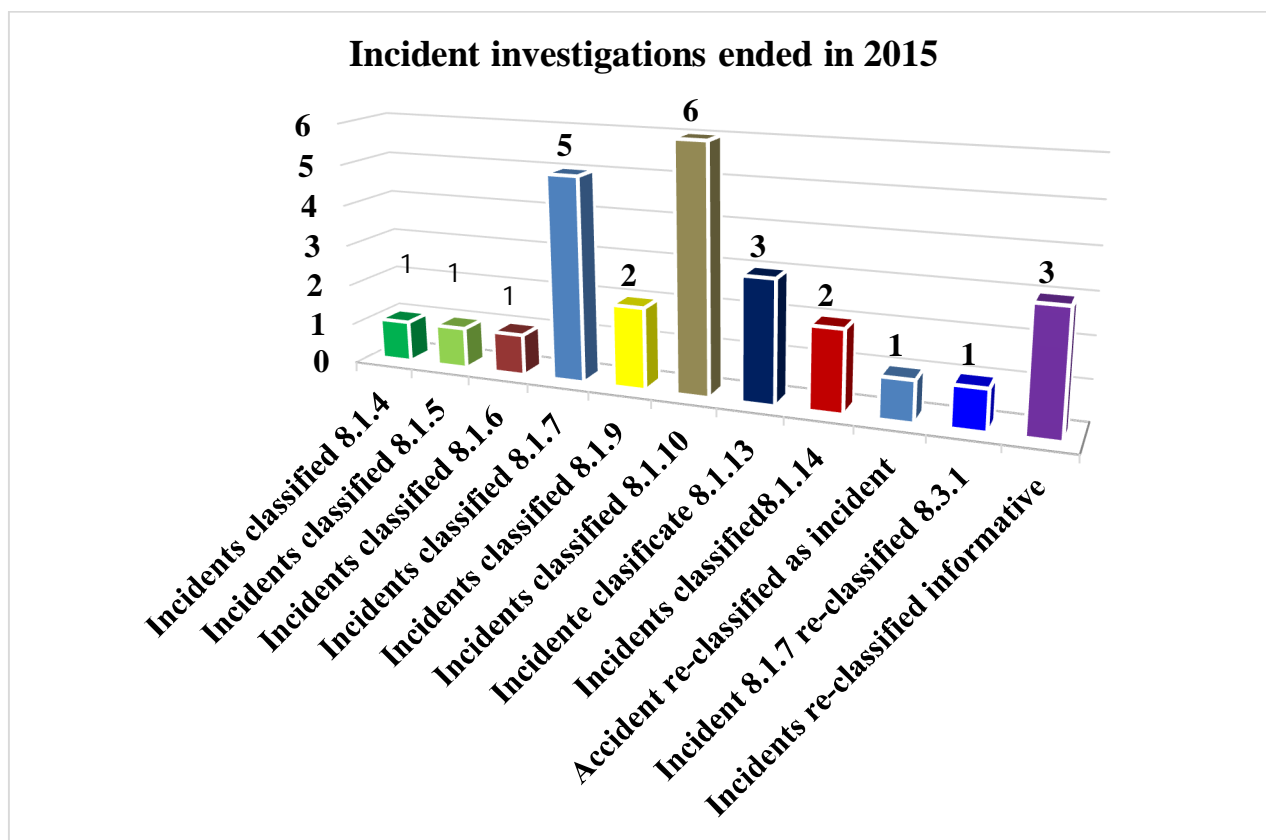
In 2015, one also ended and closed **48** investigations, respectively:

- **1 serious accident;**
  
- **20 accidents;**
  
- **26 incidents**, from which:
  - 25 cases classified according to the provisions of art.8.1 group A from the *Investigation regulations*, for which Romanian Railway Investigating Agency ensured the investigator in charge, that is:
    - 1 incident that, following the investigation, was re-classified according to the provisions of art.8 group C, point.3.1 from the *Investigation regulations*;
    - 3 incidents that, upon the preliminary findings were re-classified according to the provisions of art.10 from the *Investigation regulations*.
  
  - 1 case classified initially as accident that. Following the investigation it was re-classified according to the provisions of art. 8 group A, point 1.7 from the *Investigation regulations*;
  
- **1 technical failure of the interoperability constituent.**









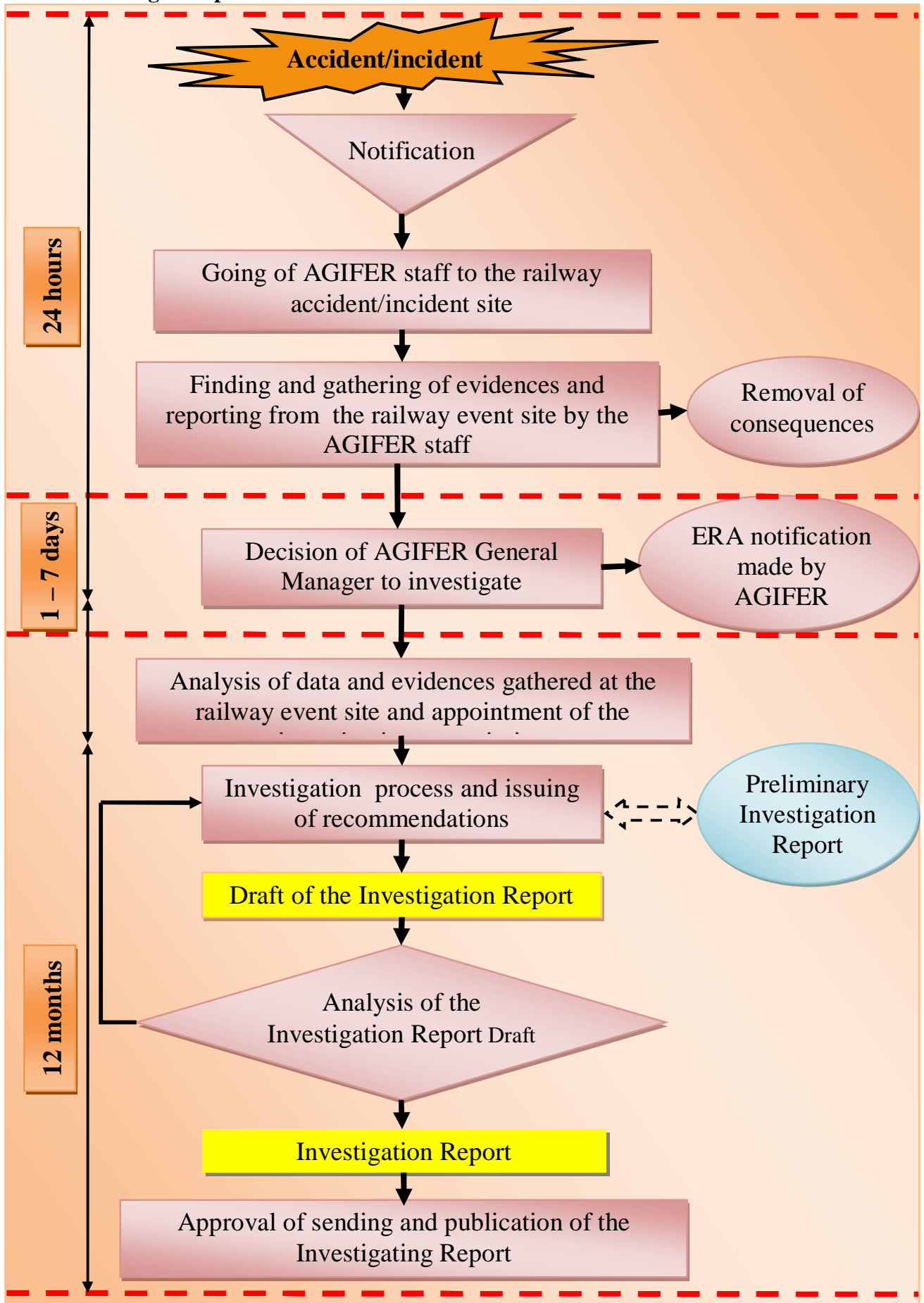
## 2.2 Institutions involved in the investigation (currently or exceptionally)

From its setting up until now, in the investigations Romanian Railway Investigating Agency - AGIFER cooperated with the authorities in charge with the legal inquiry, as well as with other authorities responsible with the interventions at the accident/incident site.

According to the provisions of the art. 20, paragraph 4 of the Law no. 55/2006 concerning the railway safety, in the investigations, Romanian Railway Investigating Agency – AGIFER can use, if necessary, specialists from related fields. During 2015, for the railway accident happened on the 5th of June 2015, at 02:30 o'clock, in the branch of the Railway County Timișoara, track section Strehaia - Caransebeș (electrified single-track line), in the railway station Orșova, in the running of the freight train no.21153 (got by the railway undertaking SNTFM „CFR Marfă” SA), 4 wagons derailed (from the rear of the train: one bogie of the 4<sup>th</sup> wagon, the 5<sup>th</sup> wagon overturn, all axles of the the 6<sup>th</sup> and the 7<sup>th</sup> wagons derailed and reclined at 45°), one used in the investigation commission a representative of the Construction Faculty fom Timisoara.

In case of the investigation of the railway accident happened on the 5th of June 2015, at 02:30 o'clock, in the branch of the Railway County Timișoara, track section Strehaia - Caransebeș (electrified single-track line), in the railway station Orșova, in the running of the freight train no.21153 (got by the railway undertaking SNTFM „CFR Marfă” SA), consisting in the derailment of 4 wagons (one of them overturn), there was necessary to use specialists from related fields. One included in he investigation a professor from the Construction Faculty from Timisoara.

2.3 Investigation process.



### 3 INVESTIGATIONS

#### 3.1 Overview of the investigations ended in 2015 as against to 2014, identification of the main tendencies.

Type of the accidents investigated in 2015 <sup>(1)</sup>	Number of accidents	Number of victims		Damages (lei)	Damages (€)	Tendency of the accident number, as against to 2014
		Dead	Seriously injured			
Train collisions	1	-	1	7.092.497,00	1.608.348,90 €	0 (0%)
Train derailments	16	-	-	1206872,79	270987,01 €	0 (0%)
Road vehicles hit at the level crossings	1	2	-	1.346.986,69	303.293,41 €	0 (0%)
Fires at in the rolling stock	3	1	-	404787,67	91447,97 €	+2 (-66,6%)
<b>Total damages (about)</b>	<b>21</b>	<b>3</b>	<b>1</b>	<b>10051144,15</b>	<b>2274077,29 €</b>	<b>+2 (-9,5%)</b>

<sup>(1)</sup> one took into account the year of the investigation end;

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

In 2015 Romanian Railway Investigating Agency (AGIFER) ended and closed **48** investigations (from which 24 were investigations opened in 2014) and started the investigation in 28 cases for which the investigations opened in 2015 have to be ended in 2016. For the analyzed period of time, 3 investigation cases were closed, following their re-classification made upon the preliminary findings.

In the bellow table we present the investigations and their legal basis, taking into account the requirements of European Directive for the railway safety and of the national legislation.

##### Investigations ended in 2015

No.	Date of occurrence	Presentation	Legal basis of the investigation <sup>(1)</sup>	Date of ending
1	14.03.2014	In the branch of the Railway County Constanța, <b>between the railway stations Constanța Mărfuri and Palas</b> , non-inteoperable track section managed by S.C. Grup Feroviar S.A, km 0+950, in the running of the working train no.88396, consisting in the gang car DCL 007, got by the Track Section L2 Medgidia, the first axle of the gang	<b>i</b>	20.01.2015

		car derailed in the running direction.		
2	07.05.2014	In the branch of the Railway County Timișoara, in <b>the railway station Timișoara Nord</b> , in the running of the passenger train regio no.9612, consisting in the diesel multiple unit AM 979, got by the railway passenger undertaking SNTFC "CFR Călători" S.A., the right wheel from the first axle of the DMU derailed, in the running direction.	i	16.02.2015
3	02.08.2014	In the branch of the Railway County Galați, <b>railway station Cotești</b> , in the running of the freight train no.60842-1 (got by SC TRANSFEROVIAR GRUP SA) the entry signal X was passed on stop position, followed by the serious collision with a group of heavy track vehicles, got by SIMC Buzău, that were parked, ensured against the running away and with instruction signals on the direct line III.	i	31.03.2015
4	04.08.2014	In the branch of the Railway County Brașov, the track section Brașov – Vânători (electrified double-track line), in <b>the railway station Augustin</b> , in the running of the freight train no.50427-2 (got by SC Unicom Tranzit SA) the first axle of the banking locomotive EA 531 derailed, after crossing over the switch no.1.	i	31.03.2015
5	22.08.2014	In the branch of the Railway County Brașov, between <b>the railway stations Izvoru Mureșului and Voșlobeni</b> , km.138+200, in the running of the freight train no.51713-2, got by the railway undertaking SNTFM „CFR MARFĂ” SA, the axle no. 6 of the banking locomotive EA 572 derailed.	i	09.03.2015
6	28.08.2014	In the branch of the Railway County Brașov, <b>between the railway stations Izvoru Mureșului and Voșlobeni</b> , km.138+843, in the running of the freight train no.41755-2, got by the railway undertaking SNTFM „CFR MARFĂ” SA, the 16 <sup>th</sup> wagon of the train loaded with diesel fuel, derailed.	i	07.05.2015
7	05.09.2014	In the branch of the Railway County Craiova, on the non-interoperable line Băbeni – Alunu (being managed by the infrastructure manager SC RC-CF TRANS SRL Brașov), between <b>the</b>	i	24.06.2015

		<b>railway stations Băbeni and Popești</b> , km 15+025, in the running of the freight train no.23688 (got by the railway freight undertaking SNTFM „CFR MARFĂ” SA) consisting in 25 wagons loaded with coal, six wagons derailed, one of them overturn.		
8	07.09.2014	In the branch of the Railway County Constanța, at the passing over the switch no.17 <b>in the railway station Constanța Mărfuri</b> , in the running of the freight train no.89617, got by the railway undertaking SC Grup Feroviar Român SA, one bogie of the first two wagons derailed.	i	31.03.2015
9	19.09.2014	In the branch of the Railway County Iași, <b>in the railway station Valea Seacă</b> , at the level crossing km 292+055, provided with automatic equipments without half-barriers for the road signaling – type SAT, a truck was hit by the passenger train no.1753 (got by the railway undertaking SNTFC „CFR Călători” SA), having as consequences: the death of the auto driver, the death of the train driver and derailment of both bogies of the first wagon of the train.	i	24.08.2015
10	19.10.2014	In the branch of the Railway County Brașov, km.265+967, between the <b>railway stations Mureni and Beia</b> , in the running of the freight train no.80068, (got by SC SNTFM „CFR Marfă” SA) the distant signal YF, afferent to the railway station Beia, was passed in stop position.	i	14.01.2015
11	30.10.2014	In the branch of the Railway County Cluj, <b>in the railway station Telechiu</b> , the passenger train no.367-2, (got by the railway undertaking SNTFC „CFR Călători” SA) passed the entry signal Y (dark) and the exit signal Y1 (dark) in stop position.	i	05.01.2015
12	30.10.2014	In the branch of the Railway County Timișoara, km 400+410, between the <b>railway stations Topleț and Băile Herculane</b> , in the running of the passenger train no.1691 (got by the railway undertaking SNTFC „CFR Călători” SA), the first three wagons derailed.	i	25.08.2015

13	04.11.2014	In the branch of the Railway County Timișoara, track section Petroșani – Simeria (electrified double-track line), on the track I, km 60+430, between <b>the railway stations Merișor and Crivadia</b> , the first bogie of the 4 <sup>th</sup> wagon, from the rear of the freight train no.23815 (got by the railway undertaking SNTFM „CFR Marfă” SA), in the running direction, derailed.	i	09.10.2015
14	10.11.2014	In the branch of the Railway County Craiova, in <b>the railway station Gilort</b> , the exit signal Y1, which permissive position (green) changed soon in stop position (red), was passed on stop position by the light locomotive EA 476 (got by SNTFM „CFR Marfă” SA), continuing to run without the driver having the running order in this respect.	i	08.01.2015
15	19.11.2014	In the branch of the Railway County Timișoara, track section Simeria – Șibot (electrified double-track line), between the <b>railway stations Simeria Triaj and Turdaș</b> , at the dispatching of the freight train no.50480 (got by the railway undertaking SC UNICOM TRANZIT SA), all the axles of the first wagon derailed in the running direction, at its passing over the switch no.7, after passing the the signal YTj in stop position.	i	23.06.2015
16	23.11.2014	In the branch of the Railway County Galați, in the railway station Cătușa, got by SC Arcelor Mittal Stell, line 1CL (broad gauge line), switch no.6CL, at the arrival of train 76058 CL (got by the railway undertaking SC UNICOM TRANZIT SA), hauled by the locomotive DAL 1112 (got by the railway undertaking SNTFM „CFR Marfă” SA), one bogie of the third wagon, from the rear of the train, running direction, derailed (CSI loaded).	i	24.03.2015
17	30.11.2014	In the branch of the Railway County Galați, between the railway station <b>Filești and the factory railway station Cătușa</b> (broad-gauge line), km.2+700, in the running of the freight train no.76052 (got by SNTFM „CFR Marfă” SA), 3 loaded wagons CSI derailed.	i	22.06.2015
18	03.12.2014	In the branch of the Railway County Craiova,	i	30.06.2015



		in <b>the railway station Filiași</b> , the covers of auxiliary equipments from the switches no. 7,11,15 were hit by a damper of a rolling stock in movement.		
19	07.12.2014	In the branch of the Railway County Iași, track section Adjud – Bacău (electrified double-track line), between <b>the railway stations Orbeni and Faraoani</b> , track II, Km. 279+200, started a fire in the cabin of the locomotive DHB 2001, being in the composition of the freight train no.80450 (got by the railway undertaking SC Grup Feroviar Român SA), hauled by the locomotive EA 428.	i	20.11.2015
20	11.12.2014	In the branch of the Railway County Galați, between the <b>railway station Filești and the factory railway station Cătușa</b> (broad-gauge line), km.2+500, in the running of the freight train no.76054 (got by SNTFM „CFR Marfă” SA), five CSI loaded wagons derailed.	i	15.09.2015
21	17.12.2014	In the branch of the Railway County Timișoara, track section Simeria – Hunedoara (non-interoperable track section), managed by SC RC-CF TRANS SRL Brașov (electrified single-track line), in <b>the railway station Pestiș</b> , both bogies from four wagons of the freight train no.29920 derailed (got by the railway undertaking SC Cargo Trans Vagon SA).	i	07.12.2015
22	18.12.2014	In the branch of the Railway County Timișoara, in <b>the railway station Lugoj</b> , the auto-stop equipment of the rout signal YPL 1 was hit and broke by the auto-stop equipment of the DMU AM 952, running as passenger train Regio no.9615 (got by the railway undertaking SNTFC „CFR Călători” SA).	i	27.01.2015
23	18.12.2014	In the branch of the Railway County Cluj, in <b>the railway station Dej Triaj</b> , all the axles of the first bogie from the locomotive EA 386, running direction, derailed, it hauling the freight train no.50448 (got by the railway undertaking SC UNICOM TRANZIT SA).	i	25.06.2015
24	23.12.2014	In the branch of the Railway County București, at the exit from <b>the railway station</b>	i	25.11.2015

