



**Romanian Railway Authority**

**- AFER -**

**Romanian Railway Investigating Body**

**- OIFR -**

**AUTORITATEA FERROVIARĂ ROMÂNĂ**

**- AFER -**

**ANNUAL REPORT**



## Preface to the Report

This report presents the activity carried out by Romanian Railway Investigating Body during the year 2010.

The Romanian Railway Investigation body was established, organized and its functioning according to provisions of Law No:55/16.03.2006 concerning the railway safety (that transposed the Directive 2004/49/CE of European Parliament) and the Government Decision No.1561/01.11.2006 amending and completing Government Decision No.626/1998 on the organization and functioning of Romanian Railway Authority – AFER, being a permanent and independent body within the Romanian Railway Authority – AFER.

The Romanian Railway Investigation body was established to investigate serious rail accidents, its objective being the improvement of railway safety.

Romanian Railway Investigating Body has to investigate the serious railway accidents and can investigate, besides the serious accidents, those accidents and incidents that in conditions little different could lead to serious railway accidents, including the technical failures of the structural subsystems or of the interoperability constituents of European high-speed or conventional railway system, taking into account in its decision the next:

- the gravity of the accident or incident;
- if it is part of a series of accidents or incidents relevant for the whole system;
- its impact on the community railway safety;
- applications of the infrastructure administrators, railway undertakings, Romanian Railway Safety Authority or of other EU member states.

Taking into account the need to regulate how the investigation of Romanian railway accidents and incidents is performed, respectively for the development and improvement of the railway safety and the regulation of the railway accidents investigation monitoring in accordance with the provisions of the Law 55/2006 concerning the railway safety, it was necessary to draw up a Regulations for the investigation of the railway accidents and incidents, for the development and improvement of Romanian railway safety.

In this situation and in accordance with the provisions of the Law no. 55/2006 concerning the railway safety, on the 2<sup>nd</sup> of March 2010 was adopted the Government Decision no. 117 for the approval of the Regulations for the investigation of the railway accidents and incidents, the development and improvement of Romanian railway safety and were cancelled the Minister of Transports Order no. 210 from the 14<sup>th</sup> of March 2000 concerning the approval of the Instructions for the prevention and investigation of the railway accidents and events – 003 and the Minister of Transports, Public Works and Housing no. 1852 from the 11<sup>th</sup> of January 2002 for the approval of the Instructions for the prevention and investigation of the subway railway events and accidents – 003 M.

The regulations for the investigation of the railway accidents and incidents, for the development and improvement of Romanian railway safety cover all the economic operators that carry out railway transports on Romanian network, respectively the public railway infrastructure administrator, non-interoperable railway infrastructure managers, licensed and private railway undertaking, economic operators that own industrial branches or railway vehicles, as well as economic operators that carry out activities connected and adjoining to the railway transport.

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## **1. PRESENTATION OF ROMANIAN RAILWAY INVESTIGATION BODY**

Romanian Railway Investigating Body was established to investigate serious railway accidents, its objective being the improvement of the railway safety and accidents prevention.

Romanian Railway Investigation body was organized and its functioning according to provisions of Law No:55/16.03.2006 concerning the railway safety (that transposed the Directive 2004/49/CE of European Parliament) and the Government Decision No.1561/01.11.2006 amending and completing Government Decision No.626/1998 on the organization and functioning of Romanian Railway Authority – AFER, being a permanent and independent body within the Romanian Railway Authority – AFER.

Romanian Railway Investigating Body has to investigate the serious railway accidents and can investigate, besides the serious accidents, those accidents and incidents that in conditions little different could lead to serious railway accidents, including the technical failures of the structural subsystems or of the interoperability constituents of European high-speed or conventional railway system.

### **1.1 National legislation and the level of the Safety Directive implementation**

The Directive 2004/49/EC of European Parliament and Council was transposed in Romania by the Law 55/16.03.2006 concerning the railway safety that came into force on the 13<sup>th</sup> of April 2006.

Romanian Railway Investigating Body is independent in the organization, legal structure and taking decisions, from any infrastructure administrator, railway undertaking, tariff body, allocation body and notified body, as well as from any part whose interest can conflict with its tasks.

Romanian Railway Investigating Body is independent from functional point of view from Romanian Railway Safety Authority and from any railway regulation authority.

Romanian Railway Investigating Body can carry out also other tasks established by government decision on the investigation of other events than the railway accidents and incidents, if these investigations do not affect its independence.

Romanian Railway Investigating Body carry out its tasks independently of any infrastructure administrator, railway undertaking, tariff body, allocation body and notified body, and has the necessary resources for it, the investigators are complete independent in the carrying out of their tasks.

### **1.2 Role and purpose**

Romanian Railway Investigation Body became operational on the 1st of March 2007.

The intended purpose of the Romanian Railway Investigating Body throughout its investigative actions of the railway accidents and incidents, is the improvement of the railway safety and the prevention of the occurrence of such accidents or incidents.

Through the investigations, Romanian Railway Investigating Body establishes the causes and circumstances occurred of the railway accidents and incidents.

Romanian Railway Investigating Body does not investigate those accidents that are not part of its purpose, respectively to improve the railway safety and to prevent some similar accidents.

The Law no.55/2006 requires that, in the decision regarding the beginning of an investigation action, Romanian Railway Investigating Body must take into account:

- the gravity of the accident or incident;

- if it is part of a series of accidents or incidents relevant for the whole system;
- its impact on the community railway safety;
- applications of the infrastructure administrators, railway undertakings, Romanian Railway Safety Authority or of other EU member states.

Romanian Railway Investigating Body does not investigate:

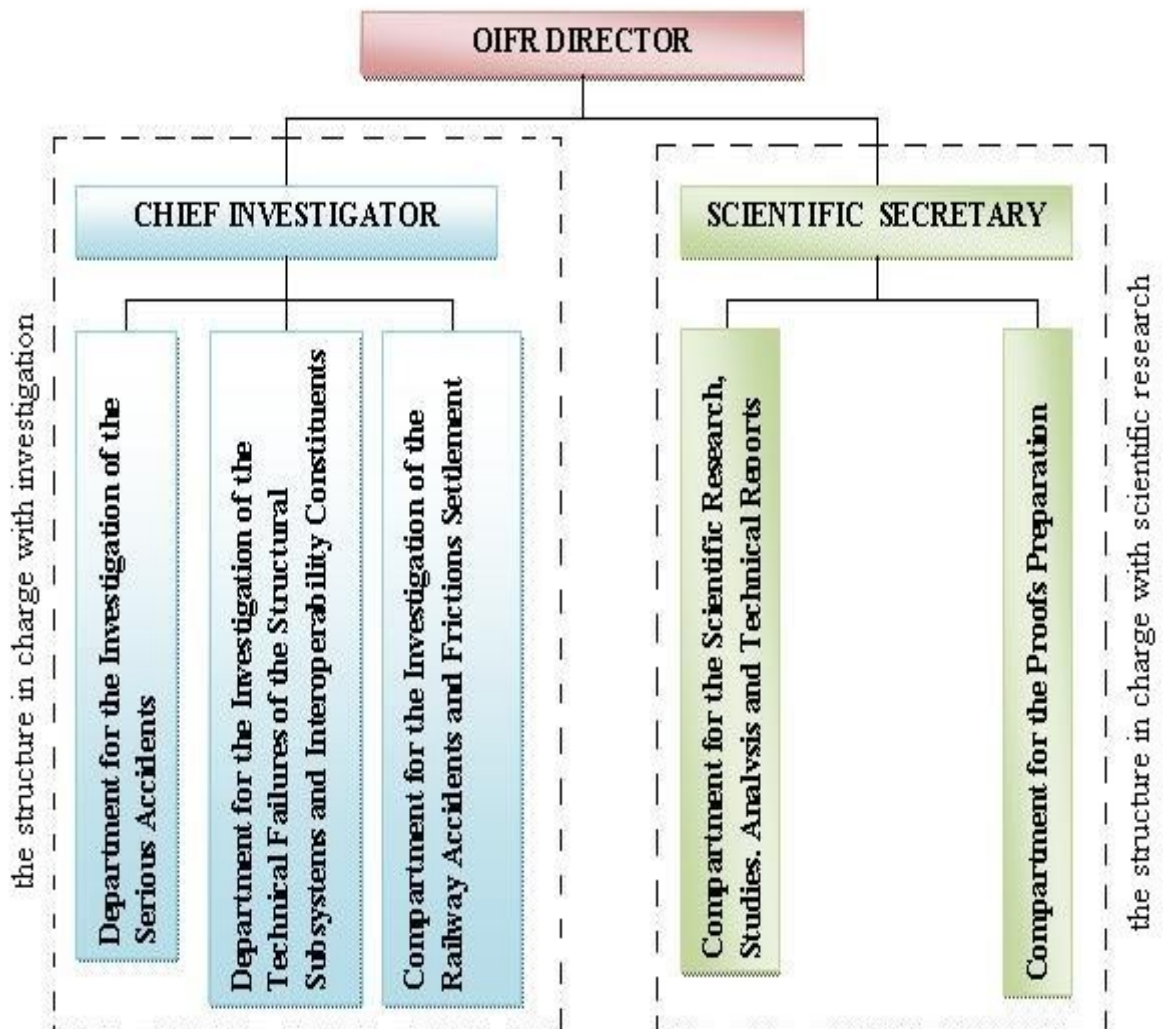
- railway accident/incident that are not relevant for the railway system;
- suicides.

### 1.3 Organization

In March 2010 the Directing Committee of Romanian Railway Investigating Body and AFER Board of Managers approved a new organizational chart of Romanian Railway Investigating Body, this being approved by Order of Minister of Transports and Infrastructure no. 562/27.04.2009.

In 2010 in the structure of Romanian Railway Investigating Body were 21 investigators and 2 psychologists

Organizational structure of Romanian Railway Investigating Body in 2010 was:



The tasks of those two departments subordinated to the chief investigator result from the provisions of the art. 19(1) and art. 19(2) of the Law 55/2006 concerning the railway safety, respectively the investigation of the railway serious accidents and the investigation of those accidents and incidents that in slightly different conditions could lead to serious railway accidents,

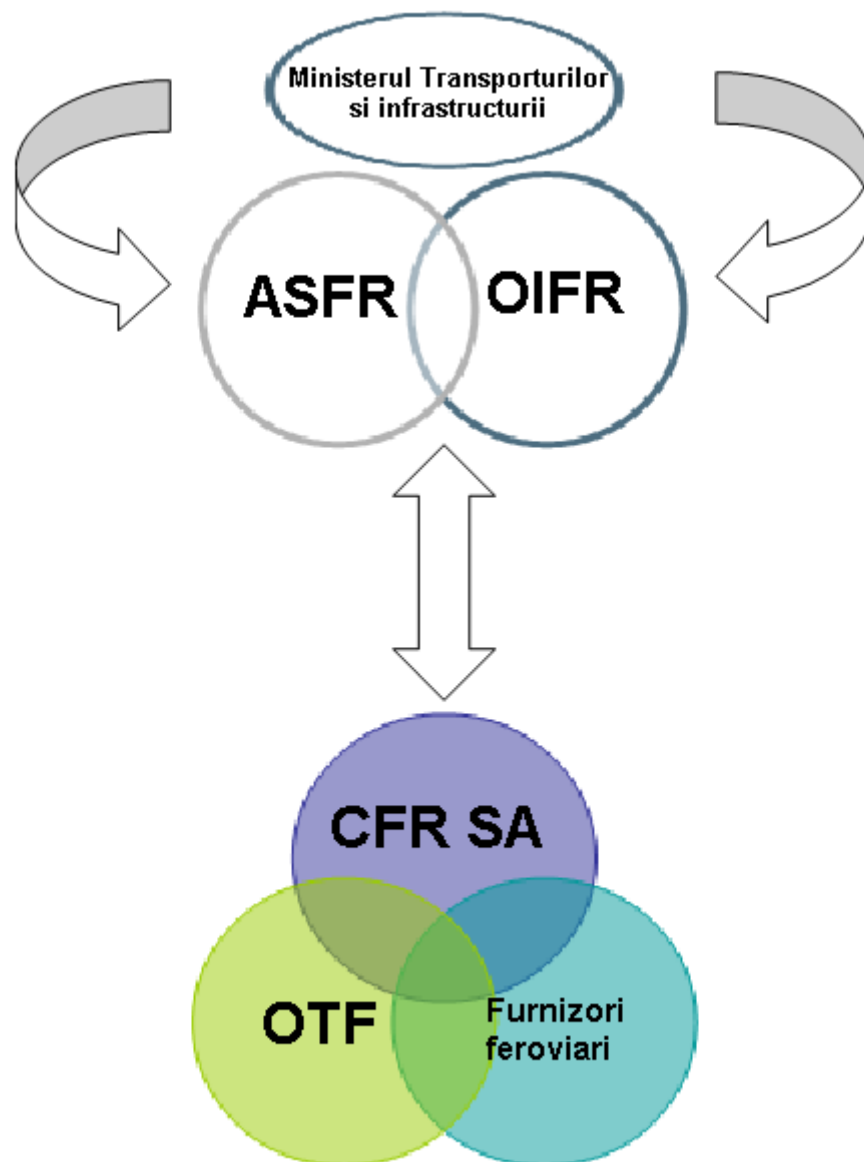
including the technical failures of the structural subsystems or of the interoperability constituents of European high-speed or conventional railway system.

