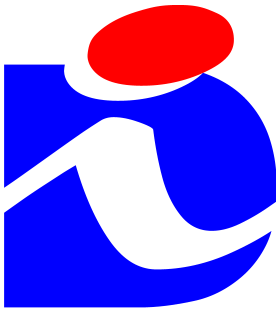
Czech Republic



The Rail Safety Inspection Office

NIB ANNUAL REPORT 2011

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

The Rail Safety Inspection Office

Czech Republic

September 2011

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 2011, 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 2011
- 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,

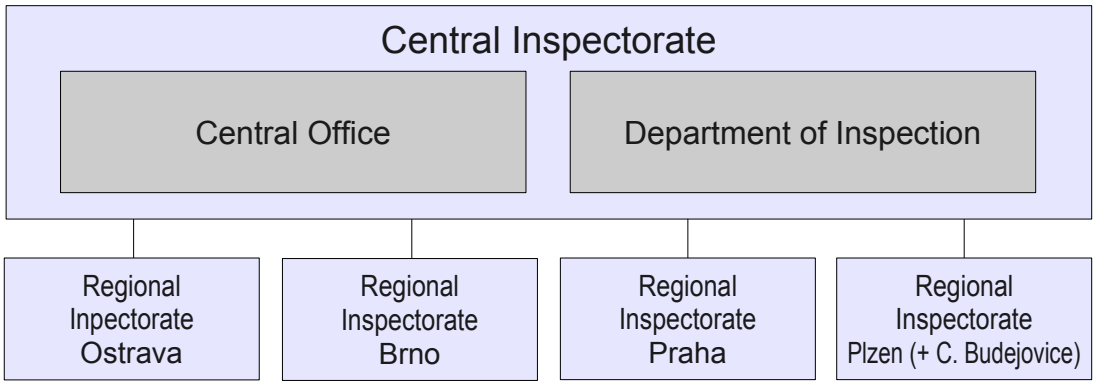
- detects deficiencies compromising the safety of rail infrastructure and rail transport,
- evaluates development trends in accidents and incidents within the rail system and takes measures to improve the situation,
- issues safety recommendations to railway undertakings, infrastructure managers, to 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

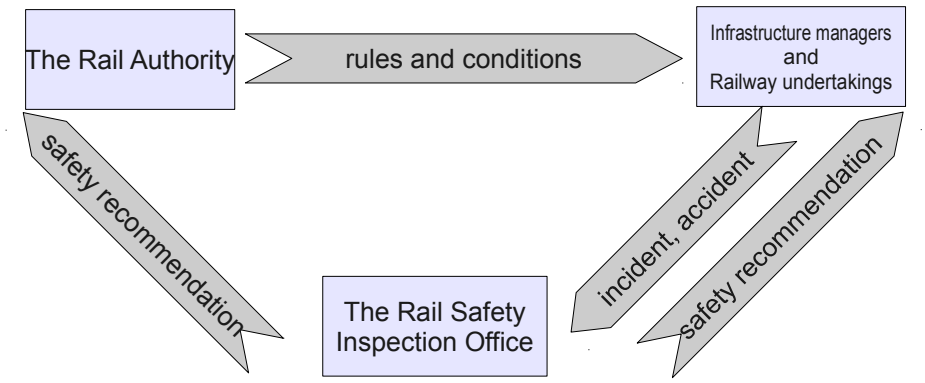
The structure of railway sector in the Czech Republic and relationships among the parties involved are defined in Act 266/1994 Coll., on Railways, as amended, and its implementing regulations. The legislation applies to the following transport systems:

- 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 IB

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 2011, identifying key trends

Trends of completed investigations (last column of the table) are calculated as difference to previous year (2010).

Type of accidents investigated	Number of accidents	Number of victims		Damages in € (approx.)	Trends in relation to previous year
		Deaths	Ser.injury		
Collisions	5	2	11	794027	-28%
Derailments	6	1	9	5093955	+20%
LC-accident	3	1	1	18640	-25%
Fire in RS	0	0	0	0	+0%
Acc. to person	3	1	1	18	+50%
Other	2	0	0	12680	+100%

3.2 Investigations completed and commenced in 2011

Investigations completed in 2011

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Completed (date)
01.07.2009	Train derailment: between Senohraby and Strancice stations	i	11.04.2011
09.03.2010	Train derailment: between Lovosice and Prackovice nad Labem stations	i	21.10.2011
11.03.2010	Other: intrusion on train by brake-shoe between Brodek u Prerova and Dluhonice stations	i	01.03.2011
04.04.2010	Accident to person – Injury to passenger: in Sazavka stop	I	04.08.2011
29.05.2010	Level-crossing accident: km 3.835 between Cervena Voda and Kraliky sta-tions	i	18.02.2011
28.06.2010	Train derailment: in Usti nad Labem-jih station	i	15.6.2011
13.08.2010	Level-crossing accident: during shunting operation in km 0.588 of FOSFA, a. s., siding, in Bori Les station	ii	11.05.2011
31.08.2010	Level-crossing accident: in km 0,535 (P10627) of siding: Vleckova sit OKD, Doprava, a. s., near Ostrava stred station	ii	28.02.2011

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Completed (date)
07.12.2010	Train derailment: between Jesenik and Lipova Lazne stations	i	06.06.2011
08.12.2010	Train derailment: between Prerov and Prosenice stations (similar accident occurred on 21. 01. 2010)	i	17.06.2011
20.12.2010	Trains collision: in Kamenne Zehrovice station	i	02.08.2011
06.01.2011	Trains collision: between Holetin and Vojtechov stops	i	11.11.2011
22.01.2011	Train derailment: in Brno Malomerice station	i	12.09.2011
02.02.2011	Trains collision: between Vodnany and Cicenice stations	i	16.08.2011
14.03.2011	Other: Broken tyre of wheel of locomotive, in Uhersko station	i	14.12.2011
31.03.2011	Accident to person – Injury to passenger: in Cimelice station	i	14.11.2011
21.04.2011	Accident to person – Injury to passenger: The City of Ostrava – tram stop Tylova	ii	14.11.2011
23.05.2011	Trains collision: The City of Brno – in the area on the four-approach intersection Drobneho-Lesnicka-Provaznikova-Trida Generala Piky	ii	28.12.2011
22.06.2011	Trains collision with an obstacle: in Kraslice predmesti stop	i	16.12.2011

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 2011

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis
20.10.2010	Accident to person caused by RS in motion: open line between Prackovice nad Labem and Lovosice stations	i
06.01.2011	Trains collision: between Holetin and Vojtechov stops	i
22.01.2011	Train derailment: in Brno Malomerice station	i
02.02.2011	Trains collision: between Vodnany and Cicenice stations	i
14.03.2011	Other: Broken tyre of wheel of locomotive, in Uhersko station	i
31.03.2011	Accident to person – Injury to passenger, in Cimelice station	i