		<b>Ploiești Sud</b> , in the running of the freight train no.80386, got by the railway undertaking GRUP FERROVIAR ROMÂN SA, all axles of three wagons derailed.		
25	10.01.2015	In the branch of the Railway County Craiova, track section Târgu Jiu – Livezeni (electrified single-track line), in <b>the railway station Meri</b> , the freight train no. 60881, hauled by the locomotive EA 789 (got by the railway undertaking TRANSFEROVIAR GRUP SA) passed the exit signal X2 in stop position and forced open the switch no. 2 .	<b>i</b>	19.02.2015
26	20.01.2015	In the branch of the Railway County Brașov, track section Teiuș – Vințu de Jos (electrified double-track line), between <b>the railway stations Alba Iulia and Vințu de Jos</b> , on the track I, km. 424+500, the passenger train no.2026 (got by SNTFC „CFR Călători” SA), hit a track vehicle got by Impresa PIZZAROTTI, that performed rehabilitation on the track II.	<b>i</b>	30.06.2015
27	21.01.2015	In the branch of the Railway County București, track section Videle – Giurgiu (non-electrified single-track line), in <b>the railway station Chiriacu</b> , after dispatching the passenger train no.460 (got by SNTFC „CFR Călători” SA), upon free pass system, the driver found out that the switch no.1 is on unsuitable position and took measures for stopping the train before the switch.	<b>i</b>	10.02.2015
28	24.01.2015	In the branch of the Railway County Cluj, track section Oradea – Cluj Napoca (non-electrified single track), in <b>the railway station Șuncuiuș</b> , in the running of the freight train no.32152 (got by SNTFM „CFR Marfă” SA), a fire burst in the hauling locomotive DA 1086.	<b>i</b>	12.08.2015
29	14.02.2015	In the branch of the Railway County Craiova, non-interoperable track section Băbeni-Alunu (non-electrified single-track line, managed by SC RC-CF TRANS SRL Brașov), between the <b>railway stations Copăceni and Popești Vâlcea</b> , km. 25+000, in the running of the freight train no.23686 (got by the railway	<b>i</b>	05.08.2015

		undertaking SNTFM „CFR Marfă” SA), the second bogie from the first wagon, in the running direction, derailed.		
30	17.02.2015	In the branch of the Railway County Craiova, track section Băbeni - Piatra Olt, in the <b>railway station Drăgășani</b> , in the running of the passenger train Regio no.2455, the axle journal from the axle no. 1 (left side in the running direction) of the DMU AM 917, got by the railway undertaking SNTFC „CFR Călători” SA, broke.	i	23.11.2015
31	27.02.2015	In the branch of the Railway County Craiova, between the <b>railway stations Strehaia and Butoiești</b> , km 304+00, in the running of the passenger train no.9502 (got by the railway undertaking SNTFC „CFR Călători” SA), a metallic fish plate, from a joint, was hit by the hauling locomotive EA 329.	i	20.03.2015
32	16.03.2015	In the branch of the Railway County Craiova, in the <b>railway station Craiova</b> , in the running of the freight train no.80604 (got by the railway undertaking SC Grup Feroviar Român SA), the hauling locomotive DA 151 hit the power supply peg and the power supply cable of the insulated section 55/69 broke.	i	28.05.2015
33	06.04.2015	In the branch of the Railway County Craiova, the cover of the device auxiliary operating device of the switch no.14 from the <b>railway station Cernele</b> and of the cover from the device auxiliary operating device of the switch no.3 from the <b>railway station Turburea</b> were hit by the lower parts of the locomotive EA 059, hauling the passenger train Regio no.2022 got by the railway undertaking SNTFC „CFR Călători” SA).	i	12.05.2015
34	02.04.2015	In the branch of the Railway County Iași, in the <b>railway station Cristești Jijia</b> , in the running of the passenger train no.1063 (got by the railway undertaking SNTFC „CFR Călători” SA), the exit signal Y5 was passed in stop position, without comply with the provisions of the specific regulations.	i	06.07.2015
35	14.04.2015	In the branch of the Railway County Galați, in the <b>railway station Buzău</b> , at the visual	i	Investigation stopped on

		inspection of the freight train one observed an opened door at the wagon no.315354733091, on the right side , in the running direction (last but one wagon), that had new hit traces.		29.04.2015
36	15.05.2015	In the branch of the Railway County București, between <b>the railway stations București Vest and Chiajna</b> , track I, km.68+100, a fire burst in the locomotive LDH 623, that hauled the freight train no.96014, got by the railway undertaking SNTFM „CFR Marfă” SA.	i	25.08.2015
37	31.05.2015	At <b>SC TMB „METROREX” SA București</b> , the train no. 407 (Bombardier type) was wrong routed by the movements inspector of the station Nicolae Grigorescu, to the station Anghel Saligny instead the station Republica	i	22.06.2015
38	02.06.2015	In the branch of the Railway County București, track section Ploiești - Brașov (electrified double-track line), in <b>the railway station Buda</b> , a metallic piece from the rolling stock of the freight train no. 80586 (got by the railway undertaking SC GRUP FERVIAR ROMÂN SA) hit some parts of electrodynamics centralization (CED) equipment.	i	Investigation stopped on 08.06.2015
39	02.06.2015	In the branch of the Railway County Craiova, track section Craiova - Filiași (electrified double-track line), km.282+232, between <b>the railway stations Filiași and Răcari</b> , a metallic piece of the wagon, coupled at the motorised train, running as freight train no. 98378-1, got by the infrastructure manager CNCF „CFR” SA, hit some parts of CED equipment.	i	24.06.2015
40	13.03.2015	In the branch of the Railway County Constanța, <b>beteen the railway stations Palas and Capul Midia</b> , in the running of the freight train no.89965 (got by the railway undertaking SC Tehnotrans Feroviar SRL), the line maximum speed was exceeded.	i	07.07.2015
41	13.03.2015	In the branch of the Railway County Constanța, between <b>the railway stations Năvodari and Constanța Mărfuri</b> , in the running of the freight train no.89886 (got by	i	07.07.2015

		the railway undertaking SC Tehnotrans Feroviar SRL), the maximum speed accepted for the line was exceeded,		
42	29.06.2015	In the branch of the Railway County Braşov, track section Blaj – Copşa Mică (electrified single-track line), between <b>the railway stations Valea Lungă and Micăsasa</b> , km. 358+035, the passenger train regio no. 3514 (got by the the railway undertaking SNTFC „CFR Călători” SA) hit a plastic visual warning, got by ARCADA COMPANY SA.	i	Investigation stopped on 08.10.2015
43	10.07.2015	In the branch of the Railway County Constanţa, <b>in the railway station Palas</b> , the entry route of the passenger train no. R 8202 (got by SNTFC „CFR Călători” SA) was made wrong.	i	30.07.2015
44	07.08.2015	In the brach of the Railway County Galaţi, track section Iaşi - Barboşi (non-electrified single-track line), a piece from the locomotive DA 1324, hauling the passenger train IR no. 1962/1961-1, got by the railway passenger undertaking SNTFC „CFR Călători” SA, hit 15 track magnets between <b>Scânteia - Berheci</b> and 11 track magnets between <b>Lieşti - Barboşi</b> .	i	12.10.2015
45	08.09.2015	In the branch of the Railway County Braşov, <b>in the railway station Coşlariu</b> , the passenger train no. 2412-1 (got by SNTFC „CFR Călători” SA) passed the route signal XP4B was in stop position, with red position - „Stop without passing the signal in stop position!”.	i	28.09.2015
46	02.03.2015	In the branch of the Railway County Bucureşti, <b>in the railway station Buftea</b> , the entry route of the passenger train no.5003 in the railway station (got SNTFC „CFR Călători” SA) was made wrong.	i	26.10.2015
47	03.10.2015	In the branch of the Railway County Constanţa, <b>in the railway station Saligny Est</b> , the driver put in motion the freight train no.50412-1 (got by SC UNICOM TRANZIT SA) in the direction opposite to the running direction	i	21.10.1015
48	12.10.2015	In the branch of the Railway County	i	02.11.2015

		București, <b>between the railway stations Chiajna and Grădinari</b> , track II, km.10+900, the passenger train no.1691, got by the railway undertaking SNTFC „CFR Călători” SA, hit the boom of the crane from the small wagon of the gang car 018, got by the track section L1 București, being in the structure clearance.		
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(1) **Legal basis of the investigation:** i= According to the Safety Directive, ii= Upon the national legal basis (that cover the possible areas excluded by the art.2, paragraph 2 of the Safety Directive), iii= Optional – other criteria (National norms/regulations, to which the Safety Directive does not refer).

### Investigations started in 2015, that are to be finished in 2016

No.	Occurrence date	Presentation	Legal basis of the investigation <sup>(1)</sup>	Ending date
1	07.02.2015	In the branch of the Railway County Timișoara, track section Sânnicolau Mare - Ronaț Triaj (non-electrified single-track line), managed by RC-CF Trans SRL Brașov, <b>between the railway stations Satu Nou and Biled</b> , km 33+800, in the running of the freight train no.89388, (got by the railway undertaking GRUP FERROVIAR ROMÂN SA), 5 wagons derailed.	i	11.01.2016
2	14.04.2015	In the branch of the Railway County Constanța, in <b>the railway station Agigea Nord</b> , at the stabling of the freight train no.82571 (got by the railway undertaking SNTFM „CFR Marfă” SA) on the line no.5, the first bogie from the fourth wagon derailed.	i	15.02.2016
3	27.04.2015	In the branch of the Railway County Constanța, in <b>the railway station Tulcea Mărfuri</b> , in the running of the freight train no.21716 (got by SNTFM „CFR Marfă” SA), a fire burst in the locomotive DA 1383, hauling the train.	i	12.01.2016
4	28.04.2015	In the branch of the Railway County Iași, in <b>the railway station Săbăoani</b> , where the movements inspector got no authorization for the operation of SCB equipment.	i	22.03.2016
5	07.05.2015	In the branch of the Railway County Brașov, track section Ploiești Vest - Brașov (electrified	i	21.03.2016

		double-track line), between <b>the railway stations Predeal and Timișu de Sus</b> , track II, km.150+965, in the running of the freight train no.30686 (got by the railway undertaking DB Schenker România), the first bogie of the 5 <sup>th</sup> wagon , in the running direction, derailed		
6	16.05.2015	In the branch of the Railway County Brașov, track section Copșa Mică - Sibiu (non-electrified single-track line), between <b>the railway stations Loamneș and Ocna Sibiului</b> , km.405+960, in the running of the passenger train no.2568 (consisting in the DMU ADH 1412, got by the railway undertaking SNTFC „CFR Călători” SA), both axles of the first bogie, in the running direction, derailed.	i	08.03.2016
7	22.05.2015	In the branch of the Railway County Craiova, in <b>the railway station Caracal</b> , line no.1, in the running of the train no.31652, got by the railway undertaking SNTFM „CFR Marfă” SA, the both bogies of the 18 <sup>th</sup> wagon derailed.	i	06.05.2016
8	26.05.2015	In the branch of the Railway County Brașov, track section Brașov – Sighișoara (electrified double-track line), in <b>the railway station Vânători</b> , km.288+300, in the running of the freight train no.50428 (got by the railway undertaking SC UNICOM TRANZIT SA), 7 wagons derailed, one of them overturn.	i	23.05.2016
9	27.05.2015	In the branch of the Railway County Galați, track section Focșani - Mărășești (electrified double-track line), between <b>the railway stations Mărășești and Putna Seacă</b> , track I, km 112+000, the last wagon of the freight train no.41786 (got by the railway undertaking SNTFM „CFR Marfă” SA), stopped in front of the entry signal YF from the railway station Putna Seaca, was overtook by the train no. 58394 (gang car DP 052 got by the district LC Mărășești), leading to the injury of 4 railway employees from the gang car cabin.	i	20.05.2016
10	05.06.2015	In the branch of the Railway County Timișoara, track section Strehaia - Caransebeș (electrified single-track line), at the entry in <b>the railway station Orșova</b> , in the running of the freight train no.21153 (got by the railway undertaking SNTFM „CFR Marfă” SA), 4 wagons derailed,	i	06.06.2016

		one of them overturn.		
11	02.07.2015	In the branch of the Railway County Craiova, track section Roşiori Nord – Videle (electrified double-track line), in <b>the railway station Roşiori Nord</b> , on the switch no. 15, 5 axles of the locomotive ED043, hauling the train, derailed.	i	30.06.2016
12	05.07.2015	In the branch of the Railway County Braşov, track section Blaj – Teiuş (electrified double-track line), between <b>the railway stations Coşlariu Gr.P.Mureş and Crăciunel</b> , km.389+000, in the running of the freight train no.40617-2, got by the railway undertaking DB Schenker Rail România SRL, the first axle of the 7 <sup>th</sup> wagon derailed.	i	04.07.2016
13	06.07.2015	In the branch of the Railway County Galaţi, in the factory railway station <b>Cătuşa</b> , in the running of the freight train no.59464, got by the railway undertaking SC UNICOM TRANZIT SA, two wagons derailed.	i	30.06.2016
14	20.07.2015	In the branch of the Railway County Craiova, track section Costeşti – Roşiori Nord (non-electrified single track), between <b>the railway stations Balaci and Roşiori Nord</b> , in the running of the freight no.60812 (got by the railway undertaking SC Transferoviar Grup SA), 3 wagons loaded with cars derailed.	i	Investigation in progress
15	11.08.2015	In the branch of the Railway County Timișoara, track section Simeria - Livezeni (electrified double-track line), between <b>the railway stations Bănița and Merișor</b> , km.65+670, track II, in the running of the freight train no.80438, got by the railway undertaking SC GRUP FERROVIAR ROMÂN SA, a fire burst in the hauling locomotive EA 085.	i	Investigation in progress
16	22.08.2015	In the branch of the Railway County Braşov, <b>track section Ucea – Victoria</b> (non-interoperable track-section managed by SC VIROMET SA – non-electrified single-track line), km.8+100, a fire burst in the locomotive DA 1524, hauling the freight train no.89497, got by the railway undertaking SC GRUP FERROVIAR ROMÂN SA.	i	13.06.2016



17	06.09.2015	In the branch of the Railway County Timișoara, track section Strehaia - Caransebeș (electrified single-track line), between <b>the railway stations Vălișoara and Valea Timișului</b> , km. 446+250, in the running of the freight train no.80368-1 (got by the railway undertaking SC Grup Feroviar Român SA), six wagons, loaded with diesel fuel, derailed (from these 2 overturn).	i	01.07.2016
18	11.09.2015	In the branch of the Railway County București, track section Dâmbu - Armășești, in the railway station <b>Dâmbu</b> , at the exit from the railway station to the track I Ghighiu, in the running of the freight train no.31550 (got by the railway undertaking SNTFM „CFR Marfă” SA), hauled by the locomotive EA 038,the both bogies of the 5 <sup>th</sup> wagon derailed.	i	Investigation in progress
19	14.10.2015	In the branch of the Railway County Cluj, track section Războieni - Apahida (electrified double-track line), in <b>the railway station Valea Florilor</b> , end X, track I, in the running of the freight train no.80413 (got by the railway undertaking SC GRUP FERROVIAR ROMÂN SA), 6 wagons loaded with diesel fuel derailed (three of them overturn).	i	Investigation in progress
20	15.10.2015	In the branch of the Railway County Timișoara, track section Ilia - Radna, in <b>the railway station Ilteu</b> , in the running of the passenger train no.2343 (got by the railway undertaking SNTFC „CFR Călători” SA), the first axle of the hauling locomotive EA 263, in the running direction, derailed.	i	Investigation in progress
21	03.11.2015	In the branch of the the Railway County Timișoara, between <b>the railway stations Arad and Aradu Nou</b> , in the running of the passenger train no.14316-2 (got by the railway undertaking SC Regiotrans SRL Brașov), the entry signal Y <sub>FA</sub> from the railway station Aradu Nou was passed in stop position .	i	12.04.2016
22	04.11.2015	In the branch of the Railway County Constanța, in <b>the railway station Fetești</b> , in the running of the freight train no.31762-1 (got by the railway undertaking SNTFM „CFR Marfă” SA), one found out that the routing from the forming station was made without ensuring the braked	i	11.07.2016

		weight percentage.		
23	04.11.2015	In the branch of the Railway County Constanța, in <b>the railway station Fetesti</b> , in the running of the freight train no.31764-1 (got by the railway undertaking SNTFM „CFR Marfă” SA), one found out that the routing from the forming station was made without ensuring the braked weight percentage.	i	11.07.2016
24	19.11.2015	In the branch of the Railway County Brașov, track section Brașov – Vânători (electrified double-track line), between <b>the railway stations Rupea and Racoș</b> , track II, km. 238+850, in the running of the freight train no.41758-1 (got by the railway undertaking SNTFM „CFR Marfă” SA), 7 wagons loaded with diesel fuel, from 12 <sup>th</sup> to 18 <sup>th</sup> derailed (3 of them overturn) .	i	Investigation in progress
25	17.11.2015	In the branch of the Railway County Constanța, in <b>the railway station Fetesti</b> , in the running of the freight train no. 31734-1 (got by the railway undertaking SNTFM „CFR Marfă” SA), one found out that the routing from the forming station was made without ensuring the braked weight percentage.	i	Investigation in progress
26	29.11.2015	In the branch of the Railway County Craiova, in <b>the railway station Filiași</b> , km.285+500, in the running of the freight train no.93754 (got by the railway undertaking SNTFM „CFR Marfă” SA), parts from the rolling stock in movement hit the covers of auxiliary operating device DAM, afferent to the switches no. 4 and 18, hitting also the passing concrete slabs from the line II of the railway station.	i	07.04.2016
27	21.12.2015	In the branch of the Railway County Cluj, in <b>the railway station TUNEL</b> , in the running of the work train no.38230, consisting in the vehicle PLASSER DGS 62N, the signal Y was passed in stop position, on “red” position, followed by the forcing open the switch no.6 (coupled with the switch nr.4)	i	07.04.2016
28	27.12.2015	In the branch of the Railway County Timișoara, at the end Y of <b>the railway station Arad</b> , during the shunting for the coupling of the hauling locomotive DA 1097 at the passenger train regio no.3115 (got by the railway	i	Investigation in progress

		undertaking SNTFC „CFR Călători” SA), on the line 7P (occupied), the passenger train set regio no. 3115, in stop position, was seriously hit. Following that collision, the first wagon was damaged, 7 passengers were injured, 4 of them being hospitalized.		
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(1) **Legal basis of the investigation:** i= According to the Safety Directive, ii= Upon the national legal basis (that cover the possible areas excluded by the art.2, paragraph 2 of the Safety Directive), iii= Optional – other criteria (National norms/regulations, non-taking into account by the Safety Directive).

### 3.3. Researches (or safety studies) ended or ordered in 2015

#### Studies ordered in 2015 and ended in 2015

Order date	Study name (classification type, localization)	Legal basis of the investigation <sup>(1)</sup>	Complementary data
05.06.2015	Report of mechanical tests, chemical analysis and metalographic examinations for the leading axle, series 46, cast S 77918/91, type of steel 34MoCN15X, broken from the axle no. 1 of the motorised train AM 917, involved in the railway incident from the 17 <sup>th</sup> of February 2015, in the railway station Drăgășani.	ii	25.08.2015
18.06.2015	Report of mechanical tests, chemical and metalographic analysis for the main broken leaf of the suspension spring with 8 leafs, size 2, category 2 (laminated one), with negative arch, for four-axled wagons with bogies H, from the wagon no. 84537850017-5, of the freight train 80386, involved in the railway accident from the 23 <sup>rd</sup> of December 2015, in the railway station Ploiești Sud.	ii	30.09.2015

(1) **Legal basis of the investigation:** i= According to the Safety Directive, ii= Upon the national legal basis (that cover the possible areas excluded by the art.2, paragraph 2 of the Safety Directive), iii= Optional – other criteria (National norms/regulations, to which the Safety Directive does not refer).

### Studies ordered in 2015 in process

Order date	Study name (classification type, localization)	Legal basis of the investigation <sup>(1)</sup>	Complementar y data
-	-	-	-

### 3.4. Summary of the investigations ended and closed in 2015

In 2015, 48 investigations were ended and closed, from these 24 opened in 2014, the other of 28 being opened in 2015.

Forwards, we present the summary of the 48 investigation reports, ended and closed in 2015.

3.4.1. The railway accident happened on the 14<sup>th</sup> of March 2014, at 12:50 o'clock, in the branch of the Railway County Constanța, between the railway stations Constanța Mărfuri and Palas, non-inteoperable track section managed by S.C. Grup Feroviar S.A, km 0+950, in the running of the work train no.88396, consisting in the gang car DCL 007, got by the Track Section L2 Medgidia, the first axle of the gang car derailed in the running direction.

The investigation report was ended on the 20<sup>th</sup> of January 2015.

**Direct cause** were the cross level failures, longitudinal and direction failures, that cumulated, that under the forces sent by the gang car and taking into account the technical characteristics of the running gear (wheel base and axle load), led to a critical condition of the guiding capacity, both of the track and of the leading axle of the gang car. These led to the overclimbing of the exterior track of the curve and the derailment of one gang car axle.

