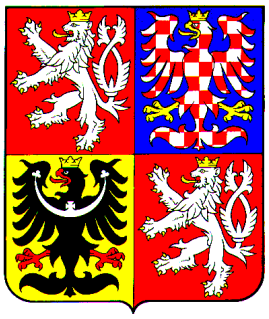
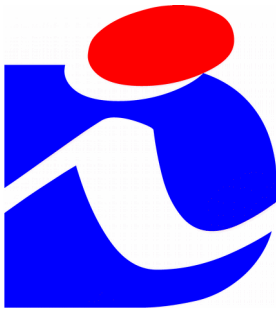


Czech Republic



The Rail Safety Inspection Office

NIB ANNUAL REPORT 2016

according to Article 23(3) of Directive 2004/49/EC

The Rail Safety Inspection Office

Czech Republic

September 2017

PREFACE TO THE REPORT

A National Investigation Body operates in the Czech Republic – The Rail Safety Inspection Office – conducting independent investigation of the causes and circumstances of railway accidents and incidents according to Directive 2004/49/EC, the principles and requirements of which have been implemented into the national legislation. The objective of the investigation of the causes and circumstances of railway accidents and incidents is to increase the safety of railways.

This Annual Report is an annual report issued by the National Investigation Body of the Czech Republic, The Rail Safety Inspection Office, for 2016, pursuant to Art. 23(3) of Directive 2004/49/EC. It comprises information regarding:

- the National Investigation Body
- the system of investigation of railway accidents and incidents
- the investigations of accidents and incidents completed in 2016
- the safety recommendations issued

CONTENTS

1 INTRODUCTION TO THE INVESTIGATION BODY

1.1 Legal framework

The process of the implementation of Directive 2004/49/EC into the national legislation of the Czech Republic was completed on 1st July 2006 by Act 266/1994 Coll., on Railways, as amended, and the subsequent issue of implementing Decree 376/2006 Coll., on the System of Safe Railway Operation and Railway Transport Operation and Procedures Following Railway Accidents and Incidents.

Directive 2009/149/EC amending Annex I of Directive 2004/49/EC was implemented into the national legislation on 30th August 2010.

Accidents and incidents are further divided into the following categories, reflecting their nature and consequences:

- serious accidents
- accidents
- incidents

The national legislation of the Czech Republic orders infrastructure managers and railway undertakings to investigate the causes and circumstances of railway accidents and incidents.

The accident and incident investigation performed by The Rail Safety Inspection Office is independent of any other party and independent of the investigation conducted by other bodies, especially police investigation and the investigation of the causes and circumstances of accidents and incidents conducted by infrastructure managers or railway undertakings.

1.2 Role and Mission

The National Investigation Body was established in the Czech Republic on 1st January 2003. The mission is to guarantee independent investigation of the causes and circumstances of railway accidents and incidents. The national legislation of the Czech Republic also authorizes the National Investigation Body to investigate accidents and incidents within trams, trolleybuses and cable-ways, because all these kinds of transport are included in the same legislation regime as the railways.

The main goal of the Office's work is to prevent the occurrence of accidents and incidents. Therefore, the Rail Safety Inspection Office:

- investigates the causes and circumstances of rail accidents and incidents,
- supervises investigations performed by infrastructure managers and railway undertakings,

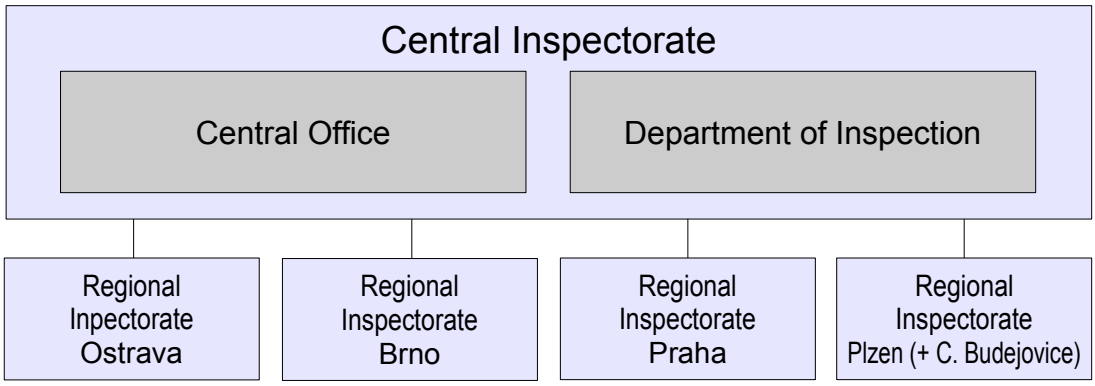
- detects deficiencies compromising the safety of rail infrastructure and rail transport,
- evaluates development trends in accidents and incidents within the rail system and takes measures to improve the situation,
- issues safety recommendations to railway undertakings, infrastructure managers, to the National Safety Authority or other authorities and parties.

1.3 Organisation

On 1st January 2003, the National Investigation Body – The Rail Safety Inspection Office – was established in the Czech Republic pursuant to the provisions of Act 77/2002 Coll. The Rail Safety Inspection Office is a national body investigating the causes of railway accidents and incidents independently of any other party and performing preventative inspections of railway safety. As an investigation body it is independent of any infrastructure manager, railway undertaking and regulatory body. The competences of The Rail Safety Inspection Office include:

- railways (main lines, regional lines, sidings, underground)
- tram lines
- trolleybus lines
- cable-ways

The Rail Safety Inspection Office has a total of 49 employees in five cities of the Czech Republic (Ostrava, Brno, Praha, Plzen, Ceske Budejovice). It comprises of the Central Inspectorate and four regional inspectorates covering the area of the entire country. The Central Inspectorate consists of The Central Office and The Department of Inspection.



The Central Office plays supportive role for the Inspector General and the whole structure of The Rail Safety Inspection Office. It provides human-resource management, economic, IT and legal services and public relations.

The Department of Inspection maintains accident investigation and preventative safety inspection systems, including the co-ordination of the regional inspectorates' activities.

The department also manages staff training and mediates communication with EU bodies.

Regional Inspectorates investigate the causes of rail accidents and incidents with the aim of enabling lessons to be learned for improving the safety of railways. They also perform safety inspection focusing on accident and incident prevention.

1.4 Organisational flow

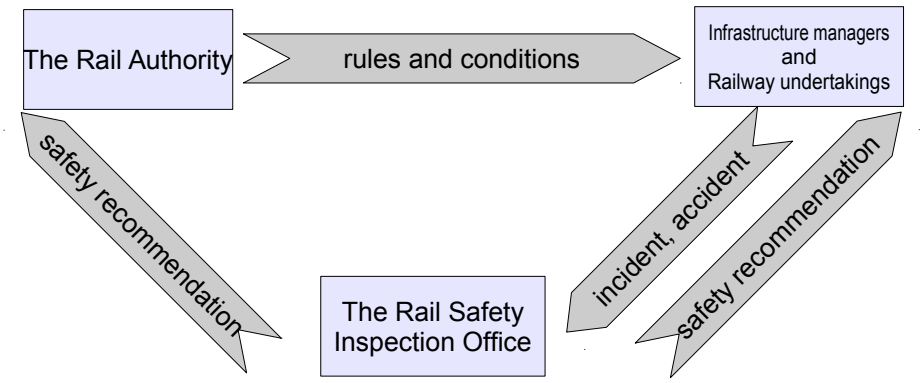
The structure of railway sector in the Czech Republic and relationships among the parties involved are defined in Act 266/1994 Coll., on Railways, as amended, and its implementing regulations. The legislation applies to the following transport systems:

- railways (main lines, regional lines, sidings, underground)
- tram lines
- trolleybus lines
- cable-ways

The most important bodies in the railway sector include the Czech Ministry for Transportation, The Railway Office and The Rail Safety Inspection Office. The Czech Ministry for Transportation is in charge of the national railway legislation, including implementation of the EU railway legislation. The Railway Office is the National Safety Authority carrying out certification and regulation of railway and railway transport operation, according to the national legislation. The Rail Safety Inspection Office is the National Investigation Body independent of any party in the railway sector.

All these authorities are involved in the system of maintaining and improving safety of railways and railway transport:

- **The Czech Ministry for Transportation** sets the framework by developing railway legislation.
- **The Rail Safety Inspection Office (NIB)** investigates railway accidents and incidents and issues safety recommendations to The Railway Office.
- **The Rail Authority (NSA)** sets and adjusts safety rules for infrastructure managers and railway undertakings.



2 INVESTIGATION PROCESSES

2.1 Cases to be investigated

The national legislation of the Czech Republic orders the National Investigation Body, The Rail Safety Inspection Office, in accordance with European principles, to investigate the causes and circumstances of serious accidents on main and regional lines, border railways and sidings. In addition, The Rail Safety Inspection Office may investigate, in cases defined by the respective law, other occurrences in the following cases:

- serious accidents regarding underground, trams, trolleybuses and cable-ways
- accidents and incidents on all types of guided transport

When making decision whether to investigate or not, The Rail Safety Inspection Office takes into account the above mentioned legal requirements, as well as possibility to learn safety relevant lessons from the accident or incident.

2.2 Institutions involved in investigations

Following the occurrence of railway accident or incident, various parties may launch several independent investigations, depending on the occurrence's nature and consequences:

- **Infrastructure manager or railway undertaking** identifies the causes and circumstances of accident or incident, focusing on the drafting of preventative measures and the proposal of responsibility for the occurrence.
- **The Rail Safety Inspection Office** investigates the causes and circumstances of accident or incident with a focus on the determination of the causes and issue of preventative safety recommendation.
- **Czech Police** investigate accident or incident with the aim of defining responsibility for the committing of offenses or criminal acts.

2.3 Investigation process or approach of the NIB

The objective of the investigation of the causes of railway accidents and incidents is to gain knowledge for the prevention of accidents and incidents, minimize the consequences and increase the safety of railways.

Investigation performed by the National Investigation Body of the Czech Republic, The Rail Safety Inspection Office, focuses on the following aspects of each occurrence:

- independent investigation of the causes and circumstances of accident or incident (serious accidents and selected accidents and incidents only)
- meeting legal requirements for procedures following railway accident or incident by infrastructure manager and railway undertaking

- verification of the correctness and completeness of the procedures followed by infrastructure manager or railway undertaking when identifying the causes and circumstances of an accident or incident, in accordance with the national legislation.

When notified about the occurrence of accident or incident by an infrastructure manager or railway undertaking, The Rail Safety Inspection Office will decide whether it will immediately go to the accident-site or not. At the accident-site The Rail Safety Inspection Office will launch an independent investigation or just verifies the steps performed by infrastructure managers and railway undertakings involved.

If The Rail Safety Inspection Office launches an investigation, it will notify The European Railway Agency within seven days. The investigation of accident or incident may be launched immediately after the occurrence and/or later, in reaction to specific circumstances.

The Rail Safety Inspection Office will publish the conclusions of its investigation in Investigation Report, the structure of which is based on the requirements of Directive 2004/49/EC. If the accident or incident occurred without any violation of legislation or internal regulations of infrastructure manager and/or railway undertaking, The Rail Safety Inspection Office issues safety recommendation with the aim of preventing reoccurrence of the accident or incident. Safety recommendation is issued also if there are other findings relevant for the safety.

3 INVESTIGATIONS

3.1 Overview of investigations completed in 2016, identifying key trends

Trends of completed investigations (last column of the table) are calculated as difference to previous year (2015).

Type of accidents investigated	Number of accidents	Number of victims		Damages in € (approx.)	Trends in relation to previous year
		Deaths	Ser.injury		
Collisions	10	1	0	5.904.546,-	+43 %
Derailments	5	0	0	1.282.135,-	+25 %
LC-accident	5	7	0	625.043,-	-37 %
Fire in RS	0	0	0	0	+0 %
Acc. to person	1	1	0	0	-50 %
Other	4	2	0	677.750,-	-33 %

3.2 Investigations completed and commenced in 2016

Investigations completed in 2016

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Completed (date)
17. 9. 2014	Trains collision: in Praha Vysehrad station with consequent derailment	i	13. 6. 2016
13. 11. 2014	Train derailment: in Pribyslav station	i	7. 7. 2016
30. 12. 2014	Trains collision: in Poricany station with consequent derailment	i	16. 5. 2016
11. 1. 2015	Trains collision with an obstacle: between Rozna – Nedvedice stations	i	8. 1. 2016
16. 2. 2015	Trains collision: in Bakov nad Jizerou station	i	30. 3. 2016
28. 3. 2015	Trains collision: between Velke Zernoseky – Litomerice dolni nadrazi stations with consequent derailment	i	11. 4. 2016
3. 7. 2015	Train derailment: in Horni Cerekev station	i	4. 6. 2016
14. 7. 2015	Trains collision with an obstacle: in Praha Masarykovo nadrazi station with consequent derailment	i	29. 2. 2016
4. 8. 2015	Trains collision: in Horazdovice predmesti station with consequent derailment	i	22. 1. 2016
14. 8. 2015	Level-crossing accident: km 94,356 between Uhersky Ostroh – Ostrozska Nova Ves stations	i	7. 4. 2016

