KÖZLEKEDÉSBIZTONSÁGI SZERVEZET

TRANSPORTATION SAFETY BUREAU

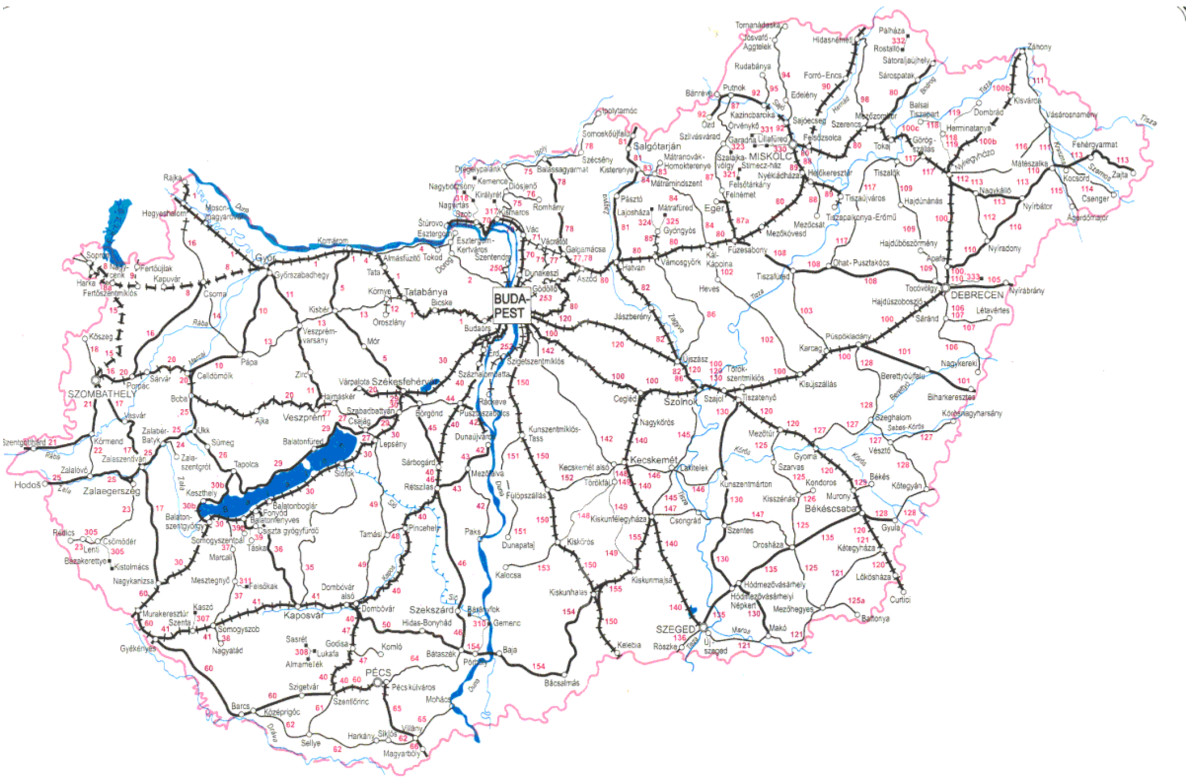
ANNUAL REPORT 2009

Transportation Safety Bureau

Hungary

CONTENTS

MAIN CHARACTERISTICS OF RAIL TRANSPORT IN HUNGARY



CHARACTERISTICS OF THE RAILWAY LINES OF HUNGARY

Main lines	4556 km
Regional lines	1390 km
Other lines	1877 km
Total	**7823 km**
Electrified lines (out of total)	2826 km
Lines equipped with track condition and occupancy detection (out of total)	2201 km
Number of protected level crossings	2752
Total number of level crossings	5996

SUMMARY

The Republic of Hungary fully implemented all essential requirements concerning accident investigation of the Railway Safety Directive 2004/49/EC in its national law. The Transportation Safety Bureau was established on 1st January 2006 as the legal successor of Civil Aviation Safety Bureau (founded in 2002).TSB operates in a multimodal form. Its main duty is the independent technical investigation of aviation, railway and marine accidents and incidents. Within the organisational framework of TSB, the Railway Department began to operate on 1st March 2006, thus 2009 was the third full year of its operation.

In 2009, there was no occurrence (serious accident) on the railways which the Railway Department of TSB was obliged to investigate pursuant to the regulations.

TSB decided at its own discretion to conduct independent technical investigation into 19 further occurrences.

During year 2009, TSB issued 24 safety recommendations regarding 10 commenced investigations. The majority of these recommendations were accepted by the addressees. Furthermore, TSB issued one safety recommendation prior to the completion if the investigation, in which it recommended immediate preventive actions which were accepted and implemented by the operator.

Taking the last few years' experiences into consideration, in 2009 we put special emphasis on gathering and analysing data on occurrences where people were run over (both personal injuries caused by rolling stock in motion and suicides) as well as on accidents at LCs.

Similar to the year 2008, accidents in LCs were considered as priority to the department in 2009. Weighing up the circumstances and consequences of the reported occurrences, the TSB investigated eight such accidents.

Abbreviations	
CASB	Civil Aviation Safety Bureau
IC	Investigating Committee
LC	Level crossing
Máv Zrt.	Hungarian State Railways Plc.
NIB	National Investigation Body
NTA	National Transport Authority (the National Safety Authority of Hungary)
TSB	Transportation Safety Bureau

1. INTRODUCTION

The Transportation Safety Bureau of Hungary (TSB) as a multimodal organisation for the investigation of accidents was established on 1st January 2006.

The Annual Report 2009 of TSB - in accordance with Article 23/3 of the Railway Safety Directive 2004/49/EC - gives an account on the following:

- the implementation of 2004/49/EC Railway Safety Directive into the Hungarian law,
- the relations of TSB with other concerned organisations,
- the philosophy and process of the independent technical investigation at TSB,
- the overview of the past 12 months from transport safety point of view,
- the experiences of the independent technical investigations carried out by TSB,
- the safety recommendations issued by TSB and the provisions made in relation to the recommendations, and
- the participation of TSB in the work of the European Railway Agency.

1.1 Legal basis - The implementation of the Safety Directive in the Hungarian law

The Republic of Hungary implemented all essential requirements concerning accident investigation of the Railway Safety Directive 2004/49/EC in Act CLXXXIV of 2005 on the technical investigation of aviation, rail and marine accidents and incidents. Based on the Directive, Transportation Safety Bureau was established on 1st January 2006 which – as a multimodal organisation - is responsible for the independent technical investigation of aviation, railway and marine accidents and incidents.

The detailed regulations of the technical investigation are included in the decrees of Act CLXXXIV of 2005 which were separately issued for the three modes of transports by the Minister for Economy and Transport. The decree on the regulations of the technical investigation of serious railway accidents, railway accidents and incidents (7/2006 GKM) was issued on 27th February 2006.

Within the organisational framework of TSB, the Railway Department began to operate on 1st March 2006 pursuant to the regulations.

The national Act guarantees the complete independence of TSB from all other actors of the concerned transport sector. The Act defines the objective of the independent technical investigation as follows:

“The objective of the independent technical investigation is to reveal the causes and circumstances of serious railway accidents, accidents and incidents and to initiate the necessary technical measures and make recommendations in order to prevent similar cases in the future.” It also states that “it is not the purpose of the investigation carried out by TSB to apportion blame or legal liability”.

The Act contains the rights and responsibilities of the investigators defined in the Safety Directive.

According to the national regulations:

– All aviation, railway and marine occurrences shall be reported to TSB.