In carrying out the investigative actions may occur situations that need a quick presence of the investigators in distant places, to provide early information on the spot in the shortest time and to take the necessary measures for the identification, keeping and taking of the proofs.

So, in order to achieve the above mentioned tasks, besides the central structure Romanian Railway Investigating Body set up a compartment, subordinated to the chief investigator, with 8 investigators in charge with the territorial structure.

Considering that the investigation of the railway accidents and incidents involves study activities, research, analysis and technical expertise, it was necessary to establish a compartment, to ensure the interface with other technical bodies, that can ensure technical support concerning the scientific research, performance of studies, analysis or reports necessary to find the causes that generated the railway accidents or incidents.

#### 1.4. Organisational flow



## 2. INVESTIGATION PROCESS

The investigation is a performed process 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 .

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

The result of an accident or incident investigation is part 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.

Leading up the investigation report ( the final investigation report) is drawn up 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 undertaking, 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 make comments on the information of the report draft.

If Romanian Railway Investigating Body considers that the opinions and comments are relevant for the investigation, the investigation report is change accordingly.

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

### 2.1 Investigation cases

During 2010 the Romanian Railway Investigating Body, taking into account the severity of the railway accidents/incidents, including technical failures of the structural subsystems of railway products and romanian subway transportation and their impact on the railway safety, according to the provisions of the art. 19(2) of the Law no. 55/2006 concerning the railway safety , considered necessary to start 48 investigative actions.

From these in 2010, **31** investigations were concluded, the last **17** have been concluded during 2011.

In 2010 a number of 5 investigations have been concluded, that have been started during september- december 2009, so that the total number of concluded investigations during 2010 is **36**.

- Investigations started in 2009 and concluded in 2010	= 5	
- Investigations started and concluded in 2010	= 31	
- <u>Investigations started in 2010 and concluded in 2011</u>	<u>= 17</u>	
<b>Total investigations performed in 2010</b>	<b>= 53</b>	
<b>Investigations concluded in 2010</b>	<b>= 36</b>	
- Severe accidents	= 0	
- Accidents	= 14	
• <i>collisions</i>	= 3	
• <i>derailments</i>	= 9	
• <i>fire</i>	= 2	
- <b>incidents</b>	<b>= 22</b>	
- technical failure of the structural subsystems or		

of interoperability constituents

= 0

The publishing deadline of the investigations did not exceed 12 months, stipulated in the Law no. 55/2006, concerning the railway safety and the regulation of accident and incident investigation, development and improvement of railway safety on railways and romanian metro transport network .

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

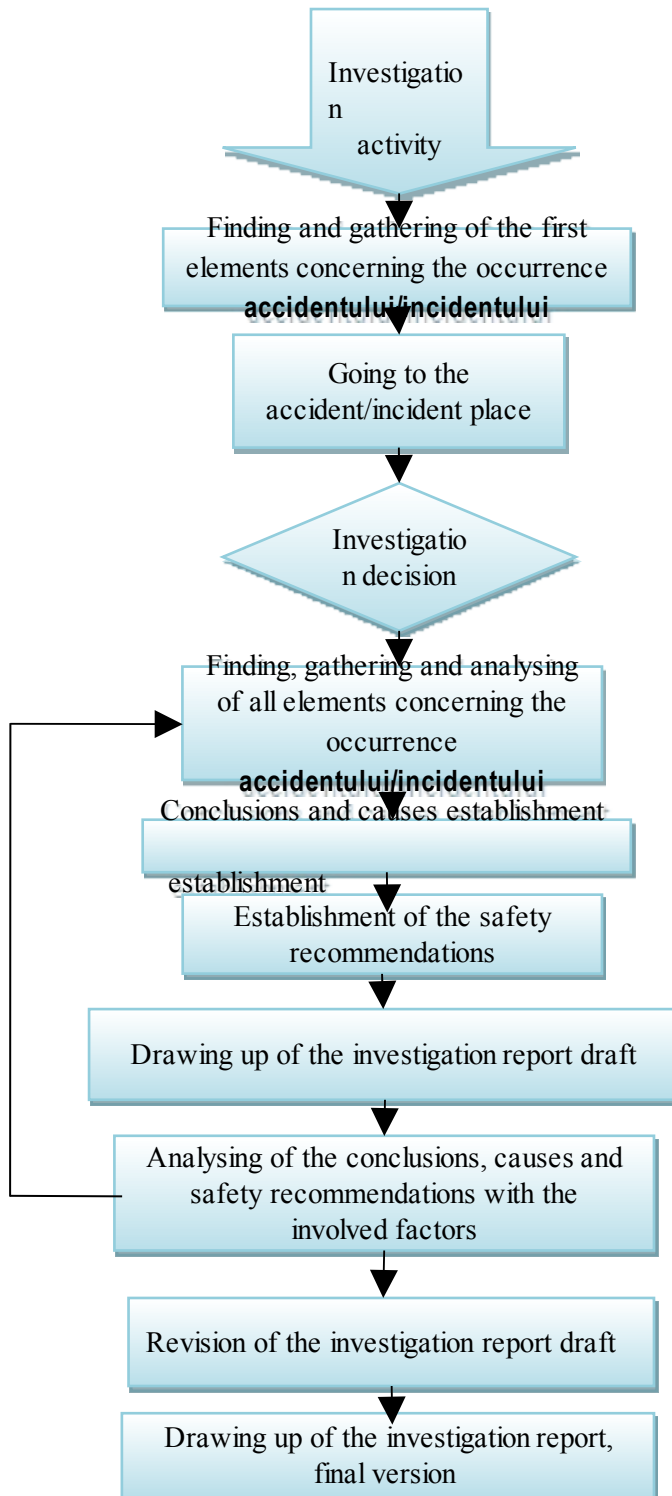
In the investigations Romanian Railway Investigating Body cooperated with the authorities in charge with the legal investigation, as well as with other authorities responsible with the interventions at the accident/incident place.

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 Body can use, if necessary, specialist from related fields.

During 2010 was not necessary to apply the provisions of this article, investigative actions carried no need to call on specialists in related fields.



### 2.3 Investigation process



### 3 INVESTIGATIONS

#### 3.1 General overview of the concluded investigations in 2010 comparative with 2009, identification of the main tendencies.

Type of accidents investigated in 2010	Number of accidents	Number of victims		Damages (lei)	Damages (euro)	The trend compared with 2009
		Deaths	Seriously injured			
Train collisions	3	-	-	368.199,85	13.308,37 €	+300%
Train derailments	9	-	-	1.810.980,73	-	+300%
Rolling stocks fires	2	-	-	173.739,86	-	+200%
<b>TOTAL</b>	<b>14</b>	-	-	<b>2.352.920,44 1</b>	<b>13.308,37 €</b>	<b>+466%</b>
<b>Total damages in euro (about)</b>				<b>568.216,26 €</b>		

#### 3.2. Concluded and started investigations in 2010

In 2010 Romanian Railway Investigating Body concluded and published 36 investigation reports and initiated the investigation for a total of 17 cases, for which investigation actions undertaken were completed in 2011.

In the tabel bellow are shown the investigations and the legal basis for their carrying out, these taking into account the requirements of European Directive concerning the railway safety and the national legislation.