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Legal basis**	**Completed** (date)
7. 9. 2015	Level-crossing accident: km 8,971 in Sluknov station	i	7. 6. 2016
9. 9. 2015	Accident to person caused by RS in motion: in Golcuv Jenikov station	i	29. 6. 2016
12. 9. 2015	Trains collision with an obstacle: in Usti nad Orlici station	i	15. 6. 2016
14. 9. 2015	Train derailment: between Vlkanec – Golcuv Jenikov stations	i	7. 4. 2016
30. 9. 2015	Accident to person caused by RS in motion: in „Doly Bílina – upravna uhli Ledvice“ siding	ii	29. 7. 2016
30. 10. 2015	Trains collision: in Rehlovice station	i	1. 12. 2016
3. 11. 2015	Other: Collision of rolling stocks during shunting operation in Ceska Trebova station with consequent derailment	i	16. 6. 2016
8. 11. 2015	Train derailment: in Drisy station	i	28. 11. 2016
4. 12. 2015	Level-crossing accident: km 52,066 between Zdarec u Skutce – Hlinsko v Cechach stations	i	15. 7. 2016
11. 12. 2015	Level-crossing accident: km 21,580 in Frydek Mistek station	i	6. 6. 2016
21. 3. 2016	Level-crossing accident: km 264,230 between Golcuv Jenikov mesto – Golcuv Jenikov stations	i	29. 11. 2016
19. 4. 2016	Accident to person caused by RS in motion: in „DKV Suchdol nad Odrou“ siding	ii	10. 10. 2016
26. 5. 2016	Train derailment: between Dobronin - Jihlava stations	i	14. 12. 2016
25. 6. 2016	Other: Collision of rolling stocks during shunting operation in Brno hlavni nadrazi station with consequent derailment	i	29. 11. 2016
10. 7. 2016	Trains collision: in Rotava station	i	26. 9. 2016

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

Investigations commenced in 2016

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Legal basis**
21. 3. 2016	Level-crossing accident: km 264,230 between Golcuv Jenikov mesto – Golcuv Jenikov stations	i

13. 4. 2016	Other: SPAD in Rudoltice v Cechach station	i
19. 4. 2016	Accident to person caused by RS in motion: in „DKV Suchdol nad Odrou“ siding	ii
26. 5. 2016	Train derailment: between Dobronin - Jihlava stations	i
27. 5. 2016	Train derailment: in Praha hlavní nadrazi station	i
25. 6. 2016	Other: Collision of rolling stocks during shunting operation in Brno hlavni nadrazi station with consequent derailment	i
10. 7. 2016	Trains collision: in Rotava station	i
24. 7. 2016	Accident to person caused by RS in motion: between Olomouc – Stepanov stations	i
30. 8. 2016	Train derailment: in Kolin station	i
30. 8. 2016	Trains collision: between Vcelnicka - Chvalkov stations	i
13. 9. 2016	Level-crossing accident: km 4,982 between Straznice – Veseli nad Moravou stations	i
15. 12. 2016	Train derailment: in Havlickuv Brod station	i

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

3.3 Research studies (or Safety Studies) commissioned and completed in 2016

Safety Studies completed in 2016

Date of commission	**Title of the Study** (Occurrence type, location)	**Legal basis**	**Completed** (date)
	none		

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

Safety Studies commenced in 2016

Date of commission	**Title of the Study** (Occurrence type, location)	**Legal basis**
	none	

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

3.4 Summaries of investigations completed in 2016

See annex of this report.

3.5 Comment and introduction or background to the investigations

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Legal basis**
	none	

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

Investigations commenced in 2016 and not followed

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Legal basis**	**Reason of non following or suspension of investigations**	**Who, why, when (decision)**
	none			

Basis for investigation: **i** = According to the Safety Directive, **ii** = On national legal basis (covering possible areas excluded in Article 2, §2 of the Safety Directive), **iii** = Voluntary – other criteria (National rules/regulations not referred to the Safety Directive).

3.6 Accidents and incidents investigated during last five years (in 2012–2016)

Rail investigations completed in 2012–2016

The table groups investigations by year of their completion.

Accidents investigated		2012	2013	2014	2015	2016	TOT
Serious accidents (Art 19, 1 + 2)	Train collision	0	0	0	0	1	**1**
	Train collision with an obstacle	0	0	0	0	0	**0**
	Train derailment	0	2	0	0	0	**2**
	Level-crossing accident	-	-	-	-	-	**-**
	Accident to person caused by RS in motion	-	-	-	-	-	**-**
	Fire in rolling stock	-	-	-	-	-	**-**
	Involving dangerous goods	0	0	0	0	-	**0**
Other accidents (Art 21.6)	Train collision	3	2	0	3	6	**14**
	Train collision with an obstacle	4	3	2	4	3	**16**
	Train derailment	6	7	6	4	5	**28**
	Level-crossing accident	5	4	6	8	5	**28**
	Accident to person caused by RS in motion	2	1	1	2	1	**7**
	Fire in rolling stock	0	0	0	0	0	**0**
	Involving dangerous goods	0	0	0	0	0	**0**
Incidents		1	6	2	1	0	**10**
TOTAL		**21**	**25**	**17**	**22**	**21**	**106**

4 RECOMMENDATIONS

4.1 Short review and presentation of recommendations

A safety recommendation can be issued only on a basis of an independent investigation performed by The Rail Safety Inspection Office (NIB). Safety recommendation is usually issued when an accident occurred without any violation of legislation or internal regulations of infrastructure manager and/or railway undertaking, or if there are other findings relevant for the safety.

According to national legislation, safety recommendations are not legally binding. When a recommendation is issued, railway undertakings and infrastructure managers are obliged to adopt their own preventative safety measures based on the safety recommendation issued.

Implementation of recommendations during 2012 – 2016

Recommendations issued		**Recommendation implementation status**					
		Implemented		**In progress**		**Not to be implemented**	
Year	**[No.]**	**[No.]**	**[%]**	**[No.]**	**[%]**	**[No.]**	**[%]**
2012	**19**	7	36,8	8	42,1	4	21,1
2013	**25**	14	56	9	36	2	8
2014	**20**	8	40	9	45	3	15
2015	**25**	4	16	16	64	5	20
2016	**20**	3	15	13	65	4	20
TOTAL	**109**	**36**	**33**	**55**	**50,5**	**18**	**16,5**

Accidents with safety recommendations issued in 2012 – 2016

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
11. 7. 2011	Trains collision with an obstacle: in Olomouc hl. n. station	partially implemented	19. 1. 2012
20. 10. 2010	Accident to person caused by RS in motion: between Prackovice nad Labem - Lovosice stations	implemented	29. 3. 2012
5. 6. 2011	Train derailment: between Vyskov na Morave - Ivancice na Hane stations	implemented	29. 3. 2012
29. 7. 2011	Train derailment: between Okrisky - Jihlava stations	not implemented	18. 4. 2012
17. 10. 2011	Trains collision with an obstacle: between Ostrava Trebovice - Dehylov stations	implemented	20. 4. 2012

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
22. 10. 2011	Train derailment: Branch Odra, between Ostrava Kuncice - Ostrava Svinov stations	in progress	29. 5. 2012
5. 12. 2011	Other: SPAD in Baska station	partially implemented	25. 6. 2012
23. 8. 2011	Trains collision: in Praha Liben station	partially implemented	24. 8. 2012
22. 11. 2011	Trains collision with an obstacle: in Hradcany stop	implemented	6. 9. 2012
8. 12. 2011	Other: railway vehicle movement events in the siding “Vlecka CEZ” Chvaletice	implemented	6. 9. 2012
24. 1. 2012	Trains collision with an obstacle: in the siding “Vlecka Drevosklad” Adamov	implemented	10. 9. 2012
27. 2. 2012	Level-crossing accident: km 247,813 between Protivin stop - Protivin station	implemented	11. 9. 2012
17. 11. 2011	Train derailment: between Pardubice Rosice nad Labem - Steblova stations	partially implemented	24. 9. 2012
5. 3. 2012	Level-crossing accident: km 4,740 between Kobyli na Morave - Velke Pavlovice stations	partially implemented	12. 10. 2012
20. 1. 2012	Level-crossing accident: km 54,854 in Breznice station	not implemented	16. 11. 2012
29. 7. 2011	Accident to person caused by RS in motion: in Vladislav station	partially implemented	23. 11. 2012
7. 9. 2011	Train derailment: in Prerov station	not implemented	4. 12. 2012
29. 2. 2012	Level-crossing accident: km 186,463 in Kastice station	not implemented	7. 12. 2012
21. 7. 2011	Trains collision with an obstacle: between Hodkovice nad Mohelkou - Rychnov u Jablonce nad Nisou stations	partially implemented	27. 12. 2012
12. 9. 2011	Train derailment: in Slatinany station	implemented	3. 1. 2013
7. 5. 2012	Level-crossing accident: km 286,369 in Uhersko station	not implemented	3. 1. 2013
23. 7. 2012	Trains collision with an obstacle: between Strelice - Hrusovany nad Jevisovkou stations	implemented	11. 2. 2013
26. 8. 2012	Trains collision with an obstacle: between Vlastejovice - Ledec nad Sazavou stations	implemented	25. 2. 2013
29. 3. 2012	Other: SPAD in Praha hlavni nadrazi station	partially implemented	26. 3. 2013
1. 11. 2012	Other: Broken axle - The city of Ostrava – tram yard	implemented	12. 4. 2013
28. 7. 2012	Level-crossing accident: km 2,431 in the siding “Vlecka Elektrarna” Opatovice	implemented	26. 4. 2013

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
31. 3. 2012	Trains collision: between Peruc - Klobuky v Cechach stations	implemented	10. 5. 2013
19. 9. 2011	Trains collision: The City of Praha – tram stop Kotlarka	partially implemented	15. 5. 2013
16. 2. 2012	Other: SPAD between Korenov - Dolny Polubny stations	partially implemented	30. 5. 2013
5. 2. 2013	Trains collision: in Mirosov station	implemented	14. 6. 2013
14. 1. 2013	Accident to person caused by RS in motion – Injury to passenger: in Bystricka stop	implemented	15. 7. 2013
13. 1. 2013	Train derailment: in Vysoke Myto station	implemented	5. 8. 2013
14. 12. 2012	Level-crossing accident: km 320,829 between Prelouc and Recany - Labem stations	partially implemented	16. 8. 2013
4. 2. 2013	Other: Unauthorised train movement other than SPAD in Adamov station	implemented	27. 8. 2013
22. 1. 2013	Other: SPAD in Kolin station	partially implemented	16. 9. 2013
1. 4. 2013	Level-crossing accident: km 61,796 between Lenora station - Lenora stop	implemented	16. 9. 2013
31. 3. 2013	Train derailment: in Odry station	partially implemented	27. 9. 2013
20. 5. 2013	Train derailment: in Nepomuk station	implemented	4. 10. 2013
25. 4. 2013	Other: Broken axle between Klenci pod Cerchovem - Pobezovice stations	implemented	4. 11. 2013
25. 6. 2012	Other: SPAD in Horovice station	not implemented	10. 11. 2013
24. 3. 2013	Train derailment: between Tabor - Chotoviny stations	implemented	20. 11. 2013
2. 5. 2013	Other: SPAD in Kunovice Loucka station	partially implemented	28. 11. 2013
23. 5. 2013	Train derailment: in Kladno station	partially implemented	20. 12. 2013
20. 5. 2012	Train derailment: between Steti - Libechov stations	partially implemented	30. 12. 2013
10. 9. 2012	Train derailment: among Blansko – Adamov – Brno Malomerice stations	partially implemented	24. 1. 2014
18. 11. 2012	Train derailment: in Praha Vrsovice station	implemented	30. 4. 2014
30. 1. 2013	Other: SPAD in Strancice station	partially implemented	3. 6. 2014
24. 2. 2013	Other: Broken wheel between Jesenik - Lipova Lazne stations	implemented	16. 1. 2014
12. 3. 2013	Train derailment: in Prelouc station	not implemented	5. 3. 2014

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
27. 3. 2013	Other: SPAD in Roztoky u Prahy station	partially implemented	14. 3. 2014
20. 6. 2013	Train derailment: The city of Brno – tram stop Celni	implemented	9. 1. 2014
13. 7. 2013	Level-crossing accident: km 110,525 between Opava zapad - Skrochovice stations	not implemented	13. 1. 2014
21. 7. 2013	Train derailment: in Pardubice hlavni nadrazi station	partially implemented	15. 1. 2014
7. 8. 2013	Level-crossing accident: km 7,527 between Varnsdorf - Rybniste stations	partially implemented	25. 6. 2014
31. 8. 2013	Other: SPAD in Postrelmov station	partially implemented	21. 2. 2014
12. 9. 2013	Level-crossing accident: km 148,648 between Jaromerice nad Rokytnou - Kojetice na Morave stations	implemented	3. 2. 2014
2. 10. 2013	Other: Derailment during shunting operation in Prerov station	partially implemented	6. 5. 2014
3. 11. 2013	Other: Derailment during shunting operation in Brno Malomerice station	implemented	25. 8. 2014
10. 1. 2014	Accident to person caused by RS in motion: The city of Praha – tram stop Palmovka	implemented	6.10. 2014
4. 2. 2014	Trains collision with an obstacle: between Jindrichov ve Slezsku statni hranice – Jindrichov ve Slezsku stations	in progress	1. 9. 2014
7. 3. 2014	Train derailment: in Brno hlavni nadrazi station	implemented	2. 9. 2014
10. 3. 2014	Other: Tram trains collision during shunting operation in The City of Ostrava – tram stop Nova hut jizni braha	implemented	20. 8. 2014
15. 3. 2014	Level-crossing accident: km 61,599 between Cervenka - Moravicany stations	partially implemented	31. 10. 2014
24. 3. 2014	Level-crossing accident: km 16,388 between Rozsochatec - Chotebor stations	not implemented	18. 11. 2014
11. 10. 2013	Accident to person caused by RS in motion: in Karlov pod Jestedem station	partially implemented	15. 1. 2015
11. 7. 2014	Level-crossing accident: km 6,006 between Brno Chrlice – Brno hlavni nadrazi stations	partially implemented	4. 3. 2015
30. 8. 2014	Level-crossing accident: km 77,275 between Slatinany – Chrudim stations	not implemented	29. 4. 2015
9. 9. 2014	Accident to person caused by RS in motion: The city of Ostrava – tram stop Horni	partially implemented	14. 5. 2015
1. 12. 2014	Train derailment: between Pacejov – Horazdovice predmesti stations	partially implemented	27. 5. 2015