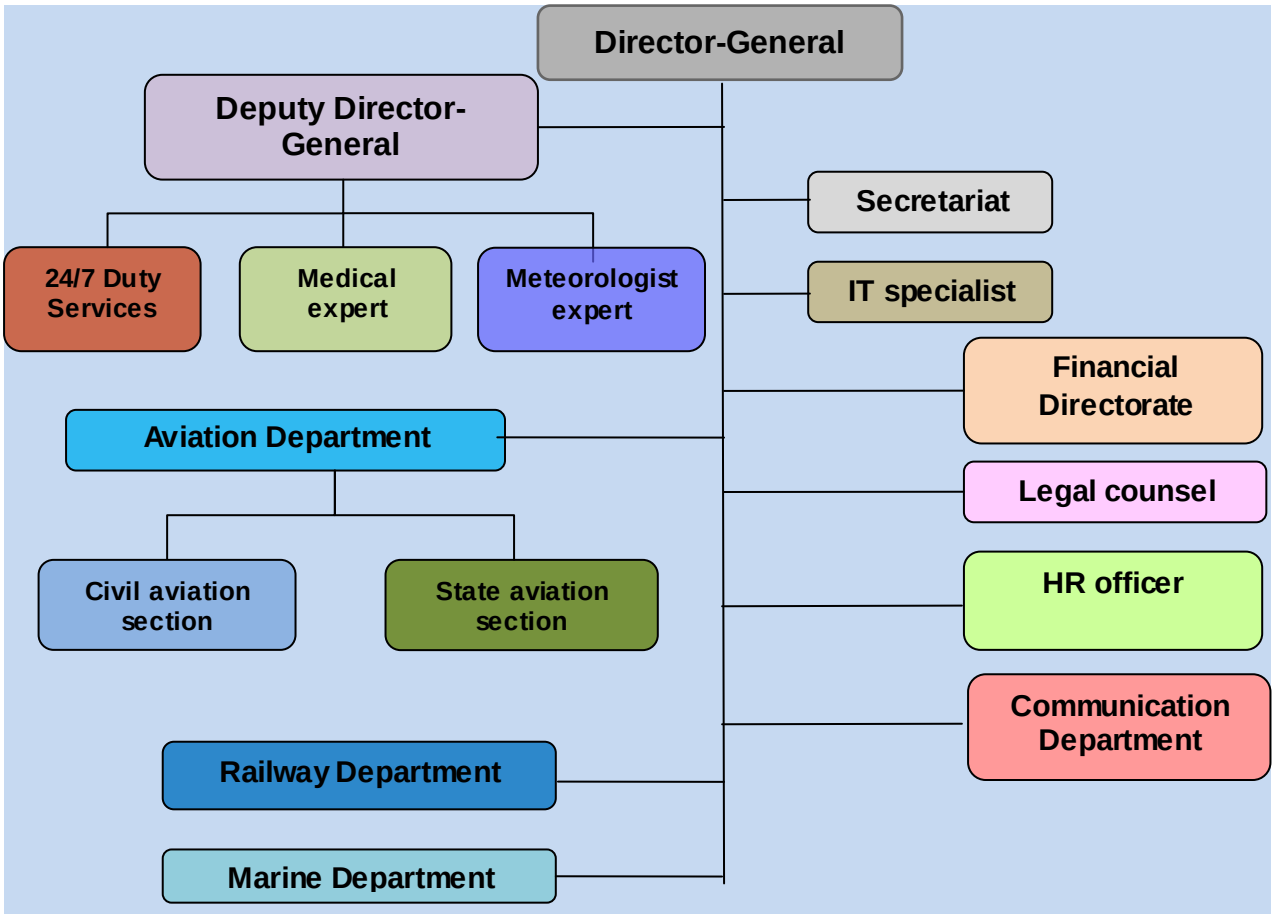
– The members of the Investigating Committee of TSB are authorized to be present at the site of any occurrence and to conduct the technical investigation parallel with the police investigation (if there is one).

– Based on the results of the investigation, TSB is entitled to issue safety recommendations and recommend immediate preventive actions before the completion of the investigation, if necessary. The implementation of safety recommendations is not obligatory, however, the addresses must report to TSB once a year whether they have accepted or rejected them. (The addresses must forthwith respond to the recommended immediate preventive actions.)

– The anonymity of the relevant parties is guaranteed. TSB shall make public the final reports on the results of the technical investigation. However, the final report shall not contain data based on which the relevant parties can be identified. The final report shall not be used in criminal procedures.

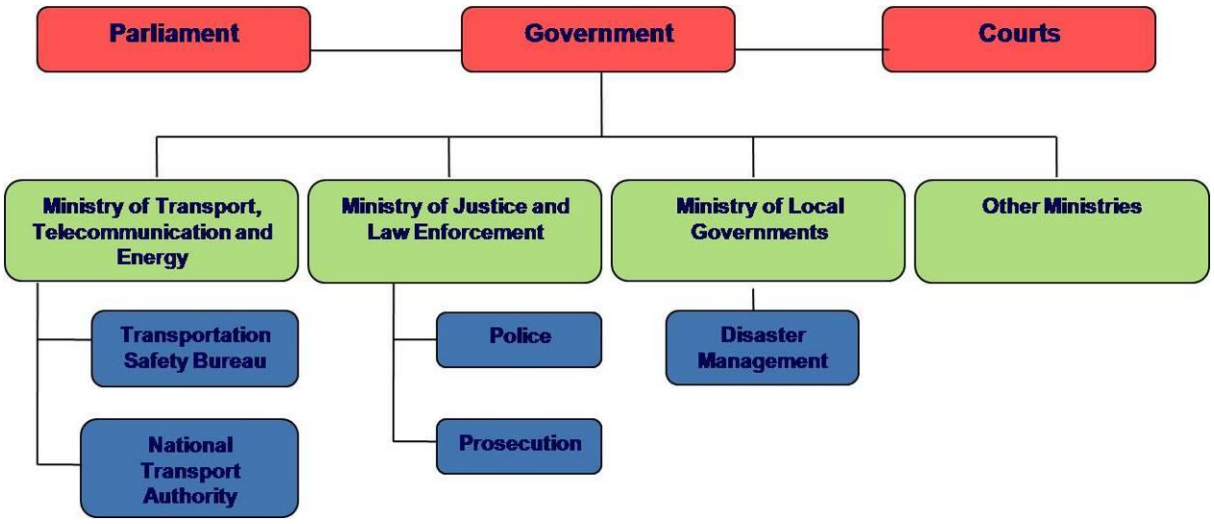
While the provisions of the Safety Directive are fully implemented regarding the independent technical investigation, the powers of the National Transport Authority are curtailed by the fact that the national safety rules have not yet been issued up to the present. Thus the NTA does not have a right to prepare the rules and regulations, only approves them.

1.2 Organisation of TSB Hungary



- TSB regards prevention as the main objective of its activity. TSB endeavours to share the findings, the results and the experiences of the technical investigations with a wide circle of organisations in the profession as well as with the civil sector.
- The predecessor of TSB was the Civil Aviation Safety Bureau which conducted investigations in the field of aviation between 2002 and 2005 in line with Directive 94/56/EC establishing the fundamental principles governing the investigation of civil aviation accidents and incidents.
- TSB was established on 1st January 2006. The Aviation Department and the 24/7 Duty Services operated from the beginning of 2006 and the other departments and units grew gradually during the year. The Railway and the Marine Department began to work officially on 1st March 2006. The total number of permanent staff at the end of 2006 was 50 which increased to 57 by the end of 2007. The reason behind this increase is that since 1st July 2007, the Aviation Department of TSB has been conducting investigations into occurrences involving state (military and police) aircraft as well, which required further human resources.
- The Railway Department – in accordance with the regulations – began its work on 1st March 2006 with 5 employees delegated by the Safety Directorate of Hungarian State Railways Plc. (MÁV Zrt).
- The Railway Department consists of 9 investigators and the Head of Department.

1.3 Organisational flow of TSB Hungary



* The governmental structure changed by the completion of this report; however, the changes do not concern the place of TSB within the governmental hierarchy.

- TSB is supervised by the Ministry of Transport, Telecommunication and Energy. The Director General of TSB works under direct supervision of the Minister. According to the national law, the Minister shall not instruct TSB in matters concerning the independent investigations.
- The Minister reports to the government annually on the activities of TSB, the lessons learned from the independent investigations, the processes and trends concerning transportation safety.

- The Ministry for of Transport, Telecommunication and Energy is the national regulator.
- The general rules regarding the operation of the railways are currently defined by the state-owned MÁV Zrt, the largest operator in Hungary. The National Transport Authority only assents to the amendments to the rules.
- Based on the outcome of the investigations, TSB may issue safety recommendations to the other actors of the concerned transportation sector (operators, legislators, etc). The implementation of safety recommendations is not compulsory, however, the addressees are obliged to compile an annual report on their response (acceptation, implementation, or refusal).
- TSB is authorized to get access to all data relevant to the occurrence in question (including data stored on data recorders).
- The Investigating Committee of TSB may conduct its site investigation simultaneously with the police investigation.
- TSB and the police may help each other's work with exchange of factual data and results of expert analyses. The IC may withhold information obtained in the course of the investigation from other authorities in occurrences when the owner of the information would have had the right to do so.
- TSB, the police and the disaster management mutually inform each other about the received occurrence reports.

