

Translation from Bulgarian language



REPUBLIC OF BULGARIA
MINISTRY OF TRANSPORT,
INFORMATION TECHNOLOGY AND COMMUNICATIONS

9 Dyakon Ignatiy str , 1000 Sofia
tel.: (+359 2) 940 9317
fax: (+359 2) 940 9350

mail@mt.government.bg
www.mt.government.bg

FINAL REPORT

on

Technical investigation of railway accident- derailment of passenger train No 30111, occurred on 01.02.2015 at 09:10 a.m. during entering in Stryama station



April 2015



бул. "Ал. Стамболийски" № 87, моб. тел.: 0897 070 487, факс: 02/ 980 01 34
бул. "Княгиня Мария Луиза" № 51, моб. тел.: 0893 457 698, факс: 02/ 980 01 34
бул. "Васил Левски" № 68, тел.: 02/ 980 60 52, факс: 02/ 980 01 34
Гео Милев - ул. "Александър Жендов" № 6, моб. тел.: 0894 773 803, факс: 02/ 980 01 34
Младост - бул. „Александър Малинов“ № 23, моб. тел.: 0894 790 313, факс: 02/ 980 01 34

e-mail: office@artedoc.com

20140801

www.artedoc.com

FINAL REPORT

on

Technical investigation of railway accident- derailment of passenger train No 30111, running on Sofia-Karlovo destination while entering into Stryama station at switch No 2, at 09:10 a.m. on 01.02.2015

Objective of the report and rate of responsibility

As per Directive 2004/49/EC of the European Parliament and Council on the rail transport safety in the Community, Rail Transport Act of Republic of Bulgaria and Ordinance No 59 dated 5.12.2006 of the MT, the investigation of rail events aims: to find the cause, which led to its occurrence in order to be eliminated and avoided in future, **without seeking no one's fault and responsibility.**

The investigation is being performed as per art. 115 и, par. 2, of the RTA of Republic of Bulgaria and art. 78, par. 1 of Ordinance No 59 dated 5.12.2006, as a commission for investigation of the rail accident was nominated by Order No ПД-08-2/06.01.2015 of the Minister of Transport, Information Technology and Communication.

The technical investigation commission performed an inspection on the day of the accident and questioned the persons, directly involved in the accident. In order to clarify timely and to ascertain the circumstances and causes that led to the accident occurrence, one independent expert was joined to the Commission. In the course of the investigation were reviewed the report and the materials, submitted by the Task Force. There were additionally required the materials and documents from the SE NRIC and „Holding-BDZ" EAD, which were necessary for the investigation.

The external expert statement was discussed and approved.

1. Ascertained facts and circumstances in the course of investigation.

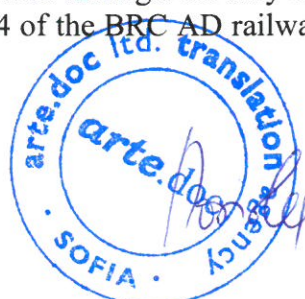
On 01.02.2015 from Sofia station departed passenger train (PT) No 30111 in a composition of 2 coaches, 8 axes with total mass of 94 ton, serviced by electric locomotive No 44179 and running as per the Train operation schedule (TOS) along Sofia-Karlovo destination. At 06:01 a.m., the train departed from Sofia station with locomotive crew of engine driver locomotive, assistant engine driver locomotive, and a traffic crew – train master and conductor. An engine-driver locomotive drove the locomotive from the first command cabin. The train departed from Koprivshytza station at 08:59 a.m. and arrived in Stryama at 09:10 a.m.

The traffic manager on duty (new shift) accepted the duty at Stryama station on 01.02.2015 at 05:35 a.m. The signalling technique (ST) in the station and the automatic block system with passage signals in the interstation Stryama-Klisura and Stryama-Koprivshytza did not work as there was missing power supply voltage of 75 Hz, поради because of failure in the power transmission line 6 kV of the dispatching centralisation (DC). The train operation between the stations Stryama-Klisura and Stryama-Koprivshytza is ensured by a telephone method.

