



Transporta nelaimes gadījumu un incidentu izmeklēšanas birojs

Transport Accident and Incident Investigation Bureau of the Republic of Latvia

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ANNUAL REPORT 2015

as regards to railway traffic accidents investigation

Riga 2016

Report summary

In the Republic of Latvia, serious railway traffic accidents and significant incidents are being investigated by the Transport Accident and Incident Investigation Bureau.

The report contains information on activities of the Bureau as regards to railway accident investigation and on cooperation between the Bureau and other institutions.

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1. INTRODUCTION

1.1. Legal framework

The requirements of Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways (*Railway Safety Directive*) as regards to establishing an independent railway accident investigating body were implemented on 24 May 2007 by adopting amendments in the Railway Law which entered into force on 12 June 2007 and which introduce the functions and tasks of serious railway accident investigating body and criteria for classifying serious railway traffic accidents and accidents. Investigation of serious railway accidents was delegated to the Transport Accident and Incident Investigation Bureau (hereinafter – the Bureau), where a special department – Railway Accident Investigation Department – was established.

In order to fully implement all requirements of Railway Safety Directive and to ensure provisions of the Railway law regarding an independent railway accident investigating body amendments to Cabinet Regulations of 6 October 1998 No. 393 "Procedures for the Investigation of Railway Traffic Accidents" were adopted on 27 March 2007 and new Cabinet Regulations No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents" were issued on 26 October 2010.

By fulfilling the requirements of Article 21 of the Railway Safety Directive the Bureau has been established as an institution that is organisationally, legally and in the taking of its decisions independent from the railway infrastructure manager, railway undertaking and railway technical operations control and supervision institutions, as well as from institutions, which are responsible for the specification and collection of railway infrastructure charges, the allocation of railway infrastructure capacity or the realisation of State administration in the field of railway transport, and from persons whose interests may be in contradiction with the tasks of the Bureau.

Bureau employs two investigators who in the case of serious railway accident or significant accident (occurrence) are able to carry out functions of investigator-in-charge.

1.2. Authority, role and aim of the Bureau

The Bureau's primary aim is to carry out independent safety investigation of aircraft accidents and incidents, serious railway accidents and marine accidents. The sole purpose of investigation is to prevent aircraft accidents and incidents, serious railway accidents and marine accidents in order to improve aviation, railway and marine traffic safety. In any case, investigation has not been carried out for determination of a personal fault or liability.

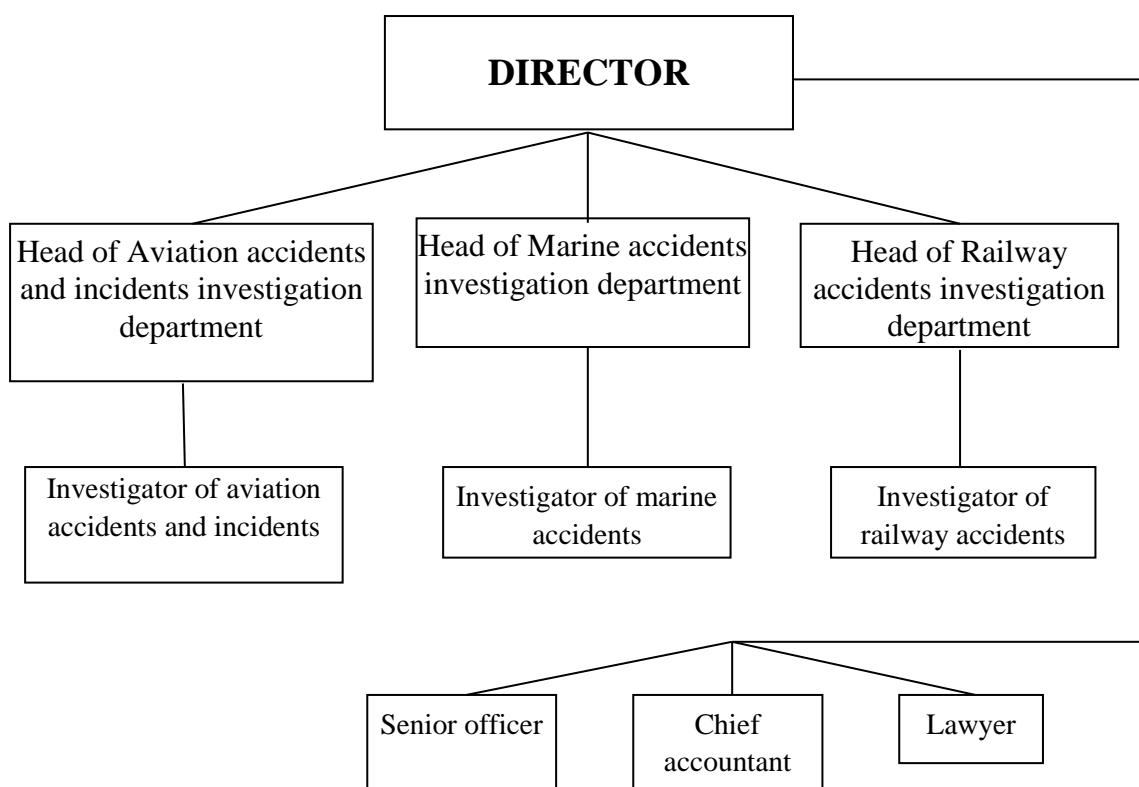
Railway accident investigation has been performed by the Bureau in accordance with the requirements and regulations of *Railway Safety Directive*, which are transposed into national legislation – Railway Law, Cabinet Regulations of 20 December 2005 No. 973 "By-laws of the Transport Accident and Incident Investigation Bureau" and Cabinet Regulations of 26 October 2010 No. 999 "Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents".