#### Concluded investigations in 2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
1	08.09.2009	In the railway station Ilva Mica in the Branch of Railway County Cluj, a breakage occurred at the axle no.4 of the electric locomotive EA 040-139-2 hauling the passenger train no.18703	i	25.05.2010
2	21.09.2009	On the running line between the railway stations Maracine and Malu Mare, in the Branch of the Railway County Craiova, the locomotive and the first seven coaches of the passenger train no. 1692 derailed	i	24.02.2010
3	17.10.2009	In the Branch of the Railway County Constanta, the running line II between the railway stations Lehliu and Sarulesti, at the km 66+100, there was caught up and hit the freight train no. 93402 by the freight train 93400	i	23.02.2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
4	02.11.2009	In the Branch of the Railway County Cluj, between the railway stations Dealu Ștefăniței – Fiad, at km 28+715, occurred the collision between the light locomotive LDE 60-0720-7 running as passenger train no. 17444 and the passenger train no. 1923 locomotive that was stopped.	i	01.02.2010
5	05.12.2009	In the Branch of the Railway County București, in the railway station CFR Pantelimon, for the passenger train no.8013 wrong route was performed at line 4, line occupied by the passenger train no.18207	i	15.03.2010
6	25.01.2010	The railway accidents occurred between 25th-26th of January 2010 in the running of electric train set type Z 6100: <ul style="list-style-type: none"> <li>▪ the derailment of the passenger train no. 4503, owned by SNTFC „CFR Călători” occurred on 25.01.2010, at 07:30, at km 54+862, between the railway stations Malnaș Băi and Bicsadu Oltului, on the Branch of the Railway County CF Brașov,</li> <li>▪ the derailment of the passenger train no. 5501, owned by SNTFC „CFR Călători” occurred on 26.01.2010, at 05:04, over the switch no. 67 from the end X of the railway station Suceava, on the Branch of the Railway County CF Iași,</li> <li>▪ the derailment of the passenger train no. 4506, owned by SNTFC „CFR Călători” occurred on 26.01.2010, at 14:22, at km 79+422, between the railway stations Sânsimion and Tușnad Sat, on the Branch of the Railway County CF Brașov,</li> </ul>	i	18.03.10
7	07.02.2010	In the Branch of the Railway County București, between the Railway Station Ciocănești and Railway Station Bâldana, at km 26+700, on the running line II, a fire occurred in the coach no. 50532057480-7, of the passenger train no. 9101.	i	08.03.2010
8	18.03.2010	In the Branch of the Railway County Timișoara, between the Railway Station Bănița and Railway Station Merișor, the freight train no.50503 ran 1 km/h over the speed limit of 40 km/h allowed by the line.	i	16.08.2010
9	18.03.2010	In the Branch of the Railway County Timișoara, between the Railway Station Crivadia and Railway Station Merișor, at km 58+916, on the running line I. six coaches of the passenger train	i	23.11.2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
		no.50503 derailed.		
10	07.04.2010	In the Branch of the Railway County Cluj, in the Railway Station Mogoșeni in the passenger train running no.4485, two wagons by one bogie derailed.	i	17.08.2010
11	13.04.2010	In the Branch of the Railway County Timișoara, in the Railway Station Arad, occurred the passenger train dispatched no. 473-2 in another direction than that provided	i	21.06.2010
12	11.05.2010	In the Branch of the Railway County Craiova, in the Railway Station Amaradia, occurred the losing control of the train no.70870-1 with the passing the shunting limit sign between lines 1-2 by the last 13 wagons of the train and trailing the switch.	i	07.06.2010
13	16.05.2010	In the Branch of the Railway County Craiova București, between Railway Stations Valea Larga and Railway Station Sinaia, at km 121+664, the derailment occurred by the first axel in the running direction of locomotive EA 400017 located in the hauling freight train no.24796-1.	I	13.10.2010
14	22.05.2010	In the Branch of the Railway County Constanța the hit of two electrical and metal poles occurred by an opened door of the 8th wagon from the freight train no.60168.	I	01.07.2010
15	28.05.2010	In the Branch of the Railway County Craiova Cluj, în Railway Station Halmeu, the derailment of the first bogie in the running direction of the wagon no.67573287 (wagon owned by the State Administration for Railway Transport of Ukraine - UZ) of freight train no.70728 over the switch no.23 from the end station X.	I	27.07.2010
16	06.06.2010	In the Branch of the Railway County Craiova Iași, between the Railway Station Ruginoasa and Railway Station Târgu Frumos, at km. 25+300 in the running of the train no.17958, composed of the light locomotive DHC 235, a fire took place in the engine cabin.	I	16.07.2010
17	18.07.2010	In the Branch of the Railway County Craiova Brașov, in the Railway Station Aiud, the derailment of the second bogie in the running direction of the wagon no. 84535451255-8 (the 19th century wagon from the locomotive) of freight train no.60133-2, on the sixth switch from the end Y of the Railway Station.	I	10.11.2010
18	20.07.2010	In the Branch of the Railway County Craiova Craiova, between Railway Station Drăgănești Olt and Railway Station Dragomirești, at km	I	20.09.2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
		133+600, the hit of an air tank found in the structure gauge occurred, by the locomotive EA 856, located in the hauling train no. 83598.		
19	25.07.2010	In the Branch of the Railway County Craiova Timișoara, at the freight train no. 60843 crossing through Railway County Căvâran, the pole 53 - 8 was hit by the two right side doors of the wagon no. 33876735501-3.	i	06.09.2010
20	29.07.2010	In the Branch of the Railway County Constanța in the railway station Palas , two loaded wagons of the freight train no 93590 derailed, running to the Railway Station Valul lui Traian direction.	i	20.10.2010
21	01.08.2010	In the Branch of the Railway County Craiova the exceeding of the output signal in Railway Station occurred, by the freight train no.70660 and and filling the current line between Railway Station Bumbești and Railway Station Pârîngu.	i	04.08.2010
22	02.08.2010	In the Branch of the Railway County Timișoara on the interoperable traffic section Timișoara Vest-Cruceni, in curent line at km 37+600 the derailment of the forth axle occurred, from railcar AMX 97-0566-6 which formed the passenger train no.14489.	i	11.10.2010
23	11.08.2010	In the Branch of the Railway County Timișoara, în stația CFR Curtici, at the entry into the station, passing over the crossing with double junction (TJD) no.19/23, occurred the collision of the freight train no.39915 with the moving locomotive EA 40-0167-3, occurred the derailment of the all locomotive axels EA 91-53-0-478-001-7 located in the hauling train no. 39915.	i	17.12.2010
24	16.08.2010	In the Branch of the Railway County Timișoara, în Railway Station CFR Baru Mare the train no 27699 passed the signal X2 (exit) on its forbidden indication, to Simeria, and the train engaged on the 6th passing track.	i	09.09.2010
25	24.08.2010	In the Branch of the Railway County București, between Railway Station CFR Sărulești and Railway Station Fundulea, on the monitoring wire II , at km 46+300, occurred the electrical clearance and hitting the passing train no.680 by an equipment belonging to SC ASTALDI SPA Italia.	i	06.09.2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
26	31.08.2010	In the Branch of the Railway County Timișoara, in the railway station Timișoara Nord occurred the penetrating section wrong route of the passenger train no. 2027-2, hauled with the electric locomotive, to a non-electric line instead of an electrified line.	i	06.09.2010
27	11.09.2010	In the Branch of the Railway County Galați, between the railway stations Moinești-Comănești the hitting of the field magnet of 1000 Hz of the running signal PrXM occurred, situated at km 1+980, by the guard of the second axle from the first bogie of wagon no. 885378861417 from the freight train composition no. 50578.	i	11.10.2010
28	29.09.2010	On the subway network, in the station Anghel Saligny the metro train TEM 043-011 passed the red signal (indicating to stop), of the fixed buffer stop and hitting the fixed buffer stop.	i	29.10.2010
29	03.10.2010	In the Branch of the Railway County București, in the engine shed Ploiești, occurred the non recommended putting into running of the locomotive EA no. 41-0906-2 from the line no. 5 towards the railway station Ploiești Sud.	i	29.10.2010
30	04.10.2010	In the Branch of the Railway County Galați occurred the running of the freight train no. 51860/51860-1 with actual automatic brake mass less than the required automatic brake mass.	i	29.10.2010
31	14.10.2010	In the Branch of the Railway County Constanța, in the railway station Țândărei occurred the hitting of the railway bridge at km 59+035, and of catenary support poles no. 111, 107 and 102 and of the lighting mast box P 9 (km 58+110), by a lateral door from the wagon no. 31835300072-8, from the freight train composition no. 60144.	i	04.11.2010
32	07.11.2010	In the Branch of the Railway County Cluj, in the Railway Station CFR Salonta Mare the train no.7760 passed the signal XK, indicating „STOP without passing the signal”, passing over TDJ 3/7, trailing the switch no.7.	i	24.11.2010
33	10.11.2010	In the Branch of the Railway County Craiova, when the freight train no. 39568 stopped at direct line II from the railway station Vlădueni occurred the passing of the fouling point between the lines no. 1 and II bursting open the points no. 3.	i	16.12.2010
34	22.11.2010	In the Branch of the Railway County Iași in the	i	07.12.2010

No.	The date of occurrence	Description	Legal basis of the investigation	Concluding date
		railway station Iași, the passenger train no. 6444 was accepted into the station at line 0 C non-electrified instead of line 4, as it was established in the arriving, departure and stabling panel of trains.		
35	30.11.2010	In the Branch of the Railway County Constanța, in Railway Station Bărăganu and Railway Station CFR Fetești at passing the locomotive EA 40 0711-8 hauling the freight train no. 80374-1, when passing the level crossing at km 144+320 occurred the bumping of a concrete slab situated in the structure clearance.	i	22.12.2010
36	04.12.2010	In the Branch of the Railway County Timișoara the losing control of the 4th line occurred at the Railway Station CFR Băile Călacea, group of vehicles formed by 23 wagons and a locomotive bound up with the group of vehicles (belonging of the rail operator SNTFM CFR Marfă SA) and entering of current line between Railway Station Băile Călacea and Railway Station Sânnandrei.	i	24.12.2010

**Legal basis of the investigation:** i= In accordance with Safety Directive ii= Under national law (that covers possible areas excluded through art. 2, paragraph 2 of the Safety Directive), iii= Optional – other criteria (National rules / regulations that Safety Directive does not refer).

### Concluded investigations in 2011

Nr. crt.	Date of occurrence	Description	Legal basis of investigation	Ending date
1	23.08.2010	In the Branch of the Railway County Constanța, between the railway stations Târgușor Dobrogea and Nicolae Bălcescu (km 31+000), a fire started at the locomotive DA 60-0945-0, hauling the freight train no.83972.	i	19.01.2011
2	30.08.2010	In the Branch of the Railway County Timișoara, at the entry in the railway station Livezeni on the deflecting section no.5 of the freight train no.30471-2, when passing the switch 10-18 the first two wagons after the locomotive derailed	i	14.01.2011
3	08.09.2010	On the non-interoperable running section Oravița – Berzovia (managed by SC RC-CF TRANS SRL Brașov), between the railway stations Oravița and Grădinari – Caraș, at km. 45+700, in the train running no. 17360 composed of the locomotive	i	24.02.2011

Nr. crt.	Date of occurrence	Description	Legal basis of investigation	Ending date
		DHC 80-0172-9 first and the locomotive DF 69-004-7 (hailed as inactive locomotive), a fire started at the locomotive DHC 80-0172-9		
4	27.09.2010	In the Branch of the Railway County Braşov, between the railway stations Miercurea Ciuc and Sâncrăieni, at km. 90+530, occurred the collision between the locomotive EA 40-0919-7 (locomotive running as a breakdown train on clodes running line) and the last wagon from the passenger train no. 4504 stopped on current line	i	04.02.2011
5	30.09.2010	In the Branch of the Railway County Constanţa between the Borcea Branch and the railway station Ovidiu, at km. 153+000 occurred a fire in the engine room, traction engine area 4 and 5 of banking locomotive DA 1361 for the train no.53598.	i	02.02.2011
6	15.10.2010	In the Branch of the Railway County Craiova, between the railway stations Popeşti Vâlcea - Copăceni, at km 18+890 and km 21+900 occurred the failure of the infrastructure structural subsystem which had led to the derailment of the first bogie in the running direction from the 10th wagon in the freight train composition no. 23748, respectively the derailment of the first axle of the locomotive DHC 514, hauling the passenger train no. 2835	i	28.03.2011
7	17.10.2010	In the Branch of the Railway County Iaşi, in the railway station Bacău, occurred the collision during hauling of 8 tank wagons loaded by another group of 19 tank wagons loaded	i	22.02.2011
8	02.11.2010	In the Branch of the Railway County Iaşi between the railway stations Bucecea and Vereşti, at km. 13+500 occurred a fire in the engien room of the locomotive DA 60-0965-8, hauling the passenger train no.1555-2	i	20.01.2011
9	06.11.2010	In the Branch of the Railway County Braşov, between the railway stations Făgăraş and Şercaia, in the freight train running no. 21800 (owned by SNTFM "CFR Marfă" SA), the maximum speed established for the train category in the train timetable of 60 km/h, was exceeded.	i	28.01.2011
10	15.11.2010	In the Branch of the Railway County Craiova, in the railway station Gălăteni, by derailment of the second bogie in the running direction of the 3rd wagon in the freight train composition no. 60182-1 on the switch no. 7 from the end X of the railway station.	i	04.04.2011
11	17.11.2010	On the transport network owned by SC METROREX SA pn the running line I between the stations Piaţa Unirii – Timpuri Noi, at km 5+860 occurred the derailment of axle no. 8 from REM 175.	i	03.02.2011



Nr. crt.	Date of occurrence	Description	Legal basis of investigation	Ending date
12	25.11.2010	In the Branch of the Railway County Braşov between the railway stations Voşlăbeni - Chileni occurred the derailment of an axle from the second wagon in the freight train composition no. 39462.	i	14.03.2011
13	07.12.2010	In the railway station Bacău, when backing-into-siding operation of a passenger train from line 3C in technical group, due to the passing of the signal XIII indicating „red-stop without passing the signal”, occurred an incident by the derailment of the first bogie of wagon no. 50532047251-5, the first in the push direction over the switch no. 42.	i	07.03.2011
14	09.12.2010	Between the railway stations Valea Seacă - Bacău, at km 296+750, on the running line I occurred the collision between the service train no. 58911 (low capacity gang car DC no. 1350 -73) and the last wagon (Eacs series, no. 31535483882-5) from the freight train composition no. 55101 (which was stopped in current line at km 296+750), which led to the injury of 7 persons situated in the gang car cabin DC no.1350 -73	i	18.04.2011
15	21.12.2010	The passenger train IC no.376-1 passed the signal XP 1, indicating to stop.	i	27.01.2011
16	24.12.2010	Between the railway stations Chitila-Bucureştii Noi running line II, at km 2+100 occurred a fire at the locomotive DHC 80-0152-1 linked to the train and connected to the brake system as last wagon in the passenger train composition no.3008.	i	21.02.2011
17	31.12.2010	In the running of the freight train no.60760 passing from the running line II Buşteni-Sinaia on the deflecting section 4 with exit on running line II Sinaia-Valea Largă over the switch no.7, occurred the derailment of the first axle from the locomotive EA40-0622-7 hauling the train	i	22.02.2011

**Legal basis of the investigation:** i= In accordance with Safety Directive ii= Under national law (that covers possible areas excluded through art. 2, paragraph 2 of the Safety Directive), iii= Optional – other criteria(National rules / regulations that Safety Directive does not refer).