10.04.2011	Train derailment: in Praha Zizkov station, marshalling yards	i
21.04.2011	Accident to person – Injury to passenger, The City of Ostrava – tram stop Tylova	ii
23.05.2011	Trains collision: The City of Brno – in the area on the four-approach intersection Drobneho-Les-nicka-Provaznikova-Trida Generala Piky	ii
05.06.2011	Train derailment: between Vyskov na Morave and Iv-ancice na Hane stations	i
08.06.2011	Level-crossing accident: km 147,076, between Napa-jedla and Spytihnev stations	i
22.06.2011	Trains collision with an obstacle: in Kraslice predmesti stop	i
11.07.2011	Trains collision: in Olomouc hl. n. station	i
21.07.2011	Trains collision: between Hodkovice nad Mohelkou and Rychnov u Jablonce nad Nisou stations	i
29.07.2011	Train derailment: between Okrisky and Jihlava stations	i
23.08.2011	Trains collision: in Praha Liben station	i
31.08.2011	Trains collision: between Karizek and Zbiroh stations	i
07.09.2011	Train derailment: in Prerov station	i
12.09.2011	Train derailment: in Slatinany station	i
19.09.2011	Trains collision: The City of Praha – tram stop Kotlarka	ii
29.09.2011	Trains collision: Siding Vitkovice doprava	ii
06.10.2011	Trains collision: between Kostomlaty nad Labem and Nymburk hl. n. stations	i
17.10.2011	Trains collision: between Ostrava Trebovice and De-hylov stations	i
22.10.2012	Train derailment: Branch Odra, between Ostrava Kuncice and Ostrava Svinov stations	i
17.11.2011	Train derailment: between Pardubice Rosice nad Labem and Steblova stations	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 2010

Safety Studies completed in 2011

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 2011

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 2011

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

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 2011 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 2007–2011)

3.7 Rail investigations completed in 2007–2011

The table groups investigations by year of their completion.

Accidents investigated		2007	2008	2009	2010	2011	TOT
Serious accidents (Art 19, 1 + 2)	Train collision	0	5	1	1	2	**9**
	Train collision with an obstacle	0	0	0	1	0	**1**
	Train derailment	1	2	0	2	0	**5**
	Level-crossing accident	-	-	-	-	-	**-**
	Accident to person caused by RS in motion	-	-	-	-	-	**-**
	Fire in rolling stock	-	-	-	-	-	**-**
	Involving dangerous goods	0	0	0	0	0	**0**
Other accidents (Art 21.6)	Train collision	2	2	1	6	0	**11**
	Train collision with an obstacle	1	2	0	0	2	**5**
	Train derailment	3	5	1	7	1	**17**
	Level-crossing accident	8	5	4	7	0	**24**
	Accident to person caused by RS in motion	1	1	1	3	2	**8**
	Fire in rolling stock	0	1	0	0	0	**1**
	Involving dangerous goods	0	0	0	0	0	**0**
Incidents		0	2	0	1	0	**3**
TOTAL		**16**	**25**	**8**	**28**	**7**	**84**

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 2007 – 2011

Recommendations issued		**Recommendation implementation status**					
		Implemented		**In progress**		**Not to be implemented**	
Year	**[No.]**	**[No.]**	**[%]**	**[No.]**	**[%]**	**[No.]**	**[%]**
2007	**3**	3	100	0	0	0	0
2008	**16**	11	68,75	2	12,5	3	18,75
2009	**5**	1	20	2	40	2	40
2010	**11**	5	45,5	5	45,5	1	9
2011	**13**	3	23	9	69	1	8
TOTAL	**48**	**23**	**48**	**18**	**37,5**	**7**	**14,5**

Accidents with safety recommendations issued in 2007 – 2011

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
18.01.2007	Train collision: Between Dvur Kralove nad Labem and Bila Tremesna stations	implemented	17.08.2007
20.02.2007	Train derailment: between Mnisek pod Brdy and Cisovice stations	implemented	27.02.2008
19.03.2007	Level crossing accident: Between Dolni Berkovice and Vranany stations	implemented	11.07.2007
07.05.2007	Level crossing accident: Between Jablunka and Valasske Mezirici stations	implemented	01.11.2007
04.07.2007	Level crossing accident: Veseli nad Luznici station	not implemented	14.03.2008
14.07.2007	Trains collision: Cercany station	implemented	25.06.2008

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
01.09.2007	Trains collision: between Bavorov and Vodnany stations	implemented	18.04.2008
20.09.2007	Train collision: between Krasikov and Rudoltice v Cechach stations	implemented	20.03.2008
21.09.2007	Level crossing accident: between Jaromerice nad Rokytnou and Moravske Budejovice stations	not implemented	25.05.2008
30.10.2007	Level crossing accident: between Domasov nad Bystrici and Moravsky Beroun stations	implemented	07.04.2008
27.11.2007	Train derailment: Bystrice nad Olsi station	implemented	06.06.2008
01.12.2007	Train derailment: between odbocka Kyje and Praha-Bechovice	not implemented	28.08.2008
06.12.2007	Train derailment: Ostrava-Kuncice station	implemented	26.05.2008
23.01.2008	Train collision: Trebovice v Cechach station	implemented	12.12.2008
19.02.2008	Accident to person – Injury to passenger (cableway): Janske Lazne, Protez	not implemented	31.08.2009
10.04.2008	Trams collision: Brno, Husova - Palackeho crossing	implemented	21.11.2008
11.04.2008	Trams collision: between Poruba koupaliste and Vresina tram-stops	implemented	31.08.2008
19.05.2008	Trains collision: Moravany station	partially implemented	26.09.2008
02.06.2008	Accident to person – Injury to passenger: Olomouc, Wolkerova tram-stop	implemented	20.11.2008
30.07.2008	Fire in rolling stock: between Pnovany and Vranov u Stribra stations	partially implemented	18.12.2008
08.08.2008	Train collision with an obstacle: Studenka station	partially implemented	31.05.2010
10.11.2008	Trains collision: between Hlinsko v Cechach and Zdirec nad Doubravou stations	not implemented	02.07.2009
23.11.2008	Level-crossing accident: km 20.285, between Horni Lipova and Ramzova stations	partially implemented	30.06.2009
17.12.2008	Level-crossing accident: km 4.981, between Branka u Opavy and Odbocka Moravice stations	partially implemented	26.08.2009
08.01.2009	Level-crossing accident: km 222.975, between Hluboka nad Vltavou and Zliv stations	implemented	07.07.2009
16.02.2009	Trains collision: between Paskov and Vratimov stations	in progress	17.03.2010
01.04.2009	Train derailment: derailment during shunting operation in Brno hl. n. station	implemented	19.04.2010

Date of occurrence	**Title of the investigation** (Occurrence type, location)	**Status of implem.**	**Completed** (date)
24.04.2009	Train derailment: Cercany station	implemented	14.01.2010
16.05.2009	Trains collision: collision of run-away wagons in Ceska Trebova station	implemented	05.10.2010
23.06.2009	Trains collision: collision during shunting operation in Brno hl. n. station	implemented	16.03.2010
01.07.2009	Train derailment: between Senohraby and Strancice stations	in progress	11.04.2011
17.08.2009	Accident to person – Injury to passenger: Brno, between Porici and Nemocnice Milosrdnych Bratri tram stops	partially implemented	04.06.2010
01.09.2009	Trains collision: between Horni Lipova and Lipova Lazne stations	partially implemented	13.04.2010
16.10.2009	Trains collision: Prerov station	not implemented	18.10.2010
07.03.2010	Accident to person – Injury to passenger: in Ostrava hl. n. station	in progress	10.11.2010
11.03.2010	Other: intrusion on train by brake-shoe between Brodek u Prerova and Dluhonice stations	implemented	01.03.2011
04.04.2010	Accident to person – Injury to passenger: in Sazavka stop	in progress	04.08.2011
16.04.2010	Train collision with an obstacle: in Golcuv Jenikov station with consequent derailment	implemented	28.12.2010
29.05.2010	Level-crossing accident: km 3.835 between Cervena Voda and Kraliky stations	not implemented	18.02.2011
28.06.2010	Train derailment: in Usti nad Labem-jih station	in progress	15.06.2011
07.12.2010	Train derailment: between Jesenik and Lipova Lazne stations	in progress	06.06.2011
20.12.2010	Trains collision: in Kamenne Zehrovice station	in progress	02.08.2011
06.01.2011	Trains collision: between Holetin and Vojtechov stops	in progress	11.11.2011
22.01.2011	Train derailment: in Brno Malomerice station	in progress	12.09.2011
02.02.2011	Trains collision: between Vodnany and Cicenice stations	in progress	16.08.2011
14.03.2011	Other: Broken tyre of wheel of locomotive, in Uhersko station	implemented	14.12.2011
31.03.2011	Accident to person – Injury to passenger, in Cimelice station	in progress	14.11.2011
21.04.2011	Accident to person – Injury to passenger, The City of Ostrava – tram stop Tylova	implemented	14.11.2011

