



MINISTRY OF TRANSPORTS AND INFRASTRUCTURE
ROMANIAN RAILWAY AUTHORITY - AFER

ROMANIAN RAILWAY INVESTIGATING BODY



INVESTIGATING REPORT

of the railway accident
occured on the 22th of December 2012, in the activity area of the Regional Center for Railway
Operation, Maintenance and Repairs Branch Timișoara, in the railway station Pui



*Final edition
The 21th February 2013*

NOTICE

According to the provisions of the *Regulations for the investigation of accidents and incidents, development and improvement of railway safety on Romanian railway and subway network, approved by the Government Decision no. 117/2010*, Romanian Railway Investigating Body performed an investigation of the railway accident occurred on the 22th of December 2012, at 12.35, in the activity area of the Regional Center for Railway Operation, Maintenance and Repairs Branch Timișoara, in the running of the freight train no. 50408 (belonging to the railway undertaking SC UNIFERTRANS SA), in the railway station Pui, consisting in the derailment of the second bogie, in the running direction of the wagon no. 88536656800-8, the 9th from the locomotive.

Through the performed investigation, the information concerning the occurrence of this accident was gathered and analyzed, the conditions were established and the causes determined.

Romanian Railway Investigating Body's investigation did not aim to establish the guilt or the responsibility in this case.

Bucharest, the 21th of February 2013

Approved by

Director,
Nicolae SANDU

*I ascertain the compliance with the
legal provisions concerning the investigation
and the drawing up of this investigating report that*

I submit for approval
Chief Investigator
Eugen ISPAS

This notice is part of the Investigation Report of the railway accident occurred on the 22nd of December 2012, at 12.35, in the activity area of the Regional Center for Railway Operation, Maintenance and Repairs Branch Timișoara in the running of the freight train no. 50408 (belonging to the railway undertaking SC UNIFERTRANS SA), in the railway station Pui, through the derailment of the second bogie, in the running direction of the wagon no. 88536656800-8, the 9th from the locomotive.

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SUMMARY

A.1 PREAMBLE	4
A.1. Introduction	4
A.2. Investigation process	4
B. INVESTIGATION REPORT BRIEF PRESENTATION	4
C. INVESTIGATION REPORT	5
C.1. Accident presentation	5
C.2. Accident circumstances	6
<i>C.2.1. Involved parties</i>	6
<i>C.2.2. Composition and the train equipments</i>	7
<i>C.2.3. Presentation of the railway equipments involved in the railway accident</i>	7
<i>C.2.4. Communication means</i>	7
<i>C.2.5. Starting of the railway emergency plan</i>	8
C.3 Accident consequences	8
<i>C.3.1 Fatalities and injuries</i>	8
<i>C.3.2 Material damages</i>	8
<i>C.3.3 Consequences of the railway accident in the railway traffic</i>	8
C.4. External circumstances	8
C.5. Investigation course	8
<i>C.5.1. Summary of the involved staff testimonies</i>	8
<i>C.5.2. Safety management system</i>	9
<i>C.5.3. Norms and regulations. Sources and references for investigation</i>	9
<i>C.5.4. Operation of the technical equipments, infrastructure and rolling stock</i>	10
<i>C.5.4.1. Data on the tracks</i>	10
<i>C.5.4.2. Data on the operation of the rolling stock and its technical equipment</i>	11
C.6. Analysis and conclusions	12
<i>C.6.1. Conclusions on the technical condition of the track superstructure</i>	12
<i>C.6.2. Conclusions on the technical condition of the train wagons</i>	12
<i>C.6.3. Analysis and conclusions on the train derailment occurrence</i>	12
D. ACCIDENT CAUSES	14
<i>D.1. Direct causes</i>	14
<i>D.2. Underlying causes</i>	14
<i>D.3. Rot causes</i>	14
E. SAFETY RECOMMENDATIONS	14

A. PREAMBLE

A.1. Introduction

Romanian Railway Investigating Body, hereinafter referred to as OIFR, performs investigations in accordance with the provisions of the *Law no. 55/2006* on the railway safety, hereinafter referred as *Railway Safety Law*, well as of the *Regulation for the investigation of the accidents and incidents, for the development and improvement of Romanian railway and subway safety*, approved by the Government Decision no. 117/2010, hereinafter referred as *Regulation*.