**Contributing factors:**

-use of motorised rolling stock without being matriculated.

**Underlying causes:**

a) *Gang car DCL 135L – 007*

-non-ensuring of the technical conditions(Instruction no. 340, chapter 8 art.79);

-non-meting with the cycle of inspections and repairs (NF 67-007:2012).

b)*Procedures*

- use of non-authorized staff for the track inspection (Order no. 2262/2005).

**Root causes:**

The present regulation framework does not stipulate :

- minimum necessary works that have to be made during the inspections and repairs, according to the cycle stipulated in NF 67-007:2012;

- size the primary and secondary suspension clearances and of the differences between the maximum accepted diameters of the wheels of the powered axles and of the front idle axles;

- operations and controls that have to be made before the routing of the gang cars;

- the way to perform the control of the access of the vehicles got by CNCF „CFR” SA on the infrastructure .

**Safety recommendations:**

1. Drawing up a railway norm for the gang cars concerning :

- types of planned inspections and repairs;
- time norms for the performance of the planned inspections and repairs;
- minimum works performed during the planned inspections and repairs.

2. Revision of the of the technical specification for the inspection of the gang car DC 135 L corroborating with NF 67-007:2012.

3.4.2. The railway accident happened on the 7<sup>th</sup> of May 2014, at about 07:20 o'clock , in the branch of the Railway County Timișoara, in the railway station Timișoara Nord, km 1+775, line no. 124, in the running of the passenger train Regio no.9612, consisting in the diesel multiple unit AM 979 (got by the railway passenger undertaking SNTFC "CFR Călători" S.A), the right wheel from the first axle of the DMU derailed, in the running direction.

The investigation report was ended on the 16<sup>th</sup> of February 2015.

**Direct cause** was the breakage of the powered axle center of the DMU AM 979 (first in the running direction), followed by the fall of the right wheel between the tracks. The breakage of the axle happened because the fatigue in overstraining conditions (under efforts consisting in rotative bending and traction - compression) at the connection between the section of diameter 150 mm and the and the grooved section. The initiation crack were from the stress concentrators situated on the circumference of the axle in the connection area.

**Contributing factors:**

- differences of 20 mm between the diameters of the running treads of the powered axles wheels of the two , diesel multiple units which induced additional internal tensions in the axis of this axle in the operation conditions in couple of this two diesel multiple units (AM 979 and AM 990);
- the use of employees with low experience (ultrasonic flaw detector operator) at the performing of ultrasonic control at the powered axles of the diesel multiple units.

**Underlying causes:**

Keeping in operation of the powered axle from AM 979, without assurance that it corresponds in terms of ultrasonic control (CUS). Thus, on 01<sup>st</sup> of August 2014, in the Engine Shed Timisoara, at the axle in question was made an incomplete CUS (without to include the verification of the area in which the break occurred - the leading area of the axle) and without to comply with the specific regulations ("Instructions for ultrasonic control of diesel multiple units axles"- developed by ICPTT in 1975).

Failure to provide the necessary operating conditions and self-instruction of the CUS operator, condition of the Chapter 1.4 - Problems of staff, "Instructions for ultrasonic testing of DMU axles" - developed by ICPTT in 1975.

**Root causes:**

The inexistence of an updated and harmonised framework referring to the performing of an ultrasonic control at the DMU axles series 900, in which could be clear set:

- inspections /planned repairs when the ultrasonic control is performed;
- the time / km. at which is performed the ultrasonic control;
- the company and employees which performs the ultrasonic control.

The inexistence of regulations which set the technical conditions for operation, referring at the maximum admitted difference between the diameters of the running treads of the powered axle's wheels from the DMUs on two axles series 900, equipped with an engine Volvo Penta and automatic gear box Allison, in the case their use coupled, in multiple command.

**Măsuri care au fost luate:****Measures taken:**

Following the breakage of the driving axle series 25147, batch 20991/1992 of the DMU AM 979, from the 7th of May 2014, SNTFC "CFR Călători" SA, through Direction Depots, Department IRLA drew up and sent the address no. M12/4/07.05.2014 asking the depots to identify in operation the axles from the batch 20991/1992.

Following the controls, 2 wheelsets were identified:

-series 25128 batch 20991/1992 - fitted up under the multiple unit AM 936 -

Depot Pitești;

-series 25157 batch 20991/1992 - fitted up under the multiple unit AM 952 -

Depot Timișoara.

Through the address no.M12/2/529/08.05.2014, SNTFC"CFR Călători" SA management asked the withdrawal of those multiple units from running and performance of the ultrasonic control at those axles, and if those met with the that control, be kept in operation with monthly ultrasonic control performed, for 1 year.

Taking into account the possibilities to perform the ultrasonic control at the wheelsets of the multiple unit series 900, Depot Timișoara decided, as additional safety measure, to withdraw from operation the wheelset from the multiple unit AM 952.

**Safety recommendations:**

The recommendations are directed to address the following issues:

1. Review of regulatory framework on ultrasonic control 900 series DMU axles, so be clearly established:

- inspections / planned repairs when performing ultrasonic control;

- the time interval / mileage undergoing ultrasonic control;

- The regulatory framework will be made in accordance with the provisions:

- Transport Minister(MT)Order no. 1359/2012 amending and supplementing of the Norms railway "Vehicles Railway. Types of inspections and planned repairs. Rules or standards for kilometres for maintenance and planned repairs", approved by MT Order no. 315/2011;

- Instructions for ultrasonic control of DMU axles - developed by ICPTT in 1975;

- Instructions for the repair of wheelsets of railway vehicles no. 931/1986.

2. The establishing of the technical operating conditions relating to the maximum permissible difference between the diameters of running treads wheel axles from DMUs on two axles 900 series, equipped with Volvo Penta engine and Allison automatic gearbox, if their use coupled in multiple command.

3. Establishment and implementation of a database enabling the identification of the axle's traceability of railway vehicles engines.

4. Development of regulations on how to perform ultrasonic control at the axles from the DMUs type LVT series 79.

3.4.3. The railway accident happened on the 2<sup>nd</sup> of August 2014, at about 05:20 o'clock, in the branch of the Railway County Galați, in the running of the freight train no.60842-1, got by the railway freight undertaking SC TRANSFEROVIAR GRUP SA, in the railway station Cotesti, in which the entry signal X was passed in stop position, followed by the serious collision between the vehicles, parked on the direct line no. III, and the hauling locomotive of the train no.60842-1.

The investigation report was ended on the 31<sup>st</sup> of March 2015.

**The direct cause** of the accident occurrence is the non respecting of the entry signal X from the railway station Cotesti, which ordered „Stop without exceeding the signal!”,

leading to the rear end-collision of the railway vehicles stopped on direct line no. III from the railway station Cotesti, corroborated with the inexistence of organisational barriers which could prevent a collision.

#### **Contributing factors**

- exceeding the maximum allowed continuous duty of the locomotive by the staff which drove and operated the locomotive EA 389;
- driving the locomotive EA 389 with the train automatic speed control system unduly isolated;
- the lack of attention of the locomotive staff in pursuing the indication of the entry signal X from the railway station Cotesti, which ordered "Stop without exceeding the signal" against the background of fatigue of the driver and the driver's assistant, who were in service for about 32 hours;

#### **Underlying causes**

- noncompliance with the maximum permissible duration of continuous duty on the locomotive contrary to the Order no. 256 / 03.29.2014 and working instructions IL-7.5.1-01 4<sup>th</sup> edition.
- noncompliance with the provisions of Annex 2 of the Instructions for the activity of the locomotive staff no. 201/2006 on cases where the shutting down is allowed of the automatic control system installed on the train locomotive;
- noncompliance with Art. 127- (1) a of the Instructions for locomotive staff activity no. 201 / 2006 referring to follow carefully when towing a train at the indication signals;

#### **Root causes**

- not applying of the SC Transferoviar Group SA of all measures to control the hazards identified in the safety management system;
- not applying of the Railway Company "CFR" SA of the operational procedure provisions "risk assessment with other organizations interface introduced by changes" code PO SMS 0-4.14, part of its own safety management system. So were not identified and assessed the interface risks introduced by modifying the activity of the railway station Cotesti in the conditions of the execution of approved periodic repair works with heavy track machinery and full screening of the ballast prism (RPMG + Ci).

#### **Safety recommendations**

After analyzing the activities that have been carried out by rail freight operator involved in serious accident revealed that there wasn't a concern about the follow up of measures to control the risks associated with railway operations (where it circulated with isolated INDUSI facility and where it exceeding the maximum allowed continuous service on the train) and for identifying and controlling risks interface with the infrastructure manager.

Also, after analyzing the activities that have been carried out by the railway infrastructure manager, it resulted that were not identified and assessed interface risks introduced by changes in the activity of the railway station Cotești in the conditions of the performance of approved periodic repair works with heavy track machinery and full screening prism ballast (RPMG + Ci).

Given these issues, the investigation commission issues the following recommendations, which it refers to the Romanian Railway Safety Authority, the rail freight operator SC Transferoviar Group SA and the Railway Company "CFR" SA to identify measures to be taken or planned as a consequence:

1. To perform an audit at the freight operator SC Transferoviar Group SA for assessing the necessary monitoring and enforcement measures for the restraint of the risks associated with railway processes which should have the following objectives:

- effectiveness of the measures that were taken by the management of railway freight operator to eliminate cases of exceeding of the regulated duty, recorded both before and after the serious railway accident;- how is done the verification of the status of the safety

and vigilance and automatic control installation of the train and the measures set to control the cases of unjustified isolation of these installations.

2. Review by SC Transferoviar Group SA of the opportunity to introduce the procedure code PP-6.2 "Human resources assurance" of a new criterion referring to the professional record, at the employment activity, in order to ensure a proper staffing structure adequate to the professionalism and responsibility requirements required by the traffic safety activity.

3. Identification and assessment by the Railway Company "CFR" SA of the interface risks introduced by changing the activity of movement and shunting in the conditions of the repair works performance at the railway infrastructure, which require the introduction of speed restrictions or closure of railway traffic.

3.4.4. The railway accident happened on the 4<sup>th</sup> of August 2014, at 19:27 o'clock, in the branch of the Railway County Braşov, the track section Braşov – Vânători (electrified double-track line), in the railway station Augustin, in the running of the freight train no.50427-2, got by the railway undertaking SC Unicom Tranzit SA, in which the first axle of the banking locomotive EA 531 derailed, after crossing over the switch no.1.

The investigation report was ended on the 31<sup>st</sup> of March 2015.

**The direct cause** of this accident occurrence is the **overclimbing** of the connection curve exterior rail of the switch no. 1 by the left wheel no. 1 from the leading axle from the front bogie of the locomotive LE 40-0531-9, due the decreasing of the guiding capacity of the leading axle, being exceeded the derailment stability limit.

The decreasing of the guiding capacity of the leading axle was generated cumulative by the following factors:

- exceeding of the admitted tolerances beside the prescribed gauge at the points and crossings (foreseen at Art. 19.2 from the Instruction no. 314/1989), fact which led to the entry of not favourable attack angles of the axle in the track;
- the load transfer of the wheel no. 1, due the not favourable assignment of the load in the suspension levels of the locomotives LE 40-0531-9, amplified in dynamic regime.

**Underlying causes:** none.

**Root causes:** none.

**Safety recommendations:** none.

3.4.5. The railway accident happened on the 22<sup>nd</sup> of August 2014, at 00:05 o'clock, in the branch of the Railway County Braşov, track section Siculeni - Deda (electrified single-track line), between the railway stations Voşlăbeni and Izvoru Mureşului, consisted in the derailment of the first axle, in the running direction of the banking locomotive EA 40-0572-4, that hauling the freight train no.51713-2 (got by the railway undertaking SNTFM „CFR MARFA" SA).

The investigation report was ended on the 09<sup>th</sup> of March 2015.

**The direct cause** of this accident occurrence is constituted by the climbing of the exterior curve rail by the right wheel of axle no. 6 (first in the running direction of the train) from the locomotive EA 40-0572-4 (banking locomotive), due the increasing of the ratio between the leading force and the load which acted on the leading wheel (the wheel from the right side of the axle no. 6), exceeding the stability limit at derailment.

The increasing of the ratio between the leading force and the load which acted on the leading wheel was generated by the strong load discharging of the right wheel from axle no. 6 (first in the running direction of the train) after the track twist over the admitted value for the speed of maximum 30 km/h.

**Contributing factors:** none.



### Underlying causes

The underlying causes of this accident occurrence are the following:

- the non-corresponding performance of the intermediary packing of sleepers from 21<sup>st</sup> of July 2014, in the area between km 138+000 and km 138+325, without being performed also the plug in operation of the sleepers on those entire length, as foreseen in the “Organisation File” of the periodical repair works with integral packing of sleepers (RPc) between the railway station Voslabeni and Izvorul Muresului;
- The non-compliance with the provisions of point 10 from the sheet “Measures for traffic safety”, integral part of the organization file of the work which set that daily, after the working hours and in the non-working hours, to provide on the construction site of an intervention team which had to inspect periodically the line and intervene when it was necessary to maintain the line in the admitted tolerances.

**Root causes:** none.

### Measures taken

After the occurring of the two derailment cases (this investigation case and that occurred on 28<sup>th</sup> of August 2014 in the same area), the management of Lines Division from the Railway County Braşov Brasov released the disposition no. 210/2/16/01.09.2014, through which disposed more additional safety measures for coordinating and supervising of the periodical repair works with integral ballast cleaning, especially those referring at the measurements which must be performed at the line.

### Safety recommendations

As was mentioned in Chap. C.5.2. *Safety management system*, the common document through which was set the action common method in the case of railway accident occurrence „Unitary management of the participants forces at the intervention in the case of accidents on the railway tracks”, part of the own safety management system as administrator of the public railway infrastructure, is not agreed with the Transport Regulation on the Railways from Romania, approved by the Government Decision no. 7/2005 and the Law no. 115/2006 and with the Investigation Regulation, approved by HG no. 117/2010.

Regarding this fact, the investigation commission considers necessary the implementing of the following safety recommendation:

CNCF „CFR” SA, as public railway infrastructure administrator, together with the other parties which act in the case of railways accident and incident occurrences (transport operators, public institutions and emergency public services) will modify and update the common document „Unitary management of the participant forces in the case of accidents on the railway track”, part of the own safety management system, so that:

- to be mentioned the fact that, the notification of the railway accidents/incidents to be made according to the provisions from the Investigation Regulation;
- to be foreseen the obligations of the public railway infrastructure administrator to assure “a transport service for passengers and luggage with other vehicles, on his expenses, until the destination or to the first connection point to continue the journey with the train”, as set in Art. 10, paragraph (8) from the Transport Regulation on the Railways from Romania, approved by the Government Decision no. 7/20.01.2005 and the Law no. 115/27<sup>th</sup> of April 2006;
- to be foreseen the obligations of the economic operator’s managements to be taken to eliminate the consequences and to resume the traffic, as are foreseen in the Investigation Regulation, approved by Government Decision 117/2010.

3.4.6. The railway accident happened on the 28<sup>th</sup> of August 2014, at 07:35 o’clock, in the branch of the Railway County Braşov, track section Siculeni - Deda (electrified single-

track line), between the railway stations Voşlăbeni and Izvoru Mureşului, consisted in the derailment of the first bogie of the wagon no.31537957322-51, in the running direction of the freight train no.41755-2 (got by the railway undertaking SNTFM „CFR MARFĂ” SA).

The investigation report was ended on the 7<sup>th</sup> of May 2015.

#### **Direct cause**

- increase of the horizontally guide force on the first wheel (right wheel in the running direction) from the guiding axle of the first bogie of the wagon no.31537957322-5, the 16<sup>th</sup> of the freight train no.41755-2, km. 138+843, between the railway stations Voşlăbeni and Izvoru Mureşului, over the derailment stability limit.

#### **Contributing factors:**

- track twisting over the accepted value for the maximum speed of 30 km/h, it leading to the load transfer of the left wheel of the guiding axle of the derailed bogie from the wagon and that led the increase of the ratio between the guiding force and the load on the first wheel;
- exceeding of the accepted tolerances at the differences between the close middle ordinates, that led to the appearance of some detrimental attack angles of the guiding axle in the track;
- existence of an excessive humidity in the track bed, because the showers fallen before the railway accident (21-27.08.2014), that affected the quality of works for the screening and packing of sleepers.

#### **Undelying causes**

- non-compliance of the provisions from the point 10 of the sheet „Traffic safety measures” (part of the file for the work organization), regulation that established daily ensurance, after the working hours, as well as in the days off, of an operation team until 18.00 o'clock, that check periodically the track and intervene, if case, in order to keep the track in accordance with the accepted tolerances.

#### **Root causes**

Instructions from «File for the organozation of periodical repair» do not contain measures for mechanical packing of sleepers and screening in the splashy broken stone bed, very cloked also during the period of time with excessive humidity

#### **Measures that were taken**

Taking into account that for the same track part, between the railway stations Voşlăbeni and Izvoru Mureşului two railway accidents happened on close dates (22.08.2014 și 28.08.2014), the management of Track Division within the branch of the railway county Braşov issued a disposition, through which established additional safety measures for the coordination and surveillance of the operation team, performance of measurements at the track and the necessary reparations in case of the exceeding of the accepted tolerances.

#### **Safety recommendations**

Before the accident, between the railway stations Voşlăbeni and Izvoru Mureşului, periodical repairs with total screening were performed (with heavy track machines) during a period of time with important rainfalls and in a cloked track bed and with excessive humidity, leading to the twisting of the track over the accepted value of maximum 30 km/h and the derailment of a bogie of a wagon.

In the special instructions drawn up by the infrastructure manager there are not stipulated preventive measures for the performance of works in these weather and land conditions.

Taking into account the conclusions of the investigation commission, Romanian Railway Investigating Body recommends Romanian Railway Safety Authority to ask the inclusion of the special instructions of the railway infrastructure administrator/manager, in accordance with the provisions of *Instruction of norms and tolerances for the track*

*construction and maintenance-lines with standard gauge no. 314/1989* of the preventive measures necessary to keep under control the risks afferent to this type of work, corresponding to the weathet and land conditions, characteristic for each working situation.

- 3.4.7. Railway accident happened on the 5<sup>th</sup> of September 2014, at 23:20 o'clock, in the branch of the Railway County Craiova, on the non-interoperable line Băbeni – Alunu , between the railway stations Băbeni and Popești, in the running of the freight train no.23688, consisted in the derailment of six wagons, one of them overturn  
The investigation report was ended on the 24<sup>th</sup> of June 2015.

**Direct cause** of the railway accident was the unsuitable technical condition of the track superstructure, the left wheel (wheel no. 2) of the first axle from the wagon no. 81536654772-8, first in the composition of the freight train no.23688.

**Contributing factor**

Exceeding of the loading limit and of the maximum load accepted on the axle (20 tons) of the wagon no. 81536654772-8.

**Underlying causes**

1. Unsuitable maintenance of the track superstructure in the derailment area, it being confirmed by the keeping in operation of the wooden sleepers whose failures imposed their replacement.
2. Loading of the wagons of the freight train no.23688, without the compliance with the provisions of points 3.1 and 3.2 from the Annex II RIV, concerning the maximum load on axle and the loading limits.

**Root causes**

The investigation commission identified as root causes of this railway accident the problems appeared in the drawing up of the safety management system, problems written down in the chapter C.5.2. *Safety management system* from the investigation report, respectively:

1. Non-inclusion of the provisions from art.9, Sheet 4 from the Instruction no.305/1997, concerning the quarterly measurement of the gauge and cross level of the district lines, with the gauge measure, if these were not measured with the testing and recording car or trolley, in în „Flow chart of the process for the track diagnosis and work reception” from the procedure code PP-63 „Railway infrastructure maintenance”.
2. Non-inclusion of Instruction of norms and tolerances for the construction and maintenance of track – lines with standard gauge no.314/1989 in the codes of good practice, that is applied for the risk associated to the danger identified, hereinafter referred to as „failure of the track superstructure”.
3. Non-identification in the Danger Records, worked out according to the procedure code PP-83-01 „Control of all associated risks of the railway infrastructure management”, of the danger that led to the accident, respectively the track over-widening (exceeding of the maximum accepted value of the track gauge).