4.2 Recommendations issued in 2011

Date of occurrence	Title of the investigation, Safety recommendation
01.07.2009	Train derailment: between Senohraby and Strancice stations
1) Addressed to Sprava zeleznicni dopravni cesty, statni organizace: • It is recommended to include the units (Stavební správy) into the system approach of railway Safety Management System of infrastructure manager; • It is recommended to provide adopted measure of unit Stavební správa Praha for units Stavební správa Plzeň and Olomouc.	
11.03.2010	Other: intrusion on train by brake-shoe between Brodek u Prerova and Dluhonice stations
1) Addressed to the railway undertaking and operator of infrastructure manager České dráhy, a. s.: • It is recommended to develop a procedure for vehicles inspection allowing so that vehicles can be checked from both sides by the personnel visually, including their bogies. • It is recommended to take appropriate effective and systematic measures to prevent similar occurrences. The measures must ensure that carriages with Görlitz bogies are operated only in the technical condition which corresponds to the approved technical qualification. 2) Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings running the carriages with Görlitz bogies.	
04.04.2010	Accident to person – Injury to passenger: in Sazavka stop
1) Addressed to České dráhy, a. s. (RU): • It is recommended to modify pre-departure and departure safety procedures for carriages with automatic doors not signaling their status to train driver, in order to ensure that train crew is able to hold the train when there is a locked-in person in the doors or the doors are open again during departure (the procedures must allow train crew to watch the situation during departure). 2) Addressed to Drážní úřad (NSA): • It is recommended to take their own measures leading to adoption of the above recommendation by other railway undertakings running carriages with automatic doors not signaling their status to train driver.	

Date of occurrence	Title of the investigation, Safety recommendation
29.05.2010	Level-crossing accident: km 3.835 between Cervena Voda and Kraliky stations
1) Addressed to Správa železniční dopravní cesty, státní organizace (infrastructure manager): • It is recommended to verify visibility condition and make them compliant with article 7.4 of technical norm ČSN 73 63 80 at those level crossings, where articles A.5, B.6 and C.8 of technical norm ČSN 73 63 80 have been used for calculation or maintenance of visibility condition and where reduction of visibility condition was applied according to infrastructure's internal regulation SŽDC S 4/3. 2) Addressed to all railway undertakings within Czech Republic: • It is recommended to equip all locomotives, railcars and driving carriages with a juridical recorder recording also use of horn, as absence of this type of evidence can confuse investigation of accidents. 3) Addressed to Drážní úřad (CZ National Safety Authority): • It is recommended to take their own measures to ensure adoption of the above recommendations No. 1 and 2 by all infrastructure managers and railway undertakings within Czech Republic. 4) Addressed to Úřad pro technickou normalizaci, metrologii a státní zkušebnictví (The Czech Office for Standards, Metrology and Testing): • It is recommended to improve technical norm ČSN 73 63 80 in order to prevent reduction of Dz, Lr and Lp parameters without measures ensuring safety of railway and road traffic at level crossings concerned.	
28.06.2010	Train derailment: in Usti nad Labem-jih station
1) Addressed to Správa železniční dopravní cesty, státní organizace (infrastructure manager) and České dráhy, a. s. (railway undertaking): • It is recommended don't use the services of the doctor who incorrectly issued a certificate of medical qualification to the engine driver of the train No. 2316 • It is recommended to re-examine health of all employees who were examined by this particular doctor • It is recommended that the above re-examine health of all employees will be found error, notify the NSA to extend the safety recommendations for railway undertakings and infrastructure managers who are concerned.	
07.12.2010	Train derailment: between Jesenik and Lipova Lazne stations

Date of occurrence	Title of the investigation, Safety recommendation
1) Addressed to ČD, a. s., railway undertaking: • It is recommended for the carriages with chock brakes to use such wheels which will be resistant to heat stress. 2) Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take own measure forcing implementation of the above recommendation.	
20.12.2010	Trains collision: in Kamenne Zehrovice station
1) Addressed to railway undertaking (České dráhy, a. s.): • It is recommended to modify design of the vehicle's interior of class 814 and class 914 vehicles in order to improve the safety of train driver and passengers in case of accidents of the similar type: Class 914 (driving car): A) It is recommended to modify access to driver's cab and the first row of seats in order to ensure that: • handbrake handle with its stand moved backward by buffers deformed due to frontal crash don't obstruct the driver's escape form the cab. • driver's escape is not obstructed by passengers or their luggage present within cab door clearance and opening of the cab door doesn't obstruct escape of passenger occupying the first left seat at the same time. • passengers occupying the first row of seats on right hand side are not in danger of crashing to partition of driver's cab, especially to its glassed-in part. B) It is recommended to modify design of glass partition between low-floor area and rear passenger compartment in order to prevent destruction of the glass caused by impact of the low-floor area's ceiling. Class 814 (railcar) and 914 (driving car): A) It is recommended to improve mounting of seat frame covers in order to prevent injuries caused by the detached covers. B) It is recommended to perform feasibility study of improving design of the vehicle's interior as far as position and design of seats and tables is concerned and consider implementing of the study's results. 2) Addressed to Czech National Safety Authority (Drážní úřad): A) It is recommended to consider whether design of class 814, 914, 014 vehicles is in line with safety requirements of national legislation (Art. 43 paragraph 1 Act No. 266/1994 Coll.), especially as far as passenger and staff safety is concerned.	

Date of occurrence	Title of the investigation, Safety recommendation
B) It is recommended to consider taking measures according to Art. 44 paragraph 2 Act No. 266/1994 Coll. with regard to current condition of the above mentioned vehicles.	
06.01.2011	Trains collision: between Holetin and Vojtechov stops
1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.: • It is recommended to establish procedures in order to restore a traffic after the accident or incident for the operation by provable documented affirmative expression of professionally qualified staff. • It is recommended to establish procedures in order to allow by dispatcher toIt is recommended to take own measure forcing implementation of the first recommendation by all relevant railway (tramway) undertakings drive a train which stands on track, but the dispatcher is not sure whether the track is clear. • It is recommended to establish a clear methodology when it is useful to ask for winter conditions measures. • It is recommended to use on-line weather information and local weather information provided by Czech Hydrometeorological Institute's branches, especially in areas where obstacles within clearance gauge are often expected due to poor weather conditions. 2) Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take their own measures to ensure adoption of the above recommendations by all infrastructure managers of main and regional lines within Czech Republic.	
22.01.2011	Train derailment: in Brno Malomerice station
1) Addressed to infrastructure manager Správa železniční dopravní cesty, státní organizace: • It is recommended, on all points which are in operation for more than 15 years, to make defectoscopy inspections more often and to ensure that the inspection is capable to detect also hidden defects • It is recommended to determine the maximum lifetime of points depending on their operational load and time • t is recommended to improve IM's internal regulation defining IM's internal supervisory system, in order to remove ambiguities concerning follow-up inspections and responsibilities 2) Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take own measure forcing implementation of the above first first two recommendations by all IM in Czech Republic	

Date of occurrence	Title of the investigation, Safety recommendation
02.02.2011	Trains collision: between Vodnany and Cicenice stations

1) Addressed to the infrastructure manager (Správa železniční dopravní cesty, s. o.) and railway undertaking (České dráhy, a. s.):

- It is recommended to establish a technical (interlocking) device, which excludes human error, especially unauthorized departures of trains from the stations.
- It is recommended to modify the technological procedures to ensure a control mechanism eliminating human error. Mainly to remove routine act of employees.