### 3.3. Research studies (or safety studies) completed or ordered in 2010

#### Studies ended in 2010

Commission date	Study Name (type, location)	Basis for legislation	Additional data

-	„Reliability analysis of the human factor in current economic and social-professional conditions”. The study was established as a safety recommendation within the Investigating report on the serious railway accident on 21.09.2009 between the railway stations Banu Mărăcine and Malu Mare.	i	-
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**Legal basis of the investigation:** i= In accordance with Safety Directive ii= Under national law (that covers possible areas excluded through art. 2, paragraph 2 of the Safety Directive), iii= Optional – other criteria(National rules / regulations that Safety Directive does not refer).

The study was performed by the OIFR psychologists in collaboration with specialised staff within CNCF ”CFR” SA and Social Care Direction of the Ministry of Transport and Infrastructure. By this study, OIFR aims to identify the main problems faced by the railway staff with lines traffic safety responsibilities are dealing with, so that they can work towards a harmonisation between working conditions, professional duties and human physical and psychological possibilities, aiming to increase the reliability of the human factor, with direct influences on improving running safety.

The objective of the study took into account the stress level and the biological and psychological echo of the working conditions actions over the investigated staff and the development of proposals for increasing the reliability of the human factor.

#### Studies ordered in 2010

Commission date	Study Name (type, location)	Basis for legislation	Additional data
-	-	-	-

**Legal basis of the investigation:** i= In accordance with Safety Directive ii= Under national law (that covers possible areas excluded through art. 2, paragraph 2 of the Safety Directive), iii= Optional – other criteria(National rules / regulations that Safety Directive does not refer).

### 3.4 Summary of investigation completed in 2010

During 2010 there were completed a number of 36 investigations and 5 were opened in 2009, the rest of 31 were opened during 2010.

Below is a syntetical situation of the 36 investigation reports completed during 2010.

*3.4.1. The railway incident occurred on 08.09.2009, at 21:47, on the Branch of the Railway County Cluj, in the railway station Ilva Mică, by the derailment of the axle no. 4 from the electric locomotive EA 040-139-2 hauling the passenger train no. 18703.  
The investigation report was completed on 25.05.2010*

#### Direct cause

The direct cause of the railway incident occurrence is exceeding the material fatigue limit of the axle no. 41751.

**Contributing factor** was the big number of stretching – compression cycles that this wheelset was requested during its operation. Thus, from the date that the wheelset was mounted at the locomotive EA 040-139-2 - 12.01.2006, it has traveled a distance of 352.501 km.

**The underlying causes** were not identified.

**The root causes** were not established

**Safety recommendations**

The Romanian Railway Safety Authority together with railway undertakings will analyze the opportunity for, at the wheelsets of the type involved in this accident, after a certain period of operation, the ultrasonic frequency of checks to be increased.

If, after this analysis, it will be determined that it is appropriate to increase the frequency of ultrasonic checks for this type of wheelsets, the Romanian Railway Authority will develop a railway technical norm through which this safety recommendation will be implemented.

3.4.2 *The railway accident occurred on 21.09.2009, around 02:23 o'clock, on the Branch of the Railway County CF Craiova, running section Craiova – Caracal (double line, electrified), between the railway stations Banu Mărăcine and Malu Mare, at km 201+149, on current line II, by the derailment of the hauling locomotive and of the first seven wagons from the passenger train composition no. 1692.*

*The investigation report was completed on 24.02.2010*

**Direct cause** of the accident, was the loss of the wheel tyre lip guidance from the right side of the first axle in the running direction of the locomotive (axle no.1) right to the expansion joint between the track from the right side of the panel with glued isolated joint and the buffer panel from the end of the track section without joints, fact that led to the running of the tyre lip over the head of rail and the falling of this wheel outside the track. This occurred as a result of deliberate action of some (one) unknown and unidentified person/s until completion of the investigation, outside the maintenance/support process of the railway infrastructure elements, removal of the constructive elements of track superstructure related to the right side track (in the train running direction) of the buffer panel body from the track without joints:

- removing the fish plates from the right side joint that make the transition from the panel with glued isolated joint to the buffer panel towards the the end of the track section without joints;
- complete removal of vertical fastenings of the track to the sleepers within the buffer panel on the first 14 sleepers and of the next 4 sleepers only on the right side;
- moving the rail heads within the joint composition under the action of vertical and lateral dynamic loads caused by railway vehicles.

**The underlying causes** were not identified.

**The root causes** were not established

#### **Safety recommendations**

The recipient of the safety recommendations is CNCF "CFR" S.A, as administrator of the public railway infrastructure and the railway undertakings.

The recommendations are directed to address the following issues:

1. Speeding up a program in which to apply with priority the provisions implementation of the Law no.289 of 11.10.2005 on measures for preventing and control of crime in railway transport.
2. Develop a study prepared by the Romanian Railway Authority – AFER and CNCF „CFR” SA together with the railway undertakings on the analysis of the human factor in the current social-professional and economical conditions.
3. Analysis of the possibility of including the counseling and psychotherapy services in the medical services from which the railway staff benefits, to ensure a state of optimal physical and mental health.

3.4.3 *The railway accident occurred on 17.10.2009, around 03:50 o'clock, on the Branch of the Railway County CF Constanța, running section Pasărea – Ciulnița (double line,*

*electrified), between the railway stations Lehliu – Sărulești, at km 66+100, on the running line II, by caught up and hitting the freight train no. 93402 by the freight train no. 93400. The investigation report was completed on 23.02.2010*

#### **Direct cause**

The collision occurred due to the irregular passing of the signal BI 212 turned off (in these conditions the signal was indicating stop) by the freight train no. 93400 followed by the speed increase up to 45 km/h, which resulted in catching up and hitting the freight train no. 93402.

The irregular passing of the signal BI 212 turned off by the freight train no. 93400 has as basis a human error, because:

- the freight train no. 93400 should have stopped in front of the block signal BI 212, that was turned off and in this conditions was indicating stop, without passing it, according to the provisions of art. 89 (1) conjunction with art. 93 (1) of Signalling Regulation no. 004/2006, respectively according to the provisions of art. 129 (3) and (4) of the Instructions for the locomotive staff activity in the railway transport no. 201/2007;
- in the case of stop in front of the block signal BI 212, situation described above, the driver should have waited the time necessary to unbrake and if in this time the indication doesn't change, he must saw that at the signal was a rectangular white landmark, after that he run the train with a speed of maximum 20 km/h until the next signal according to the provisions of art. 89 (2) of the Signalling Regulation no. 004/2006, respectively according to the provisions of art. 132 (b) of the Instructions for the locomotive staff activity in the railway transport no. 201/2007;
- in the above conditions, the driver had to drive with special attention, permanently supervise the line and to adjust the speed according to the visibility distance so that he can immediately stop the train if the track is busy or if he observe signals from the end of another train according to the provisions of art. 28 (9) of the Signalling Regulation no. 004/2006;
- the button "order to pass" was wrongly handled of speed point control equipment according to the provisions of chapter V of the Order 17DA/610 col. 1987 „Instructions on operation, service and maintenance of safety and vigilance and the equipment for the punctual control of the speed (INDUSI), respectively according to the provisions of art. 9 (1) letter „o” of the Instructions for locomotive staff activity in the railway transport no. 201/2007.

#### **Underlying causes**

There weren't identified any underlying causes of this railway accident.

#### **Root causes**

There weren't identified any root causes of this railway accident.

#### **Safety recommendations**

There weren't identified any safety recommendations.

- 3.4.4 *The railway accident occurred on 2nd of November 2009, on the Branch of the Railway County CF Cluj, on the running section Salva - Sighetu Marmației between the railway stations Dealu Ștefăniței – Fiad at km 28+715, by collision between the passenger train no.1923 (situated in stop position due to a technical failure at the hauling locomotive) and the diesel-electric locomotive LDE 60-0720-7 guided as emergency locomotive, running light as train no. 17444.*

*The investigation report was completed on 01.02.2010*

**The direct cause** of the accident – the collision occurred due to the emergency locomotive LDE 60-0720-7 didn't stop at a regular distance of the, running light as train no. 17444, fact that led to the violent collision of the hauling locomotive of the passenger train no. 1923

situated in stop position. The unstop of the locomotive at the regular distance has as basis a human error, because:

- the emergency locomotive LDE 60-0720-7 had to be stopped at km. 28+800 as it was specified in point 1 of the running order no. 2303140 issued by the movement inspector from the railway station Dealu Ștefăniței;
- according to the provisions of art. 115 (3), chapter II of the Instructions for locomotive staff activity in the railway transport no. 201/2007, the locomotive had to be stopped at least 2 meters before the first railway vehicle hauled from the train composition, then the coupling had to be done.

There weren't/y identified any other underlying or root causes of this railway accident.

#### **Safety recommendations**

The recommendations are directed to address the following issues:

- Organizing a training action during the training sessions by the drivers and movement inspectors staff school from the regulations on emergency locomotive running, means of intervention and gang car on closed current line. During practical training sessions, instructors will follow the correct way of learning skills on the coupling the locomotives at the train.
- Agreeing with the provisions on emergency locomotive running, means of intervention and gang car on closed current line of the Regulation for trains running and railway vehicles shunting no. 005/2005, Instructions for locomotive staff activity in the railway transport no. 201/2007 and Regulation for shunting and braking no. 006/2005.

*3.4.5 The railway incident occurred on 05.12.2009, at 13:43, on the Branch of the Railway County CF București, in the railway station Pantelimon, by stopping the passenger train no. 8013 over the switch no. 37 with access to line 4 occupied by the passenger train no. 18207. The investigation report was completed on 15.03.2010*

#### **Direct cause**

The incident occurred as a result of the error entry route for the passenger train no. 8013 at line 4 occupied by the passenger train no. 18207 instead of line III open, and activating the calling-on signal of the route signal XOP of the railway station Pantelimon without checking the line and the entry route.

#### **Underlying causes**

1. When the railway incident occurred there wasn't drawn, distributed and processed by the interested operating staff, the handle instruction for all-relay interlocking of switches and signals with handler and vertical desk operating from 01.12.2009.
2. The operating staff from the railway station Pantelimon wasn't train on how to work and wasn't authorised to handle the equipment of for all-relay interlocking of switches and signals with handler and vertical desk operating from 01.12.2009.

#### **Root cause**

The lack of homologation/agreement for all-relay interlocking of switches and signals with handler and vertical desk operating from 01.12.2009 and its admission to operation by the railway infrastructure manager representative without being authorised prior for operation.

#### **Safety recommendations**

The recommendations are directed to address the following issues:

1. The public railway infrastructure manager, will take all measures to apply the legislation for operational of structural subsystems and interoperability constituents and homologation / agreement of railway critical products. This recommendation was issued also with the railway incident investigation occurred on 16.12.2008 in the railway station Basarabi but no action has been taken to implement the recommendation.

2. The public railway infrastructure manager will comply with the legislation on authorizing the staff responsible for running safety to carry out on honor specific activities to railway transport.
3. Identification within the control actions by the public railway infrastructure manager of:
  - non-homologated/non-agreemented centralized traffic control
  - unauthorised operating staff for handling of equipment (SCB, TTR and IFTE), and application of legal provisions.