**Safety recommendations**

On the 5th of September 2014, on the non-interoperable line Băbeni - Alunu, managed by RC-CF TRANS SRL Braşov, between the railway stations Băbeni and Popești Vâlcea, km 15+025, six wagons of the freight train no. 23688, belonging to the railway undertaking SNTFM „CFR MARFĂ” SA, derailed (one of them overturn).

Because, from the checking and measurements at the line resulted non-conformities about the performance of the line maintenance, the investigation commission checked if the safety management system of the railway infrastructure manager (RC-CF TRANS SRL Braşov) has procedures in order to guarantee that:

- line maintenance;
  - identification of risks associated to the railway operations (including those resulted directly from the professional activities, work organization or workload) and the drawing up and establishment of measures for the risk control;
  - monitoring of the efficiency of the measures for the risk control;
- are made in accordance with the relevant requirements.

Following the checking of the documents submitted by the railway infrastructure manager, the investigation commission found out a series of deficiencies in the drawing up and application of the safety management system, deficiencies that are written down in chapter C.5.2. *Safety management system*.

Taking into account it, the investigation commission considers necessary the implementation of the next safety recommendation:

- RC-CF TRANS SRL Braşov, as railway infrastructure manager shall revise the procedures of the safety management system, so, by their application, to guarantee that the activities for the track maintenance, identification of the risks associated to the railway operations, working out and implementation of the measures for the risk control, as well as the monitoring of the efficiency of the measures for the risk control are made in accordance with the relevant requirements.

3.4.8. The railway accident happened on the 7<sup>th</sup> of September 2014, at about 04:05 o'clock, in the branch of the Railway County Constanţa, at the entry in the railway station Constanta, end X, line 6, of the freight train no.89617, got by the railway undertaking SC Grup Feroviar Român SA, consisted in the derailment of the first two wagons on the switch no. 17.

The investigation report was ended on the 31<sup>st</sup> of March 2015.

#### **Direct cause**

In the opinion of the investigation commission, the probable cause of this railway accident occurrence is the compression reactions arised in the train's body between the first and the second wagon from the locomotive, due the overlapping of the unbracking effect of the train over the braking effect at the stabling of the freight train no. 89617 in the railway station Constanta Marfuri.

Those reactions (recoils) from the train body determined:

- the strong compression of the buffers from the right side in the running direction, between the first and second wagons of the train and the complet release of the buffers from the left side;
- the decreasing of the guidance capacity of the wheels 1 and 3, left side in the running direction, from the second bogie of the first wagon from the locomotive and the running of those on the rail head between the right point switch and the stock rail;
- the climbing on the curved point switch by the wheels 2 and 4, followed by the entering of this bogie on the route of line 5;
- the derailment of the bogie with the axles 1-2 and 3-4 from wagon no. 33539335448-5, followed by the driving in derailment of the bogie with the axles 5-6 and 7-8 from the next wagon no. 33539335061-6.

#### **Contributing factors:**

- the application of the direct brake of the hauling locomotive from the freight train no. 89617 over de decreasing effect of the automatic brake of the train;
- the wears of the polyamide brake pads at the center castings of the two derailed bogies (mounted on the bogies ca. 5 years ago, at the date of the last periodical repair which was performed), fact which led to their stiffener, due the lack of lubrication.

#### **Underlying causes**

- non-complying with the Art. 74, point 3 from the Hauling and Braking Regulation no. 006/2005 (the simultaneous of the direct and automatic brake)
- the application of braking and release at short time periods, which enabled compression forces, against the provisions of Art. 72, point 9 from the Hauling and Braking Regulation no. 006/2005.

**Root causes:** none.

**Measures taken:**

SC GFR SA management, following this accident, took the next measures:

- SC GFR SA activity was reorganized by the overtaking the train technical inspections from SC GRAMPET SERVICE SA ;
- one forbade that the movement of the staff in charge with the train visual inspection in the locomotive that hauls the train ;
- re-training of staff, upon signature, at the staff training, about the braking systems accepted in the train running;
- practical training on the braking systems accepted in the train running and the use of the direct locomotive brake.

**Safety recommendations:** none.

3.4.9. The railway accident happened on the 19<sup>th</sup> of September 2014, at 15:45 o'clock, in the branch of the Railway County Iași, **in the railway station Valea Seacă**, end Y, at the level crossing km 292+055, provided with automatic signalling equipments without half-barriers for the road signaling – type SAT, in which a road vehicle was hit by the passenger train no.1753

The investigation report was ended on the 24<sup>th</sup> of August 2015.

**Direct cause** of the accident is the non-compliance by the road vehicle driver with the acoustic and optical signals of SAT (automatically signaling system without barriers) equipment from the level crossing.

**Contributing factors:** none.

**Underlying causes:** none.

**Measures that were taken:**

After the accident, on the right side of the direct line III from the railway station Valea Seacă, at 300 m from the level crossing km 292+070, one put a whistle board.

Through the investigation of this serious railway accident, following the analysis of the information and evidences gathered by the investigation commission, for the improvement of the railway safety at the level crossing, OIFR management submitted a set of measures to the National Infrastructure Manager „CFR” SA for the implementation, measures that in fact are support for the issued safety measures. A part of these measures was implemented.

**Safety recommendations**

Taking into account the conclusions from the accident investigation report, the members of the investigation commission ask Romanian Railway Safety Authority that the railway infrastructure administrator/manager apply the next safety recommendations:

The creation of the pilot project, in cooperation with Romanian General Police Inspectorate, for the monitor of an important number of level crossing (minimum one for each Branch of the Railway County, where repeated railway accidents happened) whose results be used in the identification of some additional measures for the keeping under control the risks associated to the level crossing, that were transposed into the national norms.

3.4.10. Railway incident happened on the 19<sup>th</sup> of October 2014, at 11:26 o'clock, in the branch of the Railway County Braşov, km.265+967, between the railway stations Mureni and Beia, in which the freight train no.80068, (got by SC SNTFM „CFR Marfă” SA) passed the distant signal YF, afferent to the railway station Beia, in stop position. The investigation report was ended on the 14<sup>th</sup> of January 2015.

**Direct cause** was delay in taking the braking measures for stopping the train in front of the signal Pr.YF, with none position, being dark, and that ordered stop according the provisions of art.93(1) from the Signaling Regulations no.004/2006.

**Contributing factors:**

-position “green” of the signal Bl.12 to the driver, that according to the functioning provisions, was also the distant position of the signal Pr.YF and that according to the Signaling Regulations no.004/2006 ordered to the driver „FREE with established speed. Next signal is with clear position with established speed - at least the first front two block sections are free”;

-non-compliance with the distance necessary to see the position “yellow flashing” of the signal Pr.YF, following the non-working of its repeating signal, corroborated with the lack of position of the signal Pr.YF, in accordance with the performed route;

-non-working of the signal RPrYF for a long time.

**Underlying causes:**

-infringement by the locomotive staff of the provisions from the art.127 (1), letter a) from the Instructions for the activity of the locomotive staff no.201 – „During the train hauling, during the route, the locomotive staff has to watch carefully the position of the fixed and mobile signals and of the indicators, located in accordance with the specific regulations in force”.

-infringement by the locomotive staff of the provisions of the art.89 (1) from the Signaling Regulations no.004 – „If a light signal for passing through the automatic block section is on red position, a curious position or if it is dark, the driver has to stop the *train in front of the signal, without passing it in stop position*”.

**Root causes:** none.

**Measures taken:**

During the investigation the signal RPr.YF Beia started to work, following the repair of the its out of service cable.

**Safety recommendations:** none

3.4.11. Railway incident happened on the 30<sup>th</sup> of October 2014, at 12:46 o'clock, in the branch of the Railway County Cluj, in the railway station Telechiu, in which the passenger train no.367-2, (got by SC SNTFC „CFR Călători” SA) passed the entry signal Y (dark) and the exit signal Y1 (dark) in stop position. The investigation report was ended on the 5<sup>th</sup> of January 2015.

**Direct cause** was the non-compliance with the position of the light entry signal Y from the railway station Telechiu, that was „dark” and ordered „stop”.

**Contributing factors**

The driver did not pay attention at the reading of the running order.

**Underlying causes:**

Infringement of the provisions of art.59, paragraph (4) from the Technical regulation for railway operation no.002/2001: „It is forbidden to pass a signal in stop position ...”;

**Root causes:** none.

**Safety recommendations:** none.

3.4.12. Railway accident happened on the 30<sup>th</sup> of October 2014, at about 17:10 o'clock, in the branch of the Railway County Timișoara, between the **railway stations Topleț and Băile Herculane** (electrified single-track line), km 400+190, in which the first three wagons of the passenger train InterRegio no.1691 (got by the railway undertaking SNTFC „CFR Călători” SA) derailed.

The investigation report was ended on the 25<sup>th</sup> of August 2015.

#### **Direct cause**

Direct cause of the accident was the hit of the active surface of the rail head from the exterior track of the curve by a heavy machine with one of its constructive part, when it crossed over the level crossing km 400+190, between the railway stations Topleț and Băile Herculane, it leading to the vertical twisting of the rail, detachment of the parts for the fastening of the rail base on the metallic plates and exit of the rail base from the rebates of the metallic plates. As a result, the track gauge could not be kept between tolerances yet, the exceeding of the maximum values under the action of the dynamic stresses generated in the track by the rolling stock in motion, led to the fall of the wheels from the first wagon inside the track, involving in the derailment the first bogie of the second and third wagons.

**Contributing factors:** none.

**Underlying causes:** none.

#### **Root causes**

Lack in the regulation framework, respectively in the Instruction for the performance of overhaul track works no.302/1986 and in the technical provisions from the File for organization on the periodical repair no.3243/2014, of clear stipulations on the way to continue the road in line area, after each technological packing of sleepers within the periodical repairs performed in the area of the level crossing.

#### **Safety recommendations**

The investigation emphasized that, in the regulation framework, which presents the overhaul track repairs, respectively the Instruction for the performance of overhaul track repairs no.302/1986, there are no stipulations on the way to restore the road area at the level crossing, after each type of mechanical packing of sleepers and lateral displacement, performed from the beginning of the works to the end of works for the packing of sleepers III and lateral displacement III, when this has to be made according to the standards.

Lack of these stipulations can generate different interpretations of the work performers concerning the way to perform continuity of the carriageway of the road in the level crossing up to the end of overhaul track works.

Taking into account these above mentioned, the investigation commission considers necessary to submit to Romanian Railway Safety Authority the recommendation that, together the railway public infrastructure manager CNCF „CFR” SA establish the necessary measures for:

- Revision of the Instruction for the performance of overhaul track repairs no.302/1986 and its supplement with provisions that make clear:
  - if for the level crossing submitted to mechanical packing of sleepers and lateral displacement, the the restoration of the carriageway of the road is made by temporary technical solutions, after each packing of sleepers III and lateral displacement III, following that the final solution be carried out after the performance of the packing of sleepers III and lateral displacement III;
  - if the restoration of the carriageway of the road according to the standards (final solution) has to be made on the same day as the packing of sleepers III and lateral displacement III, or on the next day after the performance of these packing of sleepers and lateral displacement.

- Inclusion of these stipulations in the technical documents that are drawn up for the performance of the overhaul track repairs.

3.4.13. Railway accident happened on the 4<sup>th</sup> of November 2014, at about 20:28 o'clock, in the branch of the Railway County Timișoara, track section Petroșani – Simeria (electrified double-track line), between the railway stations Merișor and Crivadia, on the track I, km 60+430, in which the first bogie, in the running direction of the 29 wagon, from the locomotive derailed.

The investigation report was ended on the 9<sup>th</sup> of October 2015.

**Direct cause** of the railway accident was the fall between the tracks of the left wheel (wheel no.7) from the guiding axle of the wagon no.81536655216-5, the 29th of the freight train no.23815. It happened because the unsuitable technical condition of the track superstructure, corroborated with the fact that the guiding axle of this wagon had the back to back wheelset distance under the limit imposed by the specific regulations in force.

**Contributing factors:** none.

**Underlying causes**

- unsuitable maintenance of the track superstructure in the derailment area, it being confirmed by the keeping in operation of the wooden sleepers whose failures imposed their replacement;
- unsuitable maintenance of the wagon no. 81536655216-5, reflected by the non-identification during the intermediary technical inspection RTI (RR/RIF) of the failure existing at the axle corresponding to the wheels 7-8 and namely, back to back wheelset distance under the limit imposed by the Regulations for Railway Technical Operation no.002/2001.

**Root causes**

- non-application of the provisions of the Instruction for the maintenance of the lines no. 300/1982, associated to the operational procedure code PO SMS 0-4.07 „Compliance with the technical specifications, standards and requirements relevant within the whole life cycle of the lines in the maintenance process”, part of the safety management system of CNCF “CFR” SA, it being confirmed by the under-sizing of the staff from the district L6 Bănița;
- lack in the railway norm code NF 67-006:2011 of a provision that, for the intermediary technical inspection of wagons, to compel the disassembling of the axles and lifting of wagons equipped with disc-wheels and tyres, it making more difficult the measurement of the sizes of these axle types and leading to the measurement failures.

**Safety recommendations**

As it is stipulated at the chapter. C.5.2. *Safety management system*, the investigation commission considers that the infringement of the provisions from the Instruction for the maintenance of the lines no. 300/1982, associated to the operational procedure code PO SMS 0-4.07 „Compliance with the technical specifications, standards and requirements relevant within the whole life cycle of the lines in the maintenance process”, part of the safety management system of CNCF “CFR” SA, led to the unsuitable maintenance of the track superstructure in the derailment area.

Also, as it is stipulated in the same chapter, the investigation commission considers that, the lack in the railway norm code NF 67-006:2011 of a provision that, for the intermediary technical inspections at the wagons, compel at the disassembling of the axles and lifting of the wagons also for wagons with axles with disc-wheels and tyres, makes more difficult the measurement of the sizes of this axle types and can generate measurement failures.



In the context of these above mentioned, for the improvement of the railway safety, the investigation commission considers necessary to address to Romanian NSA the next safety recommendations for the taking of the necessary measures for:

1. Reanalysis of the staff number sizing from the district L6 Bănița, by it relating to the provisions of the Instruction for the maintenance of the lines no. 300/1982.
2. Reanalysis of the technical endowments existing both in the Track Maintenance Section L9 Simeria, and at the level of the Branch of the railway county Timișoara.
3. Reanalysis of the regulation framework applicable for the intermediary technical inspections made at the wagons and the introduction of some provisions on the compulsoriness to perform the disassembling and lifting of wagons, including for the wagons with disc-wheels and tyres.

3.4.14. Railway incident happened on the 10<sup>th</sup> of November 2014, at 11.00 o'clock, in the branch of the Railway County Craiova, in the railway station Gilort, in which the light locomotive EA 476 (got by SNTFM "CFR Marfa" SA) passed the exit signal Y1 in stop position ( its green position changed quickly in a red one ) and continued to run without the respective running order being handed over to the driver.  
The investigation report was ended on the 8<sup>th</sup> of January 2015.

**Direct cause** was the freight train no. 27274, light engine, left the insulated track section 1 S. I. from the railway station Gilort without running order.

**Contributing factors:** none.

**Underlying causes:**

Infringement of the provisions from the art. 97, paragraph (1), letter d, from the Instructions for the activity of the locomotive staff no.201/2007.

**Root causes:** none.

**Safety recommendations:** none.

3.4.15. Railway incident happened on the 19<sup>th</sup> of November 2014, at 03:50 o'clock, in the branch of the Railway County Timișoara, track section Simeria – Șibot (electrified double-track line), between the railway stations Simeria Triaj and Turdaș, at the dispatching of the freight train no.50480 (got by the railway undertaking UNICOM TRANZIT SA), consisted in the derailment of all axles of the first wagon in the running direction, at crossing over the switch no.7, after passing the signal YTj in stop position.  
The investigation report was ended on the 23<sup>rd</sup> of June 2015.

**Direct cause** was the locomotive staff ignored the position of the light signal YT of DELTA branch with the position „STOP without passing the signal in stop position !” (a red position to the train), by the unsuitable assimilation of the running order handed over to the driver at the routing from the railway station Simeria Triaj.

**Contributing factors:**

- the branch light signal YT was not cleared.

**Underlying causes:**

-infringement of art.23(2) corroborated with the art.21 from the Signaling Regulations no.004/2006 approved by the Minister of Transports, Constructions and Tourism's Order no.1482/2006 concerning „position of the branch light signal”.

-infringement of the obligations of the locomotive staff during the route, stipulated in the Instructions for the locomotive staff activity no.201 approved by the Minister of Transports, Constructions and Tourism's Order no.2229/2006:

art.127(2) - taking the measures imposed by the observations from the route, in accordance with the specific regulations in force

-lack of mutual communication of the information by radio-telephone, with reference to the train running, between the disposing station movements inspector from the railway station Simeria and the driver, in accordance with the art.189 from the Instructions for the activity of the locomotive staff no.201 approved by the Minister of Transports, Constructions and Tourism's Order no.2229/2006.

**Root causes:** none.

**Safety recommendations:** none.

3.4.16.Railway accident happened on the 23<sup>rd</sup> of November 2014, in the branch of the Railway County Galați, in the railway station Cătușa, (got by SC Arcelor Mittal Stell), in the running of the freight train no.76058 (got by the railway freight undertaking SNTFM „CFR MARFĂ” S.A.), at the entry on the line 1L (broad gauge track), in which one bogie of the wagon no.63933162, in the running direction derailed, being the 14<sup>th</sup> wagon of the train, in the area of the switch no.R4.

The investigation report was ended on the 24<sup>th</sup> of March 2015.

#### **Direct cause**

The direct cause of the derailment is the fall of the left wheel, from the first axle of the first bogie, in the running direction of the wagon, between the rails, on a track distance with gauge values over the maximum limit accepted in operation, followed by the overclimbing of the right wheel flange on the running surface of the rail corresponding to the out track of the curve and its fall outside the track.

#### **Contributing factors**

- keeping in the track of sleepers that did not ensure the fastening of the rails and maintenance of the gauge between the accepted limits.

#### **Underlying causes**

- infringement of the provisions of art.45 from *Instruction no.315/1950 – Norms and tolerances more important for lines, branch lines and bridges for the lines with gauge URSS from Romanian networks, regulating that, at the branch lines, the sleepers be in good condition and perfectly packed.*

- infringement of the provisions from art.28 of the Government Decision no.2299 on the approval of the Methodological norms for the application of the provisions of the Government Ordinance 60/2004, concerning the periodicity of the inspections on the industrial branches, meaning the inspection of the industrial branches in railway station Cătușa, shall be made yearly and not monthly.

**Root causes:** none.

#### **Measures that were taken**

Following the finding out that the inspection of the industrial branches in the railway station Cătușa shall be made yearly and not monthly, soon after the railway accident one took the necessary measures for the compliance with the provisions of the art.28 from the Government Decision no.2299 for the approval of the Methodological norms for the approval of the provisions of the Government Ordinance 60/2004, on the periodicity of the industrial branch inspection.

**Safety recommendations:** none.

3.4.17.Railway accident happened on the 30<sup>th</sup> of November 2014, at 21:45 o'clock, in the branch of the Railway County Galați, between the railway station Filești and the factory railway station Cătușa (broad-gauge track), km.2+700, in the running of the freight train no.76052 (got by SNTFM „CFR Marfă” SA), in which 3 loaded wagons CSI derailed,

that is both bogies from the 3<sup>rd</sup> and the 4<sup>th</sup> wagons from the locomotive, and the first bogie from the 5<sup>th</sup> wagon, in the running direction .

The investigation report was ended on the 22<sup>nd</sup> of June 2015.

**Direct cause**

The direct cause of the derailment was the exceeding of the maximum limit accepted in the track gauge operation, it leading to the fall of the right wheel, in the running direction, from the guiding axle of the first bogie from the 3<sup>rd</sup> wagon of the freight train no.76052, between the rails, followed by the overclimbing by the flange of the left wheel on the running surface of the rail from the exterior track of the curve, and its fall outside the track.