1.4 Overview of the last 12 months

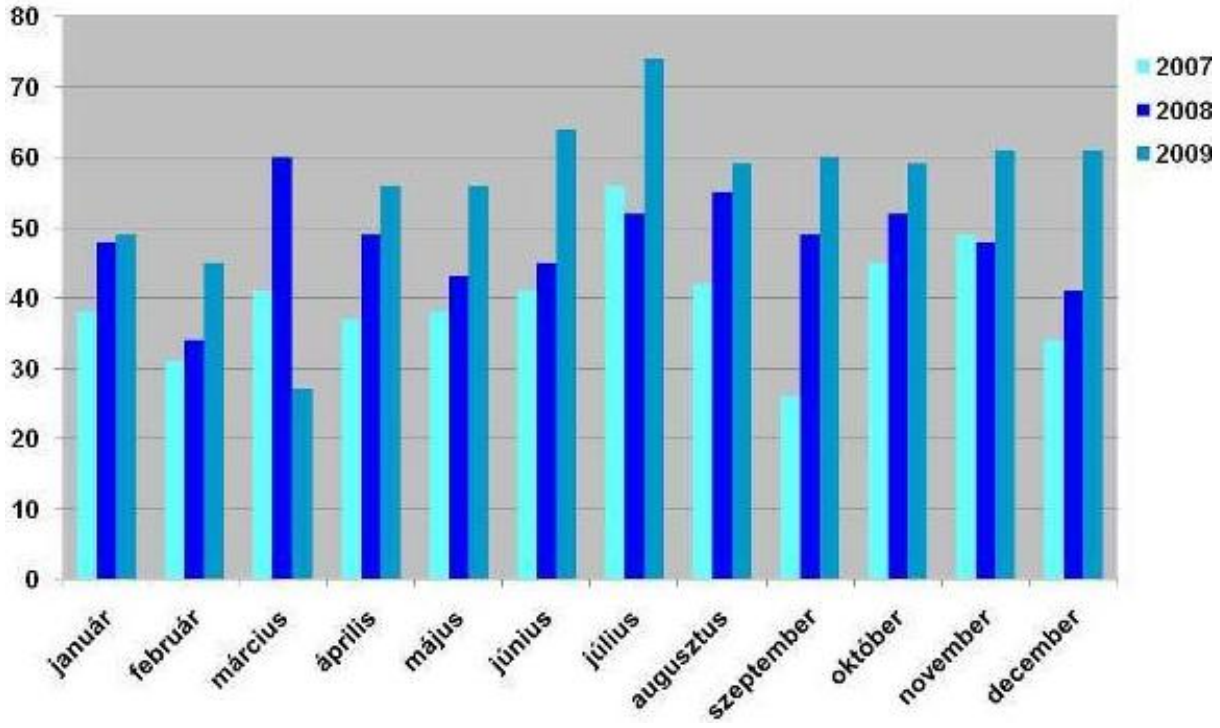
1.4.1 Trainings

In order to maintain and improve the professional knowledge of the accident investigators, the trainings organised based on our trainings plan continued in 2009. Courses on the ETCS and EIRENE systems (which have gained ground and are gradually introduced in Hungary) were completed. Within the framework of workplace trainings, the new colleagues learnt and the 'old' ones revised their knowledge on the investigation procedure, the special equipment and software used to read out data from strip chart and other data recorders. Our colleagues also succeeded in passing the public administration examinations - basic and higher level - obligatory for all civil servants in Hungary. Colleagues who had signed study contracts also fulfilled all requirements stated in their contract. The concerned colleagues participated in the required courses/sessions and passed the exams necessary to maintain their licences.

1.4.2 Reports

The number of reports on railway occurrences increased by approximately 100 within one year, which however, does not mean that railway transport became less safe. This number most probably reflects the actual number of occurrences. TSB believes that by 2009 - after two and a half years of its existence - reporting became a routine, and even the less significant occurrences are reported nowadays. (There was a similar tendency in the field of aviation, where it took a bit more time to develop a routine in reporting and in cooperation due to the large number of the concerned parties.)

Reported railway occurrences in 2006-2009 by months



Reported railway occurrences in 2006-2009 by category

Category of occurrence	Number of occurrences			
	2006*	2007	2008	2009
Serious accident	0	1	1	0
Accident	155	247	324	299
Incident	20	230	253	373
Total	324	478	579	672

* since 1 March 2006

Reported significant accidents in 2008-2009 by content

SIGNIFICANT RAILWAY ACCIDENTS	TSB	
	2008	2009
	132	165
- collision	1	-
- derailment	1	2
- injuries caused by rolling stock in motion	88	113
- accident at LC	42	50
- fire in rolling stock	-	-

Reported occurrences in 2007-2009 by content

	TSB		
	2007	2008*	2009
NUMBER OF REPORTS	**478**	**578**	**672**
Serious railway accident	**1**	**1**	**-**
Railway accident	**247**	**271**	**299**
- collision	14	29	24
- derailment	19	19	21
- accidents at LCs	90	101	95
- injuries caused by rolling stock in motion	104	108	128
- fire (in rolling stock)	15	12	24
- others	5	2	7
Railway incident	**230**	**306**	**373**
- trains in opposing direction on the same rail track	2	3	2
- signalling to occupied rail tracks	1	-	-
- SPAD	2	4	10
- overhead contact line fault	57	66	89
- suicide	73	106	114
- others**	81	127	158

* corrected according to the CSI definitions

** the data contains the seven security related reports (e.g bomb alert) in 2009

2. INVESTIGATION PROCESS

2.1 Independent basis of the investigation

Pursuant to the national law, TSB is independent of all persons and organisations whose interests are contrary to the duties of the investigating organisation, in particular:

- authorities granting permission to put vehicles into service,
- authorities granting permission and controlling the operation and the maintenance of the vehicles,
- authorities issuing driving licences,
- the organisation operating the transport infrastructure,
- transport companies,
- railway undertakings
- the organisation determining railway tariffs,
- the organisation distributing routes,
- the safety authority and
- all regulators in the field of railways.

Under the national law, the civil servants of TSB shall not be the owners, senior officials or employees of the above mentioned organisations.

The Director-General and the Investigating Committee of TSB shall not be instructed in their scope of duties concerning the technical investigation.

2.2 Accident investigation philosophy of TSB Hungary

Under the Hungarian regulations, TSB shall investigate serious railway accidents.

The definition of 'serious accident' under the national regulations - in accordance with the Railway Safety Directive 2004/49/EC – is as follows:

"*Any train collision or derailment of trains, resulting in the death of at least one person or serious injuries to five or more persons or extensive damage to rolling stock, the infrastructure or the environment of at least HUF 500 million and any other similar accident with an obvious impact on railway safety regulation or the management of safety*".

Apart from serious accidents, the national regulations permit TSB to investigate other occurrences - at its own discretion - that may have an impact on the safety of rail transport as well as on the regulations and management of railway safety.

TSB availed itself of the opportunity provided by the regulations to decide which occurrences – apart from serious accidents – are to be investigated. TSB based its decisions regarding which occurrences require investigation on the following fundamental principles:

- **occurrences resulting in serious injuries to persons, extensive material damage and/or hindering railway transport significantly,**
- **the latent danger of the occurrence can be considered significant – irrespective of its actual consequences,**
- **accidents or incidents recurring at the same site or in the same manner**

should be investigated.

2.3 The investigation process of TSB

The Duty Services of TSB (dispatchers) receive the reports of the occurrences 24 hours a day.

The members of the Investigating Committee (IC) are appointed by the Director-General. The IC consists of one field investigator technician and at least one accident investigator. In case of more serious or complicated occurrences, one of the heads of department on duty and/or the spokesperson of TSB may be present on the site.

If an occurrence is not obliged to be investigated under the law, the head of the concerned department may decide whether or not to conduct an investigation.

The Investigating Committee carries out the site survey (parallel with other authorities) and decides on the direction of the investigation, the required technical and technological examinations as well as selecting the organisations and/or experts to be initiated in the investigation if necessary.

The draft reports on the occurrences are discussed by a board made up of the heads of departments of TSB.

The relevant parties of the investigation may make reflections on the draft report within 60 days from the date of receipt which are to be evaluated when compiling the final report. After this 60-day-period, TSB convenes a meeting for a final discussion with the participation of the representatives of the persons and organisations concerned. The purpose of the final discussions is that all concerned parties can hear the comments sent in reflection to the draft report as well as the viewpoint of TSB regarding the comments before the completion and publication of the final report. According to Hungarian law, the investigators may decide whether or not to include the parties' comments in the final report, the comments of an NIB of a Member State have to be included. Subsequently, the final report is made public.

All the three major departments of TSB have a separate 'Investigators' Manual' which lays down the methodological and technical requirements based on which the investigations shall be conducted by the investigators of TSB, taking the special characteristics of the given mode of transport into account.

3. INVESTIGATIONS/ RECOMMENDATIONS

For practical reasons, this chapter deals with the closed investigations together with the safety recommendations issued in the course of or after the completion of the investigations.

3.1 Overview of investigations conducted by TSB

In 2009, there was no serious railway accident in Hungary which TSB was obliged to investigate. TSB conducted investigations - at its own discretion - on 19 further occasions, based on the fundamental principles listed in 2.3.