The primary target of the Bureau's Railway Accident Investigation Department is independent investigation of serious railway accidents and of significant accidents in order to determine the causes of an accident and, if necessary, to elaborate recommendations for preventing similar accidents in future.

The Bureau performs investigation independently from law enforcement institutions and does not determine personal liability and guilt.

1.3. Organisation

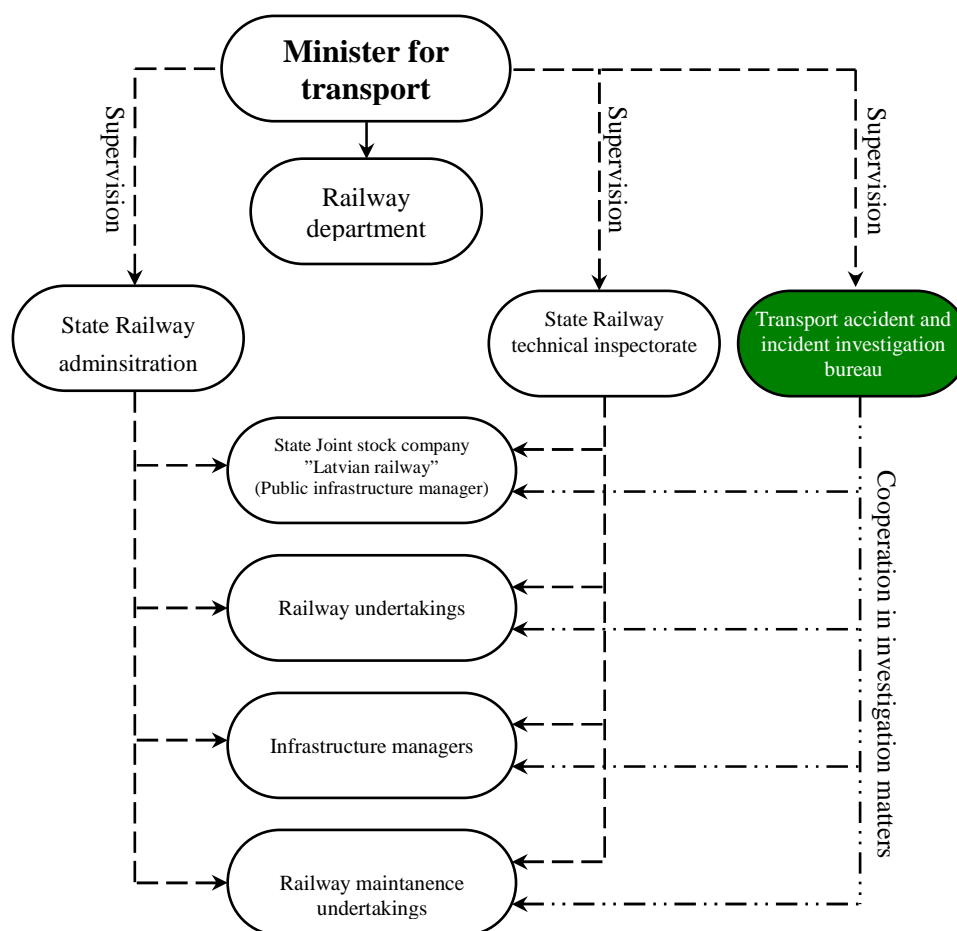
The Bureau consists of ten staff employees. The Bureau is a direct state administration entity under supervision of Ministry of Transport that implements state administration functions as regards investigation of aviation accidents and incidents, serious railway accidents and marine incidents. Railway Accident Investigation Department consists of two staff employees, namely head of department and investigator. The structure of Investigation bureau is shown on Picture 1