**Contributing factors:** none.

**Underlying causes:**

- non-compliance with the provisions of art. 16 of the *Instruction no.315/1950 – Norms and tolerances more important for the lines, line branches and bridges for the track with gauge URSS of Romanian railway network.*

**Root causes:** none.

**Safety recommendations:** none.

3.4.18. Railway accident happened on 3<sup>rd</sup> of December 2014, at 10:50 o'clock, in the branch of the Railway County Craiova, in the railway station Filiași, in which a shock absorber from rolling stock in movement hit the covers of the auxiliary operating device DAM afferent to the switches no.7, no.11 and no.15.

The investigation report was ended on the 30<sup>th</sup> of June 2015.

**Direct cause** was the fall between the tracks of an automatic brake-road adjuster detached from the braking equipment of an electric locomotive, that was not identified.

**Contributing factors:** none.

**Underlying causes:** none.

**Root causes:** none.

**Safety recommendations:** none.

3.4.19. The railway accident happened on the 7<sup>th</sup> of December 2014, at 23:30 o'clock, in the branch of the Railway County Iași, track section Adjud – Bacău (electrified double-track line), between the railway stations Orbeni and Faraoni, track II, Km. 279+200, consisted in a fire burst in the cabin of the locomotive DHB 2001, being in the composition of the freight train no.80450 (got by the railway undertaking SC Grup Feroviar Român SA), hauled by the locomotive EA 428.

The investigation report was ended on the 20<sup>th</sup> of November 2015.

**Direct cause:**

The „active” position of the pipe joint from the locomotive DHF 2001, in the composition of the train, as a cold one, (instead of „neutral” position), that led to the overheating over the inflammability limit of the oil from the converter for the start of the hydraulic transmission, breaking of the converter cover, jetting of the heat oil inside the driving cab and burning of the locomotive cab equipments.

**Contributing factors:**

Unsuitable preparation of the locomotive DHF 2001, for its hauling as a light one, in the freight train no.80450, by the responsible staff.

**Underlying causes:**

Infringement of the provisions of art.36 section 5 (conditions for the coupling of railway vehicles at passenger and freight trains), chapter V (train braking) from the Regulations for Hauling and Braking no.006/2005, as follows:

- paragraph (4) concerning the surveillance of the hauled locomotive;
- paragraph (7) concerning the arranging and transport within the freight trains of the diesel hydraulic locomotives, without connecting rods, non-operated locomotives, that is “only with the position pipe joint blocked on neutral position”.

**Root causes:**

- lack of some provisions on the operation of the pipe joint position in the Instruction for the Operation of diesel hydraulic locomotive of 580 HP, remotorized with engine Diesel Cummins QSX15 in form Power Pack, worked out by the railway undertaking S.C. Grup Feroviar Român S.A., that is the owner of the locomotive;
- lack of the procedure for the implementation of the requirements stipulated in the Regulations (UE) no.1158/2010 on the identification of the risks associated to the railway operations, including those resulted directly from the professional activities, organization of the work or the workload and the activities of other organizations and/or persons;

**Measures taken**

After the accident, the railway undertaking S.C. GRUP FEROVIA ROMÂN S.A., as immediate inner measure, disposed the information of whole locomotive staff, upon signature, about the preparations necessary for putting in running, as a cold ones, of the locomotives type DHF (modernized), DHB or DHA, this action was performed within February 2015.

**Safety recommendations**

Taking into account the issues presented at the point C.6.3. Analysis and conclusions on the incident occurrence way, the investigation commission issues the next recommendations, addressed to Romanian Railway Safety Authority, for implementation:

1. Issuing of provisions on the operation of the pipe joint position, in the Instruction for the Operation of diesel-hydraulic locomotives 580 HP, remotorized with engine Diesel Cummins QSX15, in form Power Pack;
2. Drawing up of a procedure for the implementation of the requirements stipulated in the Regulations (UE) no.1158/2010 on the identification of the risks associated to the railway operations, including those resulted directly from the professional activities, organization of the work or the workload and the activities of other organizations and/or persons;

3.4.20. The railway accident happened on the 11<sup>th</sup> of December 2014, at 03:20 o'clock, in the branch of the Railway County Galați, between the railway station Filești and the factory railway station Cătușa (broad-gauge line), km.2+500, in the running of the freight train no.76054 (got by SNTFM „CFR Marfă” SA), in which five CSI loaded wagons derailed, that is the last axle of the 3<sup>rd</sup> wagon, first bogie of the 4<sup>th</sup> wagon, the last axle of the 6<sup>th</sup> wagon, first axle of the 7<sup>th</sup> wagon, first axle of the 8<sup>th</sup> wagon (in the train running direction).

The investigation report was ended on the 15<sup>th</sup> of September 2015.

**Direct cause**

The direct cause of the derailment is the exceeding of the maximum value accepted in operation for the track gauge, it leading to the fall between the rails of the right wheel, in the running direction of the guiding axle from the first bogie of the 4<sup>th</sup> wagon of the freight train no.76054, followed by the derailment of the second axle from this bogie and the derailment of the other 4 wagons (the 3<sup>rd</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup>) from the composition of this freight train.

**Contributing factors:** none.

**Underlying causes**

- infringement of the provisions from the art.16 of the Instruction no.315/1950 – Norms and tolerances more important for lines, branch lines and bridges for the line with gauge URSS from Romanian railway network.

**Root causes:** none.

**Measures that were taken**

Taking into account that in this area, between the railway stations Filești (Steel Factory Galați Connection) and Cătușa two railway accidents happened on close dates (30.11.2014 and 11.12.2014), the management of the Track Section L1 Galați, within the Branch of the Railway County Galați, took the necessary measures and the works for the de-chocking of the line, rectification of the track gauge, replacement of the unsuitable wooden sleepers, replacement and supplement of the missing and out of order track fastenings were scheduled and performed, between km 2+000 - 3+000.

**Safety recommendations:** none.

3.4.21. The railway accident happened on the 17<sup>th</sup> of December 2014, at 19:50 o'clock, in the branch of the Railway County Timișoara, track section Simeria – Hunedoara (non-interoperable track section), managed by SC RC-CF TRANS SRL Brașov (electrified single-track line), in the railway station Pestiș, in which both bogies from the wagons no.33876735053-5 and no.33876735060-0 derailed ( the 14<sup>th</sup> and 15<sup>th</sup> from the locomotive), respectively one axle (first in the running direction) of the wagons no.85535310038-8 and no. 33535489330-7 derailed (the 16<sup>th</sup> and the 17<sup>th</sup> from the locomotive ), all in the composition of the freight train no.29920 (got by the railway undertaking SC Cargo Trans Vagon SA).

The investigation report was ended on the 7<sup>th</sup> of December 2015.

**Direct cause**

The direct cause of the railway accident is the unsuitable technical condition of the wooden sleepers, that was not allowing the fastening of the coach screws and of the metallic plates. It led to the displacement of the metallic plates along the sleepers and implicitly the increase of the gauge value over the accepted tolerances, generating the fall between the tracks of the right wheel from the guiding axle of the 14<sup>th</sup> wagon after the locomotive, followed by the overclimbing of the running surface of the rail from the exterior track of the curve by the left wheel of the same axle and its fall outside the track.

**Contributing factors:**

- unsuitable maintenance of the superstructure from the line no.2 in the railway station Pestiș,;
- use of staff non-authorized for the activity of track inspection;
- use of rolling stock whose load on axle was exceeding the value of limit load accepted by the technical operation plan of the railway station;

**Underlying cause**

- infringement of the provisions of art.25 paragraph (2) from the Instruction of norms and tolerances for the track construction and maintenance – lines with standard gauge no.314/1989, on the failures that impose the replacement of the wooden sleepers;
- infringement of the provisions of art.125 paragraphs (1) and (3) of the Instructions for the activity of the locomotive staff no.201, approved by Order of Minister of Transports, Constructions and Tourism no.2229/2006, on the compliance with the maximum speed;
- infringement of the Annex II RIV, Book II, point.1.6.4. „Methods of loading – Steel billets”, that was imposing the use of wagons with wooden floor, with steel billets arranged in layers, evenly distributed on the wagon width, with insertions of softwood;

### Root causes

- non-application of the provisions from the Instruction on the establishment of the terms and order for the track inspections no.305/1997, Instruction for the track maintenance no. 300/1982 and Instruction of norms and tolerances for track construction and maintenance – Lines with standard gauge no.314/1989, documents associated at the *Process procedure, code PP - 63*, „*Railway infrastructure maintenance*”, part of the safety management system of S.C. RC – CF Trans S.R.L. Braşov, on:
  - unsuitable dimensioning of the work volume for the line maintenance;
  - unsuitable maintenance of the railway infrastructure;
  - use in the track technical inspection of non-authorized staff, contrarily the provisions of the Order of Minister of Transports and Infrastructure no.815/2010 from the 12<sup>th</sup> of October 2010 for the approval of Norms on the implementation and development of the system for the keeping of the professional competences for the staff with responsibilities in the traffic safety and for other staff categories, that carries out specific activities in Romanian railway transports, document asoassociated at *Process Procedure, code PP - 622*, „*Competence, training, authorization*”, part of safety management system of S.C. RC – CF Trans S.R.L. Braşov;
  - allowing the access on the lines from the railway station Pestiş of rolling stock with load on the axle over that accepted through the Technical Operation Plan from the railway station, leading to the infringement of the Regulations for the running trains and shunting of railway vehicles – no.005/2005, document associated at Operational Procedure, code PO –75-02, „*Access on railway infrastructure*”, part of safety management system of S.C. RC – CF Trans S.R.L. Braşov.

### Measures taken

The line 214, Simeria – Pestiş, was rehanded-over to the railway infrastructure manager CNCF „CFR” SA upon the minute of handing - reception, concluded with the no.1/3/373/03.07.2015 from CNCF „CFR” SA – Regional County Timişoara, respectively no.2543/2015 from S.C. RC-CF Trans S.R.L. Braşov.

### Safety recommendation

As it is stipulated at the chapter *C.5.2. Safety management system*, the investigation commission considers that the non-meeting with the documents associated at the Procedures, part of the safety management system of S.C. RC - CF Trans S.R.L. Braşov, identified as root causes in the accident occurrence, led to an unsuitable maintenance and operation of the track infrastructure in the derailment area.

According to these above mentioned, for the improvement of the railway traffic safety, the investigation commission considers necessary to issue a safety recommendation for Romanian Railway Safety Authority, meaning this has to be sure that the railway infrastructure administrator/managers comply completely with the provisions from the good practice codes, part of documents of the safety management system, on the railway infrastructure maintenance.

3.4.22.Railway incident happened on the 18<sup>th</sup> of December 2014, at 13:05 o'clock, in the branch of the Railway County Timişoara, in the railway station Lugoj, in which the auto-stop equipment from the route signal YPL1 was hit and broken by the auto-stop equipment of the multiple unit AM 952, running as passenger train Regio no.9615 (got by the railway undertaking SNTFC „CFR Călători” SA).

The investigation report was ended on the 27<sup>th</sup> of January 2015.

**Direct cause** was the track magnet from the driving cab I of the DMU AM 952 exceeded the gauge, followed by the hit of the field magnet of the light signal YPL1.

**Contributing factors:**

- wears of the fastening ensemble – support of the track magnet from the auto-stop equipment of the DMU AM 952;
- fastening of the support of the field magnet from the DMU AM 952 without the spacer between the axle box and the field magnet support.

**Underlying causes:** none.

**Root causes:** none.

**Measures that were taken:**

The motorised train AM 952 was withdrawal from traffic, following to be scheduled for major overhauls.

The whole DMU fleet, series 900, from Depot Timișoara, was checked, so all motorised trains with a such fastening system of the field magnets have fitted up the spacer between the support and the axle box.

**Safety recommendations:** none.

- 3.4.23. Railway accident happened on the 18<sup>th</sup> of December 2014, at 22:00 o'clock, in the branch of the Railway County Cluj, in the railway station Dej Triaj, in which all the axles of the first bogie from the locomotive EA 386, running direction, derailed, it hauling the freight train no.50448 (got by the railway undertaking SC UNICOM TRANZIT SA). The investigation report was ended on the 25<sup>th</sup> of June 2015.

**Direct cause** of the accident is the lateral threshold appeared at the insulated joint gap made of plywood, that led to the overclimbing of the left connection rail, on the “deflecting” section, by the flange of the left wheel from the guiding axle of the first bogie, in the running direction of the hauling locomotive EA 386 from the freight train no.50448, at its passing over the switch no.15A from the railway station Dej Triaj.

**Contributing factors:**

- breakage of the plywood fish plates from the left insulated joint, on the deflecting section, that generated the appearance of a lateral threshold between the ends of the rails at the insulated joint gap.

**Underlying causes**

Lack of suitable maintenance of the insulated joint from the direction “deflecting section” of the switch no. 15A.

**Root causes:** none.

**Safety recommendations:** none.

- 3.4.24. Railway accident happened on the 23<sup>rd</sup> of December 2014, at 02:03 o'clock, in the branch of the Railway County București, at the exit from the railway station Ploiești Sud, in the running of the freight train no.80386, got by the railway undertaking GRUP FERROVIAR ROMÂN SA, consisting in 44 empty wagons and hauled by the locomotive EB 187, all axles of three tank wagons derailed. The investigation report was ended on the 25<sup>th</sup> of November 2015.

**The direct cause** of the accident is the overclimbing of the curved point from the switch no.57, in the area of the heel of the points, by the first wheel no.2 of the wagon no.84537850017-5 because of the increase of the ratio between the guiding force and the load acting on this wheel, exceeding the stability limit at the derailment. The increase was generated by the combined action of the next **factors**:

- load transfer of the wheel no.2, generated by the breaking of the leaf spring afferent to the wheel no.3, in the conditions of an old crack existing at the connection between the main spring leaf and its eye, that increased in dynamic conditions.

- appearance of an unsuitable angle of attack, because the exceeding of the tolerances accepted in the operation for the gauge established for the switches.  
The derailment of the first wheel no.2 from the wagon no.84537850017-5 happened through the cumulation of those two factors, that is the breaking of the main spring leaf and the value of the track gauge, none of them could lead itself to the derailment.

**Underlying cause:** none

**Root causes:**

Lack of regulations on the performance of checking, between the planned inspections, for the identification of some hidden failures (that can not be observed during the train technical inspections) at the suspension of the wagons with bogies type H .

**Measures taken:**

During the investigation, in order to reduce the risk of accidents with similar causes, the railway undertaking SC GRUP FERROVIAR ROMÂN SA took a series of measures on the visual and dimensional inspection of the suspension springs during the technical inspections of the trains or during the running of the wagons in the washing station or on the repair tracks.

**Safety recommendations:**

With reference to the accident happened in the running of the freight train no.80386, one found out that the breaking of the main leaf of the suspension spring, corresponding to the axle box no.2, of the wagon no.84537850017-5, happened because the fatigue, in the conditions of an unsuitable heat treating, exiting on the faces of the main leaf of the suspension spring pressure concentrators, resulted from the serious roughness of the surface, as well as from the corrosion cavities that increased in the material and led, during the time, at the appearance of some fatigue crack networks.

The fatigue crack networks could be identified if the regulation framework had stipulated that the performance of the inspections of the spring for the suspension of the bogies type H in their inaccessible areas, be made at periods of time, thus determined that the appearance of cracks in these areas be identified soon, so the spring breaking be avoided.

Taking into account these above mentioned, the investigation commission considers necessary the issuing of a safety recommendation for Romanian Railway Safety Authority – ASFR, that is it be sure that the Safety Management System of the railway freight undertakings contains enough measures for keeping under control the risks consisting in the failure of the parts of the suspensions from the wagons with bogies type H.

3.4.25.The railway incident happened on the 10<sup>th</sup> of January 2015, at 23:37 o'clock, in the branch of the Railway County Craiova, track section Târgu Jiu – Livezeni (electrified single-track line), in the railway station Meri, in which the freight train no. 60881, hauled by the locomotive EA 789 (got by the railway undertaking TRANSFEROVIAR GRUP SA) passed the exit signal X2 in stop position and forced open the switch no. 2 . The investigation report was ended on the 19<sup>th</sup> of February 2015.

**Direct cause** was the failure in taking the measures to stop the freight train no.60881 before the exit signal „X2”, on position „STOP without passing the signal on stop position!”.

**Contributing factors:** none.

**Underlying causes:**

Infringement of the provisions of the Instructions for the activity of the locomotive staff no.201/2007, art. 127, paragraph (1), letter a, concerning the obligation of the locomotive staff to watch carefully, during the route, the position of the fixed and mobile signals and of the indicators fitted up in accordance with the specific regulations in force.

**Root causes:** none.



**Safety recommendations:**

Although the railway freight undertaking SC Transferoviar Grup SA implemented the safety management system accepted by Romanian Railway Safety Authority, identifying within it the risk factors, it assessed the risks associated and took the measures for their control, the investigation commission found out an increase of the incident number in the transport activity of the railway undertaking, generated by the passing of the signals in stop position, considering necessary to issue the next safety recommendations:

-re-assessment of the measures proposed for the control of the risk factor „Passing of the signals and indicators in stop position”.

3.4.26. The railway incident happened on the 20<sup>th</sup> of January 2015, at 09:50 o'clock, in the branch of the Railway County Braşov, track section Teiuş – Vinţu de Jos (electrified double-track line) between the railway stations Alba Iulia and Vinţu de Jos, track I, km. 424+500, in the running of the passenger train no.2026 (got by SNTFC „CFR Călători” SA), consisted in finding in the structure clearance and slight hit of a vehicle got by Impresa PIZZAROTTI, performing rehabilitation works on the track II.

The investigation report was ended on the 30<sup>th</sup> of June 2015.

**Direct cause** was the entrance in the structure clearance of a vehicle, (tracked excavator) performing track specific works.

**Contributing factors:**

-un-endowment of the signaling agent with signaling supplies.

**Underlying causes:**

-infringement of the provisions from the „Process procedure - Traffic management plan” got by Impresa Pizzarotti SA, concerning the endowment of the signaling agents and the surveillance by them, through RTF equipment, of the communications between the drivers and the staff from the railway stations concerning the train traffic.

**Root causes:**

-lack of some regulations concerning the sending of signals between the signaling agent and the staff of the vehicles that perform track works.

**Safety recommendations:**

Between the railway stations Alba Iulia and Vinţu de Jos one performed works for the rehabilitation of the line, keeping the track I permanently opened for the passenger and freight transport. A vehicle that performed specific works, entered in the structure clearance and was hit by the locomotive of the passenger train no.2026.

Although, the own regulations got by the economic operator in charge with the performance of the works stipulate the compulsoriness for the signaling agents to have supplies and communication means, at the moment of the incident occurrence, the signaling agent has no radio-telephone equipment.

The economic operator in charge with the line rehabilitation has no regulations on sending the signals between the signaling agent and the staff of the track vehicles.

Also, the involved economic operators did not identify properly all the dangers generated by the rehabilitation of the line with an open track.

Taking into account these above mentioned, the investigation commission recommends Romanian Railway Safety Authority to ask:

1. Impresa Pizzarotti SA as economic operator that performs line rehabilitation, to issue own regulations for sending the signals between the signaling agent and the staff of the track vehicles, regulations that shall be notified to the interested staff.

2. The actors involved in this incident to identify all the dangers that can appear in the rehabilitation of the line with an open track and to establish the measures for the control

of the risks corresponding each identified danger, so the passenger and freight transport can be performed safely.

3.4.27. Railway incident happened on the 20th of January 2015, at 15:46 o'clock, in the branch of the Railway County București, track section Videle – Giurgiu (non-electrified single-track line), in the railway station Chiriacu, after dispatching the passenger train no.460 (got by SNTFC „CFR Călători” SA), upon free pass system, the driver found out that the position of the switch no. 1 is unsuitable and took measures for the stop of the train before the switch.

The investigation report was ended on the 10th of February 2015.

**Direct cause** was the conflicting exit route performance, that is the switch no.1 was not operated on the corresponding exit route.

**Contributing factors:** none

**Underlying causes:**

Infringement of the provisions of the art.205, letter f) from the Regulations for the train traffic and shunting of the railway vehicles no.005/2005 and of the art.28 from the Instruction for the operation of the equipment CR2 afferent to the railway station Chiriacu, concerning switching over in the section block and checking on the track diagram the correct switching over.