Investigations commenced in 2006-2009 by the amount of damages

Amount of damages	Number of occurrences			
	2006	2007	2008	2009
Over HUF 500 million (Euro 2 million)	-	1	-	-
HUF 100-500 million	2	2	2	1
HUF 0-100 million	12	4	11	12
No damage	2	5	4	6

Investigations commenced in 2006-2009 by the number of persons injured in the occurrences

	Fatal '06/'07/'08/'09				Serious '06/'07/'08/'09				Minor '06/'07/'08/'09			
Passenger	-	-	3	-	1	4	6	-	7	4	47	3
Railway staff	-	1	4	2	1	-	1	1	-	1	1	1
LC user	2	3	12	7	5	1	2	3	6	-	1	4
Unauthorised person	-	2	-	-	-	-	-	-	-	-	-	-

Investigated occurrences in 2006-2009 by their presumed cause (based on the reports)

Cause of the occurrence	Number of occurrences*			
	2006	2007	2008	2009
Human factor	**12**	**8**	**12**	**15**
- personnel of railway undertaking	5	2	6	10
- other person	7	6	6	5
Technical factor	**5**	**4**	**5**	**4**
- defect in the track	1	2	4	4
- defect of the rolling stock	4	2	1	-

* data may contain accumulation

Number of investigations lasting longer than one year between 2006-2009

	TSB			
	at the end of 2006	at the end of 2007	at the end of 2008	at the end of 2009
Railway	0	12	11	7

3.2 High priority topics in 2009

Taking the last few years' experiences and tendencies into consideration, in 2009, **the Organisation put special emphasis on the investigation and data processing of accidents in LCs (collisions with road vehicles, occurrences when people were run over, suicides) as well as continuously paying attention to occurrences in course of which people were run over at other locations.**

What makes it difficult to assess occurrences where pedestrians are involved is that the question arises whether or not self-harm paid a role in the accident. According to law, only such cases can be considered suicides at which the relevant authority declares that the action was committed wilfully.

Compared to 2008, the number of occurrences when people were run over increased in 2009. The ratio of suicides also increased. Based on our experiences, however, the police often close cases when people are run over stating that 'no sign indicating criminal act was found', and wilful self-harm is not mentioned or mentioned as a mere possibility. This fact increases the number of injuries caused by rolling stock in motion and causes 'latency' in the case of suicides.

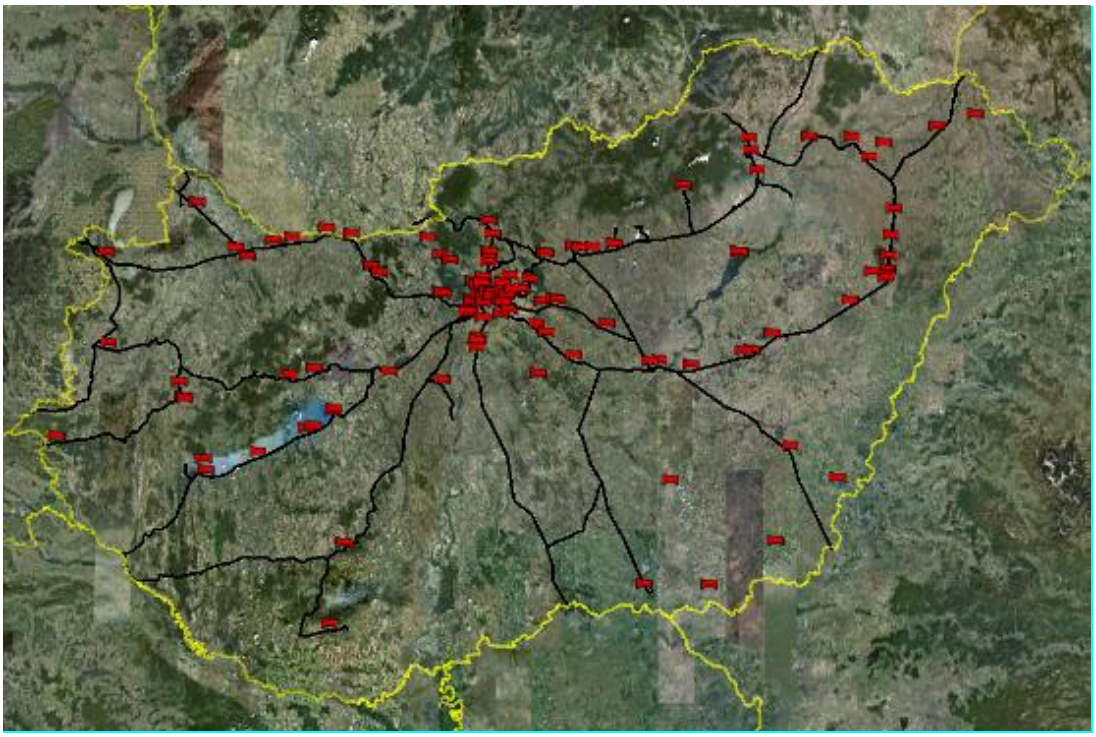


Figure 1: occurrences when people were run over

Evaluating the exact data, it can be stated that the number of injuries caused by railway vehicles increased from 104 in 2007, to 108 in 2008 and 128 in 2009. Parallel with this, the number of suicides also increased from 73 in 2007 to 106 in 2008 and 114 in 2009. This tendency indicates a significant increase even when considering that accidents occurred at the HÉV (suburban rail network) lines have also been known to TSB since 2008.

Figure 2: location of suicides

With regard to the above type occurrences (people run over and suicides), it can be established that besides the previous years' typically dangerous locations (Budapest, the area of Városligeti-elágazás and the section between Debrecen and Apafa stations) where similar accidents occurred in 2009 too, there were other 'new' locations where several accidents occurred. These are as follows: between Dunakeszi and Vác stations, in 2008 and 2009 altogether 14 occurrences, between Kőbánya-Kispest and Vecsés stations in 2007 2009 altogether 14 occurrences of this kind.

In 2009 TSB put special emphasis on accidents occurring at LCs. From the reported occurrences - weighing the consequences and circumstances - TSB chose to investigate (at its own discretion) 8 such occurrences.

It was found in the previous years that a significant number of the accidents at LCs occur while the warning lights are operating normally and are due to the inattention/carelessness of drivers or their wilful non-compliance with the regulations. Parallel with this, there were 3 accidents in 2009 when the fault of warning lights or the LC structure contributed to the occurrence of the accidents - on two occasions, the warning lights were dark (inoperative) and on one occasion they mistakenly indicated flashing white lights towards the road when the railway vehicle was approaching the LC.

There were no accidents in 2009 at the other dangerous location, - based on the findings of the previous years' investigations - LC AS 380 between Csajág and Balatonkenese stations where 5 accidents occurred in 2006-2007, which presumably is due to the half barriers installed following the investigations of TSB.
Regarding another typically dangerous location, (LC AS 41 in Debrecen, between Tócóvölgy and Balmazújváros - 4 accidents in 2007-2008) the tendency continued as there was one accident in 2009 also. However, the traffic control system which the IC recommended was not implemented - even though the idea was supported by the transport authority, the operator of the road and the railway infrastructure manager -

due to lack of financial sources. The implemented measures which required fewer investments were not able to prevent the occurrence of another accident.