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
8. 7. 2014	Trains collision: in Ceska Trebova station with consequent derailment	partially implemented	28. 5. 2015
11. 11. 2014	Trains collision: between Petrovice u Karvine – Odbocka Zavada stations	partially implemented	1. 6. 2015
28. 3. 2014	Other: SPAD in Praha hlavni nadrazi station	not implemented	19. 6. 2015
23. 4. 2014	Level-crossing accident: km 361,191 in Vsetaty station	implemented	19. 6. 2015
24. 3. 2015	Level-crossing accident: km 47,208 between Obratan – Chynov stations	not implemented	10. 8. 2015
21. 11. 2014	Train derailment: in Ostrava hlavni nadrazi station	implemented	11. 8. 2015
13. 3. 2014	Trains collision: between Decin Prostredni Zleb – Decin hlavni nadrazi stations	implemented	19. 8. 2015
28. 11. 2014	Train derailment: in Bohumin station	partially implemented	31. 8. 2015
26. 7. 2014	Level-crossing accident: km 80,206 between Jince - Bratkovice stations	not implemented	7. 9. 2015
19. 2. 2015	Other: Unauthorised movement of shunting operation other than SPAD in Paskov siding with consequent derailment	implemented	16. 9. 2015
25. 5. 2015	Level-crossing accident: km 4,740 between Velke Pavlovice – Kobyli na Morave stations	in progress	25. 9. 2015
27. 7. 2014	Other: SPAD in Kolin station	partially implemented	30. 9. 2015
15. 12. 2014	Trains collision with an obstacle: in Prosenice station	partially implemented	4. 11. 2015
28. 1. 2015	Trains collision with an obstacle: between Ponikla – Hrabacov stations with consequent derailment	in progress	20.11. 2015
16. 11. 2014	Train collision with an obstacle: in Hrusovany u Brna station	partially implemented	30. 11. 2015
24. 6. 2015	Level-crossing accident: km 8,985 between Sudomerice nad Moravou – Straznice stations	not implemented	1. 12. 2015
27. 2. 2015	Accident to person caused by RS in motion: in Cernotin stop	partially implemented	10. 12. 2015
22. 7. 2015	Level-crossing accident: km 245,044 in Studenka station	in progress	15. 12. 2015
19. 6. 2014	Other: Unauthorised train movement other than SPAD in Dolni Berkovice station	partially implemented	17. 12. 2015
29. 6. 2015	Train derailment: in Prosenice station	partially implemented	29. 12. 2015
17. 9. 2014	Trains collision: in Praha Vysehrad station with consequent derailment	partially implemented	13. 6. 2016
13. 11. 2014	Train derailment: in Pribyslav station	implemented	7. 7. 2016

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
30. 12. 2014	Trains collision: in Poricany station with consequent derailment	partially implemented	16. 5. 2016
11. 1. 2015	Trains collision with an obstacle: between Rozna – Nedvedice stations	partially implemented	8. 1. 2016
16. 2. 2015	Trains collision: in Bakov nad Jizerou station	partially implemented	30. 3. 2016
28. 3. 2015	Trains collision: between Velke Zernoseky – Litomerice dolni nadrazi stations with consequent derailment	partially implemented	11. 4. 2016
14. 7. 2015	Trains collision with an obstacle: in Praha Masarykovo nadrazi station with consequent derailment	partially implemented	29. 2. 2016
4. 8. 2015	Trains collision: in Horazdovice predmesti station with consequent derailment	implemented	22. 1. 2016
14. 8. 2015	Level-crossing accident: km 94,356 between Uhersky Ostroh – Ostrozska Nova Ves stations	in progress	7. 4. 2016
7. 9. 2015	Level-crossing accident: km 8,971 in Sluknov station	partially implemented	7. 6. 2016
9. 9. 2015	Accident to person caused by RS in motion: in Golcuv Jenikov station	implemented	29. 6. 2016
14. 9. 2015	Train derailment: between Vlkanec – Golcuv Jenikov stations	not implemented	7. 4. 2016
30. 10. 2015	Trains collision: in Rehlovice station	not implemented	1. 12. 2016
8. 11. 2015	Train derailment: in Drisy station	partially implemented	28. 11. 2016
4. 12. 2015	Level-crossing accident: km 52,066 between Zdarec u Skutce – Hlinsko v Cechach stations	not implemented	15. 7. 2016
11. 12. 2015	Level-crossing accident: km 21,580 in Frydek Mistek station	in progress	6. 6. 2016
21. 3. 2016	Level-crossing accident: km 264,230 between Golcuv Jenikov mesto – Golcuv Jenikov stations	partially implemented	29. 11. 2016
19. 4. 2016	Accident to person caused by RS in motion: in „DKV Suchdol nad Odrou“ siding	in progress	10. 10. 2016
26. 5. 2016	Train derailment: between Dobronin - Jihlava stations	not implemented	14. 12. 2016
10. 7. 2016	Trains collision: in Rotava station	partially implemented	26. 9. 2016

4.2 Recommendations issued in 2016

Date of occurrence	Title of the investigation, Safety recommendation
17. 9. 2014	Trains collision: in Praha Vysehrad station with consequent derailment
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • Modify the current system related to third parties activities conducting works for infrastructure manager, especially in field of: ◦ terms and conditions, in order to be on time and verifiable informed about all third parties participating in infrastructure works, including all of the contracts and stipulations; ◦ preparatory stages, to approve in advance all the procedures and connected measures related to the operation of the track for smooth and safety conducting of the railway transport; ◦ supervision of activities of all third parties, respectively final contractors in order to ensure observing all the terms and conditions for smooth and safety conducting of the railway transport., including the professional competence. The point of this safety recommendation is to ensure better control of infrastructure manager above the third party activities carrying out the infrastructure works. In the current state the infrastructure manager loose the option sufficiently and effectively control the operation of the track for smooth and safety conducting of the railway transport especially from the contractor side. 2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other infrastructure manager (IM) in the Czech Republic.	
13. 11. 2014	Train derailment: in Pribyslav station
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • to prepare basic points and organize regular specialized trainings focused on dealing with situations when detecting an occurrence of an emergency or threatening its happening; • continuously work with printed outputs from continual measurements of the geometric position of the track. Including retrospective checking and evaluating its repeating and developing at the same places;	

<table>
<tr><th>Date of occurrence</th><th>Title of the investigation,
Safety recommendation</th></tr>
<tr><td colspan="2">
• in case of an overrun operating anomalies track geometry in grades IL always clearly set deadlines for removing these defects (to prevent on time the occurrence and limit exceeded operating anomalies - defects degrees IAL);
• establish processes and safety conditions for track measurement under load, and measure the track under the load as a part of each investigation of an incident with a suspected cause in relation to the state of the track geometry.
2) Addressed to Czech National Safety Authority (NSA):
• it is recommended to take own measure forcing implementation of the above recommendations for all other IM in the Czech Republic;
• adoption of their measures towards the implementation of the following safety recommendations for all carriers and holders cargo rail vehicles on railway tracks in the Czech Republic:
◦ gradually equip all towed rail vehicles with a pneumatic derailment detectors, primarily those intended for transporting passengers and dangerous goods (RID).
The meaning of above-mentioned safety recommendations is first of all:
• improvement of the habits and reactions in case of finding out an unusual situation threatening with the incident/accident;
• improvement of the conditions and taking up effective measurements in order to prevent incidents/accidents linked to state of the track geometry;
• preventing the increasing damage on infrastructure, or putting people or railway operation at risk due to a ride of derailed vehicles.
</td></tr>
<tr><td>30. 12. 2014</td><td>Trains collision: in Poricany station with consequent derailment</td></tr>
<tr><td colspan="2">
1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:
• based on previous safety recommendations issued by Railway safety inspection unit and taking into account the causes of accidents reconsider technological procedures and conditions for the expedition of trains (especially passenger transport) by signal of the main signal device. To determine technical or organizational measures for employees conducting expedition trains without possibility of circumvention.
2) Addressed to railway undertaking České dráhy, a. s.
• ensure as soon as possible software update of the AVV system, modified by the producer after the accident in the railway station Poříčany into all conceivable train engines.
</td></tr>
</table>

Date of occurrence	Title of the investigation, Safety recommendation
3) **Addressed** to The Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations in its activities the national safety authority. The purpose of these issued recommendations is to prevent accidents/incidents resulted from human factor error (of the train driver) resulting in the unauthorized movement of the train behind signal device with the signal stop. Base on that reduce the probability of an another collision or derailment of the rolling stock, including reduction of the potential consequences of rail vehicles collisions.	
11. 1. 2015	Trains collision with an obstacle: between Rozna – Nedvedice stations
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • it is recommended to issue a system that will ensure strict observance of the rules and procedures contained in the current technical procedures of the IM to assess vegetation in the protected zone of the railway taking into consideration its height, age, reduced stability and "health" status whether is a source of danger; • it is recommended to implement in current technological processes specification and implementation of the basic requirements for the competence of personnel responsible for line track inspections to identify vegetation, which shows signs, that it could be a source of danger to the railway; • it is recommended to introduce a system of trainings and periodic verifications of knowledge of workers in charge to carry out track line checks to identify vegetation, which shows signs of being source of danger to the track line. The system should count as well with the workers who will carry out cutting and felling of selected vegetation in the way that those workers will meet the competency requirements for such activities at least at a basic level. The goal of issued safety recommendations is to determine clear rules and procedures to detect and identify threats to track line by vegetation growing in the protected zone of the railway including the competence of employees ie. which professional skills they should have and how to assess the vegetation as a threat. The aim is not complete cut down all the vegetation growing in the protected zone of the railway but to distinguish different level of threats eg. between the young ones, low trees, overgrown trees and “sick” trees. 2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.	

Date of occurrence	Title of the investigation, Safety recommendation
16. 2. 2015	Trains collision: in Bakov nad Jizerou station
1) **Addressed** to infrastructure manager SŽDC, s. o. and to railway undertaking ČD Cargo, a. s.: • fulfil the safety recommendations issued by RSIO in connection with incident in Dolní Beřkovice station, dated 19th June 2014; • by own arrangements to ensure knowledge of the infrastructure manager about professional competence of railway undertaking employees for carrying out activities in the rail operation. 2) **Addressed** to Czech National Safety Authority (NSA): • fulfil the safety recommendations issued by RSIO in connection with incident in Dolní Beřkovice station, dated 19th June 2014. The purpose of this recommendation are findings following from results of investigation of this accident, these confirm the reality, that the main segment of the management is the supervision. Without demanding and efficient supervision, consistent discussion of discovered lacks is not possible to reach set safety goals for systematic improvement of safety management system.	
28. 3. 2015	Trains collision: between Velke Zernoseky – Litomerice dolni nadrazi stations with consequent derailment
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • change the activating procedure for the instruction "emergency" on the control panel TOP 1, so that the activation of this instruction was as simple as possible and adjust control panel software so that in a case of incorrect input the operator will be notified by warning text on the screen; • to introduce throughout the Czech Republic on the railways radio system GSM-R function "General Stop" that could stop the train without the assistance of the train driver. The purpose of the above safety recommendations is: • minimize the risk of incorrect operation on workplace TOP 1 in cases a non-routine operation is carrying out and when the staff work under psychological pressure and time constraints; • to provide by technical means, without the assistance of train driver, to stop all the threatened trains in cases of unauthorized train ride behind their train route and	

<table>
<tr><th>Date of occurrence</th><th>Title of the investigation,
Safety recommendation</th></tr>
<tr><td colspan="2">thereby prevent subsequent train collision.
2) Addressed to railway undertaking ČD Cargo, a. s.:
• in internal Directive PERS-25-B-2012 to specify "shortcomings in the activities of people associated with a medical condition and circumstances indicative of the changing health capability to perform activities" that could influence the safety of railway transport;
• to equip rolling stocks (locomotives) operated within a railway radio system GSM-R and TRS with function "General Stop", so that it will be possible to stop the train without the assistance of train driver.
The purpose of the above safety recommendations is:
• to improve the existing safety management system - to establish rules for assessing the "shortcomings in the activities of employees in relation to their state of health" in connection with sending these employees to extraordinary preventive examinations;
• to provide by technical means, without the assistance of train driver, to stop all threatened trains in cases of unauthorized train ride behind their train route and thereby prevent subsequent train collision.
3) Addressed to Czech National Safety Authority (NSA):
• it is recommended to take own measure forcing implementation of the above recommendations for other all IM in the Czech republic.</td></tr>
<tr><td>14. 7. 2015</td><td>Trains collision with an obstacle: in Praha Masarykovo nadrazi station with consequent derailment</td></tr>
<tr><td colspan="2">1) Addressed to railway undertaking České dráhy, a. s.
• ensure the mandatory use of the AVV system on all equipped engines and lines and continue to spread this equipment;
• update the operation system of the CRV&AVV system by installing an acoustic signal in order to ensure notification of the driver, when the “target braking” system Is being deactivated.
2) Addressed to Czech National Safety Authority (NSA):
• it is recommended to take own measure forcing implementation of the above recommendations for other all IM and RU in the Czech republic.
The purpose of this recommendation is in the framework of current possibilities use the AVV system with the function “CD” in order to improve the safety level of railway transport.</td></tr>
</table>

Date of occurrence	Title of the investigation, Safety recommendation
Determine the rules for their use and improve the notification of the driver during the deactivation process of the AVV system. The acoustic signalization should be unified on all kinds of engines. The cooperation between all involved subjects, including producers, is recommended.	
4. 8. 2015	Trains collision: in Horazdovice predmesti station with consequent derailment
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • on the lines operated by SZDC check whether the basic transport documentation, especially the station regulations, unambiguous way determines (in the sense of Art. 2859 own internal regulation SZDC D1) for detecting train routes districts and whether is further defined how to check whether the train route is unoccupied or not; • on the lines operated by SZDC check whether the data about the track and techno-logical procedures of operating railway are up to date. If not, is needed take mea-sures to keep them updated; • on the lines operated by SZDC perform in the frame of carrying out the controls practical verification of knowledge of dispatchers and employees with the D-03 exam (switchman) at stations that are equipped with an electromechanical inter-locking equipment with switch device. 2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic. The purpose of the above safety recommendations is to increase the level of safety of rail transport. Specifically: • ensure accurate, current and complete data in the basic transport documentation so that transport employees will have all information necessary for performance of transport services; • ensure verification of employees who operate with safety equipment of the same type as in the Horažďovice předměstí station, with focus on proper handling of equipment, especially if it is in a fault condition.	
14. 8. 2015	Level-crossing accident: km 94,356 between Uhersky Ostroh – Ostrozska Nova Ves stations
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • it is recommended to change level crossing system of level crossing No. P7953 to	