**Root causes:** none.

**Safety recommendations:** none.

3.4.28. Railway accident happened on the 24<sup>th</sup> of the January 2015, at 05:10 o'clock, in the branch of the Railway County Cluj, track section Oradea – Cluj Napoca (non-electrified single track), in the railway station Șuncuiuș, end „X”, in the running of the freight train no.32152 (got by SNTFM „CFR Marfă” SA), in which a fire burst in the hauling locomotive DA 1086.

The investigation report was ended on the 12th of August 2015.

**Direct cause**

The fire was generated by an electric short-circuit between the connection cable of the batteries no.6 și no.7 and the metallic tube for the protection of this cable.

**Contributing factors**

- decrease during the time of the di-electric strength of the electric cable;
- presence of some fuel deposits on the locomotive bogies and equipments;

**Underlying causes**

Keeping in service of the locomotive DA 1086, after the exceeding of time or km limits for the scheduled repair, infringing the provisions of the *Railway normative N.F. 67-006:2011 "Railway vehicles. Types of scheduled inspections and repairs. Time or km limits for the performance of the scheduled inspections and repairs"*.

It was favoured by the infringement of the regulations on the validation through signature, by the legal representative of the keeper, of the records of times and km run by the locomotives, infringing the provisions of the *Railway normative N.F. 67-006:2011 "Railway vehicles. Types of scheduled inspections and repairs. Time or km limits for the performance of the scheduled inspections and repairs"*.

**Root causes**

- lack of application, by SNTFM CFR Marfă SA, of the provisions from the procedure code PO 431-SMS, part of its safety management system. So, the risks of fires in the locomotives were not identified and assessed;

- lack of a decision flow on the identification and making of decision to take out of service the locomotives, at which the time and km limits for scheduled repairs were exceeded;

#### **Safety recommendation**

Following the analysis of the activities performed by the railway freight undertaking involved in the accident resulted that there was not an enough attention for the identification and application of the measures for the keeping under control of the risks associated to the railway operations, for the locomotives that exceeded the time and km limits for the scheduled repair. Accordingly, the locomotive DA 1086 was kept in running, even if the time and km limits for the scheduled repair were exceeded.

From technical point of view, the investigation emphasized that the electric signalling systems and protection against short-circuit, wich equip the locomotive, are not designed to signal, to start and ensure the necessary ptotection, in case of a short-circuit at the conductor that generated the fire.

From the maintenance point of view, the investigation emphasized, that, as for the conductor that generated the fire, the most probable, it was never replaced from the manufacturing of the locomotive DA 1086, the age of the cable being 38 years at the moment of the accident occurrence. The connection cable between the batteries no.6 și no.7 does not allow the usual technical inspections, because its place is inside a metallic tube for protection.

With the reference to the repeatability of the fires, the investigation commission underlines that a fire happened in the same conditions as in 2011 at the locomotive DA 966, also at the connection cable between the batteries no.6 și no.7. În that case, the age of the cable was the most probable 37 years.

Following these above mentioned, the investigation commission concluded that there are system risks of fire at all the locomotives of this type at which the age of the cable exceeds „the working time” of the locomotive, as it results from *Railway normative N.F. 67-006:2011 "Railway vehicles. Types of scheduled inspections and repairs. Time or km limits for the performance of the scheduled inspections and repairs"*.

Taking into account these issues, the investigation commission issues the next recommendations, addressed to Romanian Railway Safety Authority - ASFR, for the identification of the measures that have to be taken or scheduled as result, as follows:

1. Inclusion in the classifications of scheduled repairs/inspections at the locomotives LDE 2100 hp, of some provisions of preventive replacement of the electric cable for the connection of the batteries no.6 and no.7.
2. Inclusion in the audits performed by ASFR, of the analysis of *the control of the fire risks at the locomotives LDE 2100 hp*.

3.4.29. Railway accident happened on the 14<sup>th</sup> of February 2015, at 04:35 o'clock, in the branch of the Railway County Craiova, non-interoperable track section Băbeni-Alunu (non-electrified single-track line, managed SC RC-CF TRANS SRL Braşov), between the railway stations Copăcenii and Popeşti Vâlcea, km. 25+000, in the running of the freight train no.23686 (got by the railway undertaking SNTFM „CFR Marfă” SA), in which the second bogie from the first wagon, in the running direction, derailed.

The investigation report was ended on 05th of .08.2015

#### **Direct cause :**

The direct cause of the accident is the fall of the wheel between the rails, running on a track distance with values of the gauge over the maximum limit accepted in operation.

#### **Contributing factors:**

- lack of coach screws for the fastening of three successive sleepers (necessary coach screws for ensuring the fastening of the rails on sleepers) on the inner track of the curve, in the derailment area;
- keeping of the upper level of the track bed over the level of the sleepers, it making impossible the view of the fastening of the rails on the sleepers;
- exceeding of the loading limit and of the maximum load accepted on the axle of the wagon no.81536651421-5.

**Underlying causes:**

- infringement of the provisions from the Sheet no.3, art.2 from *Instruction for the establishment of the terms and order for the performance of the track inspection no.305/1997*, on the inspections and measurements that have to be made within the fortnightly inspection, respectively the checking of the integrity and condition of the fastening of the lines and switches.
- infringement of the provisions of the art.14.2 from *Instruction of norms and tolerances for the track construction and maintenance – lines with standard gauge no.314/1989*, on the sizes and shape of the track bed for the curved track.
- infringement of the provisions from the points 3.1 și 3.2 of the Annex II from the *Regulations for the mutual use of the wagons in the international traffic*, concerning the maximum load on axle and the loading limits.

**Root causes:**

The investigation commission identified as root causes of this railway accident the deficiencies in the working out of the safety management system, these being written down in the chapter C.5.2. *Safety management system* from this investigation report, respectively:

1. Non-inclusion in the Sheet no.3, from the *Instruction on the establishment of the terms and order for the performance of the track inspection no.305/1997* in „Flow chart of the process for the track diagnosis and works receptions” from the procedure code PP-63 „Railway infrastructure maintenance”. Within this Sheet, at the art.2 there are stipulated the inspections that are performed within the fortnightly inspection, respectively the inspection of the integrity and condition of the fastening at the lines and switches.
2. Non-inclusion of the *Instruction of norms and tolerances for the track construction and maintenance – lines with standard gauge no.314/1989* in the codes for good practice, that are applied for the risk associated to the identified danger and called „failure of the track superstructure”.
3. Non-inclusion in the Danger Record, worked out according to the procedure code PP-83-01 „Control of all risks associated to the activity for the management of the railway infrastructure”, of the danger that led to the accident, respectively the exceeding of the maximum accepted values for the track gauge.

**Safety recommendations**

Taking into account the deficiencies in the working out and application of the safety management system, written down in the chapter C.5.2. *Safety management system*, the investigation commission considers necessary the issuing of a safety recommendation to Romanian Railway Safety Authority to ask RC- CF TRANS SRL Braşov, as railway infrastructure manager, to revise the procedures of the safety management system, so through their application, being guaranteed the fact that the legal activities for the line maintenance, identification of the risks associated to the railway operations, working out and establishment of the measures for the risk control, as well as the monitoring of the

efficiency of the measures for the risk, are made in accordance with the relevant requirements.

3.4.30. Technical failure of the interoperability constituent „motorized train wheelset” happened on the 17<sup>th</sup> of February 2015, at 11:10 o'clock, in the branch of the Railway County Craiova, track section Băbeni - Piatra Olt, in the running of the passenger train Regio no.2455, in which the axle journal from the axle no. 1 (left side in the running direction), of the diesel multiple unit (DMU) AM 917, broke between the entry semaphore Y of the railway station Drăgășani and the switch no. 2 (km.240+600).

The investigation report was ended on the 23<sup>rd</sup> of November 2015

#### **Direct cause**

The direct cause of the incident was the exceeding of the fatigue limit of the material from which the driving axle no.25083 was made of, in conditions of overstress under the efforts consisting in tractive-compression and rotative bending.

#### **Contributing factors:**

- appearance of stress concentrators as holes and micro-cracks that, during the time led to the appearance of cross fatigue cracks on the surface of the axle journal to the connection with the section of 133 mm diameter;
- performance of ultrasonic inspection at the driving axle no.25083 without the inspection of the axle journal areas.

#### **Underlying cause**

Non-performance of the ultrasonic inspection on the axle journal surfaces, in order to find out the cross fatigue cracks, initiated at the surface, infringing the provisions from the point 3.1 of „Instructions for the ultrasonic inspection of the DMU axles” – drawn by ICPTT in 1975. It was possible because the Repair section Pitești of SC „CFR-SCRL Brașov” SA was not getting the necessary technical equipments to perform a such ultrasonic inspection.

#### **Root cause**

Ambiguity of the provisions from the Technical Specification Code ST8 – 2004 „Planned inspections type Pth3, RT, R1, R2, RM at the DMUs series 700-900-1000”, concerning the periodicity and place where the ultrasonic inspection of the DMU axles is made.

#### **Measures taken**

Following the breakage of the driving axle with the park number CFR 25083, series 46, from the charge S 77918/91, from the diesel multiple unit AM 917, on the 17<sup>th</sup> of February 2015, the railway undertaking SNTFC ”CFR Călători” SA took the next measures:

- disposed the identification of all axle from the charge no.77918/91, performance of ultrasonic inspection at all these axles and their keeping in operation provided that they will be ultrasonic inspected monthly, during a year;
- made a working team consisting in specialists from SNTFC ”CFR Călători” SA and SC „CFR-SCRL Brașov” SA, that went to Timișoara depot for drawing up the regulations necessary in the ultrasonic inspection performance, using a wheelset non-equipped, in order to simulate the failure signal. Following this action, the working team established the next regulations for the ultrasonic inspection at the driving axles:
  - using of ultrasonic transducer MWB 60° for the inspection of the grooves susceptible for the crack appearance (failure no.6 from the Instruction ICPTT 1975) and the way to proceed;
  - periodicity of the performance of the ultrasonic inspection be 6 months;
  - depots Pitești and Suceava shall make the efforts to buy the probe MWB 60° for the performance of ultrasonic inspection;

- in order to identify the failures of the axle journal (failures 3 and 4 from the Instruction ICPTT 1975) the depots shall make the steps at AFER for the manufacture of set pieces with varying degrees of incidence that allow the use of probe B2S-0o, that equipped the depots.

- the minutes concluded at the meeting of the commission at the depot Timisoara was sent to all branches of SNTFC "CFR Călători" SA, that have diesel multiple units series 900 and one disposed the purchasing of ultrasonic transducer type MWB 60°.

#### **Safety recommendations**

With reference to the incident happened in the running of the passenger train Regio no.2455, one found out that the breakage of the driving axle from the DMU AM 917 happened in fatigue conditions, because the appearance on the surface of the axle journal of stress concentrators as holes and micro-cracks that, during the time, led to the appearance of cross fatigue cracks on the surface of the axle journal.

The cross fatigue cracks could been identified if the ultrasonic inspections performed at the driving axle no.25083 had covered also the axle journal areas. It was possible because the Repair section Pitești of SC „CFR-SCRL Brașov” SA was not getting the technical equipments necessary to make this ultrasonic control.

Taking into account these above mentioned, the investigation commission recommends Romanian Railway Safety Authority – ASFR to ensure that:

1. the supplier of the railway critical services SC „CFR-SCRL Brașov” SA shall revise the reference document used for the planned inspections made at the DMU series 700-900-1000, so it be put in line with the provisions and regulations existing for the ultrasonic inspection of the axles of the DMUs. In this respect, the reference document shall contain clear provisions on the periodicity and place where the ultrasonic inspection of these axles is made.
2. the regulation framework applicable to the activities of inspection/repair at the DMUs has enough provisions in order to guarantee that:
  - economic operators that supply this type of services use the technical equipments necessary to perform all the activities stipulated in the applicable reference documents;
  - monitoring of these economic operators is an efficient one.

3.4.31. The railway incident happened on the 27th of February 2015, at 03:55 o'clock, in the branch of the Railway County Constanța, in the railway station Ciulnița, in the running of the train 89897, consisting in the light locomotive DA 946, got by the railway undertaking SC Tehnotrans Feroviar SRL, passed the exit signal X1 (to the railway station Perișoru) in stop position and forced open the switch no.22.

The investigation report was ended on the 20th of March 2015.

**Direct cause** was the train started to run in the opposite direction to the dispositions received through the running order.

#### **Contributing factors:**

- non-changing of the driving cab;
- non-acknowledgment of the running order content.

#### **Underlying causes:**

- routing of the staff with responsibilities in the traffic safety at 0:10 o'clock, on the 27th of February 2015, although this had medical certification with the restriction to work during the night, contrarily the provisions of the Annex no.3, art.2 letter a from the Instructions for the activity of the locomotive staff no.201;
- non-watching of the signal positions, contrarily the provisions of art.121 from the *Instructions for the activity of the locomotive staff* no.201.

**Root causes:** none.

**Safety recommendations:** none.

3.4.32. The railway incident happened on the 16th of March 2015, at 15:55 o'clock, in the branch of the Railway County Craiova, in the railway station Craiova, line no.7, in the running of the freight train no.80604 (got by the railway undertaking SC Grup Feroviar Român SA), in which the hauling locomotive DA 151 hit the power supply peg and the broke of the power supply cable from the insulated section 55/69.

The investigation report on the 28th of May 2015.

**Direct cause** was the detachment of the upper guidance of the bolt welded on the upper half-casing, it generating its entrance in the structure clearance and hanging of the cable from the power supply peg of the impedance bond from the insulated section 55/69.

**Contributing factors:**

-breakage of the weld from the upper guidance of the gear exhausted box from the axle no. 3, right wheel running direction, of the locomotive DA 60-0151-5.

**Underlying causes:** none.

**Root causes:** none.

**Safety recommendations:** none.

3.4.33. Railway incident happened on the 06<sup>th</sup> of April 2015, the inner sub-assemblies of the locomotive EA 059, hauling the passenger train Regio no. 2022 (got by the railway undertaking SNTFC „CFR Călători” SA), hit the cover of the equipment DAM (auxiliary operating device) of the switch no.14 from the railway station Cernele and the cover from the equipment DAM of the switch no.3 from the railway station Turburea.

The investigation report was ended on the 12<sup>th</sup> of May 2015.

**Direct cause** was the detachment of the coupling sleeve from the crank chamber of the automatic brake-road adjuster type SAB from the axle no.4 of the a locomotive EA 059 hauling the passenger train no. 2022 from the 6<sup>th</sup> of April 2015, followed by the turning of the crank chamber around the joint of the adjuster eye, its entrance in the structure clearance and hitting of the protection covers of the auxiliary operation device afferent to the switches 3 and 14 from the railway stations Turburea and Cernele.

**Contributing factors:** shearing of the screw for the fastening against the turning of the coupling sleeve of the brake-road adjuster SAB from the axle no.4.

**Underlying causes:** none.

**Root causes:** none.

**Safety recommendations:** none.

3.4.34. Railway incident happened on the 2nd of April 2015, at 18:57 o'clock, in the railway station Cristești Jijia, in the running of the passenger train no.1063 (got by the railway undertaking SNTFC „CFR Călători” SA), in which it passed the exit signal Y5 in stop position, infringing the provisions of the specific regulations.

The investigation report was ended on the 6th of July 2015.

**Direct cause** was the movements inspector did not comply with the tasks established by the specific regulation framework and the wrong establishment of the running order necessary to continue the run, after the emergency braking happened at the locomotive of the train IR-1063.

**Contributing factors:**

-change of the permissive light of the exit signal Y5 of the railway station Cristești, quickly by its rotating at 90 degrees in front of the train, from „FREE with low speed. ATTENTION! The next signal on stop position” (two light units on yellow to the train),

in "STOP without passing the signal in stop position!" (a light unit on red position to the train);

-the emergency braking of the locomotive DA-1118, by activating the frequency of 2000 Hz of the field magnet 1000/2000 Hz afferent to the signal Y5, it being passed in stop position by the driving cab of the locomotive, with about 5-6 m.

**Underlying causes:**

-infringement of the provisions of art.201 paragraph (1) from the part III (train running), chapter I (organization of the train running), section 12 (regulations on the running line occupation) from the Regulations for the train running and shunting of the railway vehicles no.005/2005, concerning the giving by the movements inspector of the departure order, by running order handed over to the driver, in which he had to stipulate the position of the exit signal and filled in with „train no. IR-1063 free to the railway station Holboca”. The running order issued by movements inspector on duty in the railway station Cristești Jijia contained wrong records, that is „Running under free pass system. Exit from the line 5 with the position on stop of the exit signal Y5 with the maximum speed of 20 km/h over the switches”;

- infringement of the provisions of art.9 paragraphs (8) and (9) from part I (general provisions), chapter I (content and application area of the Regulations), 4<sup>th</sup> section (obligations and responsibilities of the staff), of the *Regulations for the train running and railway vehicles shunting nr.005/2005*, on the intervention of the staff out of duty in the carrying on of tasks and performance of the service instead other employees.

**Root causes:** none.

**Measures taken:**

Following the note for notification of the emergency braking of the train IR-1063, from the 2nd of April 2015, 18.57 o'clock, interlocking system responsible, on the 3rd of April 2015, in the interval of time 4:40 and 5:50, according to the records from the Register for the Inspections of Lines and of Safety Traffic Equipments, controlled ( and after removed the failure) the auto-stop equipment afferent to the exit signal Y5 from the railway station Cristești Jijia. One found out that the field magnet was active on the frequency of 2000 Hz., at all signal positions.

During the tests for each position, one found out that the bulb of the green position is out of service and the position „FREE with reduced speed. The next signal on open position with established or reduces speed” (a green position and a yellow position to the train) not keep its position, the signal position passing „STOP without passing the signal in stop position!” During the day and the night a red position to the train, when, for 1 – 1,5 seconds, changed at 90 degrees by indicating one yellow position.

The bulb found out of order was replaced, this failure is not indicated on the track diagram as distinct failure.

**Safety recommendations:** none.

3.4.35.Railway incident happened on the 14th of April 2015, in the railway station Buzău, where, at the visual inspection of the freight train no.74501 (got by SNTFM „CFR Marfă” SA), one observed and opened door on the right side, in the running direction, at the wagon no.315354733091 (the last but one wagon of the train), that has new hit traces. The investigation was closed on the 29th of April 2015, following its re-classification upon the preliminary findings

3.4.36.Railway accident happened on the 15th of May 2015, at 12:25 o'clock, in the branch of the Railway County București, between the railway stations București Vest and Chiajna, track I, km.68+100, in which a fire burst in the locomotive LDH 623, hauling the freight train no.96014, got by the railway undertaking SNTFM „CFR Marfă” SA.



The investigation report was ended on the 25th of August 2015.

**Direct cause was** the short-circuit at the power supply cables of INDUSI equipment, in the area of box for cable passing, on conductors with different electric potential, following the decrease of the di-electric strength of the cable covering and their perforation, it leading finally to the covering ignition

**Contributing factors**

- aging of the covering of power supply cables from the INDUSI equipment;
- existence in the area of the short-circuit of oil residuals resulted from the locomotive operation, as well as of an air flow generated by the dynastarter ventilator.

**Underlying causes** - none

**Root causes** - none

**Measures taken** - none.

**Safety recommendations** - none.

- 3.4.37. Railway incident happened on the metro network , on the 31<sup>st</sup> of May 2015, in the activity of SC TMB „METROREX” SA București, the train no. 407 (Bombardier type) was wrong routed by the movements inspector of the station Nicolae Grigorescu, to the station Anghel Saligny instead the station Republica  
The investigation report was ended on the 22<sup>nd</sup> of June 2015.

**The direct cause** was the dispatching of the metro train no.407 to a direction different from that of the timetable, because a human mistake in the route making.

**Contributing factors:** none.

**Underlying causes:**

-infringement of art. 16 letters c) and d) from the Instructions for the metro traction staff 201M, approved by Minister of Transports and Infrastructure’s Order no. 395/201 in the driving of the train, that the exit route and the direction of the Combined indicators of direction and speed, according to the timetable C1335, were not met.

-infringement, in the monitoring of the train running, of the art.19, letter b) from the Instructions for the metro movement no. 005M, approved by Order of Minister of Transports and Infrastructure no. 1620/2012, that is train traffic was not watched on the monitor/overhead.