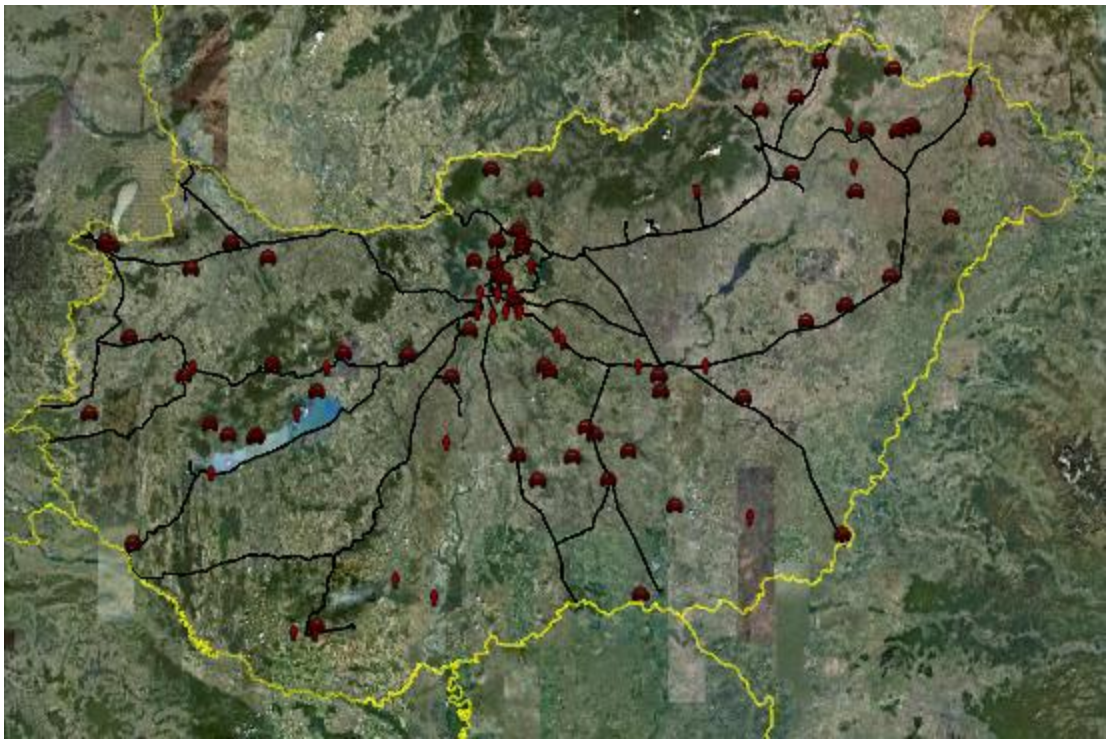


Figure 3: accidents at LCs

Having evaluated the data of 2009, two other significant recurrences can be found; one at LC AS 436 in Monorierdő where altogether 4 accidents occurred in 2008-2009, and the second at LC SR2 at Pestszentimre station where altogether 4 accidents occurred in 2006-2009 (and one in 2010 so far).

The purpose of this type of analysis is to find points/locations/sections on the railway network where the chances of recurrence are high. At these places it would be advisable for the infrastructure manager and the relevant authority to take preventive actions.

3.3 Investigations commenced in 2009

Date 2009	Occurrence	Classification
25. 01.	Train collided with a car in an LC between Csorna and Szil-Sopronnémeti stations. **Two fatalities.**	Railway accident
04. 02.	A wagon of freight train approaching Rajka station derailed.	Railway accident
23. 03.	A wagon of freight train approaching Pusztaszabolcs station derailed and tipped over to its side.	Railway accident
14. 04.	Train passed the exit signal at danger upon leaving Székesfehérvár station.	Railway incident
21. 04.	First two wagons of freight train derailed when leaving Vámosgyörk station.	Railway accident
02. 05.	Two trains ran in opposite direction on the same track between Morgó and Hártókút stations (narrow gauge railway line).	Railway incident
08. 05.	Train collided with a lorry between Vásárosnamény and Nyírmada stations. **One fatality.**	Railway accident
13. 06.	The chief ticket inspector of a passenger train fell off the train in between two carriages between Herminatanya and Buj stations and died. **One fatality.**	Railway accident
19. 06.	Passenger train collided with a trailer at an LC between Hajdúnánás and Tiszavasvári stations. The toppled trailer swept away a cyclist who died at the site. **One fatality.**	Railway accident
07. 08.	Passenger train collided with a coach at an LC at Sátoraljaújhely station. **One fatality**, 2 people suffered serious, 4 minor injuries.	Railway accident
13. 08.	UNIMOG spraying machine tumbled off the rail track between Dunaújváros and Paks stations.	Railway accident
23. 08.	Freight train entered and passed Aba-Sárkeresztúr station without permission.	Railway incident
05. 09.	Train passed an entry signal at danger at Nagylapos points.	Railway incident
03. 10.	Train collided with a car between Edelény and Szendrőlád stations, **One fatality.**	Railway accident
04. 10.	Train collided with a tractor between Tököl and Szigetcsép stations.	Railway accident
17. 10.	Train collided with a car at an LC between Ebes and Debrecen stations. **One fatality.**	Railway accident
14. 11.	Shunting locomotive collided with the rear of a freight train at Nagykanizsa station.	Railway accident
19.11.	Train collided with a car at an LC between Ikrény and Enese stations.	Railway accident
09. 12.	Freight train broke loose at Devecser station.	Railway incident

* the data in the above table is of March 2010.

3.4 Investigations completed in 2009 with the issued recommendations

The final reports issued in 2009 analysed occurrences of the following types:

– collision,

– derailment,

– accident at LC,

– occurrences which do not qualify as serious railway accidents but as a result of which there were fatalities.

In 2009, 25 final reports were compiled and published on the website of TSB**. Further 9 draft reports were compiled and sent** to the relevant parties for reflections.

The above investigations were closed and the final reports were published in the beginning of 2010 considering the 60 days provided by law for the relevant parties to reflect on the draft report.

The final report on the collision occurred on 6 October 2008 at Monorierdő, resulting in the death of 4 people and the serious injuries of other 4 people were published in July 2009. In this report, the IC issued 4 safety recommendations right after the accident, suggesting immediate preventive actions - which have been accepted and implemented since then - and another 4 safety recommendations which suggested more complex measures to be implemented in the long run. No response has been received on the latter 4 recommendations so far.

Investigations completed in 2009

2006-078-5

Railway incident

On 16 September 2006 a passenger train passed a signal which was set to „Stop" at Aba-Sárkeresztúr station while en route between Sárbogárd and Székesfehérvár stations. As a result, the passenger train was running in opposing direction on the same track with a freight train from Székesfehérvár to Sárbogárd – which was departing from Börgönd station in accordance with its running permit. The trains stopped approximately 2500 metres from each other. No one was injured.

Factual statements directly connected to the occurrence of the incident

The railway incident occurred due to human factors as follows:

- At Aba-Sárkeresztúr station, the scheduled train was not stopped as prescribed by the relevant regulations.
- The engine-driver received a signal which he misinterpreted as a 'move forward' signal and departed from the station.

Factual statements indirectly connected to the occurrence of the incident

The engine driver did not possess the required certificate regarding the route knowledge (railway line no.46).

It was not checked beforehand whether or not the engine-driver possessed the above certificate.

Safety recommendations

Similar occurrences can be prevented by complying with the relevant regulations, therefore there was no need to issue a safety recommendation.

2006-103-5

Railway accident

On 28th October 2006 at 17 hours 20 minutes, the 5th wagon - a track maintenance vehicle - of a freight train derailed with 1 bogie at Pusztaszentistván stop, between Mende and Sülysáp stations.

Factual statements directly connected to the occurrence of the accident

The accident occurred due to the following technical problems:

The derailment was as a consequence of the fact that the bearing box on the right wheel of the second axle (1st bogie) of the wagon had melted and opened.

Safety recommendations

Considering to the findings of the investigation, the IC does not wish to issue safety recommendations.

2007-034-5

Railway accident

On 25 January 2007 a freight train was approaching Szolnok station, when the empty tank of a four-wheeled tank wagon imploded and the wagon derailed with all four wheels. The tank wagon running ahead of it also derailed with two wheels. The derailed wagons damaged the track.

Factual statements directly connected to the occurrence of the accident

Once a tank wagon has been emptied by hot steam, the air temperature inside the tank shall be cooled down to ambient temperature before the dome lid is closed. In the current case, the lid was closed prematurely.

In order to prevent vacuum-forming inside the tank, a small piece of wooden stick was supposedly put under the lowered dome lid. This stick disappeared in unexplained circumstances.

Safety recommendations

BA2007-0034-5-01: The IC recommends Lesaffre Magyarország Kft to revise and amend the "Technology for loading and unloading molasses". The current version does not contain requirements with regards to cooling down the tanks to ambient temperature and measures against vacuum-forming inside the tanks after unloading molasses. Furthermore, it does not contain regulations or procedures for measuring temperature inside the tanks and conditions for closing tank lids either.

accepted, implementation in progress

BA2007-0034-5-02: The IC recommends the European Railway Agency to suggest railway undertakings and shipping companies which use similar technology for loading and unloading that they should revise and amend their procedures in order to ensure that the tanks are cooled down and to prevent vacuum-forming inside the tanks.

published in the Safety Information System of ERA

BA2007-0034-5-03: The IC recommends MÁV Cargo Zrt to notify its business partners which use similar technology for loading and unloading about the occurrence, its possible causes and recommended actions regarding procedures for measuring temperature inside the tanks and conditions for closing tank lids.

accepted, implementation in progress

2007-211-5

Railway accident

On 19 June 2008, a passenger train collided with a lorry at a normally operating LC - protected with warning lights - between Pécel and Rákos stations. As a consequence of the collision, the driver of the lorry died at the site.

The IC established in the course of the investigation that the accident was caused by human factors, by the behaviour of the lorry driver.