On 01.02.2015 at 06:00 a.m., the duty was also accepted by a switchman/post at Stryama station.

Until 08:13 a.m., through Stryama station passed with stopping PT No 30112 and PT No 30114 along the first main track.

At 08:40 a.m., the train dispatcher ordered to the traffic manager on duty in Stryama station to carry out a meeting of direct freight train (DFT) No 30584 of the BRC AD railway undertaking with PT No 30111.



Due to the lack of power supply voltage, at the panel-board of a route relay interlocking (RRI) the switches gave information “artificial occupancy.” That imposed their turning to be performed by sealed buttons – a switch emergency button (SEB) “E” for the switches in the even filler and SEB “O” button for the switches in the odd filler and the trains were accepted by a welcoming/acceptance signal (WS).

At 08:45 a.m. under a requirement of the traffic manager on duty, Stryama station by order No 15 gave permission for unsealing and use of buttons. The buttons were switch emergency SEB “E” with counter No 1412, switch emergency SEB “O” with counter No 0907 for turning of switches No 1 and No 2 at Stryama station and a button for welcoming signal WS “E” with counter No 2375 for the acceptance of PT No 30111.

After the exchange of telephoned telegrams form 1 and 2 between Koprivshytza and Stryama stations, PT No 30111 departed from Koprivshytza to Stryama station at 08:59 a.m.

At 09:01 a.m. at Stryama station was accepted DFT No 30584 on the first main track, which stopped for a meeting with PT No 30111.

After the acceptance of DFT No 30584, the traffic manager on duty undertook actions for turning of switches No 1 and No 2, for preparation of a train route along second deviation track for acceptance and dispatch of PT No 30111. By a switch emergency button SEB “E” and individual button for switch No 1, the switch was turned for exit from second track, however for a moment loosed electric control. The traffic manager on duty Stryama station gave an oral order to the post switchman to lock switch No 1 with the manual switch lock (MSL) type “Kolben–Danek”. The post switchman locked switch No 1 with the MSL and reported orally to the traffic manager on duty at Stryama station, using his personal mobile phone. The traffic manager on duty prepared the route, through the switch emergency button SEB “E” and individual button of switch No 2, which he used two times with the argument that the first was loosed and tried to turn switch No 2. He without convincing himself in incontestable way on the correct preparation of the route and presence of electric control of switch No 2, as per the light indications of the panel-board, used the buttons for electric lock of the switches MCLS “E” and MCLS “O” in the even filler and then opened welcoming signal for acceptance of PT No 30111.

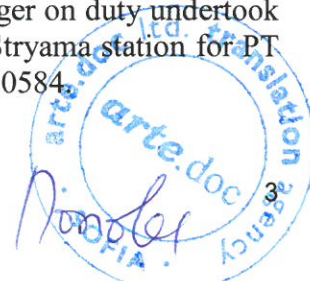
The technical investigation commission carried out a confrontation at the MTITC with the traffic manager on duty at Stryama station, at SATOM – Sofia in order to:

- Find the conformity between the signals and switches position during the order of the route for PT No 30111 on 01.02.2015 from the panel-board in the station;
- Detecting the RRI equipment status, before the train derailment;
- Check of the conformity with the welcoming signal and the indication of the panel-board for the position of switch No 2 at Stryama station.

The duty manager stated that the electric bell, which gives information on the switch control in the station, was switched off from the previous shift. As well as he advised that, he did not remember whether switch No 2 had electric control. He did not order to the post switchman to lock switch No 2 with manual switch lock type Kolben - Danek. He stated he did not perform other manipulations for turning switch No 2, and then opened welcoming signal “E.”

A confrontation with switchman/ post at Stryama station was not performed due to an pretty immediate dismissal from the employer SATOM-Sofia and not coordinated actions with the Technical investigation commission at MTITC.

The post switchman at the acceptance of the duty denied to implement an order of the traffic manager on duty for cleaning and locking of switch No 2 with the argument that was dark outside (evident from the explanation of the traffic manager on duty). The traffic manager on duty undertook an order of route on second track, which includes switches No 2 and No 4 in Stryama station for PT No 30111 at Koprivshytza station, as on first main track was accepted DFT No 30584.