3.4.6. *The railway accidents occurred between 25th-26th of January 2010 in the running of electric train set type Z 6100:*

- *the derailment of the passenger train no. 4503, owned by SNTFC „CFR Călători” occurred on 25.01.2010, at 07:30, at km 54+862, between the railway stations Malnaș Băi and Bicsadu Oltului, on the Branch of the Railway County CF Brașov,*
- *the derailment of the passenger train no. 5501, owned by SNTFC „CFR Călători” occurred on 26.01.2010, at 05:04, over the switch no. 67 from the end X of the railway station Suceava, on the Branch of the Railway County CF Iași,*
- *the derailment of the passenger train no. 4506, owned by SNTFC „CFR Călători” occurred on 26.01.2010, at 14:22, at km 79+422, between the railway stations Sânsimion and Tușnad Sat, on the Branch of the Railway County CF Brașov,*

*The investigation report was completed on 18.03.2010*

### **Accidents causes**

#### **Common elements of the 3 derailment cases**

From the data related to the occurrence of the three railway accidents, resulted that in all cases, the derailments showed a number of common elements, as follows:

- they occurred in the passenger trains running formed only by train set type Z 6100;
- the weather conditions at the 3 railway accidents occurrence sites were characterized by low temperatures between -16°C and -29°C;
- they occurred at the first axle of the carrying bogies, by the derailment of the first wheel outside the curve;
- the second wheel of the same axle (first axle) derailed by falling between the lines, due to the derailment of the first wheel;
- the derailments occurred in circular curves with radius between 275 meters and 324 meters;
- there weren't identified failures at line or at the electric units link with the direct cause of the accidents.

#### **Direct cause**

The direct cause of the accidents was the climbing the inner side of the rail of the exterior rail of the curve by the first wheel of the first axle of the carrying bogies, followed by its fall outside the track.

#### **Contributing factors**

Climbing the inner side of the rail from the exterior rail occurred as a result of exceeding the derailment safety limit in the conditions of increasing the guidance force on the first wheel at running on curve.

Increasing the guiding force (horizontal) occurred due to the limited movement performed by the support upper plates on the box on the bogie on the working area from the support side guides on the bogie due to existing ice formations, which could cause blockage of the surfaces in contact from the side guides (the case of the derailment of bogie no. 6 of wagon no.207 from the train set composition no. 007).

Another factor that could cause the increase of the guidance force, but could not actually be identified on the ground, is represented by the melted ice between the surfaces of pin axle coating and bogie bearing casing and ice forming on the surfaces in contact, due to the low

temperatures could lead to the blocking of the relative movement between them and hence to the bogie movement rotation.

#### **Underlying causes**

There weren't identified any underlying causes of this railway accident.

#### **Root causes**

There weren't identified any root causes of this railway accident.

#### **Safety recommendations**

The recipient of the safety recommendations is CNCF "CFR" S.A, as owner of the train set type Z 6100.

The recommendations are directed to address the following issues:

- the identification and implementation of solutions to protect the area between the upper plates for support the frame on the bogie and the side sliders on the bogie, against snow.

As far as the safety recommendation described above will be applied, the safety recommendations proposed by the Romanian Railway Botified Body by the report no. 4110/30/2010, are no longer necessary, referring to:

- forbidding the train running composed of train set type Z 6100 at exterior temperatures below -20<sup>0</sup> C both in stations and during subsequent guidance;
- limiting the running speed at 50 km/h in current line and on direct lines in stations and 15 km/h on deflecting lines in stations where these train sets must run under exterior temperatures between -50 C and -200 C.

3.4.7. *The railway accident occurred on 07.02.2010, around 06:35 o'clock, on the Branch of the Railway County CF București, on running section Chitila – Titu (double line, non-electrified), between the railway stations Ciocănești and Bâldana, at km 26+700, on running line I, by starting a fire in the wagon no. 50532057480-7, in the passenger train composition no. 9101.*

*The investigation report was completed on 08.03.2010*

#### **Direct cause**

Open fire inside the wagon, in the area of compartment no. 9 determined by an external source (flame, cigarette, ignition of combustible materials, etc), independent of the electrical equipments for lighting and heating the wagon.

**Contributing factors** that led to a rapid development and widespread of fire were determined by the rapid air masses movement inside and outside the wagon determined by:

- functioning of the wagon ventilation;
- weather conditions – strong wind (gust of wind up to 43 km/h);
- running of train at a maximum speed of 60 km/h (with influence only in the initial phase).

**The underlying causes** were not identified.

**The root causes** were not established

**There weren't identified any safety recommendations** during the investigation of this railway accident.

3.4.8. *The incident occurred on 18.03.2010 on the Branch of the Railway County Timișoara, on the running section Petroșani-Subcetate (double line electrified), on current line I between the railway stations Bănița and Merișor, by exceeding the maximum speed allowed by the line of 40 km/h in the freight train running 50503 (owned by SC UNIFERTRANS SA București).*

*The investigation report was completed on 16.08.2010*

**The causes of the railway incident** were established as follows

#### **Direct cause**

The non-compliance occurred as a result of a human error in the freight train no. 50503 braking process by operating, with delay, the valve handle KD2 of the locomotive EA 531

to perform the service brake in order to reduce the train speed, without taking into account the time needed for the automatic brake to perform so that the train speed doesn't exceed the maximum speed allowed by the line and that provided in the timetable, leading to the exceeding by +1km of the maximum speed of 40 km/h allowed by the line.

**Contributing factors:** choosing the moment when operating the valve handle KD2 of the locomotive EA 531 to perform the train automatic brake, led to a delayed braking effect, while the train was in the starting period after his departure from the railway station and embark on a stretch of line in slope with a gradient of 17,9 ‰ from the railway station Bănița towards the railway station Merișor, in the running direction of the train 50503.

**The underlying causes** were not identified.

**The root causes** were not established

**There weren't identified any safety recommendations** during the investigation of this railway accident.

*3.4.9. The railway accident occurred on 18.03.2010, at 09:06, on the Branch of the Railway County Timișoara, running section Simeria – Petroșani (double line electrified), between the railway stations Crivadia and Merișor, at km 58+916, on the running line I, by the derailment of 6 wagons from the freight train no. 50503 composition (owned by the railway transport operator SC UNIFERTRANS SA București.*

*The investigation report was completed on 23.11.2010*

#### **Direct cause**

The derailment of axle no.7-8 (first axle) from the first bogie in the running direction of the wagon no. 88536656494-0 (the 5th from the locomotive in the train composition), at km 58+916, by falling of the wheel no. 8 from the right rail (the rail appropriate to the inner side of the curve). This was possible due to the fact that total transversal play in track of this axle exceeded the permissible limits, while the thickness of the first wheel no.7 lip was below the minimum allowable by the Instruction no.250/2005.

**Contributing factors** to this accident were as follows:

- existence of edges and burrs on the active outer side of the wheel no.7;
- pronounced wear of wheels lips on the left side of the wagons in the train running direction, caused by the train running of this railway undertaking, on the section Ploșoru – Episcopia Bihor, in winter 2009 – 2010, in „commute” system, without being changed the train composition.
- Pronounced wears on the buffer plates from the wagons no. 88536656494-0 and no. 88536657723-2, which led to appear at the running in curve of a very strong friction between them;
- high axle load discharge of the first axle (axle corresponding to wheels 7 – 8) from this wagon under the behaviour conditions of wagons no. 88536656494-0 and no. 88536657723-2 as a rigid (because of the recorded above) and performing a service brake on a line section in curve and slope with a gradient of 15,3‰.

#### **Underlying cause**

Nonobservance of the mandatory checks and works to be provided by the wagon technical inspector within the technical inspection at the train composition no. 50503 on 18.03.2010, which has resulted in the failure to identify the defects at the first wheel no. 7 of wagon no. 88536656494-0, defects imposing the removal of the wagon from the train composition.

#### **Root cause**

Lack of regulation to establish the periodic lubrication of the buffer plates from the freight wagons in the range between two periodical repairs.

#### **Safety recommendations**



- Perform by the Romanian Railway Safety Authority of an inspection at the railway freight transport operators, through which to examine the organization mode and verification activities of freight wagons technical state that are included in their own trains.

After completing this action, The Romanian Railway Safety Authority, will propose measures to remedy the lack of conformities.

- The Romanian Railway Safety Authority together with the railway undertakings will consider that, to reduce the frictions between the buffer plates of the freight wagons during running, they will be periodically lubricated.

If, after this analysis, it will be determined that it is appropriate to lubricate the freight wagons buffer plates, the Romanian Railway Safety Authority update the Instructions for wagons technical checking and maintenance in traffic no. 250 approved by Order of the Minister of Transports, Constructions and Tourism no. 1817 on 26.10.2005.

- 3.4.10. *The railway accident occurred on 07th of April 2010 in the running passenger train no. 4485, by the derailment of two wagons of one bogie, in the railway station Mogoşeni, the Branch of the Railway County Cluj.  
The investigation report was completed on 17.08.2010*

#### **Direct cause**

Entering the left wheel of the first axle, in the running direction, of wagon n0. 505320476896 (the 2nd from the locomotive) in the space between the side surface of the rail head of the curved stock rail and side surface of the connecting rail from the left side of the direct line of the switch no. 5 due to the failure of the metal plate welding, entrance and lateral movement of it in the sleeper body, in conjunction with the deformation of the coach screws to fix the metal plate on the sleeper, followed by the fall of this wheel inside the track.

#### **Contributing factors**

Braking the metal plate by the welding failure due to the guidance force on the first axle, at running on curve, in conjunction with failure of the metal plate vertical fastenings on the timber sleeper.

Increase of the guidance force (horizontal) occurred due to the train braking to enter the deflecting section of switch no. 5;

Failure of the vertical fastenings in the timber sleeper body occurred due to the:

- braking of the weld seam within the plate construction, the weld seam was under the curved stock rail boom
- reduce of the lateral resistance exercised by the metal plate fastening element on the timber sleeper, due to the plate cutting.

#### **Underlying causes**

- execution of a non-corresponding welding at the construction of the metal plate on the timber sleeper of the curved stock rail and the point switch in the curved stock rail joint area.
- exceeding the instructional time for replacing the special sleepers non-corresponding from the switches.
- Non-corresponding impregnation of timber sleepers together with the non-observance of the reception conditions of the critical railway service of impregnation.

**Root causes** were not identified.

#### **Safety recommendations**

- Checking within the VPA works and of constructive weldings integrity of special metal plates for fixing the point switches and stock rail;

- For situations in which the instructional time to replace the non-corresponding sleepers reviewed within the switches is not respected, the management of the Railway County CF Cluj with Lines Department within CNCF „CFR” SA accord, will establish running conditions for each case by.
- The Romanian Railway Safety Authority will check by state inspections how the providers of the critical railway service „protection with chemicals of timber products (sleepers and duplicates)” meet the technological processes of preparation for preservation (impregnation), preservation and verification of preserved sleepers quality. After completion of the action, the Romanian Railway Safety Authority will send to the Romanian Railway Notified Body the report on non-conformities found and the measures disposed to be taken to eliminate them.
- CNCF ”CFR” SA will organize training courses for staff with competences on how to assess the sleepers defects and how to conduct the census of non-corresponding sleepers.
- CNCF „CFR” SA will assess how to receive the preserved timber sleepers, and to manage the documents on quality certification of the supplied materials, documents that must accompany the product until the direct user, to the line maintenance district.
- The Romanian Railway Notified Body shall verify by technical inspection the compliance of the critical railway service providers of protection with chemicals of timber sleepers, of norms and mandatory technical and technological requirements specific for this critical railway service.

*3.4.11. The railway incident occurred on 13.04.2010, at 01:06, on the Branch of the Railway County Timișoara, in the railway station Arad, by dispatching the passenger train no. 473-2 in another running direction than the one provided, namely in the running direction of Aradul Nou instead of Glogovăț, by passing the switch no. 53 which gave access to the running direction of Aradul Nou.*

#### **Direct cause**

The railway incident occurred due to the human error in the dispatch process of the train no. 473-2 in another running direction (Aradul Nou instead of Glogovăț), by:

- Execution of the exit route in another running direction and non-observance on the display of the ordered direction;
- Giving the signal “train start”, without checking the direction indicated.

#### **Contributing factors**

The human error consists of moving the train from line 1A1 from the railway station Arad in the running direction Aradul Nou, without checking and ensuring that the direction indicator was indicating running direction established on the timetable for the train 473-2, followed by the passing of the switch no. 53 which gave access to the running direction of Aradul Nou.