Date of occurrence	Title of the investigation, Safety recommendation
	level crossing system equipped with barriers; • due to the fact that a large number of collisions on level crossings and with the worst consequences takes place at level crossings secured only with warning crosses is recommended to further increase, in order to ensure maximum safety of operation of rail transport and road users, their level of security in case of renovations and modernization of railway tracks, railway crossings, not just those included in the European railway system, were designed and installed only level crossing safety equipment with warning lights and barriers. 2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to adopt of their measures towards ensuring the realization of the above safety recommendation (in the second point) for others infrastructure managers in the Czech Republic. 3) **Addressed** to Czech Ministry of Transport: • incorporating the above safety recommendation for the infrastructure manager (in the second point) to Act no. 266/1994 Coll., on Railways, as amended. The point of these above-mentioned safety recommendations is further increase safety level at level crossings and in cases of railway lines modernizations, especially on lines with the speed limit higher than 60 km/h, by installing safety equipment with warning lights and barriers. This kind of safety equipment seems to be the safest for both, road and rail transport, except flyover crossing. It is the most efficient measure to prevent repeating the same accidents/incidents with identical causes: i. e. oversight of the warning crosses. This measure could in the future prevent the vast majority of accidents/incidents, and ensure health protection of passengers and staff as a consequence of negotiations of road users. The today's reality, that at railways are used more and more lightweight construction trains much more vulnerable to get damaged by collisions and are more predisposed to derailment with much worse consequences, must not be overlooked. The Czech NIB also recommend for consideration further options of technical solutions, applicable for roads, to increase safety at above-mentioned level crossing.
7. 9. 2015	Level-crossing accident: km 8,971 in Sluknov station
	1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • increase the safety level on the level crossing by installing barriers as addition to visual and acoustic warnings; • in cooperation with road managers pay more attention to maintenance and renovation of horizontal traffic signs; • always carry out a risk assessment and evaluation of indicators, that influence the

Date of occurrence	Title of the investigation, Safety recommendation

chosen kind of level crossing safety equipment including economic and technical-safety point of view and based on that choose the best variant. Avoid building or the new barriers that could deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in technological sheds.

In addition to already issued safety recommendations:

- ensure the highest safety level on current level crossings by installing barriers on still level crossing that haven't been still equipped. When planning a new level crossing, design always only safety equipment with barriers;
- don't deteriorate the safety level on level crossings by uninstalling the barriers from already equipped level crossings.

The point of this safety recommendations is to increase the active safety on level crossing equipped with safety equipment, to determine a norm for level crossings safety and keep the barriers where they have been already installed.

2) **Addressed** to railway undertaking České dráhy, a. s.:

- to require equipping the inner side of the door connecting the driver's cabin with passenger compartment with a panic handle.
- The point of this safety recommendation is to minimalize the risk of getting the train driver injured during the incident/accident, by enabling the train drivers to leave the cabin in case of danger without a need of using the door knob in order to open the doors.

3) **Addressed** to region authority of the Usti region:

- adopt own measure on the road No. II/206, towards the level crossing P3540, aimed to realization of the road sign logarithmically decreasing transverse marking arrangement;
- In cooperation with road managers pay more attention to maintenance and renovation of horizontal traffic signs.

The point of this safety recommendation is to alert the road users to level crossing site and partly increase the safety level in shorter term before barriers are going to be installed.

4) **Addressed** to Czech National Safety Authority (NSA):

- it is recommended to take its own measure forcing implementation of the above recommendations for other infrastructure managers.

The point of above mentioned safety recommendation is to make the NSA accept the

<table>
<tr><th>Date of occurrence</th><th>Title of the investigation,
Safety recommendation</th></tr>
<tr><td colspan="2">measures that will ensure the realization of issued safety recommendations.</td></tr>
<tr><td>9. 9. 2015</td><td>Accident to person caused by RS in motion: in Golcuv Jenikov station</td></tr>
<tr><td colspan="2">1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:
reconsider (edit) existing system related to activities at construction sites (in the field of providing security at individual workplaces), especially:
in order to keep the content of the agreements concluded with external legal entities that work for the IM, alway clear, understandable, semantically unambiguous and prevent the possibility to be interpreted in multiple ways;
in order to determine clearly duties and responsibilities for IM, how and who exactly notify the project coordinator about the presence of the workers at the construction site, including contacts on these persons.
The meaning of the above-mentioned safety recommendation is to ensure better safety of infrastructure manager employees, when their physical movement around or near the construction site, which has been already handed over to the contractor, is needed. To revise the text of the contracts in order to improve clarity and conditions for ensuring the general safety of the affected employees.
2) Addressed to Czech National Safety Authority (NSA):
it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic.</td></tr>
<tr><td>14. 9. 2015</td><td>Train derailment: between Vlkanec – Golcuv Jenikov stations</td></tr>
<tr><td colspan="2">1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:
reassess the existing system of transport rails on sleepers on bogies type 53, especially in relation to the weight (number of transported rails on sleepers loaded on bogies), transport distances and transport conditions in order to eliminate (minimize) the risk of accident/incident;
in technological procedures for transporting rails on sleepers loaded on bogies type 53, prohibit passing by and meetings with freight trains travelling on the adjacent track.</td></tr>
</table>

Date of occurrence	Title of the investigation, Safety recommendation
2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic. The purpose of the above safety recommendations is to enhance the safety of transport of this type of cargo in order to reduce the property damage.	
30. 10. 2015	Trains collision: in Rehlovice station
1) **Addressed** to the infrastructure manager Správa železniční dopravní cesty, s. o.: • according to evaluated records from the recording equipment ReDat to create the conditions which allow all RUs on tracks of SŽDC to execute effective monitoring activity for their train drivers focused on control of the production of radio connection test within the intention of the internal regulation SŽDC Z11; • to subsequently discuss the revealed errors with the respective RUs and to consistenly require fulfillment of binding regulations of SŽDC from employees of the RUs under contract on operation of railway transport; • to create the technological processes in case when a station dispatcher ascertains the loss of the radio connection with a train driver. 2) **Addressed** to the railway undertaking UNIPETROL DOPRAVA, s. r. o.: • to re-value the existing control system so that the monitoring activity of the radio connection tests produced by the train drivers within the intention of the internal regulation SŽDC Z11 will be permanently increased; • to establish a control of functionality of the radio connection through the assigned mobile phone before every ride of the train. 3) **Addressed** to the Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic. The purpose of the above safety recommendations is to allow, respectively to ensure more effective control activity for the train drivers focused on control of the radio connection test within the intention of the internal regulation SŽDC Z11, above mentioned should be done in cooperation between RU and IM, because the IM has a technical device which is able to record and to preserve information about the production of radio connection tests, and it can provide the sources for inspection activities to the RU in cases when the RU is not technically able to record these information. And so to avoid cases when emergency connection is not working on such reasons, which can not detect in advance.	

Date of occurrence	Title of the investigation, Safety recommendation
8. 11. 2015	Train derailment: in Drisy station

1) **Addressed** to the infrastructure manager Správa železniční dopravní cesty, s. o.:

- to accept a sufficiently effective control system that ensures a rigid adherence to the technological procedures of the infrastructure manager for identification, documentation and timely removal of the rail defects.

2) **Addressed** to the Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.

The purpose of the above safety recommendations is to achieve responsible approach of employees of the infrastructure manager at all levels of management to ensuring the technical conditions of the rail system, especially considering the defects of rail components and their timely removal, for which must be established a control system.

4. 12. 2015	Level-crossing accident: km 52,066 between Zdarec u Skutce – Hlinsko v Cechach stations

1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.:

- as a follow-up to already issued safety recommendations it is recommended to change level crossing system of level crossing No. P5312 to level crossing system equipped with barriers;
- based on the fact, that most collisions with worst consequences happens at level crossings equipped only with warning lights without barriers and according to previous recommendations it is recommended to increase safety at the level crossings equipped with warning lights, so that at reconstruction and modernization of railway tracks and the level crossings (not only at railway tracks included to European railway system) were designed and installed only level crossing safety equipment with warning lights and barriers;
- in case of reconstructions, modernizations and building new level crossings always carry out a the best solution assessment abd risk assessment. Based on that choose the best option of level crossing safety equipment. Avoid building new barriers that could deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in a technological sheds.

2) **Addressed** to Czech Ministry of Transport:

- incorporating the above safety recommendation for the infrastructure manager to Act no. 266/1994 Coll., on Railways, as amended.

Date of occurrence	Title of the investigation, Safety recommendation
3) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to adopt of their measures towards ensuring the realization of the above safety recommendation for others infrastructure managers in the Czech Republic. The meaning of this safety recommendation is generally increase safety on level crossings including improving the sight conditions at level crossings equipped with safety equipment beyond the scope of regulation art. 7.3.4. ČSN 73 6380, by avoiding deploying non-essential building around the level crossing. That could improve the sight conditions in case of switched off/malfunction safety equipment beyond the minimal sight condition parameter for the speed of rail vehicle 10 $km \cdot h^{-1}$ with the use of the best available technologies.	
11. 12. 2015	Level-crossing accident: km 21,580 in Frydek Mistek station
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • based on the fact, that most collisions with worst consequences happens at level crossings equipped only with warning lights without barriers and according to previous recommendations ref. no .: 877/2012 / DI, dated 14. 11. 2012, and following similar or the same recommendations, it is recommended to increase safety at the level crossings equipped with warning lights, so that at reconstruction and modernization of railway tracks and the level crossings (not only at railway tracks included to European railway system) were designed and installed only level crossing safety equipment with warning lights and barriers; The point of this safety recommendation is further increase safety level at level crossings and during railway lines modernizations, by installing safety equipment with warning lights and barriers. This kind of safety equipment seems to be the safest for both, road and rail transport, except flyover crossing. It is the most efficient measure to prevent repeating the same accidents/incidents with identical causes: i. e. oversight of the warning traffic signs (warning lights) without barriers. This measure could in the future prevent the vast majority of accidents/incidents and ensure health protection of passengers and staff as a consequence of the wrong behaviour of road users. It can't be miss out a today's reality, that at railways are used more and more lightweight construction trains much more vulnerable to get damaged by collisions, and are more predisposed to derailment with much worse consequences. The Czech NIB also recommend for consideration further options of technical solutions, applicable for roads, to increase safety at above mentioned level crossing. • always carry out a risk assessment and evaluation of indicators, that influence chosen kind of level crossing safety equipment including economic and technical-	

Date of occurrence	Title of the investigation, Safety recommendation
	safety point of view and based on that choose the best variant. Avoid building new barriers that could deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in a technological sheds. The point of this safety recommendation is to make an appeal in order to improve sight conditions at level crossings equipped with safety equipment beyond the scope of regulation art. No. 7.3.4. ČSN 73 6380, by avoiding deploying expendable buildings around the level crossing. That could improve the sight conditions in case of switched off/malfunction safety equipment. 2) **Addressed** to railway undertaking České dráhy, a. s.: • in accordance with the wording of previous recommendations ref. no .: 119/2016/DI, of 3. 2. 2016 is recommended within the training for the position of train driver and follow-up trainings to systematically focus on critical situations (eg. through various simulators or practical training on specific locomotives). The point of this safety recommendation is to make the train driver ready for dealing with routine emergency situations. For example: unavoidable collision with another rolling stock, an obstacle with considerable weight and height and so on. To avoid wasting time by thinking about the best available solution instead behaving according to in advance trained procedures. 3) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take its own measure forcing implementation of the above recommendations for other infrastructure managers (IM) of national railways and in the Czech Republic; • it is recommended to take its own measure forcing implementation of the above recommendations for other railway undertakings (RUs) in the Czech Republic. 4) **Addressed** to Czech Ministry of Transport: • incorporate the above safety recommendations into the relevant legal regulation for infrastructure managers.
21. 3. 2016	Level-crossing accident: km 264,230 between Golcuv Jenikov mesto – Golcuv Jenikov stations
1) **Addressed** to infrastructure manager Správa železniční dopravní cesty, s. o.: • to order an extraordinary training course (“Professional exam for employees who controll traffic of trains and shunting operation in traffic closure”) and also including externally hired workers and employees of contractors, at the latest to 1st April 2017.	

Date of occurrence	Title of the investigation, Safety recommendation
2) **Addressed** to Czech National Safety Authority (NSA): • it is recommended to take its own measure forcing implementation of the above recommendation for other infrastructure managers in the Czech Republic. 3) **Addressed** to the Czech Ministry of Transport: • it is recommended to while partially off the level crossing signal device on multi-track lines will be participants of traffic on the road always inform by traffic signs (eg. road sign no. A22 "other dangers") for an increased risk and ongoing construction work in the area of railway crossing; • it is recommended to carry out a random inspections in the operation focused on using of alcohol or other addictive substances, especially for train drivers. The purpose of the above safety recommendations is to inform a road users of the situation at the railway crossing due to partly-off level crossing system. The goal is to increase their attention when they are driving over a railway crossing. The purpose of “Professional exam for employees who controlled traffic of trains and shunting operation in traffic closure” is to refresh and learn the proper procedures and activities relate to the performance of this position and minimization of creation accidents or incidents in connection with the traffic closure. Effective performance of inspection concerning the use of alcohol is crucial for the safety of railway traffic, respectively elimination consequences of accidents or incidents.	
19. 4. 2016	Accident to person caused by RS in motion: in „DKV Suchdol nad Odrou“ siding
1) **Addressed** to the infrastructure manager Správa železniční dopravní cesty, s. o.: • to make an adjustment of existing technological processes of operations at shunting, so that each railway undertaking determine by their uniform technological procedures using their knowledge of he specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that a view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway. The meaning of this safety recommendation is to systematically leave the train driver out of a decision process whether it is allowed or not to conduct a shunting operation at pushing without the shunting crew. And to shift responsibility to the railway undertaking. A train driver's opinion could be actually influenced by his subjective opinion and other possible requirements and by effort to fulfill them. The railway undertaking knows all of the technical specifications of used rolling stocks and conditions of their using at shunting. Based on that the train driver is more capable of deciding on matter-of-fact in order to prevent possible threats. So that the train driver will be always able to see, whether the route is clear or not and he will be able to stop the shunting unit immediately in case of danger.	