OIFR investigation aims to improve the railway safety and to prevent the railway incidents or accidents.

OIFR's investigation is performed independently from any inquiry and does not aim to establish the guilty or the responsibility.

A.2. Investigation process

According to the art. 19, paragraph 2 from the *Railway Safety Law*, corroborated with the art. 48 from the *Regulation*, OIFR, for the railway accidents or incidents, has to open investigations and to constitute investigation commissions, in order to gather and analyze technical information, to establish the conditions of the occurrence and, if case, to issue safety recommendations for the prevention of similar accidents and improve railway safety.

Taking into account the informative note of the Regional Traffic Safety Inspectorate from Railway Operation, Maintenance and Repairs Branch Timisoara, hereinafter referred to as CREIR Timișoara, concerning the accident occurred on the 22th of December 2012, at 12.35, in the activity area of CREIR Timisoara, in the running of the freight train no. 50408 (belonging to the railway undertaking SC UNIFERTRANS SA), in the railway station CFR Pui, consisting in the derailment of the second bogie, in the running direction of the wagon no. 88536656800-8, the 9th from the locomotive and taking into account that the railway event is defined as accident, according to the art. 7, paragraph (1) point b) from the *Regulation*, OIFR director decided to start an investigation and to appoint an investigation commission.

Through the Decision no. 102, from the 27th of December 2012 of OIFR director was appointed an investigation commission for this railway accident, consisting of employees belonging to OIFR and SC UNIFERTRANS SA, as follows:

- | | | |
|---------------------|----------------------------------|---------------------------|
| ▪ Luca PAIȘ | OIFR's investigator | investigator in charge; |
| ▪ Livius OLTENACU | OIFR's investigator | member; |
| ▪ Mihai SURU | Romania Railway Safety Authority | - state inspector member; |
| ▪ Marian ZAMFIRACHE | SC UNIFERTRANS SA | member. |

B. INVESTIGATION REPORT BRIEF PRESENTATION

On the 22nd of December 2012, at 12.35, in CREIR Timisoara, in the running of the freight train no. 50408 (belonging to the railway undertaking SC UNIFERTRANS SA), in the railway station Pui, at its passing through the passage between platforms at km 43+810, a railway accident occurred, consisting in the derailment of the second bogie, in the running direction of the wagon no. 88536656800-8, the 9th from the locomotive.

Following this accident, the traffic on the line no. III (afferent to stretch I) from the railway station Pui was closed at the moment of the accident occurrence up to 22.30, on the 22nd of December 2012, when the wagon was re-railed.

There were no delays of trains.

Following this accident were not injured or casualties.

Direct cause

The direct cause of this accident was that the wheels of the axle left the line, because the fall of the break block holder situated in front of the wheel no. 5, in the running direction, from the wagon no. 88536656800-8 and the its blocking in the trench between the track from the left side and the slabs of the passage between platforms situated in the railway station Pui, at km 43 +810, which made it become an obstacle in the track gauge.

Contributing factors

The improper repair performed at the safety strap afferent to the front part, in the running direction, of the wheel no. 5 of the wagon.

Underlying cause

The underlying cause of this railway accident was the failure to comply with the instructional provisions performed at the technical inspections at the train composition and in transit made at the freight train no. 50408, on 22nd of December 2012, which have in its composition wagon no. 88536656800-8.

Primary causes

None.

Safety recommendation

None.

C. INVESTIGATING REPORT

C.1. Accident presentation

On the 22nd of December 2012, in the railway station Episcopia Bihor, the freight train no. 50408 consisting in 24 empty wagons type Fals, 96 axles, was made available for the technical inspection at the forming of the train and the brake test, which were made by the examiner belonging to SC UNIFERTRANS SA.

After the technical inspection at the forming of the train and the brake test, the train was dispatch to the railway station Ploșoru. In the railway station Utvinișu Nou was performed the technical revision in transit of the train and also was changed the train hauling (the locomotive DA 1209 was changed with EA 272). In the railway station Deva the locomotive team was changed.

From the railway station Deva the train was dispatch to the railway station Ploșoru, on the 22nd of December 2012, at 05.05, and arrived in the railway station Pui at 06.25, were stabled on the line no. 4. The train no. 50408 stopped in the railway station Pui until 12.35, when it was dispatched to the railway station Petroșani.