**Root causes:** none.

**Measures taken:**

An extraordinary meeting was organized by the Department in charge with the Traffic Safety of Metrorex SA, for the analysis of the metro safety. The meeting was organized on the 10th of June 2015, joining the staff of the Operation Depot TEM and of Movement Section.

**Safety recommendations:**

Revision of the Regulations no.M.06.601/2053/2013 on the movement activity in the stations headquarters of interlocking system with two movements inspectors, stipulating their cooperation obligations.

- 3.4.38. Railway incident happened on the 2nd of June 2015, at 19:50, in the branch of the Railway County București, track section Ploiești - Brașov (electrified double-track line), in the railway station Buda, in which a metallic piece from the rolling stock of the freight train no. 80586 (got by the railway undertaking SC GRUP FERROVIAR ROMÂN SA) hit some parts of CED equipment .  
The investigation report was ended on the 20th of December 2014.

The investigation was closed on the 8th of June 2015, following its re-classification upon the preliminary findings.

- 3.4.39. The railway incident happened on the 2nd of June 2015, at 13:26 o'clock, in the branch of the Railway County Craiova, track section Craiova - Filiași (electrified double-track line), km.282+232, between the railway stations Filiași and Răcari, in which a metallic piece of the wagon, coupled at the motorised train, running as freight train no. 98378-1, got by the infrastructure manager CNCF „CFR” SA, hit some parts of CED equipment. The investigation report was ended on the 24th of June 2015.

**Direct cause** was the exit from the rolling stock maximum loading gauge and the entrance in the structure clearance of the stanchion no.4 left side of the running direction of the wagon series Uvks no.40539423001-6 of the freight train no. 98378-1, from the 2<sup>nd</sup> of June 2015, following its non-ensuring against turning.

This situation led to the displacement and breakage of 2 steel ropes at the impedance bond I XC SAT km 282+232, breakage of the connections between the peg and inductor at the track inductors of 500 Hz and 1000/2000 Hz of the signals PrYF and BL 12, running line track I Răcari – Filiași.

**Contributing factors:**

- unsuitable inspection at the taking over of the wagon by the staff of the motorized train UAM 215 – 034;
- lack of the upper support for the fastening and ensurance of the stanchion on horizontally from the wagon solebar;
- serious clearance between the stanchion and the solebar that allowed the fall of the stanchion beside lower support for the fastening and ensuring the stanchion horizontally from the wagon solebar.

**Underlying causes:** none.

**Root causes:** none.

**Safety recommendations:** none.

- 3.4.40. The railway incident happened on the 13th of March 2015, at 03.45 o'clock, in the branch of the Railway County Constanța, between the railway stations Palas and Capul Midia, the freight train no.89965 (got by the railway undertaking SC Tehnotrans Feroviar SRL) exceeded the line maximum speed. The investigation report was ended on the 7th of July 2015.

**Direct cause** was the non-meeting with the running maximum speed.

**Contributing factors:** none.

**Underlying causes:**

Running with other speeds than those stipulated in the Instructions for the activity of the locomotive staff no.201/2007, art.125 paragraph (1) and art. 127 paragraph (1) letter f) and from the Signalling Regulations no. 004 art.7, paragraph (3).

**Root causes:**

- there is no procedure for the decision flaw for the presentation of the analysis concerning the reading and interpretation of the records of the speed recorders from the locomotives of the company;
- there is no procedure or working instruction for the watching and withdrawal from traffic of the locomotives non-provided with speed recorders, metrological controlled.

**Safety recommendations:**

Members of the investigation commission consider timely to recommend Romanian Railway Safety Authority that it ask railway undertaking to take measures for the

awareness of the implications of exceeding the maximum speeds, without excluding the possibility of non-scheduled psychological of the staff.

3.4.41. Railway incident happened on the 13<sup>th</sup> of March 2015, at 04.35 o'clock, in the branch of the Railway County Constanța, between the railway stations Năvodari and Constanța Mărfuri, the freight train no.89886 (got by the railway undertaking SC Tehnotrans Feroviar SRL), exceeded the maximum line speed.

The investigation report was ended on the 7th of July 2015.

**Direct cause** was the non-meeting with the maximum speed.

**Underlying causes:**

The running with other speeds than those stipulated in the Instructions for the activity of the locomotive staff no.201/2007, art.125 paragraph (1) and art.127 paragraph (1) letter f) and și of the Signaling Regulations no.004 art.7, paragraph (3).

**Root causes:**

-there is no procedure for the decision flaw for the presentation of the analysis on the reading and interpretation of the records of the speed recorders from the locomotives of the company;

-there is no procedure or working instruction for the watching and withdrawal from traffic of the locomotives non-provided with speed recorders metrological controlled.

**Safety recommendations:** none.

3.4.42. Railway incident happened on the 29th of June 2015, at 15:30 o'clock, in the branch of the Railway County Brașov, track section Blaj – Copșa Mică (electrified single-track line), between the railway stations Valea Lungă and Micăsasa, km. 358+035, the passenger train regio no. 3514 (electric multiple unit (EMU) RE 1005, got by the the railway undertaking SNTFC „CFR Călători” SA) hit a plastic visual warning, got by ARCADA COMPANY SA.

The investigation was closed on the 8th of October 2015, following it re-classification upon the preliminary findings

3.4.43. Railway incident happened on the 10th of July 2015, at 07:40 o'clock, in the branch of the Railway County Constanța, in the railway station Palas, the entry route of the passenger train no. R 8202 (got by SNTFC „CFR Călători” SA) was made wrong.

The investigation report was ended on the 30th of July 2015.

**Direct cause** was the wrong performance of the incoming route of the passenger train no.8202.

**Contributing factors:**

Establishment of the running of the passenger trains no.8202 and no.17824 (light locomotive) without correlating the information between the disposing station movements inspectors from the railway stations Constanța and Palas.

**Underlying causes:**

Non-meeting with the dispatching, respectively the accepting of the trains, sent by traffic controller operator, in writing disposal, to the disposing station movements inspectors from the railway stations Constanța and Palas, infringing the provisions of art.263 point (5) and of art.254 point (8) from the Regulations for the train running and shunting of of the railway vehicles no.005-2005.

**Root causes:** none.

**Safety recommendations:** none.

- 3.4.44. Railway incident happened on the 6th/7th of August 2015, in the branch of the Railway County Galați, track section Iași-Barboși (non-electrified single-track line), a piece from the locomotive DA 1324, hauling the passenger train IR no. 1962/1961-1, got by the railway passenger undertaking SNTFC „CFR Călători” SA, hit 15 track magnets between Scânteia-Berheci and 11 track magnets between Liești-Barboși. The investigation report was ended on the 12th of October 2015.

**Direct cause** was the incidental breakage of the suspension horn guide levers from the 2nd bogie, left side in running direction, it leading to the fall of the suspension beam on the track magnet support and its pulling out from the fastening screws.

**Contributing factors:**

-unsuitable welding made at the reconditioning of the first lever of the suspension horn guide, running direction, at the connection area (about 20 % from the surface un-covered by the welding flux);

-old crack at the connection of the second lever for the support of the suspension horn guide, running direction ( about 42% from the breakage section), non-identified at the inspections within the technological process, specified in the Technological sheet M14, drawn up by Romanian Railway Register, because its position and fastening, as well as because it does not stipulate the inspection by removal of the horn guide than at repairs type RR, RG or RK.

**Underlying causes:** none.

**Root cause:** none.

**Safety recommendations:** none.

- 3.4.45. Railway incident happened on the 8<sup>th</sup> of September 2015, at 03:48 o'clock, in the branch of the Railway County Brașov, in the railway station Coșlariu, the passenger train no. 2412-1 (got by SNTFC „CFR Călători” SA) passed the route signal XP4B in stop position, with red position - „Stop without passing the signal in stop position!”. The investigation report was ended on the 28th of September 2015.

**Direct cause** was the non-meeting with the position ”STOP without passing the signal in stop position!” of the route signal XP4B from the railway station, that was on red position to the train and the passing of the signal in stop position without having the permission.

**Contributing factors:** none.

**Underlying causes:**

-infringement of the provisions of the Regulations for railway technical operation no.002/2001, art.59 (4) – ”It is forbidden to pass a signal in stop position or to exceed the speed ordered by the signal”;

-infringement of the provisions from the Signaling Regulations no.004/2006, art.161 (2) – concerning the meeting with the position of the entry, exit route and branch identification plates.



”this identification plate (white rectangular plate with a red strip in its middle – n.n.) indicates that the respective light signal, if is in stop position, can not be passed by the train than in the conditions established by this regulations”.

**Root cause:** none.

**Safety recommendations:** none.

3.4.46. Railway incident happened on the 2nd of October 2015, at 10:05 o'clock, in the branch of the Railway County București, in the railway station Buftea, the entry route of the passenger train no.5003 in the railway station (got SNTFC „CFR Călători” SA) was made wrong.

The investigation report was ended on the 26th of October 2015.

**Direct cause** was the wrong switching over of the entry route in the railway station for the passenger train no.5003, that is the switch no.1 was not operated on the suitable position.

**Underlying cause:**

Infringement of the provisions from the chapter IV, art.20, lit.B of the Provisions for the performance of the semester inspections of the point motors, shoe and movable frog, switch rods, and switches no.I.2/422/04.07.2015, that is the switch joined with the switch whose point motor is out of service, be operated and ensured on the position suitable to the route that has to be made.

**Root cause:** none.

**Safety recommendations:** none.

3.4.47. Railway incident happened on the 3rd of October 2015, at 05:35 o'clock, in the branch of the Railway County Constanța, in the railway station Saligny Est, the driver put in motion the freight train no.50412-1 (got by SC UNICOM TRANZIT SA) in the direction opposite to the running direction

The investigation report was ended on the 21st of October 2015.

**Direct cause** was the non-securing the train against the run-away with the handbrakes of the wagons, according to the braking sheet.

**Contributing factors:**

-non-securing the locomotive with the handbrake and straight air brake;

-accidental loosening of the straight air brake FD1 of the locomotive.

**Underlying causes:**

The train has to be secured with the automatic brake of the wagons, with straight air brake and handbrake of the locomotive, according to the provisions of art 80 point 1 letter a of the Regulations for hauling and braking no. 006/2005;

The continuity test had to be performed with handbrakes applied according to the braking sheet. These are released only after the performance of the continuity test and applying the service brake, according to the provisions of art 80 point 2 from the Regulations for hauling and braking no. 006/2005.

**Root cause:** none.

**Safety recommendations:** none.

3.4.48. Railway incident happened on the 12th of October 2015, at 11:10 o'clock, In the branch of the Railway County București, between the railway stations Chiajna and Grădinari, track II, km.10+900, the passenger train no.1691, got by the railway undertaking SNTFC „CFR Călători” SA, hit the boom of the crane from the small wagon of the gang car 018, got by the track section L1 București, being in the structure clearance.

The investigation report was ended on the 2nd of November 2015.

**Direct cause** was the boom of the crane from the small wagon of the gang car, performing specific track works, entered in the structure clearance.

**Contributing factors:** none.

**Underlying causes:**

Infringement of the next provisions included in the railway regulations and on instructions:

-lack of inspections and securing of the structure clearance, contrarily the Regulations for the train running and railway vehicle shunting no.005/2005, art.12;

-lack of inspection of the structure clearance according to the Regulations for railway technical operation 002/2001,2nd Section art.26 point 1;

-lack of signals for the work site with white pallets with three horizontal blue stripes, according to the Signaling Regulations no.004/2006, art.115 and of the Regulations for railway technical operation 002/2001,Section 3, art.144 point 1 ;

-lack of signaling agents, equipped with signaling supplies, necessary to withdraw soon the workers from the line area and that meet with the provisions for the line closing, if the workers can not be taken out of the work site, because the ground conditions (curves) according to the Own instructions for work security and health on railway infrastructure /2008;

-lack of ensuring the withdrawal from the line gauge of the staff, as well as of the vehicles, tools and materials in case a vehicle brings near and the approval to resume the work only after being sure that on the respective line another vehicle was to run according to the Own instructions for work security and health on railway infrastructure /2008;

**Root cause:** none.

**Safety recommendations:** none.

### 3.5 Accidents and incidents investigated in the last 5 years

#### Investigations performed between 2011-2015:

Investigated accidents (1)			2012	2013	2014	2015	TOTAL
Accidents (Art.19, 1 + 2)	Train collisions	2	-	-	1	1	4
	Collisions between trains and obstacles	-	-	-	-	-	-
	Train derailments	19	20	18	16	16	89
	Level crossing accidents	-	1	-	1	1	3
	Person accidents generated by the rolling stock in motion	-	-	-	-	-	-
	Rolling stock fires	15	2	4	1	3	25
	Accidents involving dangerous goods	-	-	-	-	-	-
Other accidents (Art.21.6)	Train collisions	-	-	-	-	-	-
	Collisions between trains and obstacles	-	-	-	-	-	-
	Train derailments	-	-	-	-	-	-
	Level crossing accidents	-	-	-	-	-	-
	Person accidents generated by the rolling stock in motion	-	-	-	-	-	-
	Rolling stock fires	-	-	-	-	-	-
	Accidents involving dangerous goods	-	-	-	-	-	-
Incidents	29 <sup>(2)</sup>	16 <sup>(3)</sup>	17	20	26 <sup>(3)</sup>	108	
TOTAL	65	39	39	39	47	229	

(1) one took into account the year of the investigation ending;

(2) one ended also a structural subsystem failure, not-included in the total number of the incidents ended in 2011;

(3) one ended also a failure of a interoperability constituent, not-included in the total number of the incidents ended in 2012.

## 4 RECOMMENDATIONS

### 4.1. Brief revision and presentation of the recommendations issued in 2015

Through the issued recommendations, Romanian Railway Investigating Agency aimed to improve the railway safety and to prevent the accidents.

No	Involved train/ rolling stock		Place of the railway event			Date of the report ending	Type of railway event	
	No. of train	Type of train	Occurrence site	Occurrence date	Hour		8	9
0	1	2	3	4	5	7		
1.	88396	working	Constanța Mărfuri- Palas	14.03.2014	12:50	20.01.2015	<b>accident</b>	Derailme nt of an axle of the gang car
		In the running of the working train no. 88396, consisting in the gang car DC 135L-007, got by the Track section L2 Megidia, in the branch of the Railway County Constanta, between the railway stations Palas and Constanta Marfuri, non-interoperable track section, managed by SC Grup Feroviar S.A, km 0+950, happened the derailment of the first axle, in the running direction.						
		Recommendations issued	2	A. The development of a railway norm for the gang cars referring to: - types of inspections and planned repairs; - time norms to perform the inspections and planned repairs; - minim works performed during the inspections and planned repairs;				
				B. The revision of the Technical Specification for the inspection of the gang car DC 135 L by the correlation with NF 67-007:2012.				
Recommendations in implementation process (opened)	2	Until the drawing up of the report, no answer was received from Romanian Railway Safety Authority concerning the level and way of implementation of those two safety recommendations issued following the investigation of that railway accident.						
2.	9612	passenger	Timișoara Nord	07.05.2014	07:20	16.02.2015	<b>accident</b>	Derailme nt of an axle of a DMU
		The right wheel of the first axle of the passenger train no. 9612, consisting in the DMU AM 979, got by the railway passenger undertaking SNTFC "CFR Călători" SA, running in the branch of the Railway County Timisoara, in the railway station Timisoara Nord derailed.						



		Recommendations issued	4	<p><b>A.</b> Review of regulation framework on ultrasonic control at axles of DMU series 900s, so be clearly established:</p> <ul style="list-style-type: none"> <li>- inspections / planned repairs when performing ultrasonic control;</li> <li>- the time interval / km for ultrasonic control;</li> <li>- company and employees that perform the ultrasonic control.</li> </ul> <p>The revised regulatory framework will be made in accordance with the provisions:</p> <ul style="list-style-type: none"> <li>- Minister of Transports' Order no. 1359/2012 amending and supplementing the Railway Norm "Railway Vehicles. Types of inspections and planned repairs. Time or km norm for the performance of maintenance and planned repairs", approved by Minister of Transports' Order no. 315/2011;</li> <li>- Instructions for ultrasonic control of DMUs axles - developed by ICPTT in 1975;</li> <li>- Instructions for the repair of wheelsets of railway vehicles no. 931/1986.</li> </ul>				
				<p><b>B.</b> The establishing of the technical operating conditions relating to the maximum accepted difference between the diameters of running treads wheels from the wheelsets of two-axled DMUs series 900, equipped with Volvo Penta engine and Allison automatic gearbox, if they are used coupled in multiple command.</p>				
				<p><b>C.</b> Establishment and implementation of a database enabling the identification of the traceability of the axles from the DMUs.</p>				
				<p><b>D.</b> Development of regulations for the way to perform ultrasonic control at the axles from the DMUs type LVT series 79.</p>				
		Recommendations in implementation process (opened)	2	Romanian Railway Safety Authority, through the answer from the paper no.2010/541/03.07.2015 informed that for the first and second safety recommendations, issued following the investigation of this accident (recommendations <b>A.</b> and <b>B.</b> ) took measures for implementation.				
		Recommendations non-implemented (closed)	2	Romanian Railway Safety Authority, through the answer from the paper no.2010/126/20.02.2015 informed that the second and fourth safety recommendations issued following the investigation of this accident, can not be met ( <b>C.</b> și <b>D.</b> )				
3.	Cotești	freight + Heavy track vehicles	Cotești	02.08.2014	05:25	31.03.2015	<b>Serious accident</b>	Serious collision between a freight train and a group of heavy track vehicles
The freight train no. 89401, got by SC TRANSFEROVIAR GRUP SA , running in the branch of the Railway County Galați, in the railway station Cotești, passed the entry signal X in stop position, followed by the serious collision with a group of heavy track vehicles, got by SIMC Buzău, that were parked.								

		Recommendations issued	3	<p><b>A.</b> To perform an audit at the freight operator SC Transferoviar Group SA for assessing the necessary resources for the monitoring and application of the measures for the control of the risks associated with railway processes, which should have the following objectives:</p> <ul style="list-style-type: none"> <li>- effectiveness of the measures that were taken by the management of railway freight undertaking to eliminate cases of exceeding of the regulated duty, recorded both, before and after the serious railway accident;</li> <li>- how is done the verification of the status of the safety and vigilance equipment and of the automatic control installation of the train and the measures set to control the cases of unjustified isolation of these installations.</li> </ul> <p><b>B.</b> Analysis by SC Transferoviar Group SA of the opportunity to introduce the procedure code PP-6.2 "Human resources assurance" of a new criterion referring to the professional record, at the employment activity, in order to ensure a proper staffing structure adequate to the professionalism and responsibility requirements required by the traffic safety activity.</p> <p><b>C.</b> Identification and assessment by the Railway Company "CFR" SA of the interface risks introduced by changing the activity of movement and shunting in the conditions of the repair works performance at the railway infrastructure, which require the introduction of speed restrictions or closure of railway traffic.</p>				
		Recommendation implemented <b>(closed)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no.2010/532/03.07.2015 notified about the implementation of the first safety recommendation ( <b>A.</b> ) issued following the investigation of this railway accident.				
		Recommendations in implementation process <b>(opened)</b>	2	Romanian Railway Safety Authority, through the answer from the paper no. 2010/532/03.07.2015 notified that for the second and third safety recommendations , issued following the investigation of this accident (recommendations <b>B. and C.</b> ) took measures for implementation.				
4.	51713-2	Fright	Izvoru Mureşului - Voşlobeni	22.08.2014	00:05	09.03.2015	<b>accident</b>	Derailment of an axle of a locomotive
The 6 <sup>th</sup> axle of the banking locomotive EA 572 from the freight train no.51713-2, (got by the railway undertaking SNTFM „CFR MARFĂ” SA), ran in the branch of the Railway County Braşov, railway stations Izvoru Mureşului and Voşlobeni, km.138+200, derailed.								