Date of occurrence	Title of the investigation, Safety recommendation
	2) **Addressed** to the infrastructure manager of DKV Olomouc, PP Suchdol nad Odrou siding České dráhy, a. s.: • to make an adjustment of existing technological processes of operations at shunting, so that each railway undertaking determine by their uniform technological procedures using their knowledge of the specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that a view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway. The meaning of this safety recommendation is to systematically leave the train driver out of the decision process whether it is allowed or not to conduct a shunting operation at pushing without the shunting crew. And to shift responsibility to the railway undertaking. The train driver's opinion could be actually influenced by his subjective opinion and other possible requirements and by effort to fulfill them. The railway undertaking knows all of the technical specifications of used rolling stocks and conditions of their using at shunting. Based on that the train driver is more capable of deciding on matter-of-fact in order to prevent possible threats. So that the train driver will be always able to see, whether the route is clear or not and he will be able to stop the shunting unit immediately in case of danger. 3) **Addressed** to the railway undertaking Správa železniční dopravní cesty, s. o.: • to determine by the uniform technological procedures the specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that the view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway. The meaning of this safety recommendation is to systematically determine conditions for conducting shunting operations at pushing without the shunting crew for each one specific rail vehicle. Including their profile, possible load etc. In order to make the train driver able to perceive clearly all the possible circumstances and to keep his view clear. 4) **Addressed** to the Czech National Safety Authority (NSA): • it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs on these tracks in the Czech Republic.
26. 5. 2016	Train derailment: between Dobronin - Jihlava stations
	1) **Addressed** to the Czech National Safety Authority (NSA): • it is recommended to adopt own measures: ○ that a new revision of the bearings will always be carried out in case when

Date of occurrence	Title of the investigation, Safety recommendation
	the shutdown of the rolling stock is longer than 6 months; ◦ that lifetime of the axle bearings will be limited to max. 40 years and unmarked bearings will be discarded and unused; • it is recommended to discuss with the holders of the drawn rolling stocks their armament by a pneumatic detector of derailment, especially rolling stocks which are designated to transport people or dangerous things; • it is recommended to adopt own measures in cooperation with the Ministry of Transport in relation to the national register of the rolling stocks: ◦ that the valid registration will be a condition for operation of rolling stock on the railways in the Czech republic; ◦ that the owners and the holders of the freight rolling stocks will update and complete all necessary data in the national register of the rolling stocks. The purpose of the above safety recommendations is: • to take out gradually the axle roller bearings, because the corrosion damages or the hidden defects, which are not possible to find out by revision, may arise due to the axle roller bearings' age; • to ensure that the rolling stocks with the suspended or withdrawn registration won't be operated on railway lines; • to prevent increasing damage to the infrastructure or endangering the safety of humans and rail transport operation caused by movement of the derailed rolling stocks.
10. 7. 2016	Trains collision: in Rotava station
1) **Addressed** to the owner of the railway line, to the Czech Republic, with the right to manage Správa železniční dopravní cesty, s. o.: • during the modernisation of these railway lines, establish a technical (interlocking) device, which excludes human error while driving railway vehicles, which could lead to an accident. 2) **Addressed** to the infrastructure manager PCV RAILWAY a.s.: • to edit the interlocking equipment REMOTE 98 so that any loss of an oversight of a switch, which is equipped with a self-returning point, will be indicated immediately after the loss of the oversight not only on the monitor screen but also acoustic. 3) **Addressed** to the railway undertaking GW Train Regio a.s.: • to secure that all trains will be ordered to stop and stay by a timetable (so that it	

Date of occurrence	Title of the investigation, Safety recommendation

can not be any stop train "on request") on railways, where is carry on a train transport by simplified controls of a railway transport and where GW Train Regio a.s. is the RU. It ensures, that data about request stop will be same in a timetable for passengers and in a timetable for employees of the RU;

- to provide a cooperation to infrastructure managers (on railway lines, where GW Train Regio a. s. operates railway traffic) during implementation and operation of the technical (interlocking) device, which excludes human error while driving railway vehicles, which could lead to an accident.

The purposes of the above safety recommendations are:

- unification of the technological processes of train drivers in order to eliminate as much as possible human error that could lead to an unauthorized departure of a train from any operating control point;
- to ensure a interaction (compatibility) of a technical (safe) equipment on the railway line with controls and safety devices in trains.

4) **Addressed** to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic and to implement recommendation No. 6-294/2011/DI from 5th September 2011.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	17th September 2014, 21.56 (19.56 GMT).
Occurrence type:	trains collision with consequent derailment.
Description:	collision of long distance passenger train No. 965 with shunting operation with consequent derailment.
Type of train:	long distance passenger train No. 965; shunting operation.
Location:	Praha-Vyšehrad passing point, switch No. 12, km 3,477.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the long distance passenger train No. 965); MBM Rail, s. r. o. (RU of the shunting operation)
Consequences:	1 injury; total damage CZK 4 308 345,-

Direct cause:

- a ride of the train No. 965 along set train route from 2. track towards 3. station track across the switch No. 12 occupied by the shunting operation.

Contributory factors:

- the decision to set up the route for the train No. 965 from station track No. 2 (Praha-Smíchov station) towards the station track No. 3 (Praha-Vyšehrad) in contradiction with order for the traffic closure No. 63246 and with provisions of station regulation;
- failure to abide the conditions for driving on sight by the train driver;
- insufficient coordination among ordering party and contractor before the start of traffic closure in order to carry out the works according to the order for traffic closure No. 63246;
- occupation of the switch No. 12 in contradiction with the order for traffic closure No. 63246 and without proper permission to the termination or interruption of shunting operation on this switch by the station dispatcher (Praha-Vyšehrad);
- failure to observe the speed limit;
- incorrectly written train order "V" for train No. 965.

Underlying cause:

- failure to observe technological procedures of infrastructure manager for activity at shunting operation and for detection free train route.

Root cause: none.

Annex – Summaries of investigations completed in 2016

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- Modify the current system related to third parties activities conducting works for infrastructure manager, especially in field of:
  - terms and conditions, in order to be on time and verifiable informed about all third parties participating in infrastructure works, including all of the contracts and stipulations;
  - preparatory stages, to approve in advance all the procedures and connected measures related to the operation of the track for smooth and safety conducting of the railway transport;
  - supervision of activities of all third parties, respectively final contractors in order to ensure observing all the terms and conditions for smooth and safety conducting of the railway transport., including the professional competence.

The point of this safety recommendation is to ensure better control of infrastructure manager above the third party activities carrying out the infrastructure works. In the current state the infrastructure manager loose the option sufficiently and effectively control the operation of the track for smooth and safety conducting of the railway transport especially from the contractor side.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take its own measure forcing implementation of the above recommendations for other infrastructure managers in the Czech republic.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	13th November 2014, 23:05 (22:05 GMT).
Occurrence type:	train derailment.
Description:	derailment of last wagon of freight train No. 48305.
Type of train:	freight train No. 48305.
Location:	head of 1. track line at Přibyslav station, km 103,866.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train).
Consequences:	0 fatality, 0 injury; total damage CZK 4 681 498,-

Direct cause:

- ride of rolling stock on the track with strongly muddy gravel bed. Under the load were exceeded operating anomalies of track position.

A contributing factor to the amount of damage to infrastructure damage:

- Incorrect response of the railway station dispatcher of Přibyslav who despite finding that on of the wagons has derailed, didn't use immediately the "General stop" in order to stop the train.

Underlying cause:

- not ensuring sufficient load-bearing capacity of track bed in places of long-term polluted and completely muddy track bed;
- ensure appropriate and adequate quality of inspections and track maintenance at the site of the incident.

Root cause:

- long-term neglect of the expansion of the above-mentioned defect caused by control system failure in the framework of safety measurement system. Due to inspections system failure wasn't the defect detected, that caused its expansion and threat the railway transport.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- to prepare basic points and organize regular specialized trainings focused on dealing with situations when detecting an occurrence of an emergency or threatening its happening;
- continuously work with printed outputs from continual measurements of the geometric position of the track. Including retrospective checking and evaluating its repeating and developing at the same places;
- in case of an overrun operating anomalies track geometry in grades IL always clearly set deadlines for removing these defects (to prevent on

time the occurrence and limit exceeded operating anomalies - defects degrees IAL);

- establish processes and safety conditions for track measurement under load, and measure the track under the load as a part of each investigation of an incident with a suspected cause in relation to the state of the track geometry.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations A) for other infrastructure managers (IMs) in the Czech Republic;
- adoption of their measures towards the implementation of the following safety recommendations for all carriers and holders cargo rail vehicles on railway tracks in the Czech Republic:
  - gradually equip all towed rail vehicles with a pneumatic derailment detectors, primarily those intended for transporting passengers and dangerous goods (RID).

The meaning of above-mentioned safety recommendations is first of all:

- improvement of the habits and reactions in case of finding out an unusual situation threatening with the incident/accident;
- improvement of the conditions and taking up effective measurements in order to prevent incidents/accidents linked to state of the track geometry;
- preventing the increasing damage on infrastructure, or putting people or railway operation at risk due to a ride of derailed vehicles.

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	30th December 2014, 14:30 (13:30 GMT).
Occurrence type:	trains collision.
Description:	unauthorized movement of a regional passenger train No. 9329 past the signal device S1 with the signal "Stop", entrance on the railway route set for long distance passenger train No. 983 with the consequent collision of the trains and derailment.
Type of train:	regional passenger train No. 9329; long distance passenger train No. 983.
Location:	Poříčany station, signal device S1, km 370,559, the location of collision: station track No. 1, switch No. 14, km 370,510.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the passenger trains);
Consequences:	0 fatality, 0 injurie; total damage CZK 6 680 000,-

Direct cause:

- failure to respect the signal "stop" of the main signal S1 at the Poříčany station by the train driver.

Contributory factor:

- the absence of technical equipment at Poříčany station that would prevent the train from passing the signal at danger;
- failure to respect station dispatcher's instructions given to the driver of train No. 9326.

Underlying cause:

- train driver did not comply with the technological procedures of RU and IM for shunting operation and departure of train the No. 9326 by the train driver.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- based on previous safety recommendations issued by Railway safety inspection unit and taking into account the causes of accidents reconsider technological procedures and conditions for the expedition of trains (especially passenger transport) by signal of the main signal device. To determine technical or organizational measures for employees conducting expedition trains without possibility of circumvention.

2) Addressed to railway undertaking České dráhy, a. s.

- ensure as soon as possible software update of the AVV system, modified by the producer after the accident in the railway station Poříčany into all conceivable train engines.

3) Addressed to The Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations in its activities the national safety authority.

The purpose of these issued recommendations is to prevent accidents/incidents resulted from human factor error (of the train driver) resulting in the unauthorized movement of the train behind signal device with the signal stop. Base on that reduce the probability of an another collision or derailment of the rolling stock, including reduction of the potential consequences of rail vehicles collisions.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	11th January 2015, 6:50 (5:50 GMT).
Occurrence type:	collision with an obstacle (two trees).
Description:	collision of regional passenger train No. 14905 with two fallen trees on the track.
Type of train:	regional passenger train No. 14905.
Location:	track No. 325A Žďár nad Sázavou - Tišnov, between stations Rožná and Nedvědice, km 76,100.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the regional passenger train); Lesy České republiky, s. p. (the organization that has the rights to manage the land where the trees grow).
Consequences:	1 injury; total damage CZK 180 000,-

Direct cause:

- uprooting and subsequent fall of two trees growing in the protected zone of the track on the line track.

Contributory factor:

- an inner putrefaction of both uprooted trees.

Underlying cause:

- failure of find and remove the source of danger to the railway tracks in the protected zone, which consisted in trees in the fall distance of the line track.

Root cause:

- unsystematic and inconsistent assessing sources of danger in the protected zone and failure to accept appropriate measures to prevent similar incidents by IM;
- the absence of training and validation of knowledge of railway operator workers responsible for monitoring the line tracks in the field of assessing the health condition of vegetation in the protected zone of the line track and simultaneously also the absence of such controls.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- it is recommended to issue a system that will ensure strict observance of the rules and procedures contained in the current technical procedures of the IM to assess vegetation in the protected zone of the railway taking into consideration its height, age, reduced stability and "health" status whether is a source of danger;

- it is recommended to implement in current technological processes specification and implementation of the basic requirements for the competence of personnel responsible for line track inspections to identify vegetation, which shows signs, that it could be a source of danger to the railway;
- it is recommended to introduce a system of trainings and periodic verifications of knowledge of workers in charge to carry out track line checks to identify vegetation, which shows signs of being source of danger to the track line. The system should count as well with the workers who will carry out cutting and felling of selected vegetation in the way that those workers will meet the competency requirements for such activities at least at a basic level.

The goal of issued safety recommendations is to determine clear rules and procedures to detect and identify threats to track line by vegetation growing in the protected zone of the railway including the competence of employees ie. which professional skills they should have and how to assess the vegetation as a threat. The aim is not complete cut down all the vegetation growing in the protected zone of the railway but to distinguish different level of threats eg. between the young ones, low trees, overgrown trees and “sick” trees.