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

- It is recommended to modify design of the vehicle's interior of class 814 and class 914 vehicles in order to improve the safety of train driver and passengers in case of accidents of the similar type:
  Class 914 (driving car):

A) It is recommended to modify access to driver's cab and the first row of seats in order to ensure that:

- handbrake handle with its stand moved backward by buffers deformed due to frontal crash don't obstruct the driver's escape form the cab.
- driver's escape is not obstructed by passengers or their luggage present within cab door clearance and opening of the cab door doesn't obstruct escape of passenger occupying the first left seat at the same time.
- passengers occupying the first row of seats on right hand side are not in danger of crashing to partition of driver's cab, especially to its glassed-in part.

B) It is recommended to modify design of glass partition between low-floor area and rear passenger compartment in order to prevent destruction of the glass caused by impact of the low-floor area's ceiling.

Class 814 (railcar) and 914 (driving car):

A) It is recommended to improve mounting of seat frame covers in order to prevent injuries caused by the detached covers.

B) It is recommended to perform feasibility study of improving design of the vehicle's interior as far as position and design of seats and tables is concerned and consider implementing of the study's results.

3) Addressed to Czech National Safety Authority (Drážní úřad):

A) It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings and infrastructure managers on main and regional lines.

Date of occurrence	Title of the investigation, Safety recommendation
B) It is recommended to consider whether design of class 814, 914, 014 vehicles is in line with safety requirements of national legislation (Art. 43 paragraph 1 Act No. 266/1994 Coll.), especially as far as passenger and staff safety is concerned. C) It is recommended to consider taking measures according to Art. 44 paragraph 2 Act No. 266/1994 Coll. with regard to current condition of the above mentioned vehicles.	
14.03.2011	Other: Broken tyre of wheel of locomotive, in Uhersko station
1) Addressed to railway undertaking (České dráhy, a. s.): • It is recommended to include regular inspection of defectoscopy testing of tyre of wheels into maintenance procedure. • It is recommended to include defectoscopy testing of tyre of wheels into the operating rules in that case in which arises a heat-affected of tyre of wheels. • According to causes of this accident it is recommended to tighten the tolerance for defectoscopy fault of tyre of wheels. 2) Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings.	
31.03.2011	Accident to person – Injury to passenger: in Cimelice station
1) Addressed to railway undertaking České dráhy, a. s. (again): • It is recommended to establish the limit of the allowance between the frame and the door of railcars class 842 to minimize the possibility of false door-closed indication when a passenger's hand is locked between the doors. • It is recommended to include regular check of the above mentioned allowance into railcar class 842 maintenance procedures. • It is recommended to improve door-closed detection system to indicate door-closed status only when doors are tightly closed along the full length of their edge. • It is recommended to modify door control system of railcar class 842 to disable initiation of pneumatic door-closing by door handle when driver's door-control switch is in "open left" or "open right" positions. This should prevent unwanted door-closing when a door handle is accidentally operated by boarding passenger. • It is recommended to improve traction control system of railcar class 842 in order to disable traction until door-closed indication is received. • It is recommended for all depots to improve train-driver's departure procedure by mandatory visual check of all doors within train-driver's viewing field (not using mirrors) ensuring that embarkment/ disembarkment is complete and doors are properly closed after door-closed indication was received. This check	

Date of occurrence	Title of the investigation, Safety recommendation
	should be applied for all rolling stock without door-closed detection system reliably indicating whether doors are tightly closed along the full length of their edge. 2) Addressed to Drážní úřad (NSA): • It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings running railcars class 842.
21.04.2011	Accident to person – Injury to passenger: The City of Ostrava – tram stop Tylova
Addressed to Dopravní podnik Ostrava, a. s. (RU): • It is recommended to equip all types of trams with technical device ensuring that doors start closing after 3 seconds of audible and visual warning. • It is recommended to develop procedures establishing efficient supervisory system of operational safety, defining scope, extend and frequency of checks, responsibilities of employees and their supervisors and details of documentation. Addressed to Czech National Safety Authority (Drážní úřad): • It is recommended to take own measure forcing implementation of the first recommendation by all relevant railway (tramway) undertakings	

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	1st July 2009, 12:20 (10:20 GMT)
Occurrence type:	train derailment
Description:	derailment of second wagon of freight train No. Pn 1. nsl 66803 while running between Strančice and Senohraby stations
Type of train:	freight train No. Pn 1. nsl 66803
Location:	open line between Strančice and Senohraby stations, track No. 1, km 155,675; (Benešov u Prahy – Praha-Vršovice osobní nádraží main line)
Parties:	Správa železniční dopravní cesty, s. o. (IM) Elektrizace železnic Praha, a. s. (RU)
Consequences:	no fatality and injury total cost CZK 0,-
Direct cause:	change of the track's position under the second wagon of the freight train and track distortion by construction activities (infrastructure)
Underlying cause:	disturbance of superstructure and substructure of the track because of incorrect technological procedures
Root cause:	IM ignored the obligation to implement the safety management system into the internal units (Organization of work and SMS)

Recommendations: Addressed to infrastructure manager (SŽDC, s. o.) :

- It is recommended to include the units (Stavební správy) into the system approach of railway Safety Management System of infrastructure manager;

- It is recommended to provide adopted measure of unit Stavební správa Praha for units Stavební správa Plzeň and Olomouc.