**The underlying causes** were not identified.

**The root causes** were not established

**The safety recommendations** were't issued.

*The investigation report was completed on 21.06.2010*

*3.4.12. The railway incident occurred on 11.05.2010, on the Branch of the Railway County CF Craiova, in the railway station Amaradia, by losing control of the train no. 70870-1, passing the safety mark between lines 1 and 2 by 13 wagons from the end of the train and trailing the switch no 7 from the railway station .*

*The investigation report was completed on 07.06.2010*

#### **Direct cause**

The incident occurred due to a human error consisting of maintain the train in place during the stop in the station, performed only by direct brake of the locomotive, without using the automatic brake and without the locomotive and train hand brake.

### Underlying causes

- Perform by the locomotive staff of the duty continuously for 24h and 30 min., without rest from the entry into service until the time of the incident, achieved by the driver non-request of a exchange team after 9 hours, hauling the train 70 668 on the distance Arad – Tg. Jiu for 11 h and 25 min, failure to rest for 4 h and 15 min, fictional co-signed on the timetable and continue the service ( 8 h și 27 min) from 16:20 until 00:57 when the incident occurred.
- No rest period at section end and the extra effort to cope the tasks after the optimum activity hours ( the first 6-8 hours) led to accumulation of tiredness, predisposing to the occurrence of errors at the action level based on rules.

**The root causes** were not established

**The safety recommendations** were't issued.

*3.4.13. The railway accident ocured on 16.05.2010, at 23:45, on the Branch of the Railway County CF București, running section Câmpina-Brașov (double line elefctrified),on running line I between the railway stations Valea Largă and Sinaia, on the bridge at km 121+672, by the derailment of the first axle in the running direction of the locomotive EA 40 0017- 0 (owned by the railway transport operator SNTFM “CFR Marfă” SA) hauling the freight train no. 24796-1 (owned by the same railway transport operator). The investigation report was completed on 13.10.2010*

**Direct cause** of the accident consists of climbing the rail corresponding to the exterior rail of the curve, at km 121+664, by the right wheel of the first axle of the first bogie in the running direction, due to non-proper rehabilitation works of superstructure track over the bridge no. 20 between the railway stations Valea Largă and Sinaia.

**Contributing factors** at this accident occurrence have been generated by the improper composition of the superstructure track on the railway bridge and have resulted in:

- Sleepers resting with the bottom on riveted joints, without the bottom being processed properly to ensure no play in vertical plane;
- Excessive cutting of the sleepers base together with non-fixing of this sleepers on the metallic elements of the bridge (designed for this purpose) to prevent longitudinal and transversal displacement;
- Sleepers with cracks disposed in length against the horizontal axis;
- Sleepers with cracks on the upper surface, in the support area of the metal plates tightening direction of coach screws.

**The underlying causes** of the occurence of this accident were determined by the non-observance of the provisions of art. 77 - 80 from the Instructions for the checking up and maintenance of the railway bridges no. 309/2005, about:

- Fixing the timber sleepers against movement along the bridge under forces due to movement of rolling stock;
- Timber sleepers grip on the bridge web plate girder;
- Forbidding sleepers to rest on rivets end;
- timber sleepers upper surface processing in front of the rivets ends on the web plate girder, to ensure the settlement of each sleeper on all their contact surface with the metal beam;
- maintaining the timber sleepers fastenings on the check rail fastenings.

**Root causes** lack of regulatory framework in relation to:

- how to store recyclabe materials for metal brigde superstructure rehabilitation and technical conditions they must meet to be reintroduced in the track;
- the technological process to be followed by the manufacturer when executing the rehabilitation works of track suprastructure on metal bridges with recovered timber sleepers;

- actions prior to the reopening of railway traffic and how it can be made for cases in which the manufacturer performs other works than those provided in the specifications, but with involvement in running safety.

**The safety recommendations** are directed to address the following issues:

Ensuring regulatory framework:

- recovery, storage and reuse of materials from the removal of the superstructure as a result of the rehabilitation works for the 4 Pan-European Corridor;
- work methods and the procedures to be respected by the beneficiary, manufacturer, and Consultancy for the reopening of railway traffic, on the sections within the 4 Pan-European Corridor, when it is not mandatory to carry out the reception of works performed by the manufacturer.

*3.4.14. The railway incident occurred on 22.05.2010, at 03:32, on the Branch of the Railway County Constanța, in the railway station Medgidia by hitting two metal poles by an open door at the 8th wagon from the freight train composition no. 60168. The investigation report was completed on 01.07.2010*

**The direct cause** of the railway incident was hitting the compensation system from the metal poles no. 206 and no. 212 supporting the contact line, by a door on the right side in the running direction of the wagon no. 31835325008-3 from the freight train composition no. 60168, owned by SC Grup Transport Feroviar SA București.

During the investigation elements could not be identified to determine with precision the aspects relating the circumstances and time in which occurred the opening of the doors at the wagons no. 35835303180-2 (the 7th from the locomotive), no. 31835325008-3 (the 8th from the locomotive) and no. 35835320285-8 (the 9th from the locomotive). Also, relevant factors couldn't be identified to establish the conditions of safety concerning the doors locking system and the possible intervention at the door ensuring system during train operation.

**The underlying causes** were not determined.

**The root causes** were not established.

**The safety recommendations** were not identified.

*3.4.15 The railway accident happened on the 28th of May 2010, at 17,15 hour, in the Branch of the Railway County Cluj, in the railway station Halmeu, consisting in the derailment of the first bogie, in the running direction, of the wagon no. 67573287 (belonging to the Ukrainian railways - UZ) from the freight train no. 70728 (belonging to the railway undertaking SC GRUP FEROVIA ROMÂN SA), over the switch no. 23, from the end X of the railway station. The investigation report was finished on the 27th of July 2010.*

**The direct cause** of the accident was the overclimbing of the curved points of the switch no. 23 by the first wheel ( the left one in the running direction) of the axle no. 1 from the first bogie of the wagon no. 67573287 (the 5th in the freight train no. 70728), following the exceeding of the derailment stability limit, because of the increase of the guiding force at the contact between this wheel and the curved points. The increase of the guiding force appeared because of the increase of the friction forces between those two parts of the centre casting ensemble, from the first bogie, in the running direction of the wagon no. 67573287, it being generated by the lack of lubrication between the upper and lower centre casting.

**The underlying causes** were not identified.

- **The root cause** of the accident was that, in the common goods transport regulations, concluded between the Ukrainian Railways (UZ) and GRUP FERROVIAR ROMÂN SA, there was no stipulation on the lubrication of the centre casting ensemble at the moving of the wagons from the wide gauge bogies on the bogies with standard gauge.

**Safety recommendation**

SC GRUP FERROVIAR ROMÂN SA, as railway undertaking shall ask Ukrainian Railways (UZ) to update the common goods transport regulations, so these regulations stipulate the lubrication of the centre casting ensemble at the moving of the wagons from the wide gauge bogies on the bogies with standard gauge.

3.4.16 *The railway accident happened on the 6th of June 2010, in the running of the train no. 17958, from the light engine DHC 235, consisted in a fire in the locomotive cab, on the running line II Pașcani-Iași, between the railway stations Ruginoasa and Târgu Frumos, at the km. 25+300.*

*The investigation report was finished on the 16th of July 2010*

**The causes of the railway accident** were established as follows:

**The direct cause**

Appearance of fire inside the left box of batteries (boxes 5-8), generated by a short-circuit between the connection between the niches and a device for the series marking of the elements from the box of the battery no.6, that generated the fire of the cable insulation and of the covers from the elements of the batteries no. 5-8, followed by the fire of the cables insulation and fuel deposits appeared over time from the locomotive operation, in the upper part of the niche of the batteries no. 5-8.

**Contributing factors**

Non-performance at the deadline of the repairs for which the locomotive was due (due for repair type major overhaul from February 2009), it leading to the an unsuitable thermo-technical condition, generating loss of oil by the constructive tight areas of the diesel engine and their eposit in hard-to-reach areas.

**Underlying causes**

Non-performance of some maintenance works at the locomotives with exceeded repair deadline, for the additional inspection of the cable insulation capacity and protection of the cables afferent to the batteries set, as well as for the cleaning of the oil deposits (fuels, lubrications) from the constructive areas of the locomotives where they can deposit .

**The root causes** were not identified.

**Safety recommendations**

- Identification and implementing of some solutions for the protection of the battery connections, including between those two niches.
- Increase of the periodical technical inspections of the insulation capacity of the battery connection cables, after the performance of the operations stipulated in the technological processes for the maintenance and operation of the batteries, up to the achievement of the protection solution previously stipulated.
- Periodical removal of the fuels deposits from the areas inclined to locomotive accidental fires, these operations that be included in the technological processes of the periodical inspections.

3.4.17 *The railway accident happened on the 18th of July 2010, at 8,30 hour, in the Branch of the Railway County Brasov, in the railway station Aiud, consisting in the derailment of the second bogie, in the running direction, of the wagon no. 84535451255-8 (the 19th*

*from the locomotive) from the freight train no. 60133-2 (belonging to the railway undertaking SC Grup Transport Feroviar SA), in the area of the switch no. 6 from the end Y of the railway station.*

*The investigation report was finished on the 10th of November 2010*

**The direct cause** of the accident was the displacement of the 6 wheel tyre on the rim, it leading to the derailment of the pair of wheels corresponding to the wheels no. 5-6 of the wagon no. 84535451255-8.

**The contributing factors** were:

- Loosening of the 6 wheel tyre from the wagon no. 84535451255-8, generating its turn on the wheel rim and the polishing of the fastening ring (clip) made by:
  - Decrease over time of the fastening forces between the tyre and the rim (the pair of the wheel is 43 years old);
  - The thermic efforts to which the tyre was subject, because of the braked running of the wagon up to the brake shoes wear and the braking of the brakeblock holder from the wheel no. 6 6.
  - Wear of the tyre in the running tread, wear close to the accepted operation limitmita .

**The underlying cause** of the accident is the non-compliance with the specific regulations in force concerning the performance of the technical inspection in transit in the railway station Campia Turzii, as it is stipulated in the freight train Working Timetable for 2010.

**The root cause:** the railway undertaking did not meet with the requirements on the use in the technical inspections ( forming and transit) of the railway critical services, that comply with the compulsory specific regulations on the granting of the railway technical agreement by.

#### **Safety recommendations:**

- Suspension by Romanian Railway Safety Authority of the safety certificate part B for the running track section „Câmpia Turzii – Apahida – Dej Călători – Beclean pe Someș – Salva – Ilva Mică – Floreni și retur” granted to SC Grup Transport Feroviar SA, for the non-compliance with the specific regulations in force and with the requirements that were basis for its granting, especially of the art. 4 (1) b) point 6, from the annex II of the Minister of Transports Order 535/2007 (that stipulates as compulsory requirement „ensurance of train technical inspection in the railway stations, in composition and transit, at arrival, with economic operators authorized as railway suppliers by AFER for this type of service or with its own staff, if the railway undertaking is authorized by AFER for this type of service”).
- Performance by Romanian Railway Notified Body of an assessment or technical inspection, if case, in order to check the conditions that were basis for the granting of the railway technical agreement for the technical inspections at the freight trains, granted to SC Compania de Transport Feroviar București SA, especially of the art. 7 point i) *from the Norm for the granting of the railway and subway technical agreement, approved by Minister of Transports Order 290/2000–amended by Minister of Transports, Constructions and Tourism Order 2068/2004, („prove that the manufacturer of the product or the service performer has organizational structures, technical endowments, as well as trained and certified staff, if case, that ensure the manufacturing/performance of the railway critical products and/or services, stipulated at the art. 1 paragraph (2) letters a), b) and c);”)*, conditions, that during the investigation, were found as non-complied and the application of the provisions of the art. 11 from the Norm above mentioned (*„if during the surveillance one found that one or more conditions, that are basis for the granting of the railway technical agreement, is/are not met, AFER can suspend the granted railway technical agreement”).*
- Performance by Romanian Railway Safety Authority of a state inspection at the freight railway undertakings in order to check the organization of the technical inspections of the freight

trains, ensuring of the authorized staff for RTV job, according to the commitments of the railway suppliers at the granting of the railway technical agreements for this type of railway critical service.