After the train dispatching, the movement inspector from the railway station Pui, which inspected visually the train, heard a noise and observed parts hanging from one of the wagons of the train. In the next moment he went in the movement office and tried to contact the driver of the train, but it was not received and the train continued its running until the switches from the X end of the station, where it was stopped by emergency brake.

After the emergency stop of the train, the driver went along the train to verify the cause of the emergency brake and observed that one of the wagons of the train was derailed. He notified the movement inspector from the railway station Pui, by radio-telephone equipment, about the findings in the train and took measures to keep the train stopped.

When the station manager and the other sub-units heads arrived on the site, they find out that the second bogie from the wagon no. 88536656800-8 (the 9th from the locomotive) was derailed in the running direction and that, on the distance from the passage between platforms at km 43 + 810 until

the area of switches (switch no. 15 – km 44 + 220), was spread more components of the bogie wagon.

The place where the accident occurred is presented in photo no. 1.



Photo 1

Following this accident both the line no. III (straight track) and the line no. 4 (deflecting track) from the railway station Pui were closed from traffic and shunting. Reopening of the railway traffic was made as follows:

- line no. III (straight track) at 22.30 (after the re-railed of the wagon);
- line no. 4 (deflecting track), on a 50 meters length in the X end of the station, on 28th of December 2012, at 16.00, with a speed restriction of 5 km/h.

Following the occurrence of the accident were not rail delays for passenger trains and freight.

The derailed wagon was lifted on the 22nd of December 2012 at 22.30, when the traffic and shunting were restored on the line no. III (straight track).

Following this accident were not injured or casualties.

Following the notification of this railway accident, made according to the provisions of the specific regulations, at the accident place came the specialists of OIFR, Romanian Railway Safety Authority, public railway infrastructure manager CNCF „CFR” SA and of the railway undertaking SC UNIFERTRANS SA.

According to the classification of the accidents, stipulated at the art. 7, paragraph (1), point b) from the *Regulation*, the derailment of the wagon no. 88536656800-8 from the composition of the train no. 50408, on the 22th of December 2012, is defined as **railway accident** according to the **art. 7, point 1, letter b.**

C.2. Accident circumstances

C.2.1. Involved parties

The infrastructure and superstructure of the track where the accident happened are administrated by CNCF „CFR” SA. The maintenance of the superstructure is made by the employees of the Track Section L9 Simeria - District Pui from CREIR Timișoara.

The interlocking system from the railway station Pui is maintained by the employees of the Interlocking Section CT 3 Târgu Jiu - District Pui from CREIR Timișoara.

The hauling locomotive EA 272 and the wagons from the train no. 50408 are owned by the railway undertaking SC UNIFERTRANS SA.

The communication equipment from the locomotive is owned by the railway undertaking SC UNIFERTRANS SA and maintained by its employees.

C.2.2. Composition and the equipment of the train

The freight train no. 50408, consisting in 24 wagons (empty), 96 axles, 581 gross tonnage, 339 meters length was hauled by the locomotive EA 272, belonging to the railway undertaking SC UNIFERTRANS SA.

C.2.3. Presentation of the railway equipments involved in the accident

C.2.3.1. Tracks

Route presentation

From the dispatching station (Episcopia Bihor) and until the place where the derailment occurred (railway station Pui) the train run a distance of about 240 km, the track consisting in a series of straight lines and curves with the smallest radius $R = 250$ meters and the track alignment is made from a series of gradients, the maximum being under 7,0‰.

Superstructure presentation

The place of the derailment was on the line no. 4 (deflecting track) from the railway station Pui.

The line no. 4 has the following technical characteristics:

- rail: type 49
- sleepers: concrete T13 and wooden sleepers
- ballast: chocked broken stone
- track embankment: alignment
- longitudinal profile: on the distance km 43 + 700 – km 44 + 200 gradient of 5,0 ‰.

C.2.3.2 Equipments

The traffic on the running section Livezeni – Simeria is made through automatic block system and running order, if case, handed over by the movement inspector.

C.2.3.3 Wagon data

Technical characteristics of the wagon no. 88536656800-8:

- wagon type Fals;
- automatic brake type KE-GP;
- bogies type Y25cs;
- automatic brake rod adjuster DRV 2 AT-600;
- wagon's wheel-base 9,00 meters;
- length over buffers 12,79 meters;
- tare weight 23,0 tons;
- buffing gear buffer with round plate;
- draft gear discontinuous;
- hand brake handled from the platform;
- loading capacity 55,0 tons;
- date of the last scheduled overhaul type RP 28th of June 2007 at ROVA Roşiori de Vede;
- maximum overhaul deadline 6 years.