2) Addressed to Czech National Safety Authority (NSA):
   - it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	16th February 2015, 13:21 (12:21 GMT).
Occurrence type:	trains collision.
Description:	collision of shunting operation with the train No. 184600 (solo running locomotive).
Type of train:	train No. 184600 (solo locomotive); shunting operation.
Location:	Bakov nad Jizerou station, station track No. 3, km 82,116.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the shunting operation and the train No. 184600 - solo locomotive.
Consequences:	1 injury (train driver of the shunting operation); total damage CZK 3 100 000,-

Direct cause:

- failure to comply with condition for running on sight by train driver at shunting operation.

Contributory factor:

- failure to drive rail vehicle from the position with the best view;
- insufficient (unclear) a confusing instructions given to the train driver when the shunting permission was being given – how far is possible to operate at the station track No. 3;
- unclear and incomprehensible instructions for ensuring safety during the shunting operation from the train driver of a shunting operation to station dispatcher .

Underlying cause:

- failure to comply with technological procedures of the infrastructure manager and railway undertaking for shunting operation by the participating employees.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager SŽDC, s. o. and to railway undertaking ČD Cargo, a. s.:

- fulfil the safety recommendations issued by RSIO in connection with incident in Dolní Beřkovice station, dated 19th June 2014;

- by own arrangements to ensure knowledge of the infrastructure manager about professional competence of railway undertaking employees for carrying out activities in the rail operation.

2) Addressed to Czech National Safety Authority (NSA):

- fulfil the safety recommendations issued by RSIO in connection with incident in Dolní Beřkovice station, dated 19th June 2014.

The purpose of this recommendation are findings following from results of investigation of this accident, these confirm the reality, that the main segment of the management is the supervision. Without demanding and efficient supervision, consistent discussion of discovered lacks is not possible to reach set safety goals for systematic improvement of safety management system.

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	28th March 2015, 8:38 (7:38 GMT).
Occurrence type:	train collision.
Description:	the freight train No. 148359 passed the signal device No. S1 with the signal “Stop” on it and entered the track occupied by another the freight train No. 53668.
Type of train:	freight train No. 148359; freight train No. 53668.
Location:	open line between Velké Žernoseky a Litoměřice dolní nádraží stations, track line No. 1, km 411,153.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of both freight trains).
Consequences:	1 injury (train driver of the freight train No. 148359); total damage CZK 24 488 311,-

Direct cause:

- unauthorized movement of freight train No 148359 into the section between Žernoseky and Litoměřice stations occupied by oncoming train No. 53668.

Contributory factor:

- the absence of technical equipment that would prevent the train from passing signal at danger.

Underlying cause:

- failure to observe technological procedures of infrastructure manager by train driver of freight train No. 148359, failure to stop the train before the signal "Stop" of the main signal device S1 at the Velké Žernoseky station.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- change the activating procedure for the instruction "emergency" on the control panel TOP 1, so that the activation of this instruction was as simple as possible and adjust control panel software so that in a case of incorrect input the operator will be notified by warning text on the screen;

- to introduce throughout the Czech Republic on the railways radio system GSM-R function "General Stop" that could stop the train without the assistance of the train driver.

The purpose of the above safety recommendations is:

- minimize the risk of incorrect operation on workplace TOP 1 in cases a non-routine operation is carrying out and when the staff work under psychological pressure and time constraints;
- to provide by technical means, without the assistance of train driver, to stop all the threatened trains in cases of unauthorized train ride behind their train route and thereby prevent subsequent train collision.

2) Addressed to railway undertaking ČD Cargo, a. s.:

- in internal Directive PERS-25-B-2012 to specify "shortcomings in the activities of people associated with a medical condition and circumstances indicative of the changing health capability to perform activities" that could influence the safety of railway transport;
- to equip rolling stocks (locomotives) operated within a railway radio system GSM-R and TRS with function "General Stop", so that it will be possible to stop the train without the assistance of train driver.

The purpose of the above safety recommendations is:

- to improve the existing safety management system - to establish rules for assessing the "shortcomings in the activities of employees in relation to their state of health" in connection with sending these employees to extraordinary preventive examinations;
- to provide by technical means, without the assistance of train driver, to stop all threatened trains in cases of unauthorized train ride behind their train route and thereby prevent subsequent train collision.

3) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IM in the Czech republic.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Annex – Summaries of investigations completed in 2016

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	3rd July 2015, 11:35 (9:35 GMT).
Occurrence type:	train derailment.
Description:	derailment of one wagon of freight train No. 62800 at the entrance to the Horní Cerekev station.
Type of train:	freight train No. 62800.
Location:	Horní Cerekev station, track No. 2, switch No. 22, km 63,643.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train).
Consequences:	total damage CZK 868 000,-
Direct cause:	• loosing of a tyre of railway wheel.
Contributory factor:	none.
Underlying cause:	• the gradual heating of the tyre of railway wheel and release connections by long and intense braking the wheel of the wagon.
Root cause:	none.
Recommendations:	not issued.

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	14th July 2015, 23:13 (21:13 GMT).
Occurrence type:	collision of the train with the railway technical device (buffer stop).
Description:	unauthorized movement of regional passenger train No. 8616 behind the signal Lc3, collision with a buffer stop, consequent derailment and entry into the passenger hall at Praha Masarykovo nádraží station.
Type of train:	regional passenger train No. 8616.
Location:	Praha Masarykovo nádraží station, station track No. 3, signal device No. Lc3, km 409,883.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the regional passenger train No. 8616).
Consequences:	3 light injuries; total damage CZK 82 313 083,-

Direct cause:

- ignoring signal “stop” of signal Lc3 by the train driver.

Contributory factors:

- failure to apply the knowledge about the local and track conditions by the driver of the train 8616 while driving along the third station track to the main signal LC3, failure to initiate braking at the point where "target braking" would be initiated;
- underestimation of the importance of AVV system for increasing rail transport safety. There wasn't an obligation to use the AVV system.

Underlying causes:

- failure to comply with technological procedures of infrastructure manager and railway undertaking by the driver of the train Os 8616, not following the signals given by IM;
- failure to initiate braking by the train driver Os 8616 in order to safely stop before the main signal device Lc3 with signal "Stop", due to a failure to keep an eye on the monitors and the control board while the position of switch for driving mode was showing deactivated state of the AVV system and manual driving mode was activated.

Root cause: none.

Recommendations:

1) Addressed to railway undertaking České dráhy, a. s.:

- ensure the mandatory use of the AVV system on all equipped engines and lines and continue to spread this equipment;

- update the operation system of the CRV&AVV system by installing an acoustic signal in order to ensure notification of the driver, when the "target braking" system Is being deactivated.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IM and RU in the Czech republic.

The purpose of this recommendation is in the framework of current possibilities use the AVV system with the function "CD" in order to improve the safety level of railway transport. Determine the rules for their use and improve the notification of the driver during the deactivation process of the AVV system. The acoustic signalization should be unified on all kinds of engines. The cooperation between all involved subjects, including producers, is recommended.

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	4th August 2015, 13.19 (11.19 GMT).
Occurrence type:	trains collision with consequent derailment.
Description:	collision of train No. 668 with train No. 667 with subsequent derailment (as a result of unsecured ride of train No. 668).
Type of train:	long distance passenger train No. 668; long distance passenger train No. 667.
Location:	Horažďovice předměstí station, switch No. 28X, km 290,685.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the long distance passenger trains).
Consequences:	16 light injuries (13 passengers, train driver of train No. 667, head guard of train No. 667 and head guard of train No. 668); total damage CZK 8 108 221,-

Direct cause:

- change of the switch no. 28X by signalman of signal box No. 2, when the wagons of train No. 668 were on the switch point and subsequent ride rear of the train along different track that was not determined for the ride of the train.

Contributory factor: none.

Underlying causes:

- failure to find out whether the train route is unoccupied or not by station dispatcher in their district and the order to preparation a train route for the train R 667 against the established technological processes;
- reposition of the switch no. 28X and 29X by signalman of signal box without clear instructions from the station dispatcher;
- giving unclear instructions related to the performance of transport services during communication between the station dispatcher and the signalman of signal box No. 2.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- on the lines operated by SZDC check whether the basic transport documentation, especially the station regulations, unambiguous way determines (in the sense of Art. 2859 own internal regulation SZDC D1) for detecting train routes districts and whether is further defined how to check whether the train route is unoccupied or not;

- on the lines operated by SZDC check whether the data about the track and technological procedures of operating railway are up to date. If not, is needed take measures to keep them updated;
- on the lines operated by SZDC perform in the frame of carrying out the controls practical verification of knowledge of dispatchers and employees with the D-03 exam (switchman) at stations that are equipped with an electromechanical interlocking equipment with switch device.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.

The purpose of the above safety recommendations is to increase the level of safety of rail transport. Specifically:

- ensure accurate, current and complete data in the basic transport documentation so that transport employees will have all information necessary for performance of transport services;
- ensure verification of employees who operate with safety equipment of the same type as in the Horažďovice předměstí station, with focus on proper handling of equipment, especially if it is in a fault condition.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	14th August 2015, 14:51 (12:51 GMT).
Occurrence type:	level crossing accident.
Description:	collision of freight train No. 82100 at the level crossing No. P7953 with a car.
Type of train:	freight train No. 82100.
Location:	open line between Uherský Ostroh and Ostrožská Nová Ves stations, level crossing No. P7953, km 94,356
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train No. 82100); driver of a car.
Consequences:	2 fatality (driver and car passenger); 2 injury (car passengers); total damage CZK 181 360,-
Direct cause:	unauthorized entry of a car onto a level crossing at the time when it was forbidden.
Contributory factor:	none.

Underlying cause:

- failure to respect the rules for operation on the road by the car driver;
- behavior of the driver in front of the level crossing, the car driver wasn't careful enough and didn't make sure whether he can safely pass the level crossing;
- not giving the priority to railway transport at the level crossing;
- enter of the car on the level crossing at the time when the arriving train was already visible.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- it is recommended to change level crossing system of level crossing No. P7953 to level crossing system equipped with barriers;
- due to the fact that a large number of collisions on level crossings and with the worst consequences takes place at level crossings secured only with warning crosses is recommended to further increase, in order to ensure maximum safety of operation of rail transport and road users, their level of security in case of renovations and modernization of railway tracks, railway crossings, not just those included in the European railway system, were designed and installed only level crossing safety equipment with warning lights and barriers.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to adopt of their measures towards ensuring the realization of the above safety recommendation (in the second point) for others infrastructure managers in the Czech Republic.

3) Addressed to Czech Ministry of Transport:

- incorporating the above safety recommendation for the infrastructure manager (in the second point) to Act no. 266/1994 Coll., on Railways, as amended.

The point of these above-mentioned safety recommendations is further increase safety level at level crossings and in cases of railway lines modernizations, especially on lines with the speed limit higher than 60 km/h, by installing safety equipment with warning lights and barriers. This kind of safety equipment seems to be the safest for both, road and rail transport, except flyover crossing. It is the most efficient measure to prevent repeating the same accidents/incidents with identical causes: i. e. oversight of the warning crosses. This measure could in the future prevent the vast majority of accidents/incidents, and ensure health protection of passengers and staff as a consequence of negotiations of road users. The today's reality, that at railways are used more and more lightweight construction trains much more vulnerable to get damaged by collisions and are more predisposed to derailment with much worse consequences, must not be overlooked. The Czech NIB also recommend for consideration further options of technical solutions, applicable for roads, to increase safety at above-mentioned level crossing.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	7th September 2015, 16.15 (14:15 GMT).
Occurrence type:	level crossing accident.
Description:	collision of regional passenger train No. 5449 with a truck at level crossing No. P3540 with consequent derailment at Šluknov station.
Type of train:	regional passenger train No. 5449.
Location:	Šluknov station, station track No. 1, km 8,971.
Parties:	SŽDC, s. o. (IM); České dráhy, a. s. (RU of the train No. 5449); truck driver (level crossing user).
Consequences:	7 injuries (4 passengers, truck driver, train driver and conductor of the train); total damage CZK 14 898 826,-

Direct cause:

- driver's failure to respect the light and acoustic warning and driving across the level crossing at the time when it was forbidden and visual and acoustic warnings were being given.

Contributory factor:

- replacing the mechanical level crossing system equipped with barriers by level crossing system without barriers at the level crossing No. P3540 as part of the reconstruction of the level crossing system.

Underlying causes:

- driver's failure to respect of the light and sound warning and ride at the level crossing at the time when it was forbidden;
- not giving priority to railway transport at a level crossing.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- increase the safety level on the level crossing by installing barriers as addition to visual and acoustic warnings;
- in cooperation with road managers pay more attention to maintenance and renovation of horizontal traffic signs;
- always carry out a risk assessment and evaluation of indicators, that influence the chosen kind of level crossing safety equipment including economic and technical-safety point of view and based on that choose the best variant. Avoid building or the new barriers that could

deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in technological sheds.

In addition to already issued safety recommendations:

- ensure the highest safety level on current level crossings by installing barriers on still level crossing that haven't been still equipped. When planning a new level crossing, design always only safety equipment with barriers;
- don't deteriorate the safety level on level crossings by uninstalling the barriers from already equipped level crossings.

The point of this safety recommendations is to increase the active safety on level crossing equipped with safety equipment, to determine a norm for level crossings safety and keep the barriers where they have been already installed.

2) Addressed to railway undertaking České dráhy, a. s.:

- to require equipping the inner side of the door connecting the driver's cabin with passenger compartment with a panic handle.

The point of this safety recommendation is to minimalize the risk of getting the train driver injured during the incident/accident, by enabling the train drivers to leave the cabin in case of danger without a need of using the door knob in order to open the doors.

3) Addressed to region authority of the Usti region:

- adopt own measure on the road No. II/206, towards the level crossing P3540, aimed to realization of the road sign logarithmically decreasing transverse marking arrangement;
- In cooperation with road managers pay more attention to maintenance and renovation of horizontal traffic signs.

The point of this safety recommendation is to alert the road users to level crossing site and partly increase the safety level in shorter term before barriers are going to be installed.

4) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take its own measure forcing implementation of the above recommendations for other infrastructure managers.