- Analysis by Romanian Railway Safety Authority, together with the economic agents that repair the rolling stock and the railway undertakings, of the opportunity to supplement the Instructions 931/1986 and the establishment of the compulsoriness to limit the use time of the pair of wheels with tyres.
- Checking by the Romanian Railway Notified Body, during the technical inspections performed at the Compania de Transport Feroviar București SA – București working place, of the compliance, in the technological flow, with the provisions of the art. 29 (on the marking of the tyre against the wheel) from the Instruction for the repair of the railway vehicle pair of wheels from the Instructions for the the repair of the railway vehicke pair of wheels no. 931/1986, especially for the pair of wheels manufactured before 1986;

3.4.18 *The railway incident happened on the 20th of July 2010, in the Branch of the Railway County Craiova, between the railway stations Drăgănești Olt and Dragomirești, at the km 133+60, consisting in the impact between an air reservoir, that was in the structure clearance, and the locomotive EA 856, hauling the freight train no. 83598. The investigation report was finished on the 20th of September 2010.*

**Direct cause**

The incident happened because of the presense of the auxiliary brake air reservoir of the wagon brake equipment in the structure clearance.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established.

3.4.19 *The railway incident happened on the 25th of July 2010, in the Branch of the Railway County Timișoara, in the railway station Căvăran, consisting in the impact between the pole 53-8 and the two doors from the right side of the wagon no 33876735501-3. The investigating report was finished on the 6th of September 2010*

**The direct cause** of the railway incident was the failure of the wagon doors closing/ensuring system, it leading, in the dynamic and vibration conditions generated by the runnig, to the opening of the doors from the right side, in the running direction, and to the impact with the concrete pole no 53 - 8 for the catenary support.

**The underlying causes**

There are no regulations between SNCFR „CFR Calatori” SA and SC Tranferoviar Grup, concerning the handing/reception of the wagons, both from comercial and technical point of view, at the wagons that were taken out of SIRV and brought on the lines of the railway station Caransebes for dispatching.

**The root causes** were not identified.

3.4.20 *The railway accident happened on the 29th of July 2010 in the running of the freight train no.93590, in the Branch of the Railway County Constanta, in the railway station Palas, consisting in the derailment of two loaded wagons. The investigation report was finished on the 20th of October 2010*

**The direct cause** of the accident was the derailment on the switch no. 85 from the double slip crossing - TDJ no. 77/85, of the first axle of the second bogie from the wagon no. 31534542088-1 (the 21st of the freight train no. 93590), fbecause of the lack of good ensuring in the container no. CLHU 28395-5, it leading to the load transfer on this bogie wheels, by the load charging of the left wheels and the discharging from the same load of the right wheels, in the running direction. The container no. CLHU 28395-

5 was loaded with ceramic plates and placed in the wagon at the end corresponding to the second bogie in the running direction.

**Contributing factors**

- Non-ensuring of the goods against the cross movement in the container no. CLHU 28395-5, loaded in the wagon, on the end and corresponding to the second bogie in the running direction ;
- Exceeding of the wagon loading limit at the letter C from the frame ABC, corresponding to the wagon running on line type C and speed conditions S.

**The underlying causes** of the accident were the non-ensuring of the goods in the container.

**The root causes** were not identified.

**Safety recommendations**

Drawing of a regulation that stipulate the way to ensure the goods loaded in containers, so they be placed stable and longitudinally and transversally ensured against the falls, movement, sliding and overturning.

- 3.4.21 *The railway incident happened on the 1st of August 2010, in the Branch of the Railway County Craiova, consisting in the passing by the freight train 70 660 of the exit signal from the railway station BUMBEȘTI in the stop position and the occupation of the running line between the railway stations Bumbeshți and Parîngu. The investigation report was finished on the 4th of August.2010*

**The direct cause**

The event happened because of a human mistake, consisting of the non- paying attention to the positions of the signals during the route and the non-operation of the button “attention” by the driver.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established.

- 3.4.22 *The railway accident happened on the 2nd of August 2010, at 04.00 hour, in the Branch of the Railway County Timisoara, on the running line, at the km. 37+600, on the non-interoperable running track section Timișoara Vest - Cruceni (managed by SC RC-CF Trans SRL Brașov), consisting in the derailment of the axle no. 4 of the railcar AMX 97-0566-6, forming the passenger train 14489 (belonging to the railway undertaking SC Regiotrans SRL Brașov). The investigation report was finished on the 11st of October 2010*

**The direct cause** of accident is the decrease of the distance between the inside surfaces and the change of the parallelism between the rims of the 2 wheels of the axle no. 4, generating the fall of the right wheel, against the running direction, between the tracks. It happened because the non-compliance with the fitting technology in order to ensure the tightening between the boss of the cast wheel from the left side and the pressing area of the axle centre, it leading over time to the increase of the cylindrical hub bore quotas with about 3-4 mm, because of the frictions appeared at the relative displacement between those two surfaces.

**Favorable factor** of the accident is the lack of visible paint marking that allow founding the relative displacement of the wheel boss against the axle centre, it could be observed by the operation staff before the appearance of the strange wears and the wheel axial displacement.

**Underlying causes**



The repairs at the pair of wheels of the railcars type X 4500 and at the trailer vehicles type XR 8300 were made by the staff from SC KRON - TRIEM SRL, without railway technical agreement, documentation or technical specification and technological endowments necessary for the replacement of axles and wheels.

#### **Root causes**

Performance of repairs at the pair of wheels in working places that got no railway technical agreements in accordance with the Minister of Transports Order 290/2000.

#### **Safety recommendations**

- The railway undertaking that got this type of rolling stock, will monitor that, the accidental and planned repairs type RR, RG, be performed by economic agents getting railway technical agreement, that cover also the repairs consisting in the dismantling and fitting of the wheel on the axle centre.
- Up to the drawing of the technical specification, respectively the supplement of the existing technical specifications for the planned inspections and accidental and planned repairs type RR, RG, so one stipulates repairs consisting in dismantling and fitting of the wheel on the axle centre, the economic agent SC KRON-TRIEM SRL shall made a marking with paint, at all axles, between the nut and the wheel boss, and the railway undertaking shall regulate, for the operation staff, the compulsoriness to check and record their condition in the sheet of the incident record.
- The economic agent SC KRON-TRIEM SRL get, without delay, the railway technical agreement for the working places where are performed the technological processes of planned inspections and accidental repairs.

3.4.23 *The railway accident happened on the 11th of August 2010, around 09:02 hour, in the Branch of the Railway County Timișoara, running track section Arad – Curtici, in the railway station Curtici, at the passing over the double slip crossing (TJD) 19/23 of the freight train no. 39915, consisting in its collision with the locomotive EA 40 0167-3, followed by derailment of all axles of the locomotive EA 91-53-0-478-001-7, hauling the train no. 39915.*

*The investigation report was finished on the 17th of December 2010*

#### **Cauza directă**

The passing of the shunting signal M 7A with the position with the position „STOP without passing the signal in the shunting”, without the meeting with the provisions of the specific regulations by the locomotive EA 40 0167-3, followed by the collision with the freight train no. 39915, that entered the station on the line 11A.

The passing of the shunting signal M 7A with the position „STOP without passing the signal in the shunting”, without the meeting of the locomotive EA 40 167-3 with the provisions of the specific regulations, is due to a human mistake.

#### **Underlying cause**

Lack of communication between the movements inspector from the railway station Curtici and the driver, because the locomotive EA 40 0167-3 had no radio station set on the shunting frequency of the railway station Curtici and the driver of the railway undertaking Train Hungary did not speak Romanian, according to the art. 5, paragraph (1) from the „Agreement” between Romanian and Hungarian Governments concerning the railway traffic through the border, concluded on the 12th of March 1997.

#### **Root cause**

The regulation framework between the railways CFR and MAV is not in accordance with the provisions of the national legislation and community directives in force.

Lack of the safety certification part B, granted by Romanian Railway Safety Authority, that certifies that the railway undertaking Train Hungary complies with the specific requirements

necessary for a safety operation of the railway network where it carries out the activity, that is Romanian railways.

**Safety recommendations**

- In order to comply with the specific requirements necessary for a safety working, the access on the railway networks corresponding to the performance of the cross-border services, for the railway undertaking licensed in one of the EU, another one than Romania is possible only getting a safety certificate part B, granted by the Romanian Railway Safety Authority.
- In order to comply with the requirements on the professional and language knowledge specific to the Romanian infrastructure, the driver of a railway operator licensed in one of the EU member states, another one than Romania shall be certified in accordance with the present legislation.

*3.4.24 The railway incident happened on the 16th of August 2010, at 07:48 hour, in the Branch of the Railway County Timișoara, in the railway station Baru Mare, consisting in the passing of the signal in stop position by the freight train no. 27699, formed by the locomotives EA 40-0404-0 și EA 40-0867-8, belonging to SNTFM „CFR Marfă” and its running on the line 6 (avoiding line), close to the parapet.*

*The investigation report was finished on the 9th of September 2010*

**Direct cause**

One did not take measures for braking early and for a corresponding decrease of the pressure in order to ensure the train stop before the signal X2, that ordered stop. It was due to the use of the straight air brake instead the automatic brake for the spontaneous brake application, followed by the automatic brake too.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established.

*3.4.25 The railway incident happened on the 24th of August 2010, at 09:20 hour, in the Branch of the Railway County București, running track section Ciulnița – București Nord, between the railway stations Sărulești and Fundulea, on the track II, at the km 46+300, consisting in entrance of a track vehicle (belonging to SC SC Astaldi Spa Italia) in the structure clearance and the impact between it and the passenger train no. 680 (belonging to the railway undertaking SNTFC „CFR Călători” SA).*

*The investigation report was finished on the 6th of September 2010*

**Direct cause**

Performance of an additional manipulation of an excavator, at the coming of the train no. 680, and its entrance in the structure clearance of the track II.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.26 The railway incident happened on the 31st of August 2010, at 07:23 hour, in the Branch of the Railway County Timișoara, in the railway station Timișoara Nord, consisting in the entry of the passenger train no 2027-2, belonging to the railway undertaking SNTFC „CFR Călători” SA, hauled by the electric locomotive EC 91-53-0-460-052-0, on the the line 2R (open, unelectrified) instead on the line 1P (open, electrified).*

*The investigation report was finished on the 6th of September 2010*

**Direct cause**

Wrong entry of the passenger train no. 2027-2, hauled by the electric locomotive, on an unelectrified line instead one electrified.

**The factor that favoured** the incident was the lack of communication between the movements inspector and the driver of the passenger train no. 2027-2, through the radio station concerning the stabling line.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.27 The railway incident happened on the 11th of September 2010, in the Branch of the Railway County, between the railway stations Moinești and Comănești, consisting in hitting of the track magnet of 1000 Hz afferent to the signal PrXM, placed at km. 1+980, by the guard connection from the bogie (interstada) of the second axle from the first bogie of the wagon no. 885378861417 of the freight train no. 50578.*

*The investigation report was finished on the 11th of October 2010*

**Direct cause**

Hitting of the track magnet by guard connection from the bogie (interstada) of the second axle of the first bogie from the wagon no. 885378861417, the 17th from the locomotive, out of the train structure clearance. The favorable factor was the loosening of the fastening system of the guard connection from the bogie (interstada) that happened following the loosening of the outer fastening devices (screws) and the lack of the inner ones.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.28 The incident happened on the subway network, on the 29th of September 2010, in the railway station Anghel Saligny, consisting in passing by TEM 043-011 of the signal in stop position (on red position), that ordered stop afferent, to the fixed stopping device and its hitting.*

*The investigation report was finished on the 29th of October 2010*

**Direct cause**

Braking of the train on a distance over the necessary one for its stop in the platform limits. It led to the passing by TEM the signal on red position, that ordered stop, afferent to the fixed stopping device of the line 2.