During the approaching of the entrance signal in Stryama station, the engine drivers noticed the welcoming, reduced the speed, and passed through the entrance signal at Stryama station with speed 25 km/h. Within the approach of the locomotive to the first entrance switch, switch No 2 noticed that the switch was turned for deviation track in position minus (-). Within the entrance of the locomotive in switch No 2, the engine drivers heard a particular noise.

The locomotive driver undertook actions for the train stopping, using the train brake. From the moment of retention until the final stopping, the train run approximately 60 metres and had a recorded fast stopping with the automatic brake at 09:14 a.m., which was evident from the speedometer band decoding of the locomotive.

There were derailed locomotive No 44-179 with two bogies, coach No 50522133013-5 with two bogies, which was first in the train composition and coach No 50522150081-0 with first bogie, which was a tail of the train.

The traffic manager on duty went out to welcome the train and reporting its delay went back into the apparatus premises at the station, and called the train dispatcher. He understood from him that the train derailed and went on the spot to see what was happening. After that, he went back at Stryama station, spoke again with the train dispatcher in Sofia, and informed the stationmaster at Stryama station via his business mobile phone.

On the accident site arrived representatives of the competent investigation authorities and the Commission at MTITC, who performed inspections of the electric locomotive, coaches, and structures of the railway infrastructure.

The Commission discovered that the relay premises at the station were locked with two keys, which are kept by the traffic manager on duty in sealed condition.

At the arrival of the competent and investigation authorities on the accident site, approximately at 11:00 a.m., they found that the points of switch No 2 were in semi-turned position. None marks of ascension from rail rolling stock (RRS) were found on the point parts of the switch, which showed that the switch was not completely turned and locked. That led to motion of the RRS wheels on the two stock rails and subsequently to RRS derailment. In case of electric control lack, switch No should have been locked by MSL.

Due to the locomotive and two coaches of the PT No 30111 derailment, the train traffic between the stations of Koprivshtiza – Stryama was closed from 09:10 a.m. on 01.02.2015 to 00:50 a.m. on 02.02.2015.

At 09:40 a.m. from Sofia, station departed a specialised automobile UNIMOG, NRIC property, which arrived at 15:30 p.m. at Stryama station for lifting of the derailed locomotive and coaches.

At 10:40 a.m. from Plovdiv station departed specialised automobile UNIMOG, NRIC property, which arrived at 14:30 p.m. in Stryama station for lifting of the derailed locomotive and coaches.

After completion of the inspections with the competent authorities at RD MI (Ministry of Interiors) – Karlovo and the Technical investigation commission, at 13:15 p.m. was given permission for commencement of the emergency-rehabilitation works.

At 16:20 p.m. was lifted coach No 50522150081-0, at 17:40 p.m. was lifted coach No 50522133013-5. At 17:54 p.m., the two coaches departed to Koprivshtiza station with locomotive No 87-028 of BRC AD, as train No 30394.

At 21:20 p.m. was lifted locomotive No 44-179 and it was self-propelled to second track, for opening and gauge clearance and distance for commencement of the repair activities on the track and switches rehabilitation.

At 00:25 a.m. on 02.02.2015, the track rehabilitation works were completed and inspection of the catenary was performed.



At 00:50 a.m. on 02.02.2015, the train operation was restored through switch No 2 on the straight switch component only, to first main track with speed of 15 km/h.

2. Officials involved in the case.

2.1 Locomotive crew:

2.1.1. „Engine driver, locomotive”, of electric locomotive No 44179 at locomotive depot Plovdiv, “BDZ-Passenger Services” EOOD - 31 years of work experience;

2.1.2. ”Assistant engine-driver, locomotive” of electric locomotive No 44179 at locomotive depot Plovdiv, “BDZ-Passenger Services” EOOD - 10 years of work experience;

2.2. Traffic crew:

2.2.1. ”Train master” of PSD Plovdiv, “BDZ-Passenger Services” EOOD - 24 years of work experience;

2.3. Station officials:

2.3.1. „Traffic manager on duty” Stryama station – official at TOSAM – Sofia, SE NRIC - 1 year and 9 months of work experience;

2.3.2. „Switchman/post” Stryama station – official at TOSAM – Sofia, SE NRIC - 9 years of work experience.