The point of above mentioned safety recommendation is to make the NSA accept the measures that will ensure the realization of issued safety recommendations.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	9th September 2015, 9.15 (7.15 GMT).
Occurrence type:	accident to person caused by RS in motion.
Description:	uncontrolled movement of bogies type 53 loaded with rails on sleepers on excluded track towards the railway station Vlkaneč which consequently collided with two employees of infrastructure manager, entered the excluded station track no. 3 in railway station Golčův Jeníkov, where it bumped into another 7 bogies type 53 loaded with rails on sleepers and derailed.
Type of train:	solo running bogies type 53 loaded with rails on sleepers.
Location:	open line between Vlkaneč and Golčův Jeníkov stations, km 258,732.
Parties:	SŽDC, s. o. (IM); OHL ŽS, a. s. (the contractor).
Consequences:	1 fatality (track worker), 1 serious injury (track worker); total damage CZK 0,-.

Direct cause:

- insufficient securing against uncontrolled movement of bogies type 53 loaded with rails on sleepers.

Contributory factor:

- failure to comply with workflow defined in technological procedures for putting aside the bogies type 53 loaded with rails on sleepers.

Contributory factor associated with collide of loaded bogies with the employees:

- failure to notify the contractor about of the presence of employees working on excluded track by infrastructure manager.

Underlying cause:

- failure to comply with the provisions of technological processes, providing terms and conditions for securing vehicles against uncontrolled movement.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:
   - reconsider (edit) existing system related to activities at construction sites (in the field of providing security at individual workplaces), especially:
     - in order to keep the content of the agreements concluded with external legal entities that work for the IM, alway clear, understandable, semantically unambiguous and prevent the possibility to be interpreted in multiple ways;
     - in order to determine clearly duties and responsibilities for IM, how and who exactly notify the project coordinator about the presence

of the workers at the construction site, including contacts on these persons.

The meaning of the above-mentioned safety recommendation is to ensure better safety of infrastructure manager employees, when their physical movement around or near the construction site, which has been already handed over to the contractor, is needed. To revise the text of the contracts in order to improve clarity and conditions for ensuring the general safety of the affected employees.

2) Addressed to Czech National Safety Authority (NSA):
   - it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic.

ACCIDENT SUMMARY

Grade:	incident.
Date and time:	12th September 2015, 3.27 (1.27 GMT).
Occurrence type:	damage of overhead contact line.
Description:	damage of overhead contact line and locomotive during the ride of the freight train No. 66287 at the place of connection of two overhead contact lines.
Type of train:	freight train No. 66287.
Location:	head of Ústí nad Orlicí station, station track No. 1, km 257,800.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train No. 66287).
Consequences:	total damage CZK 393 557,-

Direct cause:

- ride of locomotive of freight train No. 66287 without ordered lowering the pantograph at the place of connection of two overhead contact lines.

Contributory factor:

- in the time between 1. 9. 2015 and 12. 9. 2015 have been proven that nine trains drove across the place where incident happened without lowering the locomotive pantograph and put the contact wire into large thermal load beyond the normal operating conditions.

Underlying cause:

- failure to comply with the stationary sign “pantograph down” located before the place of the incident by the train driver.

Root cause: none.

Recommendations: not issued.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	14th September 2015, 8.20 (6.20 GMT).
Occurrence type:	train derailment.
Description:	derailment of load bogies type 53 with rails on sleepers.
Type of train:	the freight train No. 164203.
Location:	km 259,992 between Vlkaneč and Golčův Jeníkov stations.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train No. 164203).
Consequences:	0 fatality, 0 injury; total damage CZK 83 000,-

Direct cause:

- closer unspecified technical failure of bogies type 53.

Contributory factor: none.

Underlying cause: none.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- reassess the existing system of transport rails on sleepers on bogies type 53, especially in relation to the weight (number of transported rails on sleepers loaded on bogies), transport distances and transport conditions in order to eliminate (minimize) the risk of accident/incident;
- in technological procedures for transporting rails on sleepers loaded on bogies type 53, prohibit passing by and meetings with freight trains travelling on the adjacent track.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.

The purpose of the above safety recommendations is to enhance the safety of transport of this type of cargo in order to reduce the property damage.

Annex – Summaries of investigations completed in 2016

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	30th September 2015, 0:55 (29th September 2015 22:55 GMT).
Occurrence type:	trains collision with consequent derailment.
Description:	collision of shunting operation with a set of wagons with consequent derailment.
Type of train:	shunting operation.
Location:	Doly Bílina – úpravna uhlí Ledvice siding, service track No. 17, km 2,672.
Parties:	SD–Kolejová doprava, a. s. (IM and RU of shunting operation).
Consequences:	1 fatality (supervisor of shunting operation); total damage CZK 2 621 896,-

Direct causes:

- supervisor of shunting operation began shunt without check of occupancy of the service track by undesirable items;
- failure to adjust driving speed to view of supervisor of shunting operation.

Contributory factor: none.

Underlying cause:

- failure to observe technological procedures at shunting operation by the supervisor of shunting operation.

Root cause: none.

Recommendations: not issued.

ACCIDENT SUMMARY

Grade:	a serious accident.
Date and time:	30th October 2015, 4:57 (3:47 GMT).
Occurrence type:	a trains collision.
Description:	the unauthorized movement of the freight train No. 163602 behind the departure signal L2 and the consequent collision with the freight train No. 59040.
Type of train:	the freight train No. 163602; the freight train No. 59040.
Location:	the unauthorized movement: Řehlovice station, a station track No. 2, the departure signal L2, km 7,356; the trains collision: an open line between Řehlovice and Úpořiny stations, km 12,320.
Parties:	SŽDC, s. o. (IM); UNIPETROL DOPRAVA, s. r. o. (RU of the freight train No. 163602); SD - Kolejová doprava, a. s. (RU of the freight train No. 59040).
Consequences:	1 fatality (a train driver of the freight train No. 163602); total damage CZK 20 837 339,-
Direct cause:	the unauthorized movement of the freight train No. 163602 behind the departure signal device L2 with the signal “Stop” at Řehlovice station.
Contributory factor:	absence of technical equipment which prevents a train from passing a signal in case of danger.
Underlying cause:	breach of technological procedures of the IM and the RU by the train driver of the freight train No. 163602.
Root cause:	none.

Recommendations:

1) Addressed to the infrastructure manager Správa železniční dopravní cesty, s. o.:

- according to evaluated records from the recording equipment ReDat to create the conditions which allow all RUs on tracks of SŽDC to execute effective monitoring activity for their train drivers focused on control of the production of radio connection test within the intention of the internal regulation SŽDC Z11;
- to subsequently discuss the revealed errors with the respective RUs and to consistenly require fulfillment of binding regulations of SŽDC from employees of the RUs under contract on operation of railway transport;
- to create the technological processes in case when a station dispatcher ascertains the loss of the radio connection with a train driver.

2) Addressed to the railway undertaking UNIPETROL DOPRAVA, s. r. o.:

- to re-value the existing control system so that the monitoring activity of the radio connection tests produced by the train drivers within the intention of the internal regulation SŽDC Z11 will be permanently increased;
- to establish a control of functionality of the radio connection through the assigned mobile phone before every ride of the train.

3) Addressed to the Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic.

The purpose of the above safety recommendations is to allow, respectively to ensure more effective control activity for the train drivers focused on control of the radio connection test within the intention of the internal regulation SŽDC Z11, above mentioned should be done in cooperation between RU and IM, because the IM has a technical device which is able to record and to preserve information about the production of radio connection tests, and it can provide the sources for inspection activities to the RU in cases when the RU is not technically able to record these information. And so to avoid cases when emergency connection is not working on such reasons, which can not detect in advance.

ACCIDENT SUMMARY

Grade:	serious accident.
Date and time:	3rd November 2015, 19.01 (18.01 GMT).
Occurrence type:	trains collision with consequent derailment.
Description:	collision of shunting operation with another shunting operation standing on connection track No. 90 with consequent derailment of last two wagons.
Type of train:	2x shunting operation.
Location:	Česká Třebová station, junction track No. 90, km 0,865.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the shunting operations).
Consequences:	1 injury; total damage CZK 7 680 500,-.

Direct cause:

- failure to comply with condition for running on sight by train driver during the shunting operation.

Contributory factor:

- failure to release of shunting route in front of the signal device Lc 403 with stop signal by the previous shunting operation.

Underlying cause:

- failure to comply with technological procedures of the infrastructure manager and railway undertaking for shunting operation by the railway undertaking employees.

Root cause:	none.
Recommendations:	not issued.

ACCIDENT SUMMARY

Grade:	a serious accident.
Date and time:	8th November 2015, 21.53 (20.53 GMT).
Occurrence type:	a train derailment.
Description:	the derailment of the freight train No. 359511 due to a broken rail.
Type of train:	the freight train No. 359511.
Location:	Dřísy station, a station line No. 1, km 354,315.
Parties:	SŽDC, s. o. (IM); UNIPETROL DOPRAVA s. r. o. (RU of the freight train No. 359511).
Consequences:	0 fatality, 0 injury; total damage CZK 9 620 000,-
Direct cause:	the broken rail caused by rail defects.

Contributory factor:

- poor technical condition of the rails, in which occurred many evolving rail defects;
- occurrence of the deformation martensite on the surface of the running area.

Underlying cause:

- violation of the technological processes of the infrastructure manager – failure to adopt appropriate measures due to the condition of the visible defects on the head of the two stretch of rails at km 353.809 – 354.476;
- insufficient or ineffective control activities of the infrastructure manager which resulted in insufficient removal of source of danger to the rail system.

Root cause: none.

Recommendations:

1) Addressed to the infrastructure manager Správa železniční dopravní cesty, s. o.:

- to accept a sufficiently effective control system that ensures a rigid adherence to the technological procedures of the infrastructure manager for identification, documentation and timely removal of the rail defects.

2) Addressed to the Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs in the Czech republic.

The purpose of the above safety recommendations is to achieve responsible approach of employees of the infrastructure manager at all levels of management to ensuring the technical conditions of the rail system, especially considering the defects of rail components and their timely removal, for which must be established a control system.

ACCIDENT SUMMARY

Grade: accident.

Date and time: 4th December 2015, 8.48 (7.48 GMT).

Occurrence type: level crossing accident.

Description: collision of regional passenger train No. 5303 at the level crossing P5312 with a car.

Type of train: the regional passenger train No. 5303.

Location: active level crossing P5312 equipped with warning lights, km 52,066 between Žďárec u Skutče and Hlinsko v Čechách stations.

Parties: SŽDC, s. o. (IM);
ČD, a. s. (RU of the regional passenger train);
driver of the car (level crossing user).

Consequences: 3 fatalities (car passengers);
1 injury (car driver);
total damage CZK 202 500,-

Direct cause:

- driver's failure to respect the light and acoustic warning and driving across the level crossing at the time when it was forbidden and visual and acoustic warnings were being given.

Contributory factor: none.

Underlying cause:

- driver's failure to respect of the light and sound warning and ride at the level crossing at the time when it was forbidden;
- behavior of the driver in front of the level crossing, the car driver wasn't careful enough and didn't make sure whether he can safely pass the level crossing.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- as a follow-up to already issued safety recommendations it is recommended to change level crossing system of level crossing No. P5312 to level crossing system equipped with barriers;
- based on the fact, that most collisions with worst consequences happens at level crossings equipped only with warning lights without barriers and according to previous recommendations it is recommended to increase safety at the level crossings equipped with warning lights, so that at reconstruction and modernization of railway tracks and the level crossings (not only at railway tracks included to European railway system) were designed and installed only level crossing safety equipment with warning lights and barriers;

- in case of reconstructions, modernizations and building new level crossings always carry out a the best solution assessment abd risk assessment. Based on that choose the best option of level crossing safety equipment. Avoid building new barriers that could deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in a technological sheds.

2) Addressed to Czech Ministry of Transport:

- incorporating the above safety recommendation for the infrastructure manager to Act no. 266/1994 Coll., on Railways, as amended.

3) Addressed to Czech National Safety Authority (NSA):

- it is recommended to adopt of their measures towards ensuring the realization of the above safety recommendation for others infrastructure managers in the Czech Republic.

The meaning of this safety recommendation is generally increase safety on level crossings including improving the sight conditions at level crossings equipped with safety equipment beyond the scope of regulation art. 7.3.4. ČSN 73 6380, by avoiding deploying non-essential building around the level crossing. That could improve the sight conditions in case of switched off/malfunction safety equipment beyond the minimal sight condition parameter for the speed of rail vehicle 10 $km \cdot h^{-1}$ with the use of the best available technologies.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	11th December 2015, 7.38 (6.38 GMT).
Occurrence type:	level crossing accident.
Description:	collision of regional passenger train No. 3125 with a truck at level crossing No. P7408.
Type of train:	regional passenger train No. 3125.
Location:	Frýdek-Místek station, level crossing No. 7408, km 21,580.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the regional passenger train); driver of the truck (level crossing user).
Consequences:	0 fatalities, 0 injuries; total damage CZK 868 436,-

Direct cause:

- third party – level crossing user (truck driver violation). Entry onto the level crossing No. P7408 when acoustic and visual warnings were being given, at the time when the train No. 3125 was approaching the level crossing.

Contributory factor: none.

Underlying cause:

- insufficient attention during driving the truck, that caused oversight of traffic signs before the level crossing and failure to register acoustic and visual warnings of the level crossing safety equipment system.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- based on the fact, that most collisions with worst consequences happens at level crossings equipped only with warning lights without barriers and according to previous recommendations ref. no .: 877/2012 / DI, dated 14. 11. 2012, and following similar or the same recommendations, it is recommended to increase safety at the level crossings equipped with warning lights, so that at reconstruction and modernization of railway tracks and the level crossings (not only at railway tracks included to European railway system) were designed and installed only level crossing safety equipment with warning lights and barriers;

The point of this safety recommendation is further increase safety level at level crossings and during railway lines modernizations, by installing safety equipment with warning lights and barriers. This kind of safety equipment seems to be the safest for both, road and rail transport, except flyover crossing. It is the most efficient measure to prevent repeating the same

accidents/incidents with identical causes: i. e. oversight of the warning traffic signs (warning lights) without barriers. This measure could in the future prevent the vast majority of accidents/incidents and ensure health protection of passengers and staff as a consequence of the wrong behaviour of road users. It can't be miss out a today's reality, that at railways are used more and more lightweight construction trains much more vulnerable to get damaged by collisions, and are more predisposed to derailment with much worse consequences. The Czech NIB also recommend for consideration further options of technical solutions, applicable for roads, to increase safety at above mentioned level crossing.