1.pic. Structure of Investigation bureau

1.4. Organizational structure

For the investigation matters, Bureau shall cooperate with Infrastructure manager, railway undertakings and railway maintenance undertakings. Bureau shall cooperate with State Railway technical inspectorate in the matters relating to harmonization of time limits for the implementation of safety recommendations. Cooperation with other institutions is shown in Picture No.2.



2.pic. Cooperation structure with other institutions

1.5. Budget

Pursuant to Art. 5 Part 4 of the Law on Aviation in the field of the aviation accident investigation Bureau is being financed from a revenue share of air navigation services in the Riga flight information region, pursuant to Art. 33.1 Part 5 of the Railway Law in the field of railway traffic accident investigation Bureau is being financed from railway infrastructure funds, and pursuant to Art. 8.1. Part 2 of the Maritime Administration and Marine Safety Law in the field of maritime accident and incident investigation Bureau is being financed from the funds of Maritime Administration of Latvia, which in accordance with tariffs set by the Cabinet of Ministers are earned by providing paid services within the scope of state administration tasks.

Pursuant to Cabinet Order of 29 October 2014 No. 617 on approval of the budget for Transport Accident and Incident Investigation Bureau for the year 2015 the Bureau budget incomes in 2015 were approved in amount of EUR 453 825 where the share of budget for railway accident investigation were estimated in amount of EUR 187 036.

2. INVESTIGATION PROCESS

2.1. Railway accidents to be investigated

Investigation process is regulated by the Cabinet Regulation of 26 October 2010 No. 999 “Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents”.

Pursuant to above mentioned Regulation the Bureau must investigate all serious railway accident, as well as can take decision to investigate any other railway traffic accidents (occurrences), if they have adverse impact on traffic safety.

Serious railway accident is a collision of a train with other railway rolling stock or derailment that has caused one of the following harmful consequences:

- at least one person has died instantly or has died as a result of the serious accident within 30 days thereafter;
- serious injuries have been caused to at least five people who have been hospitalised for more than 24 hours due to the accident;
- damage has been caused to the rolling stock, railway infrastructure or the environment in the amount of at least EUR 2 000 000.

Serious railway accident is also other railway traffic accident (occurrence), the consequences of which are similar to above mentioned and which has an evidently unfavourable effect on the safety regulation or safety management of railway.

Significant accident (occurrence) means an unwanted or unintended sudden event, in which at least one rolling stock in motion is involved with a speed which exceeds 0 km/h, or a specific chain of events with one of the following harmful consequences:

- a person has died or has died within 30 days after the significant accident;
- serious injuries have been caused to a person, due to which he or she has been hospitalised for more than 24 hours;
- serious damage has been caused to the rolling stock, rail track, other equipment or damage has been caused to the environment which is equivalent to EUR 150,000 or more;
- the movement of trains along the main rail track has been suspended for six hours or more.

Bureau at any time can take decision on the investigation of other railway traffic accident, as well as investigation of accidents (occurrences) related to the movement of trains, if they has an adverse impact to the safety of movement.

2.2. Institutions that are involved in the investigation

Institutions and organisations that are involved in investigation are defined by the Railway Law and by the Cabinet Regulation of 26 October 2010 No. 999 “Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents”.

In accordance with above mentioned Regulation, serious railway accidents and any railway traffic accidents (occurrences), after which the railway rolling stock is removed from the rolling stock inventory, shall be investigated by the Bureau.