**Contributing factors**

- Non-operation in time of the lever „run - brake” (lever for the operation of the service electro-pneumatic and the emergency brake);
- Wrong operation of the lever for the selection, before to take the measures of braking and non-making of its travel up to „0”, the lever remaining between „0” and „C1”;
- Delayed operation of the cock KD2, following the wrong operations performed before, presented at the points 1 and 2.
- 

**Underlying causes**

Non-making of the travel of the lever for the selection up to „0”, was favoured by the mechanic resistance determined by the lateral friction between its lever and the cover of the control desk, unsuitable fixed, at the lever operation without firmness.

Unsuitable fixing of the cover from the control desk is because of some deficiencies in the maintenance.

**The root causes** were not identified.

#### **Safety recommendations**

Drawing and implementing of a inner regulation by SC TMB “Metrorex” SA București, for the establishment of the maximum speed at the entrance of TEM deadend siding tracks to the lines provided with fixed stop, which will be indicated on the ground with indicator and if the track for mounting the inductor.

*3.4.29 The railway incident happened on the 3rd of October 2010, around 20:10 hour, in the Branch of the Railway County București, in the Engine Shed Ploiești, consisting in the non-controlled start to run of the locomotive series EA no. 41-0906-2 (belonging to the railway undertaking SNTFC “CFR Călători” SA) from the line no. 5 to the railway station Ploiești Sud.*

*The investigation report was finished on the 29th of October 2010*

#### **Direct cause**

The non-controlled start to run of the light locomotive series EA no. 41-0906-2 from the line no. 5 of the Engine Shed Ploiesti to the railway station Ploiești Sud because the non-ensurance of its stop ( when the the driver left the cab), without the application of the hand brakes from the both cabs of the locomotive.

#### **Contributing factors**

Loosening of the straight air brake of the locomotive EA nr. 41-0906-2 by the back of the driver seat when the driver stood up and it turned.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.30 The railway incident from the 4th of October 2010, in the Branch of the Railway County Galați, in the railway station Adjud, in the running of the freight train no. 51860/51860-1 with the real braked load under the necessary load for automatic braking.*

*The investigation report was finished on the 29th of October 2010.*

#### **Direct cause**

The incident happened because of the use, for the introduction of the freight train no. 51860/51860-1 between Ploiești Vest – Ploiești Sud, Ploiești Sud – Buzău și Buzău - Adjud, of the real braked weight percentage under the braked weight percentage stipulated in the freight train Working timetable, being used a braked weight percentage of 45% (necessary for the trains stipulated for the transposed wagons and wagons with standard gauge running) and not a braked weight percentage of 50% (when the traces of these trains are used for trains consisting in wagons with standard gauge).

#### **Contributing factors:**

- Wrong use by the storekeeper from the railway station Ploiești Crâng that filled the form “driver's slip”, of the automatic braked weight percentage of 45%;
- Non-checking by the movements inspector from the railway station Ploiești Crâng, that dispatched the train 51860/51860-1, of the conditions stipulated in the freight train Working Timetable in the Branch of the Railway County București (version 2009/2010), Chapter General provisions, point 15, concerning the necessary braked weight percentage to ensure for the mentioned train.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not identified

*3.4.31 The railway incident from the 14th of October 2010, in the Branch of the Railway County Constanța, in the railway station Țândărei, consisting in hitting by a lateral door of the wagon no. 31835300072-8, from the freight train no. 60144, of the railway bridge from the km 59 + 035, and of the contact wire poles no. 111, 107 și 102 and of the lighting mast box P 9 (km 58+110).*

*The investigation report was finished on the 4th of November 2010.*

**Direct cause**

Opening of the left last door in the running direction of the wagon no. 31835300072-8, the 18th in the freight train no. 60144, it leading to the exceeding of the structure clearance limits and hitting of the railway bridge from the km 59 + 035, the contact wire poles no. 111, 107 și 102 and the lighting mast box P 9 (km 58+110). It was possible because, at the dispatching of the train from the railway station Constanța Port Mol 5, this pair of lateral doors were not closed and ensured in the upper side and the lock of the lock handle from the same pair of doors did not ensure its locking in the anchor bar.

**Contributing factors:**

- The examiner did not observed during the technical inspection in the forming of the train no. 60144 that the last left pair of wheels of the wagon no. 31835300072-8 was not closed and ensured at the upper side, it being a human mistake;
- The non-conformity at the system for the locking of the lock handle from the involved wagon door that did not ensure the locking of the handle in the anchor bar, because the moving part of this system was welded on the fixed part.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.32 The railway incident happened on the 7th of November 2010, in the Branch of the Railway County Cluj, the running track section Kotegyan (MAV) – Salonta (CFR), in the railway station Salonta, when the passenger train no.7760, consisting in the railcar Bzmot 379 belonging to OTF MAV-START passed the entry signal XK on the position „STOP without passing the signal in stop position”, passing on the double slip crossing TDJ 3/7, trailing the switch no.7, after running about 350 m from the signal XK.*

*The investigation report was finished on the 24th of November 2010.*

**Direct cause**

The railway incident happened because of the lack of measures for braking in time so the train stop before the entry signal XK of the railway station Salonta on the position „STOP without passing the signal in stop position”. Passing the entry signal XK on the position „STOP without passing the signal in stop position”, without meeting with the provisions from the specific regulations, by the passenger train no. 7760, is based on a human mistake.

**Underlying causes**

Impossibility of direct communication between the movements inspector from the railway station Salonta and the driver of the passenger train no. 7760, because the railcar Bzmot 379, belonging to OTF MAV-START was not provided with radion station set on frequency of the railway station Salonta.

**Root causes**

- The regulation framework existing between the railways MAV and CFR is not harmonized with the provisions of Romanian legislation and the community directives in force.
- Non-existence of the safety certificate part B, got from Romanian Railway Safety Authority for the performance of a railway passenger transport service on Romanian railways.
- Calling at stations by a single agent, besides the railcar Bzmot 379 was not provided with equipments and/or safety and vigilance devices.

**The safety recommendations** were not established

*3.4.33 The railway incident happened on the 7th of November 2010, at 07:41hour, in the Branch of the Railway County Craiova, on the running track section Pietra Olt - Caracal (single, unelectrified line), in the railway station Vlădueni, by bursting open the switch no. 3 by the freight train no. 39568, belonging to SC SERVTRANS INVEST SA București, following the passing of the shunting limit signal between the lines I and II and breakage of the mechanism for control position of this switch lock.*

*The investigation report was finished on the 16th of December 2010*

**Direct cause**

Stop of the freight train no. 39568 in a distance over the braking distance afferent to the line no. II from the railway station Vlădueni, following the problem in the operation of the driver's automatic brake valve type KD 2 from the cab I of the locomotive for the train hauling.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.34 The railway incident happened on the 22nd of November 2010, at 07:15 hour, in the Branch of the Railway County Iași, in the railway station Iași, consisting in the acceptance of the passenger train no. 6444 on the unelectrified line 0C instead on the line 4 established in the train arrival, departure and stabling indicator.*

*The investigation report was finished on the 7th of December 2010.*

**Direct cause**

The incident was generated by a human mistake and consisted in the the wrong making of the entry journey for the passenger train no. 6444, hauled by an electric locomotive, on the unelectrified line 0C.

**Contributing factors**

The favourable factor was the superposition, generated by the IDM dispozitor, between the dispatching and the handing-reception of duty and the existence in the same room of SCB, IFTE and L staff that asked for line obstructions for specific activities.

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.35 The railway incident happened in the Branch of the Railway County Constanța, between the railway stations Bărăganu and Fetești, at the passing of the locomotive EA 40 0711-8, hauling the freight train no. 80374-1 through the level crossing pass, at the km 144+320, where it hung a concrete slab situated in the structure clearance.*

*The investigation report was finished on the 22nd of December 2010.*

#### **Direct cause**

The locomotive EA 40 0711-8, hauling the freight train no. 80374-1, hit a concrete slab, appeared following the demolition of a road pass afferent to the the level crossing from the km 144+320, because its placing at a distance under those necessary to ensure the structure clearance, necessary for the safety running of the railway vehicles.

#### **Underlying causes**

Unsuitable placing of the concrete slabs, both by stacking and by the lack of the minimum distance necessary against the rail outside surface, stipulated in the specific regulations in force.

**The root causes** were not identified.

**The safety recommendations** were not established

*3.4.36 The railway incident happened on the 4th of December 2010, around 17.36 hour, in the Branch of the Railway County Timișoara, consisting in loosing the control on a group of railway vehicles, that is 23 wagons and a locomotive coupled to them, from the line 4 of the railway station Băile Călăcea (belonging to the railway undertaking SNTFM CFR Marfă SA) and its entrance on the running line between the railway stations Băile Călăcea and Sânanđrei*

*The investigation report was finished on the 24th of December 2010.*

#### **Direct cause**

The railway incident happened because the unsuitable ensuring for keeping stopped of a group consisting in 23 wagons and a locomotive (coupled to them), it leading to the loosing of the control on it from the line 4 (slope 3.9‰) of the railway station Băile Calăcea and its entrance on the running line between the railway stations Băile Călăcea and Sânanđrei.

#### **Contributing factors**

- One did not use drag shoes necessary to keep stopped the group of the railway vehicles consisting in 23 wagons and a locomotive (coupled to them) from the line 4 with slope 3.9‰, (2 drag shoes end X and a drag shoe end Y), contrary to the provisions of the Sheet PTE no. 18 of the railway station Băile Călăcea, and one did not applied the necessary handbrakes, contrary to the provisions of art. 69 (1), letter b from the *Regulations for the train running and shunting of the railway vehicles no. 005/2005*);
- Release of the handbrakes of the wagon group before the end of the brake test;
- Starting up of the Diesel engine pornirea motorului Diesel, air compressor and supply of the general pipe of the wagon group by the driver that took the locomotive DF 013, without know if the wagon group is ensured against the runaway;
- Leaving the cab of the locomotive LDF 013 by the driver that went into service, with the Diesel engine started, without take measures to keep stopped the locomotive and leaving the locomotive without an authorized agent .

**The underlying causes** were not identified.

**The root causes** were not identified.

**The safety recommendations** were not established

### 3.5 Accidents and incidents investigated within the last 5 years Railway investigations between 2007-2010 (Romanian Railway Investigating Body set up in March)

Accidents investigated		2007	2008	2009	2010	TOTAL
Serious accidents (Art 19, 1 + 2)	Train collision	-	-	-	3	3
	Train collision with an obstacle	-	-	-		-
	Train derailment	-	5	3	9	17
	Level-crossing accident	-	-	-		-
	Person injury caused by RS in motion	-	-	-		-
	Rolling stock fire	-	-	-	2	2
	Accidents involving dangerous goods	-	-	-		-
Other accidents (Art 21.6)	Train collision	-	-	-		-
	Train collision with an obstacle	-	-	-		-
	Train derailment	-	-	-		-
	Level-crossing accident	-	-	-		-
	Person injury caused by RS in motion	-	-	-		-
	Rolling stock fire	-	-	-		-
	Accidents involving dangerous goods	-	-	-		-
<b>Incidents</b>		-	-	2	22	24
<b>TOTAL</b>		-	5	5	36	46

<sup>1</sup> it was taken into account the investigation completion year

## 4 RECOMMENDATIONS

### 4.1 Short review and presentation of the recommendations

#### Implementation of the recommendations in the period 2008-2010

Recommendations issued		Recommendation implementation status					
		Implemented		In progress		Not implemented	
Year	[No.]	[No.]	[%]	[No.]	[%]	[No.]	[%]
2008	24	5	20,8	-	-	19	79,2
2009	23	21	91,3	2	8,7	-	-
2010	57	39	68,4	5	8,8	13	22,8
<b>TOTAL</b>	<b>104</b>	<b>65</b>	<b>62,5</b>	<b>7</b>	<b>6,7</b>	<b>32</b>	<b>30,8</b>

DIRECTOR



**FLOROIU DRAGOȘ**