- always carry out a risk assessment and evaluation of indicators, that influence chosen kind of level crossing safety equipment including economic and technical-safety point of view and based on that choose the best variant. Avoid building new barriers that could deteriorate the sight conditions at level crossings even more. Don't miss out the options of using new technologies without the need to be deployed in a technological sheds.

The point of this safety recommendation is to make an appeal in order to improve sight conditions at level crossings equipped with safety equipment beyond the scope of regulation art. No. 7.3.4. ČSN 73 6380, by avoiding deploying expendable buildings around the level crossing. That could improve the sight conditions in case of switched off/malfunction safety equipment.

2) Addressed to railway undertaking České dráhy, a. s.:

- in accordance with the wording of previous recommendations ref. no .: 119/2016/DI, of 3. 2. 2016 is recommended within the training for the position of train driver and follow-up trainings to systematically focus on critical situations (eg. through various simulators or practical training on specific locomotives).

The point of this safety recommendation is to make the train driver ready for dealing with routine emergency situations. For example: unavoidable collision with another rolling stock, an obstacle with considerable weight and height and so on. To avoid wasting time by thinking about the best available solution instead behaving according to in advance trained procedures.

3) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take its own measure forcing implementation of the above recommendations for other infrastructure managers (IM) of national railways and in the Czech Republic;
- it is recommended to take its own measure forcing implementation of the above recommendations for other railway undertakings (RUs) in the Czech Republic.

4) Addressed to Czech Ministry of Transport:

- incorporate the above safety recommendations into the relevant legal regulation for infrastructure managers.


SCANIA


2

ACCIDENT SUMMARY

Grade: accident.

Date and time: 21st March 2016, 7.08 (6.08 GMT).

Occurrence type: level crossing accident.

Description: collision of shunting operation on excluded line with a car at the level crossing No. P3706 in the area of Golčův Jeníkov město railway stop.

Type of train: shunting operation.

Location: excluded track line No. 1, level crossing No. P3706, km 264,230 between Golčův Jeníkov and Vlkaneč stations, in the area of Golčův Jeníkov město railway stop.

Parties: SŽDC, s. o. (IM);
LOKOTRANS SERVIS, s. r. o. (RU of the shunting operation);
OHL ŽS, a. s. (traffic train control on excluded line);
driver of the car (level crossing user).

Consequences: 2 fatality (driver and passenger of the car);
total damage CZK 100 000,-

Direct cause:

- entry of the car onto the level crossing No. P3706 at the time when the shunting operation was approaching to the level crossing;
- illegal movement of shunting operation between stations behind a place to stop listed in order "V" and the consequent movement over the railway crossing No. P3706, with an exceeding the authorized speed.

Contributory factor:

- the train driver of shunting operation was under the influence of alcohol.

Underlying cause:

- not giving priority to railway transport at a level crossing by driver of the car;
- departure of shunting operation from the Golčův Jeníkov station to the excluded track line in conflict with the technological procedures due to incorrect and incomplete content of order "V" and process for its takeover by train driver;
- failure to compliance of technological procedures provided for a movement of shunting operation between stations on excluded track line.

Root cause: none.

Recommendations:

1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.:

- to order an extraordinary training course (“Professional exam for employees who control traffic of trains and shunting operation in traffic

closure") and also including externally hired workers and employees of contractors, at the latest to 1st April 2017.

2) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take its own measure forcing implementation of the above recommendation for other infrastructure managers in the Czech Republic.

3) Addressed to the Czech Ministry of Transport:

- it is recommended to while partially off the level crossing signal device on multi-track lines will be participants of traffic on the road always inform by traffic signs (eg. road sign no. A22 "other dangers") for an increased risk and ongoing construction work in the area of railway crossing;
- it is recommended to carry out a random inspections in the operation focused on using of alcohol or other addictive substances, especially for train drivers.

The purpose of the above safety recommendations is to inform a road users of the situation at the railway crossing due to partly-off level crossing system. The goal is to increase their attention when they are driving over a railway crossing. The purpose of "Professional exam for employees who controlled traffic of trains and shunting operation in traffic closure" is to refresh and learn the proper procedures and activities relate to the performance of this position and minimization of creation accidents or incidents in connection with the traffic closure. Effective performance of inspection concerning the use of alcohol is crucial for the safety of railway traffic, respectively elimination consequences of accidents or incidents.

ACCIDENT SUMMARY

Grade:	accident.
Date and time:	19th April 2016, 9.07 (7.07 GMT).
Occurrence type:	accident to person caused by rolling stock in motion.
Description:	collision of shunting rolling stock with an employee of railway undertaking.
Type of train:	shunting operation.
Location:	DKV Olomouc, PP Suchdol nad Odrou siding, line No. 14b, km 232,905.
Parties:	SŽDC, s. o. (RU of the shunting operation); ČD, a. s. (IM).
Consequences:	1 fatality; total damage CZK 0.
Direct cause:	a breach of fulfillment of duty by the employee (neglecting of safety) – an entry of the employee in front of the moving shunting rolling stock.
Contributory factor:	none.
Underlying cause:	a wrong choice of site by the employee in a circuit of line when his safety was endangered by the moving shunting rolling stock.
Root cause:	none.

Recommendations:

1) Addressed to the infrastructure manager Správa železniční dopravní cesty, s. o.:

- to make an adjustment of existing technological processes of operations at shunting, so that each railway undertaking determine by their uniform technological procedures using their knowledge of he specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that a view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway.

The meaning of this safety recommendation is to systematically leave the train driver out of a decision process whether it is allowed or not to conduct a shunting operation at pushing without the shunting crew. And to shift responsibility to the railway undertaking. A train driver's opinion could be actually influenced by his subjective opinion and other possible requirements and by effort to fulfill them. The railway undertaking knows all of the technical specifications of used rolling stocks and conditions of their using at shunting. Based on that the train driver is more capable of deciding on matter-of-fact in order to prevent possible threats. So that the train driver will be always able to see, whether the route is clear or not and he will be able to stop the shunting unit immediately in case of danger.

2) Addressed to the infrastructure manager of DKV Olomouc, PP Suchdol nad Odrou siding České dráhy, a. s.:

- to make an adjustment of existing technological processes of operations at shunting, so that each railway undertaking determine by their uniform technological procedures using their knowledge of the specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that a view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway.

The meaning of this safety recommendation is to systematically leave the train driver out of the decision process whether it is allowed or not to conduct a shunting operation at pushing without the shunting crew. And to shift responsibility to the railway undertaking. The train driver's opinion could be actually influenced by his subjective opinion and other possible requirements and by effort to fulfill them. The railway undertaking knows all of the technical specifications of used rolling stocks and conditions of their using at shunting. Based on that the train driver is more capable of deciding on matter-of-fact in order to prevent possible threats. So that the train driver will be always able to see, whether the route is clear or not and he will be able to stop the shunting unit immediately in case of danger.

3) Addressed to the railway undertaking Správa železniční dopravní cesty, s. o.:

- to determine by the uniform technological procedures the specific rolling stocks, which and under what conditions they may be shunted without shunting crews at pushing so that the view from the cab of engine drivers will be always ensured the safety of railway transport and persons located in the circuit in the railway.

The meaning of this safety recommendation is to systematically determine conditions for conducting shunting operations at pushing without the shunting crew for each one specific rail vehicle. Including their profile, possible load etc. In order to make the train driver able to perceive clearly all the possible circumstances and to keep his view clear.

4) Addressed to the Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs on these tracks in the Czech Republic.

ACCIDENT SUMMARY

Grade:	a serious accident.
Date and time:	26th May 2016, 6.35 (4.35 GMT).
Occurrence type:	a train derailment.
Description:	breaking off a pivot of the axle on the last drawn rolling stock of the freight train No. 62800 with a consequential derailment.
Type of train:	the freight train No. 62800.
Location:	an open line between Dobronín and Jihlava stations, km 201,433.
Parties:	SŽDC, s. o. (IM); ČD Cargo, a. s. (RU of the freight train).
Consequences:	0 fatality, 0 injuries; total damage CZK 18 083 000,-
Direct cause:	technical fault of the drawn wagon (type Uacs No. 84 54 930 7158-1) – blockage of the axle bearing of the first right front bogie, a consequential twist of the axel's pivot and a destruction of an axelbox.
Contributory factor:	none.
Underlying cause:	insufficient lubrication of the internal bearing (PLC 410-13) from the first front axle of the bogie of wagon – type Uacs No. 84 54 930 7158-1.
Root cause:	none.

Recommendations:

Addressed to the Czech National Safety Authority (NSA):

- it is recommended to adopt own measures:
  - that a new revision of the bearings will always be carried out in case when the shutdown of the rolling stock is longer than 6 months;
  - that lifetime of the axle bearings will be limited to max. 40 years and unmarked bearings will be discarded and unused;
- it is recommended to discuss with the holders of the drawn rolling stocks their armament by a pneumatic detector of derailment, especially rolling stocks which are designated to transport people or dangerous things;
- it is recommended to adopt own measures in cooperation with the Ministry of Transport in relation to the national register of the rolling stocks:
  - that the valid registration will be a condition for operation of rolling stock on the railways in the Czech republic;
  - that the owners and the holders of the freight rolling stocks will up-date and complete all necessary data in the national register of the rolling stocks.

The purpose of the above safety recommendations is:

- to take out gradually the axle roller bearings, because the corrosion damages or the hidden defects, which are not possible to find out by revision, may arise due to the axle roller bearings' age;
- to ensure that the rolling stocks with the suspended or withdrawn registration won't be operated on railway lines;
- to prevent increasing damage to the infrastructure or endangering the safety of humans and rail transport operation caused by movement of the derailed rolling stocks.

ACCIDENT SUMMARY

Grade:	a serious accident.
Date and time:	25th June 2016, 6.10 (4.10 GMT).
Occurrence type:	a trains collision.
Description:	the unauthorized movement of the shunting operation behind the shunting signal, the collision with the oncoming shunting locomotive and the consequent derailment of the shunting operation.
Type of train:	the solo running shunting locomotive; the shunting operation.
Location:	Brno hl. n. station, a station track No. 4a, shunting device Se69, km 143,096.
Parties:	SŽDC, s. o. (IM); ČD, a. s. (RU of the shunting operation and the shunting locomotive).
Consequences:	1 light injury (a train driver of the shunting locomotive); total damage CZK 7 319 094,-
Direct cause:	a failure to stop the shunting operation ahead of the signal “Shunting forbidden” at the shunting signal device Se69.
Contributory factor:	none.
Underlying cause:	the train driver's operational error (he did not respect signal “Shunting forbidden” of the shunting device Se69).
Root cause:	none.
Recommendations:	not issued.

ACCIDENT SUMMARY

Grade:	a serious accident.
Date and time:	10th July 2016, 6.58 (4.58 GMT).
Occurrence type:	a trains collision.
Description:	an unauthorized movement of the regional passenger train No. 17016 behind a signal “Stop point” with a consequent collision with the regional passenger train No. 17007.
Type of train:	the regional passenger train No. 17016; the regional passenger train No. 17007.
Location:	Rotava operating control point, a place of the unauthorized movement (km 17,829), a place of the trains collision (km 18,095).
Parties:	PDV RAILWAY a. s. (IM); GW Train Regio a. s. (RU of regional passenger trains).
Consequences:	5 injuries (3 passengers, a conductor and a train driver of the train No.17016); total damage CZK 3 109 340,-
Direct cause:	a failure to wait of an arrival of the regional passenger train No. 17007 from Rotava operating point without a permission from a dispatcher.
Contributory factor:	none.
Underlying cause:	a breach of technological procedures of the IM for a centralised traffic control by the train driver of the regional passenger train No. 17016 after the arrival at Rotava operating control point.
Root cause:	none.

Recommendations:

1) Addressed to the owner of the railway line, to the Czech Republic, with the right to manage Správa železniční dopravní cesty, s. o.:

   - during the modernisation of these railway lines, establish a technical (interlocking) device, which excludes human error while driving railway vehicles, which could lead to an accident.

2) Addressed to the infrastructure manager PCV RAILWAY a.s.:

   - to edit the interlocking equipment REMOTE 98 so that any loss of an oversight of a switch, which is equipped with a self-returning point, will be indicated immediately after the loss of the oversight not only on the monitor screen but also acoustic.

3) Addressed to the railway undertaking GW Train Regio a.s.:

   - to secure that all trains will be ordered to stop and stay by a timetable (so that it can not be any stop train "on request") on railways, where is carry on a train transport by simplified controls of a railway transport and where GW Train Regio a.s. is the RU. It ensures, that data about

request stop will be same in a timetable for passengers and in a timetable for employees of the RU;

- to provide a cooperation to infrastructure managers (on railway lines, where GW Train Regio a. s. operates railway traffic) during implementation and operation of the technical (interlocking) device, which excludes human error while driving railway vehicles, which could lead to an accident.

The purposes of the above safety recommendations are:

- unification of the technological processes of train drivers in order to eliminate as much as possible human error that could lead to an unauthorized departure of a train from any operating control point;
- to ensure a interaction (compatibility) of a technical (safe) equipment on the railway line with controls and safety devices in trains.

4) Addressed to Czech National Safety Authority (NSA):

- it is recommended to take own measure forcing implementation of the above recommendations for other all IMs and RUs in the Czech republic and to implement recommendation No. 6-294/2011/DI from 5th September 2011.