Safety recommendations

Independent of the accident, the IC found some deficiencies, thus it issued the following immediate preventive actions in 2007:

2007-211-5-1: It would be advisable to examine whether restricting the speed of trains approaching LC AS182 would increase safety with particular attention to the fact that the vehicles using the LC may 'occupy' the clearance for a longer time as their size or cargo maybe larger than usual. Furthermore, vehicles carrying dangerous goods (for the road construction) may mean increased danger for railway traffic.

accepted, implemented

2007-211-5-2: The IC established that the traffic regulations in force are insufficient with regards to cases when the LC is damaged - as a result of an accident - to an extent that it can no longer function normally (e.g. its half barrier is broken) but it is not obvious from the light-messages on the signal box (e.g. the cables remained intact), there is no regulation according to which such LCs can be declared inoperative.

accepted, implementation in progress

2007-323-5

2008-115-5

2008-191-5

2008-211-5

Railway accidents

On 29th August 2007, a regional passenger train collided with a lorry at a normally operating LC - protected by warning lights - between Tócóvölgy and Balmazújváros stations. The engine-driver and three passengers suffered minor injuries as consequence of the accident. The control car of the train and one carriage derailed and toppled to its side.

(3 similar accidents - collisions - happened at the same LC during the year 2008 which were jointly investigated by the IC: 2008-115-5, 2008-191-5, 2008-211-5)

Based on the findings of the site survey and the available data, the IC came to the conclusion that LC AS41 operated normally when the passenger train was approaching it; it signalled 'Stop' towards the road.

The current traffic organisation and the heavy traffic on the road running parallel with the rail track makes it difficult to cross the LC.

Safety recommendations

Following the accident occurred at the same LC (AS41) on 29 April 2008, the IC issued the following safety recommendation in 2008 suggesting immediate preventive actions:

2008-0191-5-01: With regard to the recurring accidents at LC AS 41, the IC recommends the National Transport Authority to review the design and construction of LC AS41 (between Tócóvölgy and Balmazújváros stations at railway section 41+16 hm) from transport safety point of view as well as to examine whether or not it would be necessary to improve the technical conditions of railway safety and to install a traffic control system which is integrated with the LC.
The IC also recommends LC AS 47 (in railway section 47+72 hm) to be reviewed as in the last 12 months there have been a number of accidents at this LC during which cars collided with trains (disregarding the Stop signal of the warning lights). On all occasions, the road vehicles involved in the accidents arrived from Debrecen direction on road no.33 - which is a slip road to M35 motorway - and turned left (from the 2x2 lane road) onto the LC (see photo above) This manoeuvre - also considering the heavy traffic on the 4-lane-road, 2 lanes in opposing direction - directs the attention of the drivers from the LC (which is signposted with one sign only), therefore they often only notice the danger when they are already on the LC. Turning from Házgyári út direction onto the main road is also difficult as the drivers have to give way not only to the trains but also to the other cars on the main road.

accepted, implementation in progress

2007-400-5

Railway accident

On 2 November 2007 at Pestszentlőrinc station a freight train collided with a lorry which transported construction material for the rebuilding of the platforms. The lorry was moving in reverse between two tracks.

The construction site was restored and the work resumed. However, a few hours later, another accident occurred at the same location in similar circumstances.

Factual statements directly connected to the occurrence of the accident

The lorries were using a route which interfered with the clearance of the track with active traffic, although it would have been possible to mark an alternate route outside the clearance, There was no movement control for the lorries which would have considered the train traffic,

The IC established that there was considerable risk of an accident due to the work methods at the site,

The movements inspector was not informed adequately about the construction work at the site.

Factual statements indirectly connected to the occurrence of the accident

The construction work staff - among them the supervisor - did not know the regulations on works done at railway sites.

Other risk factors

The supervisory staff and the workers lacked the necessary training and skills and did not receive the required regulations,

The regulations did not contain the specific safety rules to be followed and they were difficult to understand.

Safety recommendations

BA-2007-0400-5-01: The IC recommends the National Transport Authority that it should conduct checks of railway track-building work more frequently.

Issuing the safety recommendation was justified by the fact that it is common to have a general contractor and a number of subcontractors working on rail tracks, and the chain-like co-operation of companies is considered a safety risk. Another reason is that many of the subcontractors do not have the necessary experience in that particular type of work.

accepted, implemented

2008-014-5

Railway accident

On 10th January 2008 a regional passenger train ran over two men between Hejőkeresztúr and Nyékládháza stations. Both men died at the site of the accident.

The men were clearing away the bushes in the section outside of the clearance area - in possession of permission. It was not necessary to cross the rail track and to enter the clearance area of the track to perform this work.

Factual statements directly connected to the occurrence of the accident

According to the third men working together with the two deceased persons, the two men went up to the railway embankment to sharpen their chainsaw. As they were in the clearance of the track, train no. 35012 approaching from the direction of Hejőkeresztúr ran them over.

The visibility was poor at the site on the day of the accident due to thick fog. The range of vision was under 200 metres.

Apart from the permission, no other document was given to the staff doing the work at the railway line, nor was labour safety training given.

Two workers went up to the railway embankment to sharpen their chainsaw - without anyone guarding /watching them. The third man was doing his work with a power saw. The two men at the embankment did not hear the train coming due to the noise, nor did they see it as there was thick fog. When the engine-driver noticed the two men crouching at the rail track, he immediately applied the emergency brake but could not avoid the accident.

Factual statements indirectly connected to the occurrence of the accident

The IC established in the course of the investigation that several similar permissions were given for the same railway section at the time of the accident.

The labour safety rules and requirements regarding work done by non-railway staff had not been told. This lack of information created risks for all workers in the section.

Safety recommendations

BA-2008-0014-1: The IC recommends the NTA to obligate infrastructure managers to compile and hand out written guides or bulletins for the obligatory labour safety education of third party working in the territory of the railways, as this way such accidents would be avoidable.

accepted, implemented

2008-201-5

Railway accident

On 8th May 2008, a passenger train collided with a car at an LC between Csorna and Rábatamási stations – at Farád stop. The LC was protected with warning lights and was operating normally. The driver of the car died in the accident.

Factual statements directly connected to the occurrence of the accident

The LC's warning lights were operating normally and were clearly visible (from the road) at the time of the accident.

The accident occurred due to human factors; the car drove into the LC regardless of the Stop signal.

The LC was protected as prescribed in the relevant regulations. Nevertheless, the degree and way of protection shall be reviewed considering transport safety aspects.

Other risk factors

The so called 'visibility triangle' was not ensured at the LC, however, the warning lights (indicating Stop) were clearly visible. This shall be taken into consideration as the lack of adequate 'visibility triangle' at the LC increases danger. Therefore the LC should be secured by different methods/technical solutions.

Safety recommendations

In the course of the investigation, the IC issued an immediate preventive action as follows:

BA2008-201-5-01: The IC recommends GYSEV Zrt. - as the infrastructure manager - to supplement LC no. AS 347 between Rábatamási and Csorna station in section 347+25 with half barriers.

accepted - implemented

2008-302-5

Railway accident

Two track repairers began to repair the track - with permission - at points early evening, in dark. While doing their work, a locomotive - running towards a depot - ran over them. One of them died at the site of the accident, the other suffered serious injuries.

Factual statements directly connected to the occurrence of the accident

When performing such work at the points, no vehicles should have been running on the given track, however, the track repairers had not asked for track closure.

The locomotive was permitted to run (shunt) on the points being repaired by the workers. The engine-driver was not informed about the repair work.

The accident could have been avoided if the engine-driver had kept the speed limit and paid more attention. The workers should also have been more attentive.

Other risk factors

The working area was not secured and signposted with the required signs. The set speed limit was not in harmony with the signalling regulations.

Safety recommendations

BA-2008-302-5-01: The IC recommends the NTA to obligate infrastructure managers to introduce a system at busy stations by which the permission and provisional entries of maintenance work can be done efficiently and reasonably, and the important information on track works is not lost.

The justification of the safety recommendation is that under the current regulations, the supervisor shall previously enter the work in the station log personally, which requires a significant amount of time at big stations and thus induces non-compliance. Besides, at busy stations, there are a lot of other entries regarding rail traffic, which may 'hide' the information on track works. Furthermore, the latter information (entry) is in the possession of the chief movements inspector whereas movements can be instructed by other railway staff as well. Therefore there is a high risk that certain movements endanger the workers or other train movements.

accepted, implemented

BA-2008-302-5-02: The IC recommends the NTA to obligate infrastructure managers to prohibit setting the points towards track sections where works are in progress, with consideration to the characteristics of the different signal boxes.