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident (according to our national law it is serious accident due to damage which is more than 5 000 000 CZK);
Date and time:	9th March 2010, 08:28 (07:28 GMT);
Occurrence type:	train derailment;
Description:	derailment of 1 wagons (29th wagon) of freight train No. Pn 66681 while running between Prackovice nad Labem and Lovosice stations;
Type of train:	freight train No. Pn 66681;
Location:	open line between Prackovice nad Labem and Lovosice stations, track No. 1 (it is a double track), km 497.599; (Praha-Bubeneč – Děčín hl. n. main line);
Parties:	Správa železniční dopravní cesty, s. o. (IM);
	ČD Cargo, a. s. (RU);
Consequences:	no fatality, no injury total cost CZK 32 060 418;
Direct cause:	rolling stock – bogie/wheel (destruction of the bearing axle rear bogie due to two fatigue failures of rear bearing inner ring – technical fail ure); operations – station master's error (allowing another run despite of hot axle box warning);
Underlying cause:	human factor – wrong steps by station master who didn't observe the teleological procedures;
Root cause:	none;
Recommendations:	not issued

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	incident
Date and time:	Thursday, 11th March 2010, 9:24 (8:24 GMT)
Occurrence type:	other (intrusion on train by brake-shoe)
Description:	a brake-shoe detached from brake mechanism and was projected through the window into the carriage occupied by passengers. The197897 brake-shoe flew over two coupes.
Type of train:	fast train No. 804
Location:	open line between Brodek u Přerova and Dluhonice stations; km 191.000, track No. 1 (Přerov – Česká Třebová main line)
Parties:	SŽDC, s. o. (IM) ČD, a. s. (RU of the shunting train)
Consequences:	no fatality, no injury total cost CZK 72 000,-
Direct cause:	technology – rolling stock (technical failure – detaching and falling down components in the bogie)
Underlying cause:	maintenance process (no adequacy technical vehicle inspection)
Root cause:	none

Recommendations: 1) Addressed to the railway undertaking and operator of infrastructure manager České dráhy, a. s.:

- It is recommended to develop a procedure for vehicles inspection allowing so that vehicles can be checked from both sides by the personnel visually, including their bogies.
- It is recommended to take appropriate effective and systematic measures to prevent similar occurrences. The measures must ensure that carriages with Görlitz bogies are operated only in the technical condition which corresponds to the approved technical qualification.

2) Addressed to Czech National Safety Authority (Drážní úřad): It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings running the carriages with Görlitz bogies.

ACCIDENT SUMMERY

Grade:	accident
Date and time:	4th April 2010, 13:59 (11:59 GMT)
Occurrence type:	accident to person caused by rolling stock in motion
Description:	a passenger's leg was locked into the doors, the passenger was towed by train No. 5910 and injured
Type of train:	regional passenger train No. 5910
Location:	Sázavka stop, double track, main line between Brno hl. n. and Kutná Hora hl. n. stations; km 247,828
Parties:	Správa železniční dopravní cesty, státní organizace (IM) České dráhy, a. s. (RU)
Consequences:	1 slight injury total cost CZK 0,-
Direct cause:	closure of the doors during disembarkment of passengers at the stop
Contributing factor:	none
Underlying cause:	inadequate pre-departure and departure safety procedures for carriages equipped with automatic doors without preliminary warning to passengers and without signaling of their status to train driver
Root cause:	none

Recommendations:

1) Addressed to České dráhy, a. s. (RU):

- It is recommended to modify pre-departure and departure safety procedures for carriages with automatic doors not signaling their status to train driver, in order to ensure that train crew is able to hold the train when there is a locked-in person in the doors or the doors are open again during departure (the procedures must allow train crew to watch the situation during departure).

2) Addressed to Drážní úřad (NSA):

- It is recommended to take their own measures leading to adoption of the above recommendation by other railway undertakings running carriages with automatic doors not signaling their status to train driver.

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	29th May 2010, 18:47 (16:47 GMT)
Occurrence type:	level crossing accident of passenger train No. 20556 and two cyc lists
Description:	A solo running railcar (passenger train No. 20556) collided with a bicycle ridden by two cyclists at a passive level crossing.
Type of train:	solo running railcar – passenger train No. 20556
Location:	level crossing in km 3,835 between Červená Voda and Králíky stations (Štíty – Dolní Lipka regional line)
Involved parties:	Správa železniční dopravní cesty, státní organizace (IM) České dráhy, a. s. (RU) two teenage cyclists
Consequences:	1 fatality (cyclist driving the bicycle) 1 serious injury (cyclist – passenger) total cost CZK 5 000,-
Direct cause:	– poor level crossing condition (insufficient cyclists' field of view towards approaching train No. 20556) – irresponsible conduct of bicycle driver approaching passive level crossing
Contrib. factors:	– bicycle driver influenced by a drug – two cyclists rode a one-seat bicycle – bicyclists didn't wear compulsory protective helmets
Underlying cause:	– improperly inspected level crossing and its visibility condition due to improper application of technical norm
Root cause:	– no procedure ensuring that level crossings quality is in line with t echnical norms and legislation during the whole level crossings' life-cycle

Recommendations:

1) Addressed to Správa železniční dopravní cesty, státní organizace (infrastructure manager):

It is recommended to verify visibility condition and make them compliant with article 7.4 of technical norm ČSN 73 63 80 at those level crossings, where articles A.5, B.6 and C.8 of technical norm ČSN 73 63 80 have been used for calculation or maintenance of visibility condition and where reduction of visibility condition was applied according to infrastructure's internal regulation SŽDC S 4/3.

2) Addressed to all railway undertakings within Czech Republic:

It is recommended to equip all locomotives, railcars and driving carriages with a juridical recorder recording also use of horn, as absence of this type of evidence can confuse investigation of accidents.

3) Addressed to Drážní úřad (CZ National Safety Authority):

It is recommended to take their own measures to ensure adoption of the above recommendations No. 1 and 2 by all infrastructure managers and railway undertakings within Czech Republic.

4) Addressed to Úřad pro technickou normalizaci, metrologii a státní zkušebnictví (The Czech Office for Standards, Metrology and Testing):

It is recommended to improve technical norm ČSN 73 63 80 in order to prevent reduction of Dz, Lr and Lp parameters without measures ensuring safety of railway and road traffic at level crossings concerned.

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	serious accident
Date and time:	Monday, 28th June 2010, 16:47 (14:47 GMT)
Occurrence type:	train derailment
Description:	three carriages of the passenger train No. 2316 (electrical unit) derailed on the switch when approaching Ústí nad Labem hl. n. station and hit concrete wall
Type of train:	regional passenger train No. 2316
Location:	Ústí nad Labem hl. n. – obvod jih station; km 514,908, between switches No. 103 and No. 105 (Praha-Bubeneč – Děčín hl. n. main line)
Parties:	Správa železniční dopravní cesty, s. o. (IM) České dráhy, a. s. (RU)
Consequences:	1 fatality (engine driver) 9 serious injuries (1 staff + 8 passenger) total cost CZK 70 914 339,-
Direct cause:	operational error (train didn't reduce the speed according to an entry signal and was running across the switch at speed of 117 km/h instead of 50 km/h)
Underlying cause:	qualification of the engine driver (incorrectly issued a certificate of medical qualification by the doctor)
Root cause:	none

Recommendations:

1) Addressed to Správa železniční dopravní cesty, státní organizace (infrastructure manager) and České dráhy, a. s. (railway undertaking):

● It is recommended don't use the services of the doctor who incorrectly issued a certificate of medical qualification to the engine driver of the train No. 2316

● It is recommended to re-examine health of all employees who were examined by this particular doctor

● It is recommended that the above re-examine health of all employees will be found error, notify the NSA to extend the safety recommendations for railway undertakings and infrastructure managers who are concerned.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Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	13th August 2010, 10:52 (8:52 GMT)
Occurrence type:	level crossing accident
Description:	collision of shunting movement (locomotive + 1 wagon) with a lorry at level crossing
Type of train:	shunting movement
Location:	passive level crossing in km 0,588 of FOSFA, a. s., siding (double track level crossing)
Parties:	FOSFA, a. s. (owner of the siding) Advanced World Transport a. s. (IM + RU)
Consequences:	no fatality and injury total cost CZK 401 000,-
Direct cause:	way how the lorry and shunting railway vehicles approached the level crossing
Contributory factor:	driver of lorry didn't respect a traffic sign: “Do not enter, one way!”
Underlying cause:	incompability of maximal line speed allowed and visibility condition of the level crossing in terms of railway and road safety
Root cause:	none
Recommendations:	not issued