2.4. Other officials

2.4.1. “Traffic manager on duty/senior train dispatcher” – replaced Unit “SA” Sofia, SE NRIC - 41 years of work experience.

2.4.2. “Traffic manager/train dispatcher” – Unit “SA” Sofia at SE NRIC - 26 years of work experience

3. Physical condition of the officials involved in the accident.

To the officials, involved in the accident was assured the necessary duration of rest before starting work as required by the Labour Code and Ordinance No 50 of 28.12.2001 on the Working time of the management and executive personnel, involved in the provision of passenger and freight rail transport.

To the officials, involved in the accident was performed pre-travel (pre-shift) instruction and they were declared to be alerted, rested and that did not drink any alcohol and other drugs.

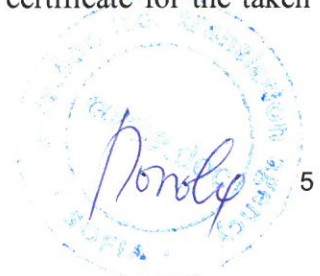
The officials, involved in the accident possessed valid certificates of psychological examination.

4. Documents, certifying work qualification and exercise of work position.

All the officials, involved in the accident, possessed the necessary work and professional qualifications for the respective work position and a certificate for its execution.

The traffic manager has worked at Stryama station since 2013.

Pursuant to art. 10 and art. 11 of Ordinance No 58/02.08.2006 the new traffic manager on duty at Stryama station, sat an exam and to him was issued a qualification certificate for the taken position on 15.03.2013 from the Railway Administration Executive Agency.



The post switchman at Stryama station sat an exam and to him was issued a qualification certificate for the taken position on 12.01.2015 from the Railway Administration Executive Agency.

5. Activities of the officials before and during the accident.

Immediately before and during the accident the officials of the locomotive and traffic crews of PT No 30111 of BDZ-PS EOOD acted in accordance with the effective and approved legislative documents, which regulate the traffic safety in the rail transport.

The engine driver, locomotive and the assistant engine driver, locomotive, who serviced PT No 30111, acted in accordance with the effective and approved legislative documents, which regulate the traffic safety in the rail transport.

The traffic manager on duty at Stryama station did not convince himself incontestably on the correct preparation of the route of PT No 30111 with welcoming/acceptance signal on the second track in the station.

The switchman/post did not respect the orders of the traffic manager on duty at Stryama station, namely to check and clean switches No 2 and No 4 after accepting the duty shift.

6. Circumstances, preceding the accident in terms of track, signalling equipment, catenary, rolling stock etc.

Meteorological weather data, which had impact on the visibility of signals:

- Air temperature - 0°C;
- Light wind and snowing;
- In the day-light hours;
- Good-visibility.

The plan for the train acceptance in the station was respected.

Profile, geometry, and track layout on the accident site:

- The distance from the entrance semaphore (ES) to the start of switch No 2 (BS) at Stryama station was 321 m straight line section, part of which in tunnel;
- The distance between the warning semaphore (WS) and the entrance semaphore was 1100 m straight line section, completely in tunnel;
- Switches No 2 and No 4 were in radius R=300 m, situated after the tunnel.

Permanent way: regular.

Type of the interlocking and interstation signalling equipment, and its status before the accident: RRI – Russian for small stations, automatic block system (AB) with passage signals in the interstation towards Koprivshtiza station – non-functional due to the lack of power supply voltage of the Dispatching Centralisation (DC). The warning and entrance semaphores were regular and frequently started. The route for acceptance of the passenger train No 30111 with acceptance signal through switches No 2 and No 4 on second acceptance-departure track at Stryama station was disordered, not delineated and unlocked.