Depending of the nature of an accident the Bureau may invite competent experts, other than the Bureau’s employees, to participate in investigation, as well as representatives of the EU member state investigation body, if a railway undertaking, which is registered and licensed in respective member state, is involved in an accident.

The Bureau may seek assistance to investigation bodies of other EU member states or to European Railway Agency to obtain expert opinions or to carry out technical examinations, analysis or to provide assessments.

2.3. Investigation process

Investigation means collection of information on consequences and circumstances of a railway traffic accident, analysis of this information and preparation of an opinion. Bureau has drafted five manuals, in order to carry out good quality investigation and to promote possible recommendation elaboration.

Once a day investigators of the Bureau from the infrastructure manager or railway undertaking receive email with the information on all railway traffic safety accidents (occurrences), which have occurred during the last 24 hours. The Bureau's staff immediately receives information about serious railway accidents and significant accidents from a railway infrastructure manager or railway undertaking by phone. Upon notification on an accident investigators of the Bureau arrive to an accident site and immediately start investigation.

Decision on commencing the investigation is taken, based on the laws and regulations of Republic of Latvia. In accordance with those laws and regulations Bureau should investigate mandatory serious railway accidents. Decision on the investigation of other occurrences is taken by analysing and summarizing information about accident and by evaluating its impact on common safety of train movement.

Within seven days after commencing an investigation the Bureau informs about that the European Railway Agency, the State Railway Technical Inspectorate, the State Police, particular railway infrastructure manager and a railway undertaking involved in a traffic accident.

Investigation is led by the director of Bureau. For the investigation of railway accident the director of Bureau shall appoint the investigator in charge, who shall be responsible for the organisation, performance and control of investigation actions.

Investigator in charge can involve independent experts, in order to conduct technical expertise and calculations necessary for clarification of accident causes.

The Bureau regularly informs the State Railway Technical Inspectorate, the railway infrastructure manager and railway undertaking involved in the railway traffic accident, the injured persons and their relatives, the owners of the damaged property, the manufacturers, the relevant emergency services, the representatives of personnel and users regarding the investigation process of the accident and gives them an opportunity to provide their opinions and comments regarding the information provided in the draft reports.

The final report of the investigation shall be signed by the investigator-in-charge and all participants of the investigation. If a dispute occurs regarding the content of the report, the final report of the investigation shall be prepared in the version approved by the investigator-in-charge. The participant in the investigation who disagrees with the content of the final report shall sign it with a note regarding his or her differing opinion and, substantiating such opinion, shall append it to the report. The date of signing of the final report shall be considered to be the final day of the investigation.

3. INVESTIGATION

3.1. Number of completed investigations in 2015, determining main tendencies

Accident type	Number of accidents	Number of injured persons		Material damages in euros (approximately)	Tendencies in relation to previous years
		Died	Seriously injured		
Collisions	-	-	-	-	Decreases
Derailments	1	-	-	187 145	Increases
Accident with a person during the movement of rolling stock	1	1	-	-	Increases
Other	-	-	-	-	Decreases

3.2. Completed investigations in 2015

Completed investigations in 2015

Date of occurrence	Name of investigation (Accident type, place)	Legal basis	Completed (date)
20 June, 2014	Significant railway accident, derailment of freight train (railway station Ziemeļblāzma)	i ii	26 June, 2015
7 September 2014	Accident with person during the movement of rolling stock (railway station Šķirotava)	i ii	15 July 2015

3.3. Serious railway accidents and significant accidents, investigated from 2008-2015

Railway accidents investigated from 2008.-2015

Investigated accidents		2008	2009	2010	2011	2012	2013	2014	2015	Total
Serious railway accidents and significant accidents (Article 19, 1 + 2)	Trains collision	1	1	1	-	-	-	-	-	3
	Derailment	-	-	-	-	1	-	-	1	2
	Accident with person during the movement of rolling stock	-	-	-	-	-	-	-	1	1
Total										6

Basis for investigation: i = in accordance with Safety directive ii = in accordance with national legislation (including fields prescribed in paragraph 2 of article 2 of Safety Directive), iii = Voluntarily - other criteria (National legislation/requirement is not included in Safety Directive).