The IC considers the safety recommendation important as this way the workers would be 'automatically' protected, as opposed to the current practice, i.e. there is only manual solution for such situations, which is solely dependent on the attention and care of the traffic staff (closing points manually, etc).

no response

BA-2008-302-5-03: The IC recommends the NTA to initiate - in cooperation with the infrastructure managers - the revision of regulations regarding the placing of low speed flags and to enforce compliance with them. Furthermore, the flags should also be in harmony with the actual speed restrictions (listed on a handout given to engine-drivers)
The justification of the safety recommendation:

The placing of low speed flags at the examined areas did not comply with the regulations, nor were they in harmony with the speed restrictions handout. (They were ambiguous as well). Furthermore, some of the regulations in force cannot be complied with.

no response

2008-315-5

Railway accident

On 22 July 2008, two wagons of a freight train derailed when approaching Rákos station (under subsidiary signal).

Factual statements directly connected to the occurrence of the accident

The occurrence of the accident was related to human factor. The IC established that the accident occurred as a consequence of railway staff not acting in accordance with the signal box operation regulations.

Factual statements indirectly connected to the occurrence of the accident

The traffic staff mistakenly assumed that the route set for the freight train was safely separated, while it actually remained open due to points failure.

Other risk factors

The staff attempted to set a Stop signal for the freight train. The regulation, however, requires the use of subsidiary signal for stopping a scheduled train on a track without signal feed capability. In the course of the site survey, the cause of points splitting was not found, but it is highly probable that it happened in the course of the events in question.

Safety recommendations

BA2008-315-5-01: The IC recommends MÁV Zrt. to disable the insulation switch-off button by modifying the signal box - in case of automatic points control. This would prevent the changing of points under a train (which, in this accident, was caused by pressing three buttons at the same time).

rejected

BA2008-315-5-02: The IC recommends MÁV Zrt. that the control panel of the signal box at Rákos station should be re-examined and its deficiencies corrected. The markings on the control panel are faded therefore they are not clearly legible. Some of the springs of flip covers intended against accidental pressing are broken therefore they cannot function.

accepted, implementation in progress

BA2008-315-5-03: The IC recommends MÁV Zrt. to revise its policy for the evaluation of splitting the points open. The current strict policy induces concealing of such occurrences. The IC considers that it is more important to reveal these occurrences and maintain transport safety than sanctioning and compensating damages.

accepted, implemented

2008-335-5

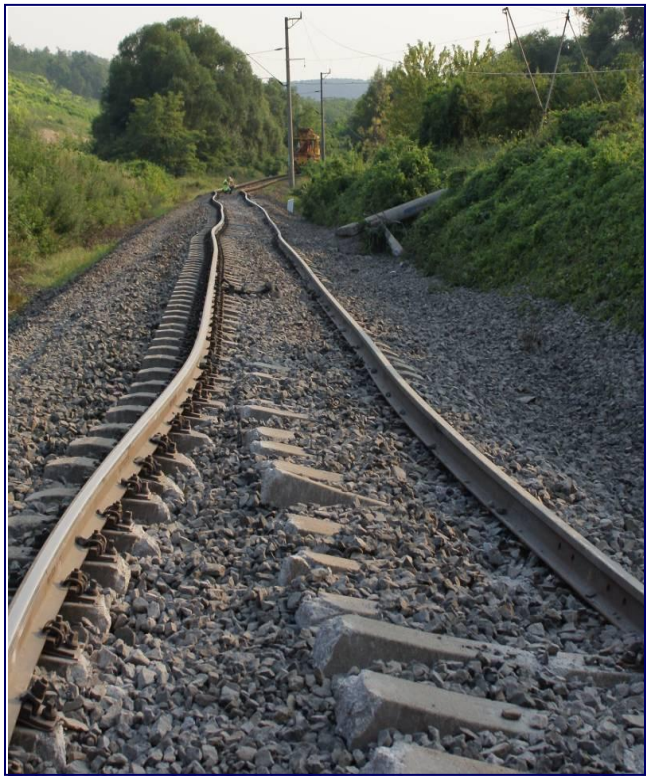
Railway accident

On 2 August 2008, 4 carriages of a passenger train derailed between Kurd and Szakály-Hőgyész stations, one of which toppled to its side. The rail track sustained substantial damage on a 200 metre length.

Factual statements directly connected to the occurrence of the accident

Weather circumstances:

- Prior to the accident, there had been more precipitation than usual, and then the weather was hot for a few days.



Railway embankment/bedding:

- There was no drainage at the site of the accident.
- The upper part of the bedding got soaked; its supporting capacity was significantly reduced.

Rail structure:

- The last rail track works when the rails were detached were performed in the autumn on 2006. The actual neutral (safe) rail temperature was set then. According to the information available for the IC, the powered-down status of overhead lines and the setting of the right rail temperature were not checked.
- Other rail track works in 2007 resulted in the decrease of the arch length and of the rail temperature.
- Local rail track defects were found at the last rail track inspection.
- The track became defected when the previous train ran on it.

Human factors

- The IC established that the application of the emergency brake contributed to the derailment.

Safety recommendations

Safety recommendation was not issued.

2008-351-5

Railway accident

On 14 August 2008, a regional passenger train collided with a car at an unprotected LC between Vámosgyörk and Gyöngyös stations. As a consequence of the collision, four people travelling in the car died at the site and the fifth person lost his life in the ambulance car.

Factual statements directly connected to the occurrence of the accident

The IC thinks that the signposts on the road (indicating the LC ahead) were insufficient.

The occurrence of the accident was related to human factor.

Factual statements indirectly connected to the occurrence of the accident

At the time of the accident, the vegetation at the direct vicinity of the LC grew tall, which may have contributed to the occurrence of the accident.

There is another LC 700 metres from the accident site. The competent authorities agreed that the unprotected LC where the accident occurred could be demolished, however, it was not initiated/implemented by the closing of TSB's technical investigation.

Other risk factors

The outside temperature was + 35 °C at the time of the accident which may have affected the driver's power of concentration.

Safety recommendation

BA2008-0351-5-01: The IC recommends the NTA - pursuant to Decree 20/1984. (XII. 21.) KM section 3. § (3) a) - to revise together with the organisations concerned whether the existence of the LC in section 102+66 on railway line no. 85 (Vámosgyörk – Gyöngyös) is necessary, with regard to the fact that traffic at this LC is low. Therefore it might be reasonable to divert traffic to a safer LC (protected by warning lights) in section 110+40.

rejected

2008-401-5

Railway accident

On 6th September 2008 a regional passenger train - upon approaching Lövő station - collided with a car at an LC which was protected by warning lights and was operating normally. As a consequence of the collision, 4 of the passengers in the car died at the site and one was taken into hospital with serious, life-threatening injuries.

Factual statements directly connected to the occurrence of the accident

The LC at Lövő station is protected by warning lights which were operating normally at the time of the accident and were clearly visible.

The train passed the entry signal with approximately 66-68 km/h disregarding the prescribed 40 km/h speed limit.

Factual statements indirectly connected to the occurrence of the accident

The track does not have signal feed capability, therefore it is possible that engine-drivers follow a routine when they reduce speed only in the immediate vicinity of the points in order to save time. This practice does not pose a risk by itself because the reason for slowing down is the points, however, it is against the regulation which requires slowing down at the main signal. The distance between the entry signal and the points is 301 metres at the location of the accident.

Safety recommendations

Considering the findings of the investigation and the circumstances of the accident, the IC does not wish to issue safety recommendations.

2008-446-5

Serious railway accident

On 6 October 2008 a regional passenger train and an InterCity train running in the same direction, collided between Pilis and Monor stations. The control car of the passenger train crashed into the last carriage of the InterCity on an 11-metre-length. Four people died, four people were seriously injured, and forty people suffered minor injuries.

Factual statements directly connected to the occurrence of the accident

The regional passenger train exceeded the 15 km/h speed limit significantly. Its precondition was that the train control device of the control car was unable to perform its speed limiting function as it had been deactivated.

The regional passenger train passed a dark block signal (to be interpreted as 'Stop') at which it should have stopped according to the relevant regulations.

Factual statements indirectly connected to the occurrence of the accident

The fault of the signal box between Monor and Pilis station was such that neither the station staff nor the engine-driver had information (on the signal box and on the block signals) on the position of the first train. In such cases, decision can be made to change the traffic method taking the circumstances into consideration, however, the persons entitled to make such decision did not do so. It is not obvious from the traffic regulations when - in what situations - such decisions should be made.

The open track signal box did not function due to the defective cable. This does not necessarily lead to an accident, though it was a basis of the unusual and dangerous situation.

Other risk factors

There was subsidiary signal on both the entry and the exit signal of Pilis station, besides, construction works were in progress at the station. This may have led to the assumption that the signal box failure was caused by the construction work at the station and the danger is not on the open track.