Cleanness of the switches, signals and structures before the accident – regular with artificial occupancy of the switches because of the power supply lack;

Catenary: technically regular regarding the occurred railway accident;

Train composition station: Sofia;

Signalling and telecommunication connections: technically regular;



Electric locomotive No 44179 was technically regular, with technically regular draft gear, brake system illumination, and acoustic signal means, as per the technical normative documents, which was evident from the records in the respective Logbooks, presented in the Task-force report.

Coaches from the composition of PT No 30111 with No 50522133013-5 and No 50 52 2150081-0, were technically regular, with technically regular draft gear, brake system and illumination signalling means, as per the technical norms and requirements evident from the protocols of the coaches presented in the Task-force report.

7. Fulfilment of the working procedures and technologies within the system of the SE National Railway Infrastructure Company before and during the accident.

The procedures and working technologies at Train operation and station activity management Division (TOSAM) – Sofia, which is within the structure of SE NRIC, before and during the accident were not fulfilled, which was evident from the Task-force report and the applications to it.

The records conformity in the logbooks was not respected form (II-76, Book VII-51 part 6 and DP-2). The Book for dispatching orders, handled by the traffic manager on duty at Stryama station and from the train dispatcher on shift, on the indications of the sealed buttons counters – SEB “E”, SEB “O”, AS “O” and AS “E” as per Order No 15/01.02.2015 at 08:45 a.m. of the train dispatcher to Stryama station.

From the conducted experiments and the additionally required materials as well as the performed confrontations on-site of the staff involved in the accident, were proved gaps and infringements in the procedures and technologies of work at TOSAM Division – Sofia.

The switchman/post was accepted to work without sitting an inspection exam under the national safety rules for the traffic in the rail transport, for the time from 03.11 to 12.12.2014. Within the same period, there were no registered checks on the traffic safety from the SE NRIC control authorities.

8. Fulfilment of the procedures and technologies for rolling stock service within the railway undertaking system before and during the accident.

Passenger train No 30111 was ensured with the necessary brake mass and was equipped with the necessary train documents. The locomotive and traffic crews were supplied with business mobile phones.

Within the review of the technical documentation, there were not ascertained and recorded any infringements of the effective, Rules for factory and depot repair and maintenance of electric locomotives and passenger coaches, as well as of the organisation and operation related to the accident.

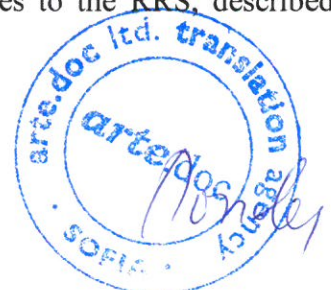
9. Railway infrastructure and rolling stock status before, during, and after the accident.

It was found that the railway infrastructure was regular before and during the accident, except for the lack of power supply voltage from transmission line for 6 kV – 75Hz supplying the DC.

As a result from the accident were found failures and damages to the railway infrastructure, described in details in item 10.4.

Before the accident, the electric locomotive No 44179 and the coaches in the composition of PT No 30111 were regular.

As a result from the accident were found failures and damages to the RRS, described in details in item 10.3.



10. Consequences from the accident.

10.1. Fatalities – there were no any

10.2. Seriously injured – there were no any

10.3. Failures and damages to the railway rolling stock:

10.3.1. Electric locomotive:

The caused damages to electric locomotive No 44179 – property of “BDZ-Passenger Services” EOOD, as per balanced value amounted to 17 009,74 BGN.

10.3.2. Coaches:

10.3.2.1. Coach No 50522133013-5, property of “BDZ-Passenger Services” EOOD, the caused damages to the coach amounted to 2 177,18 BGN.

10.3.2.2. Coach No 50522150081-0, property of “BDZ-Passenger Services” EOOD, the caused damages amounted to 2 124.39 BGN.

10.4. Failures and damages to the rail infrastructure:

10.4.1. Permanent way and structures:

As a result from the derailment were caused failures and damages to the permanent way and components of rail switches No 2 and No 4 as follows:

- The costs for rehabilitation of 2 pieces semi-point installations amounted to 333,20 BGN VAT. excluded.