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	31st August 2010, 16:04 (14:04 GMT)
Occurrence type:	level crossing accident
Description:	collision of siding train No. 425040 with a passenger car at level crossing in km 0,535 (P10627 – mark of LC)
Type of train:	siding train No. 425040
Location: „Vlečková	passive level crossing (traffic sign only), km 0,535 at siding síť OKD, Doprava, a. s.“
Parties:	Advanced World Transport a. s. (IM + RU + owner of the siding)
Consequences:	no fatality no injury total cost CZK 60.000,-
Direct cause:	- third party – level crossing user (driver didn't comply with regulations) - poor level crossing condition (insufficient visibility)
Underlying cause:	none procedure for level crossing inspection and maintenance (appropriate employee didn't make the inspections)
Root cause:	none
Recommendations:	not issued

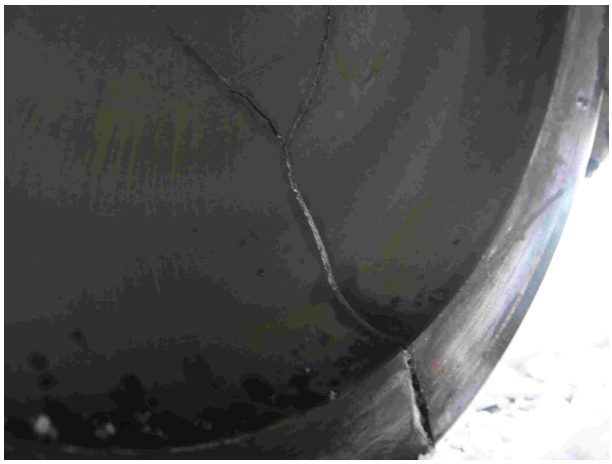
Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	7th December 2010, 6:47 (5:47 GMT)
Occurrence type:	train derailment
Description:	broken wheel of a carriage, collision of defective part of this carriage with a rail in level crossing consequent derailment of rear boogie of this one carriage of the fast train No. 900
Type of train:	fast train No. 900
Location:	open line between Jeseník and Lipová Lázně stations, km 33,046 (Mikulovice st. hr. – Hanušovice main line)
Parties:	Správa železniční dopravní cesty, a. s. (IM) České dráhy, a. s. (RU)
Consequences:	no fatality no injury total cost CZK 71 990,-
Direct cause:	failure of the brake switch-board due to excessive heat load and longterm braking
Underlying cause: which	improperly inspection of carriage by the appropriate employees made a wrong inspections
Consequence factor:	bad weather conditions (wheels and boogies were coated with snow and ice)
Root cause:	ambiguous procedure of identification of overheating wheels during the inspections

Recommendations:

1) Addressed to ČD, a. s., railway undertaking:
It is recommended for the carriages with chock brakes to use such wheels which will be resistant to heat stress
2) Addressed to Czech National Safety Authority (Drážní úřad):
It is recommended to take own measure forcing implementation of the above recommendation.



Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	serious accident
Date and time:	8th December 2010, 10:50 (09:50 GMT)
Occurrence type:	train derailment
Description:	derailment of 1 wagons (13th wagon) of freight train No. 46659 while running between Přerov and Prosenice stations
Type of train:	freight train Nex 2. nsl. 46723
Location:	open line between Přerov and Prosenice stations, track No. 2, km 186,771, (Přerov – Bohumín main line)
Parties:	Správa železniční dopravní cesty, s. o. (IM) PKP CARGO, S. A. (RU) SITFA, Via Bruno Buozzi 28, 10024 Moncalieri (owner of the wagons).
Consequences:	no fatality and injury total cost CZK 20 150 000,-
Direct cause:	rolling stock – bogie/wheel (wheel vertical force loss of the wagon – technical failure)
Underlying cause:	incorrect spring leaf was placed into the wagon than is provided by technological procedures – design
Root cause:	none
Recommendations:	not issued

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	serious accident (according to our national law, according to SD it is an accident)
Date and time:	20th December 2010, 8:56 (7:56 GMT)
Occurrence type:	trains collision
Description:	passenger train No. 19707 approached to the station Kamenné Žehrovice and collided with the stationary shunting movement
Type of train:	regional passenger train No. 19707 shunting operation
Location:	Kamenné Žehrovice station, station track No. 1, km 33,855 (Praha-Bubny – Rakovník main line)
Parties:	Správa železniční dopravní cesty, státní organizace (IM) České dráhy, a. s. (RU of the regional passenger train No. 19702) ČD Cargo, a. s. (RU of the shunting movement)
Consequences:	0 fatality 1 serious injuries (passenger) 13 light injuries (11 passengers + 2 staff – all from regional pas senger train) total cost CZK 3 930 520,-
Direct cause:	operations (station personnel's violation) – permission the etrance of the passenger regional train onto an occupied station track
Underlying cause:	human factor – wrong steps by station personnels and engine driver of shunting movements who didn't observe the teleological procedures
Root cause:	none

Recommendations: A) Addressed to railway undertaking (České dráhy, a. s.):

It is recommended to modify design of the vehicle's interior of class 814 and class 914 vehicles in order to improve the safety of train driver and passengers in case of accidents of the similar type:

Class 914 (driving car):

1. It is recommended to modify access to driver's cab and the first row of seats in order to ensure that:
   - handbrake handle with its stand moved backward by buffers deformed due to frontal crash don't obstruct the driver's escape form the cab;
   - driver's escape is not obstructed by passengers or their luggage present within cab door clearance and opening of the

cab door doesn't obstruct escape of passenger occupying the first left seat at the same time;

- passengers occupying the first row of seats on right hand side are not in danger of crashing to partition of driver's cab, especially to its glassed-in part.

2. It is recommended to modify design of glass partition between low-floor area and rear passenger compartment in order to prevent destruction of the glass caused by impact of the low-floor area's ceiling.

Class 814 (railcar) and 914 (driving car):

1. It is recommended to improve mounting of seat frame covers in order to prevent injuries caused by the detached covers.
2. It is recommended to perform feasibility study of improving design of the vehicle's interior as far as position and design of seats and tables is concerned and consider implementing of the study's results.

B) Addressed to Czech National Safety Authority (Drážní úřad):

1. It is recommended to consider whether design of class 814, 914, 014 vehicles is in line with safety requirements of national legislation (Art. 43 paragraph 1 Act No. 266/1994 Coll.), especially as far as passenger and staff safety is concerned
2. It is recommended to consider taking measures according to Art. 44 paragraph 2 Act No. 266/1994 Coll. with regard to current condition of the above mentioned vehicles

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	6th January 2011, 11:05 (10:05 GMT)
Occurrence type:	trains collision with consequence derailment
Description:	regional passenger train No. 5301 went on the the track which was in poor weather conditions (during 176 minutes didn't go any trains on this line), first of all the train deadlocked on the track, after several minutes the train continued in its journey and collided with a snowdrift and consequent derailment
Type of train:	regional passenger train No. 5301
Location:	open line between Holetín and Vojtěchov stops, km 45.823 (Havlíčkův Brod – Pardubice/Rosice nad Labem main line)
Parties:	Správa železniční dopravní cesty, s. o. (IM) České dráhy, a. s. (RU of the regional passenger train No. 5301)
Consequences:	0 fatality and injury total cost CZK 430 000,-
Direct cause:	operations (engine driver and station personnel's violation) – per mission the departure of the regional passenger train without ad opting measures for the safe journey
Underlying cause:	1) not available procedures to restore a traffic after the accident or incident for the operation by provable documented affirmative ex pression of professionally qualified staff 2) not available procedures allow by dispatcher to drive a train which stands on track, but the dispatcher is not sure whether the track is clear
Root cause:	unavailable winter measures to ensure safety in bad weather con ditions
Recommendations:	1) Addressed to infrastructure manager Správa železniční dopravní cesty, s. o.: ● It is recommended to establish procedures in order to restore a traffic after the accident or incident for the operation by provable documented affirmative expression of professionally qualified staff ● It is recommended to establish procedures in order to allow by dispatcher to drive a train which stands on track, but the dispatcher is not sure whether the track is clear ● It is recommended to establish a clear methodology when it is useful to ask for winter conditions measures ● It is recommended to use on-line weather information and local weather information provided by Czech Hydrometeorological

Institute's branches, especially in areas where obstacles within clearance gauge are often expected due to poor weather conditions.