C.2.4 Communication means

The communication between the driver and the movement inspector was ensured through radio-telephone equipments. It is stated that the driver of the freight train no. 50408 wasn't received from the movements inspector from the railway station Pui, that noticed him that there was a wagon with hanging parts and that he had to take measures for stopping the train.

C.2.5. Start of the railway emergency plan

Soon after the railway accident, the intervention plan for the removal of the damages and for the restoration of the traffic was made in accordance with the information flow stipulated in the *Investigation Regulation of the accidents and incidents, for the development and improvement of Romanian railway and subway safety*, approved by the Government Decision no. 117/2010, according which, at the accident place came the representatives of public railway infrastructure manager CNCF „CFR” SA, of freight undertaking SC UNIFERTRANS SA and of Romanian Railway Authority – AFER (OIFR and Romanian Railway Safety Authority).

C.3. Accident consequences

C.3.1. Fatalities and injuries

No fatalities or injuries.

C.3.2. Material damages

The value of the material damages, according to the estimations drawn up by the owner of the rolling stock and the public railway infrastructure manager, is:

Material damages	Value (lei)
at the wagons – according to the estimation no. RVg/907/12 th of October 2012 of Track Section IRV Oradea	446,35
at the tracks – according to the estimation no. 3293/3 rd of September 2012 from the Track Section L9 Simeria	512,09
train delays – according to the estimation no. 129/20013 of Traffic Controller Deva	0
TOTAL	958,44 lei

C.3.3. Consequences of the accident in the traffic

The accident didn't affect the railway traffic, there were no passengers or freight train's delay.

C.4. External circumstances

On the 22nd of November 2012, between 06.00 and 12.00 o'clock, the visibility was good, the temperature was about -5⁰ C (at 06.00) and +0⁰ C (at 12.00).

The visibility of the light signals was in accordance with the provisions of the specific regulations in force.

C.5 Investigation course

C.5.1 Summary of the involved staff testimonies

The examiner which performed the technical inspection at the forming and the brake test of the train no. 50408 in the station Episcopia Bihor stated:

- he performed on 21st of December 2012 the technical inspection at the forming and the complete brake test of the train no. 50408 with the hauling locomotive of the train;
- during the performance of the technical inspection he observed a missing safety strap at the wagon no. 88536656800-8;
- he assured the brake beam afferent to this safety strap trough the binding of „3 wires of 4 mm” and isolated the automatic brake of this wagon;
- the others safety elements (bolts, clips, locking pins) were complete;
- he repaired provisionally (the missing safety strap) and isolated the automatic brake;
- he knew that, in conformity with the provisions of the Instruction no. 250/2005, in the situation when he had observed the missing safety strap, he had to replace it or to repair provisionally the safety strap, or, if this is not possible, to notify the wagon and route it to a workshop.

The examiner which performed the technical inspection in transit and the brake test of the train no. 50408 in the station Utvinişu Nou stated:

- he performed on 22nd of December 2012 the technical inspection in transit and the brake test of the train no. 50408;

- he observed at the wheel no. 5 of the wagon no. 88536656800-8 a missing safety strap and assured with wires („about 4 wires”), and the suspended parts instructionally assured;
- he considered that the wagon no. 88536656800-8, with the automatic brake off, can run until the railway station Ploșoru;
- he knew that, in conformity with the provisions of the Instruction no. 250/2005, in the situation when he had observe the missing safety strap, he had to replace it or to repair provisionally the safety strap, or, if this is not possible, to notify the wagon and route it to a workshop.

C.5.2. Safety management system

At the moment of the accident, CNCF „CFR” SA, as manager of the public railway infrastructure, had implemented its own railway safety management system, according to the provisions of the Law for railway safety and of the Minister of Transports’ Order no. 101/2008 on the granting of the safety authorization to Romanian railway infrastructure administrator/manager, getting:

- Safety Authorization – Part A, identification number ASA 09002 – by which Romanian Railway Safety Authority, from Romanian Railway Authority – AFER agrees the acceptance of the safety management system of the railway infrastructure manager;
- Safety Authorization – Part B, identification number ASB 09007 – by which Romanian Railway Safety Authority, from Romanian Railway Authority – AFER agrees the acceptance of the dispositions taken by railway infrastructure manager in order to comply with the specific requirements necessary to ensure the railway infrastructure safety, in the designing, maintenance and operation, including if case, maintenance and operation of the system for the traffic control and signaling.