10.4.2. Signalling and communications, radio connections, power supply:

Caused damages – THERE WERE NO ANY.

10.4.3. Catenary:

Caused damages to the catenary and structures – THERE WERE NO ANY.

10.4.4. Other damages and failures: THERE WERE NO ANY.

10.5 Damages and spill of freights, baggage, and parcels: there were no any.

10.6. Train circulation interruption:

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

10.7. Caused train delay:

10.7.1. Delayed trains:

Train No 3636, carrier “BDZ- PS” +132
Train No 3637, carrier “BDZ- PS” +50
Train No 30115, carrier “BDZ- PS” +163
Train No 30117, carrier “BDZ- PS” +75
Train No 30393, carrier “BDZ- PS” +50
Train No 30192, carrier “BDZ- PS” +12
Train No 30604 carrier “BDZ- Cargo” +115
Train No 30580, carrier “BRC AD” +125
Train No 30562, carrier “DB Schenker” + 329
Train No 30594, carrier “DB Schenker” + 122
Train No 30696, carrier “BULMARKET DM” +162

10.7.4. Non -used capacity from “BDZ PS” EOOD on the main railway lines:



Train No 30111, carrier "BDZ- PS"
Train No 3621, carrier "BDZ- PS"
Train No 3601, carrier "BDZ- PS"
Train No 30115, carrier "BDZ- PS"
Train No 30113, carrier "BDZ- PS"
Train No 30118, carrier "BDZ- PS"
Train No 30116, carrier "BDZ- PS"
Train No 3624, carrier "BDZ- PS"
Train No 3622, carrier "BDZ- PS"
Train No 3623, carrier "BDZ- PS"

10.7.5. Non -used capacity on the main railway lines:

Train No 30584, carrier "BRC AD"
Train No 30590, carrier "DB Schenker"

10.7.6. Costs of modifying the Train circulation schedule:

10.7.6.1 "BDZ – Passenger Services" EOOD – 34 321,29 BGN with VAT.

- Appointed trains – 6 846,9 BGN;
- Cancelled trains – 15 305,70 BGN;
- Delayed trains – 1 370,00 BGN;
- Additionally involved transportation personnel – 790,81 BGN;
- Sustentation for locomotives and traffic/transportation crews – 4 287, 66 BGN;

10.7.6.2 "BDZ Cargo" EOOD – 32 365,65 BGN, without VAT.

10.8. Circulation and costs of rehabilitation vehicles:

The costs made for the circulation rehabilitation at Stryama station by UNIMOG of RS – Sofia and from UNIMOG of RS – Plovdiv of SE NRIC amounted to 3 000.27 BGN without VAT.

11. Analyses of the causes for the railway accident.

There performed inspections on site and were presented by the Task Force materials on the investigated railway accident -derailment of PT No 30111, running along Sofia-Karlovo destination, occurred on 01.02.2015 at 09:10 a.m. As a result from the abovementioned was found that the accident was caused from a wrongly ordered entrance route for the train acceptance with welcoming signal on the second acceptance-departure track through switches No 2 and No 4 in Stryama station.

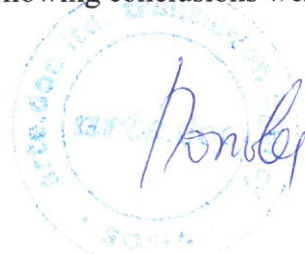
As per the technical specification and work method, Stryama station is situated on km 106+980 of 3rd main railway line between the stations Koprivshiza and Klisura, opened for "Traffic" office and passenger services and it services the district of Stryama village.

From the presented technical specification and work method of Stryama station is evident that:

- The track superstructure and switches are type 49 1:9, with radius R=300. The warning and entrance semaphores are performed under the speed signalling in respect of art. 317 and art. 324 of Ordinance No 58/2.08.2006 on the rules for technical operation, train traffic and signalling in the rail transport.

The interlocking devices ensure check of the safety conditions.