2) Addressed to Czech National Safety Authority (Drážní úřad):

- It is recommended to take their own measures to ensure adoption of the above recommendations by all infrastructure managers of main and regional lines within Czech Republic.

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	22nd January 2011, 22:02 (21:02 GMT)
Occurrence type: (associated	train derailment with consequent train collision with an obstacle with broken point)
Description:	derailment of locomotive and 3 wagons of freight train No. Rn 52336 on broken point of switch No. 43 and consequent collision of regional passenger train No. 4938 with infrastructure component (catenary support)
Type of train:	freight train No. 52336 regional passenger train No. 4938
Location:	Brno-Maloměřice station, switch No. 43, km 160,662 (Odbočka Brno Židenice – Svitavy main line)
Parties:	Správa železniční dopravní cesty, statní organizace (IM) ČD Cargo, a. s. (RU of the freight train No. 52336) Česke dráhy, a. s. (RU of the regional passenger train No. 4938)
Consequences:	no fatality, no injury total cost CZK 4 152 112
Direct cause:	1) operations – fatigue crack not detected during inspections of the point performed according to IM's procedures 2) infrastructure – developing fatigue crack on the side surface of point
Contributing factor:	too long and heavy duty of the point (the point had been in use since 1988)
Underlying cause:	1) human factor – regular inspections of switches performed insufficiently 2) maintenance processes – poor maintenance and condition of the point 3) human factor – dummy repair of the point (repair reported as completed, but in fact no repair took place)
Root cause:	SMS – repeated failure of IM's internal supervisory systém SMS – inadequately defined IM's supervisory system leading to different interpretation by employees and managers
Recommendations:	1) Addressed to infrastructure manager Správa železniční dopravní cesty, státní organizace:

• It is recommended, on all points which are in operation for more than 15 years, to make defectoscopy inspections more often and to ensure that the inspection is capable to detect also hidden defects

• It is recommended to determine the maximum lifetime of points depending on their operational load and time

• It is recommended to improve IM's internal regulation defining IM's internal supervisory system, in order to remove ambiguities concerning follow-up inspections and responsibilities

2) Addressed to Czech National Safety Authority (Drážní úřad):
• It is recommended to take own measure forcing implementation of the above first first two recommendations by all IM in Czech Republic

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	serious accident
Date and time:	2nd February 2011, 8:22 (7:22 GMT)
Occurrence type:	trains collision with consequent derailment
Description:	passenger train No. 18003 departed from the station Vodňany without permission to departure and collided with the freight train No. 88850 at open line near the station Vodňany. Regional pas senger train derailed.
Type of train:	regional passenger train No. 18003 freight train No. Mn 88850
Location:	open line between Bavorov and Vodňany stations, km 4, 048 (Číčenice – Volary regional line – centralized traffic control)
Parties:	Správa železniční dopravní cesty, s. o. (IM) České dráhy, a. s. (RU RU of the regional passenger train No18003) ČD Cargo, a. s. (RU of the freight train No. 88850)
Consequences:	1 fatality (passenger of the regional passenger train) 7 serious injuries (6 passengers + 1 staff) 8 light injuries (4 passengers + 4 staff) total cost CZK 6 820 615,-
Direct cause:	operations (engine driver of passenger train and dispatcher viol tions)
Underlying cause:	wrong steps by engine driver and dispatcher who didn't observe the teleological procedures
Root cause:	wrong safety system which allowed to human error
Recommendations:	1) Addressed to the infrastructure manager (Správa železniční dopravní cesty, s. o.) and railway undertaking (České dráhy, a.s.): A) It is recommended to establish a technical (interlocking) device, which excludes human error, especially unauthorized departures of trains from the stations. B) It is recommended to modify the technological procedures to ensure a control mechanism eliminating human error. Mainly to remove routine act of employees. 2) Addressed to railway undertaking (České dráhy, a. s.): It is recommended to modify design of the vehicle's interior of class 814 and class 914 vehicles in order to improve the safety of train driver and passengers in case of accidents of the similar type: Class 914 (driving car):

A) It is recommended to modify access to driver's cab and the first row of seats in order to ensure that:

- handbrake handle with its stand moved backward by buffers deformed due to frontal crash don't obstruct the driver's escape form the cab;
- driver's escape is not obstructed by passengers or their luggage present within cab door clearance and opening of the cab door doesn't obstruct escape of passenger occupying the first left seat at the same time;
- passengers occupying the first row of seats on right hand side are not in danger of crashing to partition of driver's cab, especially to its glassed-in part.

B) It is recommended to modify design of glass partition between low-floor area and rear passenger compartment in order to prevent destruction of the glass caused by impact of the low-floor area's ceiling.

Class 814 (railcar) and 914 (driving car):

A) It is recommended to improve mounting of seat frame covers in order to prevent injuries caused by the detached covers.

B) It is recommended to perform feasibility study of improving design of the vehicle's interior as far as position and design of seats and tables is concerned and consider implementing of the study's results.

3) Addressed to Czech National Safety Authority (Drážní úřad):

A) It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings and infrastructure managers on main and regional lines.

B) It is recommended to consider whether design of class 814, 914, 014 vehicles is in line with safety requirements of national legislation (Art. 43 paragraph 1 Act No. 266/1994 Coll.), especially as far as passenger and staff safety is concerned

C) It is recommended to consider taking measures according to Art. 44 paragraph 2 Act No. 266/1994 Coll. with regard to current condition of the above mentioned vehicles