		Recommendations issued	1	<p><b>A.</b> As was mentioned in Chap. C.5.2. <i>Safety management system</i>, the common document through which was set the action common method in the case of railway accident occurrence „Unitary management of the participants forces at the intervention in the case of accidents on the railway tracks”, part of the own safety management system as administrator of the public railway infrastructure, is not agreed with the Transport Regulation on the Railways from Romania, approved by the Government Decision no. 7/2005 and the Law no. 115/2006 and with the Investigation Regulation, approved by HG no. 117/2010.</p> <p>Regarding this fact, the investigation commission considers necessary the implementing of the following safety recommendation:</p> <p>CNCF „CFR” SA, as public railway infrastructure administrator, together with the other parties which act in the case of railways accident and incident occurrences (transport operators, public institutions and emergency public services) will modify and update the common document „Unitary management of the participant forces in the case of accidents on the railway track”, part of the own safety management system, so that:</p> <ul style="list-style-type: none"> <li>▪ to be mentioned the fact that, the notification of the railway accidents/incidents to be made according to the provisions from the Investigation Regulation;</li> <li>▪ to be foreseen the obligations of the public railway infrastructure administrator to assure “a transport service for passengers and luggage with other vehicles, on this expenses, until the destination or to the first connection point to continue the journey with the train”, as set in Art. 10, paragraph (8) from the Transport Regulation on the Railways from Romania, approved by the Government Decision no. 7/20.01.2005 and the Law no. 115/27<sup>th</sup> of April 2006;</li> <li>▪ to be foreseen the obligations of the economic operator’s managements to be taken to eliminate the consequences and to reopen the traffic, as are foreseen in the Investigation Regulation, approved through the Government Decision 117/2010</li> </ul>				
		Recommendation in implementation process <b>(opened)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/522/02.07.2015 notified that for safety recommendation , issued following the investigation of this accident ( <b>A.</b> ) took measures for implementation.				
5.	41755-2	freight	Izvoru Mureşului - Voşlobeni	28.08.2014	07:30	07.05.2015	<b>accident</b>	Derailment of a bogie of a wagon
The first bogie in the running direction of the 16th wagon from the hauling locomotive (loaded with diesel fuel) of the freight train no.41755-2, got by the railway undertaking SNTFM „CFR Marfă” S.A., running in the branch of the Railway County Braşov, between the railway stations Izvoru Mureşului and Voşlobeni, km.138+843, derailed.								

		Safety recommendations	1	<p><b>A.</b> Before the accident, between the railway stations Voşlăbeni and Izvoru Mureşului, periodical repairs with total screening were performed (with heavy track machines) during a period of time with important rainfalls and in a cloked track bed and with excessive humidity, leading to the twisting of the track over the accepted value of maximum 30 km/h and the derailment of a bogie of a wagon.</p> <p>In the special instructions drawn up by the infrastructure manager there are not stipulated preventive measures for the performance of works in these weather and ground conditions.</p> <p>Taking into account the conclusions of the investigation commission, Romanian Railway recommends Romanian Railway Safety Authority to ask the inclusion of the special instructions of the railway infrastructure administrator/manager, in accordance with the provisions of <i>Instruction of norms and tolerances for the track construction and maintenance-lines with standard gauge no. 314/1989</i> of the preventive measures necessary to keep under control the risks afferent to this type of work, corresponding to the weathet and land conditions, characteristic for each working situation.</p>				
		Recommendation non-implemented (closed)	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/521/02.07.2015 notified that the safety recommendation issued following the investigation of this railway accident can not be followed.				
		freight	Băbeni - Popeşti	05.09.2014	23:20	24.06.2015	accident	Derailment of 6 loaded wagons
		In the running of the freight train no.23688, got by the railway undertaking SNTFM „CFR Marfă” S.A, in the branch of the Railway County Craiova, non-interoperable line Băbeni – Alunu, managed by SC RC-CF TRANS SRL Braşov, between the railway stations Băbeni and Popeşti, km.138+843, six wagons, loaded with coal, derailed.						
6.	23688	Safety recommendations	1	<p><b>A.</b>RC- CF TRANS SRL Braşov, as railway infrastructure manager, shall revise the procedures of the safety management system, so through their application, being guaranted the fact that the legal activities for the line maintenance, identification of the risks associated to the railway operations, working out and establishment of the measures for the risk control, as well as the monitoring of the efficiency of the measures for the risk, are made in accordance with the relevent requirements.</p>				
		Recommendation in implementation process (opened)	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/543/06.07.2015 notified that for safety recommendation, issued following the investigation of this accident took measures for implementation.				

7.		passenger + auto	Valea -Seacă	19.09.2014	15:45	24.08.2015	<b>accident</b>	A train hit a road vehicle	
		The passenger train no.1753, got by the railway undertaking SNTFC „CFR Călători” SA, running in the branch of the Railway County Iași, in the railway station Valea Seacă, at the level crossing km 292+055, provided with automatic equipments without half-barriers for the road signaling – type SAT, hit a road vehicle, having as consequences: the death of the auto driver, the death of the train driver and derailment of both bogies of the first wagon of the train.							
		Recommendations issued	1	A The creation of the pilot project, in cooperation with Romanian General Police Inspectorate, for the monitoring of an important number of level crossing (minimum one for each Branch of the Railway County, where repeated railway accidents happened) whose results be used in the identification of some additional measures for the keeping under control the risks associated to the level crossing, that were transposed into the national norms.					
		Recommendations in implementation process <b>(opened)</b>	1	Up to the drawing up of the report, Romanian Railway Safety Authority did not answer on the level and how to implement the safety recommendation issued following the accident investigation					
8.	1691	passenger	Topleț-Băile - Herculane	30.10.2014	17:00	25.08.2015	<b>accident</b>	Derailment of three cars	
		The first three wagons of the passenger train no.1691 (got by the railway undertaking SNTFC „CFR Călători” SA), running in the branch of the Railway County Timișoara, km 400+410, between the railway stations Topleț and Băile Herculane, derailed.							
		Recommendations issued	1	A.Revision of the Instruction for the performance of overhaul track repairs no.302/1986 and its supplement with provisions that make clear: - if for the level crossing submitted to mechanical packing of sleepers and lateral displacement, the the restoration of the carriageway of the road is made by temporary technical solutions, after each packing of sleepers III and lateral displacement III, following that the final solution be carried out after the performance of the packing of sleepers III and lateral displacement III; - if the restoration of the carriageway of the road according to the standards (final solution) has to be made on the same day as the packing of sleepers III and lateral displacement III, or on the next day after the performance of these packing of sleepers and lateral displacement. Inclusion of these stipulations in the technical documents that are drawn up for the performance of the overhaul track repairs.					

		Recommendation non-implemented (closed)	1	Romanian Railway Safety Authority, through the answer from the paper no. 2310/806/17.09.2015 notified that the safety recommendation issued following the investigation of this railway accident can not be followed.					
9.	23815	freight	Merișor-Crevadia	04.11.2014	20:28	09.10.2015	accident	one bogie of a wagon derailed	
		The first bogie of the 4 <sup>th</sup> wagon, from the rear of the freight train no.23815 (got by the railway undertaking SNTFM „CFR Marfă” SA), running in the branch of the Railway County Timișoara, track section Petroșani – Simeria (electrified double-track line), on the track I, km 60+430, between the railway stations Merișor and Crivadia, derailed.							
		Recommendations issued	3	A.Re-analysis of the staff number sizing from the district L6 Bănița, by it relating to the provisions of the Instruction for the maintenance of the lines no. 300/1982.					
				B.Re-analysis of the technical endowments existing both in the Track Maintenance Section L9 Simeria, and at the level of the Branch of the railway county Timișoara.					
Recommendations in implementation process (opened)	3	C. Re-analysis of the regulation framework applicable for the intermediary technical inspections made at the wagons and the introduction of some provisions on the compulsoriness to perform the disassembling and lifting of wagons, including for the wagons with disc-wheels and tyres.							
10.	80450	freight	Orbeni-Faraoani	07.12.2014	23:30	20.11.2015	accident	Fire in a locomotive type DHB	
		In the branch of the Railway County Iași, track section Adjud – Bacău (electrified double-track line), between the railway stations Orbeni and Faraoani, track II, Km. 279+200, started a fire in the cabin of the locomotive DHB 2001, being in the composition of the freight train no.80450 (got by the railway undertaking SC Grup Feroviar Român SA), hauled by the locomotive EA 428.							
		Recommendations issued	2	A.Issuing of provisions on the operation of the condition coupling, in the Instruction for the Operation of diesel-hydraulic locomotives 580 HP, remotorized with engine Diesel Cummins QSX15,in form Power Pack;					
B.Drawing up of a procedure for the implementation of the requirements stipulated in the Regulations (UE) no.1158/2010 on the identification of the risks associated to the railway operations, including those resulted directly from the professional activities, organization of the work or the workload and the activities of other organizations and/or persons;									

		Recommendations in implementation process <b>(opened)</b>	<b>2</b>	Romanian Railway Safety Authority, through the answer from the paper no. 2310/475/28.12.2015 notified that the safety recommendations, issued following the investigation of this incident shall, be taken into account for implementation.				
11.	29920	freight	Pestiș	17.12.2014	19:50	07.12.2015	<b>accident</b>	Derailment of 4 wagons
		The wagons, from the 14 <sup>th</sup> to the 17 <sup>th</sup> , of the freight train no.29920 (got by the railway undertaking SC Cargo Trans Vagon SA), running in the branch of the Railway County Timișoara, track section Simeria – Hunedoara (non-interoperable track section) managed by SC RC-CF TRANS SRL Brașov (electrified single-track line), in the railway station Pestiș, derailed.						
		Recommendations issued	<b>1</b>	A. According to these above mentioned, for the improvement of the railway traffic safety, the investigation commission considers necessary to issue a safety recommendation for Romanian Railway Safety Authority, meaning this has to be sure that the railway infrastructure administrator/managers comply completely with the provisions from the good practice codes, part of documents of the safety management system, on the railway infrastructure maintenance.				
		Recommendation non-implemented <b>(closed)</b>	<b>1</b>	Romanian Railway Safety Authority, through the answer from the paper no. 2310/426/17.09.2015 notified that the safety recommendation issued following the investigation of this railway accident can not be followed.				
12.	80386	Freight	Ploiești Sud	23.12.2014	02:03	25.11.2015	<b>accident</b>	Derailment of 3 wagons
		In the running of the freight train no.80386, got by the railway freight undertaking GRUP FERROVIAR ROMÂN SA, in the branch of the Railway County București, at the exit from the railway station Ploiești Sud, all axles of three wagons derailed.						

		Recommendations issued	1	<p><b>A.</b> With reference to the accident happened in the running of the freight train no.80386, one found out that the breaking of the main leaf of the suspension spring, corresponding to the axle box no.2, of the wagon no.84537850017-5, happened because the fatigue, in the conditions of an unsuitable heating treatment, existing on the faces of the main leaf of the suspension spring pressure concentrators, resulted from the serious roughness of the surface, as well as from the corrosion cavities that increased in the material and led, during the time, at the appearance of some fatigue crack networks.</p> <p>The fatigue crack networks could be identified if the regulation framework had stipulated that the performance of the inspections of the spring for the suspension of the bogies type H in their inaccessible areas, be made at periods of time, thus determined that the appearance of cracks in these areas be identified soon, so the spring breaking be avoided.</p> <p>Taking into account these above mentioned, the investigation commission considers necessary the issuing of a safety recommendation for Romanian Railway Safety Authority – ASFR, that is it be sure that the Safety Management System of the railway freight undertakings contains enough measures for keeping under control the risks consisting in the failure of the parts of the suspensions from the wagons with bogies type H.</p>				
		Recommendation non-implemented <b>(closed)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no. 2310/401/07.12.2015 notified that the safety recommendation issued following the investigation of this railway accident can not be followed.				
13.	60881	freight	Meri	10.01.2015	23:37	19.02.2015	<b>incident</b>	A freight train passed a signal in stop position
Freight train no. 60881, got by the railway undertaking TRANSFEROVIAR GRUP SA, running in the branch of the Railway County Craiova, track section Târgu Jiu – Livezeni (electrified single-track line), in the railway station Meri, passed the exit signal X2 in stop position and forced open the switch no. 2 .								



		Recommendations issued	1	<p><b>A.</b> Also the railway freight undertaking SC Transferoviar Grup SA implemented the safety management system accepted by Romanian Railway Safety Authority, where it identified the risk factors, assessed the associated risks and established measures for their control, the investigation commission found out an increase of the number of the incidents happened in the railway undertaking activity, generated by the passing of signals in stop position, it being the reason for what it considered necessary to issue the next safety recommendations:</p> <p>- re-assessment of the measures proposed for the control of the risk factor „Passing of signals and indicators in stop position”.</p>					
		Recommendation in implementation process <b>(opened)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/157/24.02.2015 notified that the safety recommendation, issued following the investigation of this incident shall be taken into account for implementation.					
14.	2026	passenger	Alba Iulia-Vințu de Jos	20.01.2015	09:50	30.06.2015	<b>incident</b>	A passenger train hit a track vehicle that was in the structure clearance	
		The passenger train no.2026, got by SNTFC „CFR Călători” SA, running in the branch of the Railway County Brașov, track section Teiuș – Vințu de Jos (electrified double-track line), between the railway stations Alba Iulia and Vințu de Jos, on the track I, km. 424+500, hit a track vehicle got by Impresa PIZZAROTTI, that performed rehabilitation on the track II .							
		Recommendations issued	2	<p><b>A.</b>Impresa Pizzarotti SA, as economic operator that performs line rehabilitation, to draw up own regulations concerning the way to send the signals between the signalling agent and vehicle staff that work in the line area, regulations that shall be then notified to the interesting staff.</p> <p><b>B.</b>The actors involved in this incident, to identify all the dangers that can appear in the rehabilitation of the line with an opened track and establishment of measures for the control of the risks corresponding each identified danger, so the passenger and freight transport be performed in safety conditions.</p>					
		Recommendations implemented <b>(closed)</b>	2	Romanian Railway Safety Authority, through the answer from the paper no. 2310/566/05.05.2016,, notified that the safety recommendations, issued following the investigation of this incident, were implemented.					

15.	32152	freight	Șuncuiuș	24.01.2015	05:10	12.08.2015	<b>accident</b>	Fire in a locomotive type DA	
		In the branch of the Railway County Cluj, track section Oradea – Cluj Napoca (non-electrified single-track line), in the railway station Șuncuiuș, a fire burst in the locomotive DA 1086,hauling the freight train no.32152, got by SNTFM „CFR Marfă” SA, .							
		Recommendations issued	2	A.Inclusion in the classifications of scheduled repairs/inspections at the locomotives LDE 2100 hp, of some provisions of preventive replacement of the electric cable for the connection of the batteries no.6 and no.7.					
				B.Inclusion in the audits performed by ASFR, of the analysis of the control of the fire risks at the locomotives LDE 2100 hp.					
		Recommendation non-implemented <b>(closed)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/683/20.08.2015 notified that the safety recommendation (A) issued following the investigation of this railway accident can not be followed.					
Recommendation in implementation process <b>(opened)</b>	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/683/20.08.2015 notified that the safety recommendation (B), issued following the investigation of this incident, shall be taken into account for implementation.							
16.	23686	Freight	Copăceni-Popești Vâlcea	14.02.2015	04:35	05.08.2015	<b>accident</b>	One bogie of a wagon derailed	
		In the running of the freight train no.23686 (got by the railway undertaking SNTFM „CFR Marfă” SA), in the branch of the Railway County Craiova, non-interoperable track section Băbeni-Alunu (non-electrified single-track line, managed SC RC-CF TRANS SRL Brașov), between the railway stations Copăceni and Popești Vâlcea, km. 25+000, the second bogie from the first wagon, in the running direction, derailed.							
		Recommendations issued	1	A.Taking into account the deficiencies in the working out and application of the safety management system, written down in the chapter C.5.2. <i>Safety management system</i> , the investigation commission considers necessary the issuing of a safety recommendation to Romanian Railway Safety Authority to ask RC- CF TRANS SRL Brașov, as railway infrastructure manager, to revise the procedures of the safety management system, so through their application, being guaranteed the fact that the legal activities for the line maintenance, identification of the risks associated to the railway operations, working out and establishment of the measures for the risk control, as well as the monitoring of the efficiency of the measures for the risk, are made in accordance with the relevant requirements.					

		Recommendation in implementation process <b>(opened)</b>	<b>1</b>	Up to the drawing up of the report, Romanian Railway Safety Authority did not answer on the level and how to implement the safety recommendation issued following the accident investigation				
17.	2455	passenger	Drăgășani	17.02.2015	11:10	23.11.2015	Technical failure of an axle journal from the DMU	
		In the running of the passenger train no.2455, got by the railway undertaking SNTFC „CFR Călători” SA, in the branch of the Railway County Craiova, track section Băbeni - Piatra Olt, in the railway station Drăgășani, the axle journal from the axle no. 1 (left side in the running direction) of the DMU AM 917, broke.						
		Recommendations issued	<b>2</b>	<p><b>A.</b>The supplier of the railway critical services SC „CFR-SCRL Brașov” SA shall revise the reference document used for the planned inspections made at the diesel multiple units series 700-900-1000, so it be put in line with the provisions and regulations existing for the ultrasonic inspection of the axles of the diesel multiple units. In this respect, the reference document shall contain clear provisions on the periodicity and place where the ultrasonic inspection of these axles is made.</p> <p><b>B.</b>The regulation framework applicable to the activities of inspection/repair at the diesel multiple units has enough provisions in order to guarantee that:</p> <ul style="list-style-type: none"> <li>▪ economic operators that supply this type of services use the technical equipment necessary to perform all the activities stipulated in the applicable reference documents;</li> <li>▪ monitoring of these economic operators is an efficient one.</li> </ul>				
Recommendations implemented <b>(closed)</b>	<b>2</b>	Romanian Railway Safety Authority, through the answer from the paper no. 2310/260/01.03.2016 notified that the safety recommendations, issued following the investigation of this incident, were implemented.						
18.		metro	Metrorex Nicolae Grigorescu	31.05.2015	10:40	22.06.2015	<b>incident</b>	Dispatching of the metro train in another direction
		At SC TMB „METROREX” SA București, the train no. 407 (Bombardier type) was wrong routed by the movements inspector of the station Nicolae Grigorescu, to the station Anghel Saligny instead the station Republica.						

		Recommendations issued	1	A. Revision of the Regulations no.M.06.601/2053/2013 on the performance of the movement in the stations headquarters of interlocking system, with two movements inspectors, stipulating their cooperation obligations.				
		Recommendations implemented (closed)	1	Romanian Railway Safety Authority, through the answer from the paper no. 2310/260/01.03.2016 notified that the safety recommendation, issued following the investigation of this incident, was implemented.				
		freight	Buda	02.06.2015	19:50	(closing of the investigation)08.06.2015	<b>incident</b>	A non-ensured mobile part of a wagon hit the equipments
		In the branch of the Railway County București, track section Ploiești - Brașov (electrified double-track line), in the railway station Buda, a metallic piece from the rolling stock of the freight train no. 80586 (got by the railway undertaking SC GRUP FERROVIAR ROMÂN SA). hit some parts of CED equipment						
		Recommendations issued	1	From the findings done at the wagon no.37807861177-9 resulted that the traffic, even accidentally, of tank wagons with removed nuts from the draw-off cock, exceeding the structure clearance, led to a risk of a railway event, for which we propose Romanian Railway Safety Authority to ask railway undertakings to assess again the risks associated this ensuring way.				
		Recommendation in implementation process (opened)	1	Up to the drawing up of the report, Romanian Railway Safety Authority did not answer on the level and how to implement the safety recommendation issued following the incident investigation				
19.	89965	freight	Palas - Capul Midia	13.03.2015	03:45	07.07.2015	<b>incident</b>	Exceeding of the maximum accepted speed
		In the branch of the Railway County Constanța, <b>between the railway stations Palas and Capul Midia</b> , in the running of the freight train no.89965 (got by the railway undertaking SC Tehnotrans Feroviar SRL), the line maximum speed was exceeded.						

		Recommendations issued	1	A. Members of the investigation commission consider timely to recommend Romanian Railway Safety Authority that it ask railway undertaking to take measures for the awareness of the implications of exceeding the maximum speeds, without excluding the possibility of non-scheduled psychological of the staff.
		Recommendation non-implemented (closed)	1	Romanian Railway Safety Authority, through the answer from the paper no. 2010/625/04.08.2015 notified that the safety recommendation issued following the investigation of this railway accident can not be followed.

**DIRECTOR**  
**Phd. Vasile BELIBOU**