Based on the results from the performed investigation the following conclusions were made:



- All the devices on the preparation of the route of train No 30111, switches with artificial occupancy, warning and entrance semaphores were regular and worked as per the requirements of Ordinance No 58/2.08.2006;

- The indications of the warning and entrance semaphores in the station did not comply with the position of the switches in the preparation of the route, as per the requirements of the legislation;

- The relay premises was locked and compliant to the requirements of the legislation;

The Electric locomotive No 44173 was equipped with controller Knorr D 2 for work with the automatic train brake.

All the trains were ensured with the necessary brake mass. As per the requirements of the effective legislation and the Timetable book, the necessary brake percentage for this train category was 76 %.

As per Certificate of brake mass (VP-11) of train No 30111 dated 01.02.2015, the available brake mass was 130 t, and the necessary 71 t. within a brake percentage of 76 %, i.e. the train was ensured with brake mass.

In his written explanations for the occurred rail accident, the engine driver, locomotive stated that they saw the indication of the acceptance signal and passed it with speed of 25 km/h, as well as that the switch was opened for entrance in deviation track.

12. Causes for the accident.

As a result, from the inspections on place, acquaintance with the report and the additionally required documents from the Task Force, the performed confrontations, the presented analysis of the causes and other technical documents, the Technical Investigation Commission considered that:

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

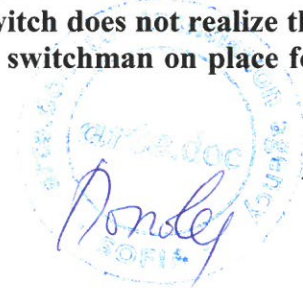
Before opening of the acceptance signal, the traffic manager on duty was obliged to convince himself that the track on which the train would enter was available and the switches for it were correctly turned, equipped with electric controls, and locked.

Within the acceptance of passenger train No 30111 in Stryama station were not met the requirements of the legislative documents for operation of the rail infrastructure, regulating the train operation safety.

1. The traffic manager on duty in Stryama station did not respect –,"Rules of technical operation of the rail infrastructure of National Railway Infrastructure Company" dated 02 August 2006.

1.1. Art. 96, par. 1 and par. 2

"(1) In case that is not possible a switch to be turned completely or does not give the control from 7 to 8 seconds after its turning, the red indication to the switch image starts to wink, accompanied by acoustic signal. This is information on the switch loss of control. The traffic manager on duty shall turn the switch in its initial position, for which it has been performing the control. As well as within second turning attempt the switch does not realize the control, it shall be returned in its initial position and shall be sent to a switchman on place for check and elimination of the causes".



,”(2) Within the Russian route-relay interlocking along the section with dispatching centralisation the red indication “loss of control” does not exist to the switch image, an acoustic signal is given instead”.

1.2 “Art. 98. In case of “artificial occupancy” of switch, the light indication for its position shines with red light. In case of necessity for switch turning, after that is being uncontestably convinced that the switch and the adjacent distances are freed from the rolling stock, the traffic manager on duty or the switchman, after receiving a permission from the train dispatcher, shall unseal the assistant switch button and shall use it in parallel with the respective switch button”.

1.3 ,”Art. 102. When a train route could not be locked because of loss of control of switch (switches), for the preparation of the route shall be exchanged written telephoned telegrams on the preparation of the route. The telegrams shall be exchanged between the traffic manager on duty and the switchman as the train shall be accepted with welcoming signal or sent by order Form II-A. The Form is under the order, defined in “Rules for the train operation and shunting activity in the rail transport” of the Director General of NRIC as for ensuring the train operation, there shall be switched into a telephone method”.

1.4 ,”Art. 104. In case that within interruption of the power supply of the route-relay interlocking in the stations included in section with Sofia-Karlovo dispatching centralization, is missing an illumination indication for the tracks occupancy. For this reason before accepting a train, the traffic manager on duty shall check on site the track availability. For the turning of switches, which give artificial occupancy, the traffic manager on duty after a check of their availability and the adjacent distances shall use the switch emergency button”.

1.5 “Art. 108. Before opening the acceptance signal, the traffic manager on duty shall convince himself that the track is free and the switches for it are regularly turned and locked”.