3.4. Summary on investigations, completed in 2015

Derailment of wagons of freight train No.2134 that took place on 20th June 2014 on railway infrastructure used by “Statoil Fuel & Retail Latvia” Ltd. and “Neste Latvija” Ltd and attached to the Ziemeļblāzma park of Mangalu station



Railway accident occurred on 20th June 2014 at around 22.35 hrs. on private-used railway infrastructure attached to Mangaļu station Ziemeļblāzma park. Accident occurred when train No. 2134 moved on the switch point No.6.

In result of accident seven railway tank-cars derailed and four of them overturned, from two of which leaked diesel. Total 54,575 tons of dangerous goods (diesel) spilled into the environment. Leaking of diesel was restricted by emergency services. To reduce aftermath damages, special train of state company “Latvian railway” and firefighting cars of State Fire and Rescue Department was involved.

Infrastructure manager - “Statoil Fuel & Retail Latvia” Ltd. and “Neste Latvija” Ltd.

Railway undertaking – “LDZ CARGO” Ltd.

Trains traffic on tracks Nr.1, Nr.2, Nr.3 and switches Nr.6, Nr.10 was stopped for 63 days.

When investigators arrived at incident place, they established, that on right side of the blade of switches No.6 was prints of impact.

Further investigation showed, that making examination procedure for seating of blade of the switch No.6 with balance transfer lockers are rising and blade separation from rail takes place. In addition was established, that right blade lockers differed from drawings construction.

Experts of Technical University of Riga was involved in investigation process and the work organization of infrastructure manager, the condition of switch No.6 was examined, as well as technical requirements for railway undertaking’s tank cars and locomotives data recorders information. As a result of investigation two recommendation were drawn up.

Accident with person during the movement of rolling stock on 7 September 2014 at Šķirotava station.



Accident with person during the movement of rolling stock (hereinafter-accident) occurred 7 September 2014 around 6:17 AM in marshalling hump area at Šķirotava station. During the uncoupling of Train No.3605 the shunter, the job task of which was to move the switch manually, was fatally injured.

At the accident site the reconstruction works of marshalling hump yard took place and signalling, centralization and blocking devices (hereinafter – SCB) of marshalling hump were switched off from centralization. The breaking-up of the train occurred by performing manoeuvres with pushes, while manoeuvre routes were prepared by the shunting officer by moving switches with a *crank handle*. During the investigation one recommendation was drawn up.

4. RECOMMENDATIONS

4.1. Short overview and introduction with recommendations

In Latvian laws and regulations (Cabinet Regulation (26 October 2010) No.999 “Procedures for the Classification, Investigation and Recording of Railway Traffic Accidents) is prescribed, that, in order to prevent the causes and circumstances of a serious railway accident or a significant accident, as well as to guarantee the railway traffic safety, the Investigation Bureau, basing on the conclusions drawn during the investigation, shall develop safety recommendations.

The presumption of guilt or liability of a person in relation to a railway traffic accident shall not be established in the safety recommendations

Investigation Bureau shall send the safety recommendations to the State Railway Technical Inspectorate and, if necessary due to the nature of the recommendations, to other institutions or a railway safety authority of another EU Member State. The State Railway Technical Inspectorate and other institutions that receive the safety recommendations shall take the necessary measures to ensure that the safety recommendations issued by the Investigation Bureau or an investigation body of another EU Member State are duly taken into account, and decisions on the recommendations are made in the respective cases.

The State Railway Technical Inspectorate shall monitor the implementation of the safety recommendations.

Institutions to which the safety recommendations are addressed, after coordination with the State Railway Technical Inspectorate, may also perform other measures in order to achieve the targets referred to in the safety recommendations.

The State Railway Technical Inspectorate and other institutions that receive the safety recommendations at least once a year shall notify the investigation Bureau or an investigation body of another EU Member State that has issued the recommendations regarding the performed or planned measures in relation to the safety recommendations.