At the moment of the accident occurrence, SC UNIFERTRANS SA, as railway undertaking had implemented its own railway safety management, according to the provisions of the Law for railway safety and of the Minister of Transports’ Order no. 535/2007 for the approval of the norms for the granting of the railway transport licenses and the safety certificates in order to perform railway transport on Romanian railways, got:

- Safety Certificate – Part A, no. 0014 – granted on 26th of April 2012 by which Romanian Railway Safety Authority, from Romanian Railway Authority – AFER agrees the acceptance of safety management system of the railway undertaking, in accordance with the national legislation;
- Safety Certificate – Part B, no. 0188 – granted on 22nd of November 2012 by which Romanian Railway Safety Authority, from Romanian Railway Authority – AFER agrees the acceptance of the dispositions taken by the railway company in order to comply with the specific requirements necessary for the safety operation on the relevant network, in accordance with the national legislation.

C.5.3 Norms and regulations. Sources and references for the investigation

In the investigation of the railway accident, one took into account the next norms and regulations:

- Regulations for the train running and railway vehicle shunting no. 005, approved by Minister of Transports, Constructions and Tourism’s Order no. 1816 from the 26th of october 2005;
- Instructions for the technical inspection and the maintenance of the wagons in operation no. 250, approved by Minister of Transports, Constructions and Tourism’s Order no. 1817 from the 26th of October 2005;
- Instructions for the activity of the locomotive staff no. 201, approved by the Minister of Transports, Constructions and Tourism’s Order no. 2229 from the 23th of November 2006;
- Instruction for the establishment of the terms and order of the track inspections no. 305 approved by Order of Minister of Transports no. 71/17.02.1997;
- Instruction of norms and tolerances for the track construction and maintenance – lines with standard gauge no. 314/1989;
- Instruction for speed restrictions, track renting and cut of power supply no. 317, approved by Order of Minister of Transports no. 317/08.03.2004.

In the investigation of the railway accident one took into account the next sources and references:

- copies of the documents enclosed to the investigation file;

- photos taken soon after the railway accident by the members of the investigation commission;
- documents on the maintenance of the rolling stock (wagon no. 88536656800-8), provided by the persons in charge with their maintenance;
- results of the measurements made soon after the accident at the superstructure and at the derailed wagon;
- examination and interpretation of the technical condition of the elements involved in the accident: infrastructure, railway equipment and train;
- testimonies of the employees involved in the accident.

C.5.4 Operation of the technical equipment, infrastructure and rolling stock

C.5.4.1 Data found out on the tracks

Findings and measurements at the tracks, after the derailment

1. at the date of the derailment the running speed on the line 4 from the station Pui was restricted at 15 km/h;
2. within the track, at km 43 + 810 it is a passage between platforms from 5 standardized slabs (on exterior right side and in interior of the track), according to the photo no. 2;



Photo no. 2

3. with about 300 meters before this passage between platforms, on the track bed can be observed friction traces of broken stone (from the track bed) by an object in movement, according to Photo no. 3 and no. 4;



Photo no. 3



Photo no. 4

4. the slab no. 5 from the passage between platforms is strongly hit and broken on the side next to slab no. 4, on its left side (photo no. 6) and on the right side, beginning from the half width, to the X end of the station, one can see the over-climbing of the flange of the wheel no. 6 from the wagon no. 88536656800-8, according to photo no. 5.