1.6 ”Art. 547, par. 1, par. 2, par. 3, par. 4.

“(1) Before accepting the duty shift the officials shall check personally the apparatuses condition, availability and regularity of the lead seals as per the applied list in the books for the devices condition. Then they shall inform themselves from the person, who hands over the duty shift on the structures and devices condition and on the occurred temporary modifications in them, reflected in the respective book, for which they shall sign under the modification notice. In case of presence of failure the accepting official shall inform himself in what regime is ordered to work until the performance of the repair and whether the mechanic, respective dispatcher on duty and the station master were informed”.

”(2) Acceptance and handing over of apparatuses shall be performed in case of found irregularity, which was not entered in the respective book on the devices condition”.

“(3) The result from the apparatuses check shall be entered into the Log-book for acceptance and handing over of the duty shifts. This shall be entered in forms DP-2, DP-3, II-76, defined in the “Rules of the train operation and shunting activity in the rail transport” of the NRIC Director General as the note shall be signed from the officials, who hand over and accept the duty shift”.

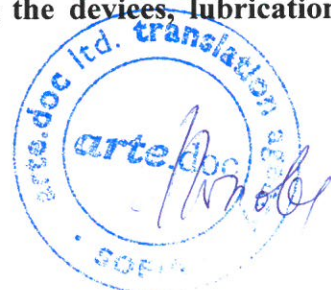
“(4) The traffic manager who accepts the duty shift shall inform himself from the switchmen and level-crossing guards, with whom he will work on the condition of their apparatuses as in case of irregularity shall give the necessary orders”.

2. The switchman/post at Stryama station did not respect – The rules of technical operation of the rail infrastructure of SE NRIC dated 02 August 2006.

2.1 Art. 502, it. 7, it. 8 and it. 10

„it. 7. He shall continuously follow the regularity of the devices and systems and shall work carefully with them“;

“it. 8. Shall use the time between the trains for cleaning the devices, lubrication of the switches and maintenance of the point/post cleanness“;



„it. 10. Shall check regularly the external condition of the switch point machines, control and manual switch locks, the presence of lead seals on the designated places for that purpose“;

2.2. Art. 547, par. 4

“(4) The traffic manager who accepts the duty shift shall inform himself from the switchmen and level-crossing guards, whit whom he will work on the condition of their apparatuses, as in case of irregularity shall give the necessary orders“.

13. Recommendations and suggestions for preventing events against other similar accidents.

In order to prevent the occurrence of similar accidents in future and with reference to the requirements of art. 94, par. 1 of Ordinance №59 dated 5.12.2006 on the management of railway safety of the Minister of Transport, Information Technology and Communications, the Railway Administration Executive Agency shall order to SE NRIC to implement the following safety recommendations:

1. With reference to Art. 7, par. 1 and par. 2 of Ordinance No 56 dated 14 February 2003, the Railway Administration Executive Agency shall perform a special exam to the persons with title station master, traffic manager on duty and switchman/post, who work at Koprivshtiza and Stryama stations.

2. As per Art. 22, par. 3, it. 13 of Ordinance No 59, the SE NRIC Director General shall organize and prepare training programmes to guarantee the technical competence of the personnel as well as including work in case of damaged signalling technique for the stations and interstation on the section along 3rd main railway line from Pirdop station to Sopot station incl. the persons with the following positions:

1. Station master;
2. Traffic manager;
3. Switchmen/post and/or Switchman/level-crossing guard.

With reference to the requirements of art. 94, par. 3 of Ordinance No 59 dated 5.12.2006 on the management of railway safety the Railway Administration Executive Agency and SE NRIC shall notify in writing the AMRAIU Directorate at MTITC not later than 30.06.2015 on the undertaken appropriate actions for the implementation of the safety recommendations.

Chairman:

..... (Boycho Skrobanski)
State Inspector at AMRAIUD, at MTITC

*I, the undersigned Julieta Popova, certify that this is a true and accurate translation done by me from Bulgarian into English of the attached document: Final report.
The translation consists of 12 pages.
Translator: Julieta Popova*