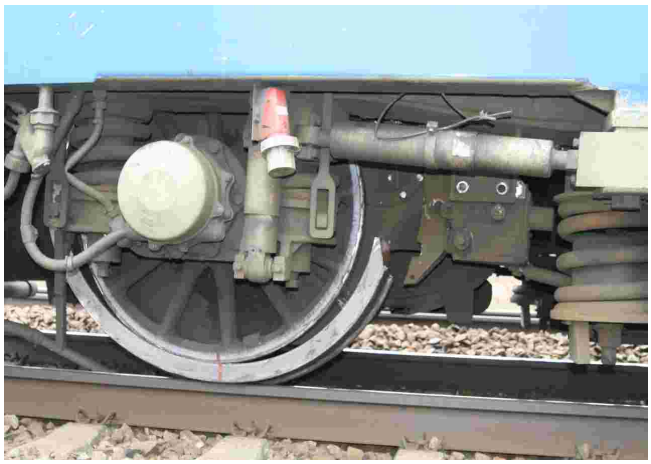
Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	incident
Date and time:	14th March 2011, 09:18 (08:18 GMT)
Occurrence type:	broken wheel
Description:	broken tyre of wheel of locomotive of the passenger train No. 867 when approached to the station Uhersko (without derailment)
Type of train:	long distance passenger train No. 867
Location:	Uhersko station, station track No. 1, main line between Česká Třebová and Praha-Libeň stations; km 286.160
Parties:	Správa železniční dopravní cesty, státní organizace (IM) České dráhy, a. s. (RU)
Consequences:	0 fatality, 0 injury total cost CZK 245 000,-
Direct cause:	rolling stock – metallurgical material defect of the wheel operations (maintenance personnel) – unidentified developing metallurgical defect which led to a developing crack during a regular maintenance
Note:	The findings regarding the condition of the tyre shows that source of broken wheel was caused by reduced quality of material originating in the manufacturing process. Although the thickness of the tyre was in order and according the regulation, the developing crack which led to a complete broken tyre.
Underlying cause:	• operational rule provided too much tolerance for defectoscopy faults • disembodiment the defectoscopy testing of tyre of wheels into the regular maintenance system • disembodiment the defectoscopy testing of tyre of wheels into maintenance in which arises a heat-affected of tyre of wheels
Root cause:	none
Recommendations:	1) Addressed to railway undertaking (České dráhy, a. s.): ● It is recommended to include regular inspection of defectoscopy testing of tyre of wheels into maintenance procedure ● It is recommended to include defectoscopy testing of tyre of wheels into the operating rules in that case in which arises a heat-affected of tyre of wheels

● According to causes of this accident it is recommended to tighten the tolerance for defectoscopy fault of tyre of wheels

2) Addressed to Czech National Safety Authority (Drážní úřad):
● It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings



Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	31st March 2011, 09:24 (07:24 GMT)
Occurrence type:	accident to person caused by rolling stock in motion
Description:	a passenger's arm was locked into the doors, the passenger was towed by train No. 7905 approximately 15 m and injured
Type of train:	regional passenger train No. 7905
Location:	Čimelice station, 1. station track, main line between Zdice and Protivín stations; km 38,200
Parties:	Správa železniční dopravní cesty, státní organizace (IM) České dráhy, a. s. (RU)
Consequences:	1 serious injury total cost CZK 446,-
Direct cause:	closure of the doors during disembarkment of passengers at the station
Contributing factor:	none

Underlying cause:

- human factor – wrong step of train crew before the departure of the train from the station – violation)
- class 842 railcar not equipped with reliable detection of fully closed doors
- inadequate pre-departure and departure safety procedures which don't provide visual check of all doors within train-driver's viewing field ensuring that embarkment/disembarkment is complete and doors are properly closed

Root cause: none

Recommendations:

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

- It is recommended to establish the limit of the allowance between the frame and the door of railcars class 842 to minimize the possibility of false door-closed indication when a passenger's hand is locked between the doors.
- It is recommended to include regular check of the above mentioned allowance into railcar class 842 maintenance procedures.
- It is recommended to improve door-closed detection system to indicate door-closed status only when doors are tightly closed along the full length of their edge.

- It is recommended to modify door control system of railcar class 842 to disable initiation of pneumatic door-closing by door handle when driver's door-control switch is in "open left" or "open right" positions. This should prevent unwanted door-closing when a door handle is accidentally operated by boarding passenger.
- It is recommended to improve traction control system of railcar class 842 in order to disable traction until door-closed indication is received.
- It is recommended for all depots to improve train-driver's departure procedure by mandatory visual check of all doors within train-driver's viewing field (not using mirrors) ensuring that embarkment/ disembarkment is complete and doors are properly closed after door-closed indication was received. This check should be applied for all rolling stock without door-closed detection system reliably indicating whether doors are tightly closed along the full length of their edge.

2) Addressed to Drážní úřad (NSA):
It is recommended to take own measure forcing implementation of the above recommendation by all railway undertakings running railcars class 842.

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident
Date and time:	21st April 2011, 12:24:49 h (10:24:49 GMT)
Occurrence type:	accident to person caused by rolling stock in motion
Description:	A person was locked into the doors by the arm (during the disembarkment) and towed him for cca 23 m
Type of train:	tramway, type T6A5 – CS
Location:	the City of Ostrava, Tylova stop
Parties:	Dopravní podnik Ostrava, a. s. (IM + RU)
Consequences:	1 fatality (passenger) total cost CZK 0,-
Direct cause:	operations – closure of the doors during disembarkment of passengers at the stop
Underlying cause:	human factor – wrong step of tram driver before the departure (inadequate pre-departure and departure safety procedures)
Root cause:	none
Recommendations:	1) Addressed to Dopravní podnik Ostrava, a. s. (RU): ● It is recommended to equip all types of trams with technical device ensuring that doors start closing after 3 seconds of audible and visual warning. ● It is recommended to develop procedures establishing efficient supervisory system of operational safety, defining scope, extend and frequency of checks, responsibilities of employees and their supervisors and details of documentation. 2) Addressed to Czech National Safety Authority (Drážní úřad): ● It is recommended to take own measure forcing implementation of the first recommendation by all relevant railway (tramway) undertakings.


STATUTÁRNÍ MĚSTO OSTRAVA

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	serious accident
Date and time:	23rd May 2011, 19:17 (17:17 GMT)
Occurrence type:	trains collision (between tram and trolleybus. A trolleybus is con sidered a train according to Czech national law)
Description:	tramway No. 9 collided with a trolleybus No. 37 in the area of the four-approach intersection. After the collision the tram derailed.
Type of train:	tram T6A5 – CS type trolleybus 14 Tr type
Location:	the City of Brno, in the area of the four-approach intersection Drobného – Lesnická – Provazníkova – Třída Generála Píky
Parties:	Dopravní podnik města Brna, a. s. (IM + RU)
Consequences:	1 fatality (passenger in trolleybus), 3 serious injuries (passen gers), 10 light injuries (passengers and 2 staff – drivers of tram and trolleybus) total cost CZK 1 085 569.-
Direct cause:	trolleybus driver's operational error (didn't respect red signal)
Contributing factor:	exceeding the maximum speed of the trolleybus about 15 km/h
Underlying cause:	none
Root cause:	none
Recommendations:	not issued

Annex – Summaries of investigations completed in 2011

ACCIDENT SUMMERY

Grade:	accident (according to our national law it is serious accident due to damage which is more than 5 000 000 CZK)
Date and time:	22nd June 2011, 17:06 (15:06 GMT)
Occurrence type:	train collision with an obstacle (fallen tree)
Description:	regional passenger train No. 20826 approached to the Kraslice před-městí stop. When the train was going at the platform a tree fell at the rear part of the train
Type of train:	regional passenger train No. 20826
Location:	Kraslice předměstí stop, km 21.093; Sokolov – Kraslice regional line
Parties:	Správa železniční dopravní cesty, s. o. (owner of the track) VIAMONT a. s. (IM) VIAMONT Regio a. s. (RU of the regional passenger train) Vogtlandbahn-GmbH (owner of the railcar)
Consequences:	0 fatality and injury total cost CZK 7 583 957,- (EUR 312 225,50)
Direct cause:	third parties – a break and a fall the tree on the train due to an excessive wind during a local storm and internal rot of the tree
Underlying cause:	none
Root cause:	none
Recommendations:	not issued