Photo no. 5



Photo no. 6

5. the sleepers of the passage between platforms were suitable, assuring trough efficient fastening the frame track – sleeper and the gauge;
6. the fall of the axle corresponding to the wheels 7-8 (second in the running direction of the bogie no. 2) happened at 40 meters after the passage between platforms, at km 43 + 850, with the left wheel outside of the track, and the right wheel between the rails;
7. the traces specific to the derailment were seen on a 410 meters length, from km 43+810 (the level crossing) at km 44+220 (in the area of switches TDJ 17/19);
8. from the over-climbing reversely the running direction were marked on the site pickets from 2,5 m to 2,5 m, and in the resulted points there were measurements at the gauge and the crossing level of the track with the track gauge and superelevation measuring device series SI no. ON1997-3831, metrological tested on the 5th of December 2012 (leaflet no. 82). The values given by the gauge measuring were within the tolerances allowed by the Instruction no. 314/1989, as follows:

Picket no.	1	2	3	4	5
E/N (mm)	0/9	1/7	-2/5	0/3	1/4

C.5.4.2 Data on the operation of the rolling stock and its technical equipment

Findings and measurements at the train wagons:

- the changeovers „Freight - Passengers” and ”Empty - Loaded” devices were in the suitable position to the wagon condition, respectively the positions ”Freight” and „Empty”;
- the train had 2 wagons with automatic brake in “off” position;
- wagon’s coupling was suitable;
- the functional couplings of the draft gears were corresponding fastened for freight trains;
- there were no uninsured parts which could jeopardize the traffic safety;

Defects at the wagon no. 88536656800-8 at the accident site:

- second bogie, in the running direction, with both axles derailed at km 44 + 220;
- the safety strap from the front of the first axle (corresponding to wheels no. 5-6) of the bogie from left part (wheel no. 5) was missing, with an old breakage in the right of the fastening screws, visible in Photo no. 7;
- the superior fastening elements (bolt) of the brake hanger fell along the route (friction traces in the fastening hole from the bogie frame are visible glossy), photo no. 8;



Photo no. 7



Photo no. 8

- the missing of the safety strap, the brake hanger and of brake block holder afferent to wheel no. 5, confirmation in Photo no. 9, and the brake block holder was found twisted (photo no. 10) between the rails of the track, at about 40 meters from the passage between platforms, at km 43+850.



Photo no. 9



Photo no. 10

C.6. Analysis and conclusions

C.6.1. Conclusions on the technical condition of the track superstructure

Taking into account the track characteristics, described at chapter *C.2.3.1 Tracks*, presented in *Presentation of the railway equipment involved in the railway accident*, and the findings and measurements made at the track, after the derailment, described in chapter *C.5.4.1 Data found out on the track*, one can stated that the technical condition of the track superstructure and switches could not influence the derailment.

C.6.2. Conclusions on the technical condition of the train wagons

Excepting the missing safety strap of the brake beam afferent to wheel no. 5 from the front of the derailed bogie and the fastening with wires of 4 mm, at the running gear of the bogies from the derailed wagon there were not defects which could exist before the dispatching of the train from the railway station Episcopia Bihor.

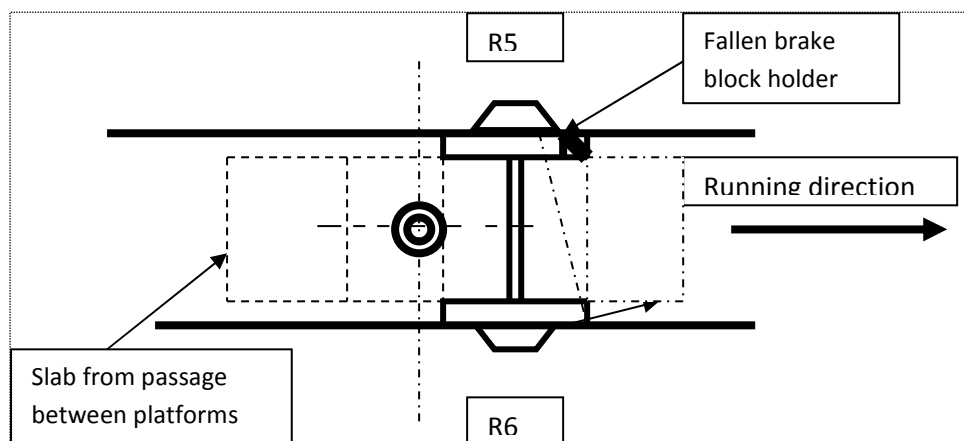
C.6.3. Analysis and conclusions on the derailment of the train

After the analysis of the findings at the place where the accident occurred, of the technical condition of the involved wagon, of the photographs taken at the accident place, as well as the testimonies of the involved employees, one can stated that the railway accident happened in the following conditions:

- at the performance of the technical inspection at the train composition in the railway station Episcopia Bihor, one observed the missing of the safety strap afferent to wheel no. 5 of the brake

beam from the front of the bogie no. II (with an old breakage) from the wagon no. 88536656800-8 (being the 9th in the train);

- in this situation, this missing piece was replaced with 3 coils of 4 mm wire and put automatic brake of this wagon in "off" position, although in conformity with the provisions of the Instruction no. 250/2005, in this situation the safety strap had to be replaced or repaired provisionally, and, if this was not possible, to notify the wagon and route it to a workshop;
- at the performance of the technical inspection in transit at the railway station Utvinișu Nou one found out the replacement of the safety strap afferent to wheel no. 5 of the brake beam in the front of the bogie no. II from the wagon no. 88536656800-8 with about 4 coils of 4 mm wires;
- in the running, from the railway station Utvinișu Nou and to the railway station Pui occurred the falling of the fastening elements of the brake hanger of the brake block holder from the front of wheel no. 5 with the bogie frame, then happened the detachment from the superior side of the brake hanger of the brake block holder and then the falling of this;
- after the detachment of the brake hanger from the front of the wheel no. 5, the unit formed from brake block holder, brake hanger and the brake beam was supported on the wire connection which replaced the afferent safety strap, turn and hit the railway infrastructure elements; following the hits of the assembly elements between the brake hanger and the brake block holder (bolts, clips, pins) broke, leading to the detachment of the brake hanger from the brake block holder, the most probably, during the period of time between the railway stations Băiești and Pui;
- also, in the same time, due to the dynamic forces of the brake beam, brake block holder and brake block assembly on the wire connection that replaced the safety strap afferent to the front part of the wheel no. 5, it broke, then, at the stabling of the train no. 50408, this assembly went out in the kinematic gauge, hitting the broken stone from the left part of the track, in the running direction of the train;
- at the dispatching of the train from railway station Pui, the brake block holder situated in the front of wheel no. 5 blocked in the trench between the rail of the left side, in the running direction of the train and the slabs of the passage between platforms situated at km 43+810, which led to the blocking of this wheel. The blocking of wheel no. 5 generated to the axle corresponding to the wheels no. 5-6 a turn against the blocking point, as it is presented in the drawing below and determined that the opposite wheel (no. 6) over-climb the slab no. 5 from the passage between platforms and, after running around 25 cm, its fall in the exterior of the track. The derailment of the axle corresponding to the wheels no. 7-8 is a consequence of the derailment of the axle corresponding to the wheels no. 5-6;



- also, at the dispatching of the train no. 50408 the movements inspector from the railway station Pui heard a noise and observed parts hanging from the train, went to the movements inspector office and through the radio-telephone ordered the driver to stop the train;
- the driver of the train no. 50408 did not receive the order and continued to run the train until the emergency braking and its stopping.
- the traces specific to the derailment were seen on a 410 meters length (km 43+810 – 44+220);

D. ACCIDENT CAUSES

D.1. Direct cause

The direct cause of this accident was that the wheels of the axle left the line, because the fall of the break block holder situated in front of the wheel no. 5, in the running direction, from the wagon no. 88536656800-8 and the its blocking in the trench between the track from the left side and the slabs of the passage between platforms situated in the railway station Pui, at km 43 +810, which made it become an obstacle in the track gauge.

Contributing factors

The improper repair performed at the safety strap afferent to the front part, in the running direction, of the wheel no. 5 of the wagon.

D.2. Underlying cause

The underlying cause of this railway accident was the failure to comply with the instructional provisions performed at the technical inspections at the train composition and in transit made at the freight train no. 50408, on 22nd of December 2012, which have in its composition wagon no. 88536656800-8.

D.3. Root causes

None

E. SAFETY RECOMMENDATIONS

None.

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* *

This Investigation Report shall be transmitted to Romanian Railway Safety Authority, to the public railway infrastructure manager CNCF „CFR” SA and to the railway undertaking SC UNIFERTRANS SA.

Bucharest
21th of February 2013

Members of the investigation commission:

- | | | |
|---------------------|--|-------------------------|
| ▪ Luca PAIȘ | OIFR's investigator | investigator in charge; |
| ▪ Livius OLTENACU | OIFR's investigator | member; |
| ▪ Mihai SURU | Romania Railway Safety Authority - state inspector | member; |
| ▪ Marian ZAMFIRACHE | SC UNIFERTRANS SA | member. |