Implemented recommendations from 2007-2015

Issued recommendations		Implementation status of recommendations					
		Implemented		Are being implemented		Not implemented	
Year	Number	Number	[%]	Number	[%]	Number	[%]
2007	0	0	0	0	0	0	0
2008	8	7	87,5	1	12,5	0	0
2009	4	0	0	4	100	0	0
2010	4	9	225	0	0	0	0
2011	0	0	0	0	0	0	0
2012	3	0	0	3	100	0	0
2013	0	3	100	0	0	0	0
2014	0	0	0	0	0	0	0
2015	3	0	0	3	100	0	0
Total	22	21	95	1	5	0	0

4.2. Safety recommendations issued in 2015

After completion of investigation of railway accident concerning the derailment of wagons of freight train No.2134 that took place on 20th June 2014 on railway infrastructure used by “Statoil Fuel & Retail Latvia” Ltd. and “Neste Latvija” Ltd and attached to the Ziemeļblazma park of Mangalu station, two safety recommendations were issued and they were addressed to the State Railway Technical inspectorate, by indicating the final implementer.

The goal of recommendation was to improve the safety of blades of non centralized railway switches and to improve the procedure of switch maintenance and control.

Recommendation 2015-1

Infrastructure manager should make changes in own requirements and should include switches' lockers' fixation norm with padlocks or another device, which guarantee lockers' fixation according to switches, that is used for route of incoming trains.

Recommendation 2015-2

State company “Latvian railways” should update railway tracks maintenance documentation, where specify in detail the technology of mechanism for non centralized switch movement and of its safe fixation examination and defect detection.

After a completion of investigation of a railway accident with person during the movement of rolling stock on September 7 2014 at Škirotava station, one safety recommendation was issued and addressed to State Railway Technical inspectorate, by indicating the final implementer.

The purpose of safety recommendation was to reduce shunters' working environment risk factors in cases there are changes in the workload and responsibilities of staff members.

Recommendation 2015-3

The railway infrastructure manager should examine the possibility of reducing shunters' working environment risk factors, in cases there are changes in the workload and responsibilities of staff members, providing training opportunities to do special exercises to remove drowsiness and fatigue.

Recommendations

Date and time:		20 June 2014, 22.35	
Place:		Railway infrastructure used by “Statoil Fuel & Retail Latvia” Ltd. and “Neste Latvija” Ltd and attached to the Ziemeļblazma park of Mangalu station	
Type of occurrence:		Derailment of wagons of freight train No.2134	
Type of train and number:		Diesel locomotive 2M62 No.1220, freight train No. 2134, weight 5254 tonnes, 244 axis	
Auto transport:		-	
		In train	Auto transport
Number of peoples:	Brigade:	2	-
	Passengers:	-	-
Dead persons:	Brigade:	-	-
	Passengers:	-	-
Seriously injured:	Brigade:	-	-
	Passengers:	-	-
Slightly injured:	Brigade:	-	-
	Passengers:	-	-
Damage to rolling stock:	Three tank-cars were damaged to such extent, that their repair was not possible. One tank-car should undergo complete repair, but for three tank-cars current repair was necessary to carry out.		
Railway equipment damage:	Damaged railway approximately 131 metres of length, including switches No.6 and No.10.		
Other damages:	Due to accident 54 575 tonnes of dangerous goods (diesel) has been spilled into environment.		
Summary: When freight train passed over the switches No.6, the right blade of switch separated from balance transfer lockers due to rising, and as a result of accident seven railway tank-cars derailed.			
Final report issued:	25 June 2015		
Recommendation 2015-1	To improve the fixation safety of blades of non centralized railway switches Infrastructure manager should conduct switches' lockers' fixation with padlocks or another device, which guarantee safe lockers' fixation, in relation to switches, that is used for route of incoming trains.		
Date	Status	Commentary Infrastructure manager elaborated new instruction, where provided switches' lockers' fixation with padlocks, in order to guarantee safe lockers' fixation	
25.06.2015.	Implemented	Infrastructure manager has approved recommendation and implemented it on May 11 2016.	
Recommendation 2015-2	To improve the procedure of maintenance and examination for switches State company “Latvian railways” should update railway tracks maintenance documentation, where to specify in detail the technology of mechanism for non centralized switch movement and of its safe fixation examination and defect detection.		
Date	Status	Commentary Infrastructure manager conducted changes the Instruction for railway track maintenance, where specified the technology of mechanism for non centralized switch movement and of its safe fixation examination and defect detection.	
25.06.2015.	Implemented	Infrastructure manager has approved recommendation and implemented it on July 29 2015.	