The control car of the regional passenger train was not equipped with locomotive radio therefore there was no possibility to inform the engine-driver about the traffic situation. The other trains equipped with radio could only be reached with difficulties, therefore the staff entitled to make decisions in this case were informed about the signal box failure with delay.

The regulations with regard to this traffic situation are rather complicated, yet they do not have prescriptions for a number of possible situations, and some regulations are contradictory. It is questionable whether in a stressful situation coupled with technical problems the right decision can be made within a short time.

Safety recommendations

In the course of the investigation, the IC issued an immediate preventive action in 2008 as follows:

2008-0446-5-01.: The IC recommends MÁV Zrt. to revise 4.2.2. of the Appendix of E.1. Regulations for traction vehicle staff and consider narrowing its scope, and initiate its modification accordingly.

accepted, implemented

Further recommendations issued in the final report:

2008-0446-5-02: The IC recommends the NTA to review the regulations as to when can block signals be considered inoperative, and how these regulations are implemented. The IC also suggests that the NTA should consider improving the relevant education, compiling guides and checklists, or further specifying the current regulation.

rejected

2008-0446-5-03: The IC recommends the NTA to revise - with the cooperation of railway undertakings - the questions of speed limit applied in case of subsidiary signals, with special regard to:

- technical circumstances having changed since its introduction,
- psychological effects on engine-drivers,
- active and passive safety risks deriving from the applied speed.

accepted, implementation in progress

2008-0446-5-04: The IC recommends the NTA to obligate the usage of communications equipment for the communication between traffic controllers and engine-drivers while the train is running, and regularly examine that the equipment is operable and is used.

accepted, implementation in progress

2008-0446-5-05: The IC recommends - via the European Railway Agency (ERA) - manufacturers of vehicles to re-examine certain equipment, installations and furnishings of vehicles manufactured or redesigned by them (e.g. baggage racks, lights, windows, doors, etc) with regards to risk effects in a possible accident. When designing the vehicles, they should choose solutions which decrease the extent of injuries to persons to the possible minimum in case of such occurrences.

accepted, implementation in progress

2008-510-5

Railway accident

On 18 November 2008, a regional passenger train collided with a car at an LC - protected with warning lights and half barriers - between Isaszeg and Gödöllő stations. As a consequence of the accident, the two persons sitting in the car died at the site.

Factual statements directly connected to the occurrence of the accident

The immediate causes of the accident were as follows:

- The warning lights were inoperative (no flashing red lights and open barriers)
- The car did not comply with the traffic regulations rearing passing an LC.

Factual statements indirectly connected to the occurrence of the accident

The LC is constructed in a way that the given train cannot be informed about a fault having developed during the journey of the train.

Safety recommendations

Safety recommendation was not issued.

2009-037-5

Railway accident

On 25th January 2009, a passenger train collided with a car between Szil-Sopronnémeti and Csorna stations at an LC protected with warning lights.

The driver of the car and one of its passengers died at the site of the accident, and the other passenger was taken into hospital with life-threatening injuries.

Factual statements directly connected to the occurrence of the accident

The accident occurred due to human factors related to the car driver.

Safety recommendations

Safety recommendation was not issued.

2009-148-5

Railway incident

On 14 April 2009, scheduled Inter City train departed on permission of the controller and passed an inoperative exit signal. The train was stopped by manual signalling. There was neither injury to persons nor material damage.

Factual statements directly connected to the occurrence of the accident

The staff of the train misinterpreted the signalling of the exit signal, as a result of which the train passed the dark signal.

Factual statements indirectly connected to the occurrence of the accident

There is no train control system installed on the tracks of the station.

The exit signal was dark (inoperative). The current regulations do not stipulate that the inoperative signals shall be repaired immediately; therefore it had been dark for 4 days.

The train staff did not know about the faulty read light bulbs of the exit signal.

The cooperation of specialist teams are required for the repair of signals, however, the communication between such specialist teams is not regulated adequately.

Other risk factors

The station personnel had not informed the personnel of the train that the train would depart a bit later than scheduled as they had been waiting for a connection.

Safety recommendations

BA2009-0148-5-01: The IC recommends the NTA to oblige MÁV to authorise movements inspectors at Székesfehérvár station to signal out trains until the track is reconstructed to be capable of train-control, in order to avoid misunderstandings.

With regard to the fact that according to the current method, movements inspectors at this station have to go out of the office to all trains (to give written instructions, etc), the above recommendation can be implemented with the current infrastructural and human resources.

accepted, implemented

BA2009-0148-5-02: The IC recommends MÁV Zrt. to modify regulations regarding troubleshooting of faulty signal boxes outside working hours so that at stations where there is no extra red light bulb built into the signal and the track is not able to control trains, the light circuits in the signals should be repaired as soon as possible.

In the IC's view, if the circuit of the red lights is faulty, this situation poses high safety risk, therefore its repair should be given higher priority in the process of troubleshooting.

accepted, implemented

BA2009-0148-5-03: The IC recommends MÁV Zrt. to revise the notification/reporting order and the compliance with it in case of signal box failure, especially on occasions when the contribution of other expert services are required for troubleshooting.

According to the findings of the IC, at present, notifying external expert services outside working hours is problematic, and the notifying/reporting method is not regulated, nor are the necessary technical conditions provided.

accepted, implementation in progress

BA2009-0148-5-04: The IC recommends MÁV Zrt. to ensure - by increasing the frequency of periodical maintenance - that the bulbs in the signals are replaced before they burn out.

According to the findings of the IC, the average lifespan of the currently used bulbs is less than three months, therefore most of them are replaced due to failure (burn-out), not as part of a preventive maintenance. In the view of the IC, by increasing the frequency of periodical maintenance, reliability of the signals is higher, this way similar occurrences are less likely to happen.

accepted, implemented

2009-157-5

Railway accident

On 21 April 2009, the first two wagons of a freight train derailed when departing from Vámosgyörk station. No one was injured.

Factual statements directly connected to the occurrence of the accident

The IC established in the course of the investigation that the scotch block had not been removed from under the freight train during its preparation. As a consequence, the scotch block got stuck at the first points when the train was leaving the station, and the bogie was pushed off the rail.

Factual statements indirectly connected to the occurrence of the accident

The IC established that the details (date and time) on the train preparation works (train inspection, brake test, etc) had not been recorded in the station log at Vámosgyörk, nor is there an entry on the removal of the scotch block.

Safety recommendation

BA2009-0157-5-01: The IC recommends MÁV Zrt. to revise regulations regarding the acknowledgement and provisional entry of statements given and received by employees of the infrastructure manager and the railway undertaking during rail traffic and shunting, with special regard to train inspections, handling of scotch blocks and brake tests done by the employees of railway undertakings.

accepted, implemented

2009-187-5

Railway accident

On 2 May 2009, two passenger trains were running in opposing directions on the same track between Morgó and Hártókút stations on the Királyrét Forest narrow gauge railway line.

Having noticed one another, the engine-drivers stopped the trains approximately 450 metres from each other.

Factual statements directly connected to the occurrence of the accident

The movements inspector had given the permission to a train to run between Morgó and Hártókút stations before he would have withdrawn the permission from another train. (He forgot to withdraw the latter permission.)

Factual statements indirectly connected to the occurrence of the accident

When there are several spheres of activities of a staff member, commercial activities are often given priority over tasks related to railway safety. Therefore some important procedures may be neglected or forgotten.

Other risk factors

As a result of inadequate regulations, there is no unified and well enforceable procedure; therefore it has become a routine that trains depart from stations without the 'Ready to depart' signal of train guards. The documentation of traffic control (traffic log, faults log etc) is also insufficient.

Safety recommendations

BA2009-0187-5-01: The IC recommends the National Transport Authority to initiate the revision and amendment of the Signals, Traffic and Mechanics Regulations so that the priority of traffic and railway safety related tasks will be assured by unambiguous regulations.

accepted, implemented

BA2009-0187-5-02: The IC recommends the National Transport Authority to initiate the revision and amendment of the Signals, Traffic and Mechanics Regulations or its local appendix defining which permissions should be given to which personnel during traffic control.

accepted, implemented

BA2009-0187-5-03: The IC recommends the National Transport Authority to rethink together with the railway undertakings whether it is enough if only the train captain gives the 'Ready to depart' signal and initiate the amendment of the Signals, Traffic and Mechanics Regulations accordingly.

accepted, implemented

2009-190-5

Railway accident

On 8 May 2009, a regional passenger train collided with a lorry at an unprotected LC between Vásárosnamény and Nyírmada stations. As a consequence of the accident, the chief ticket inspector of the train died at the site.

Factual statements directly connected to the occurrence of the accident

The IC thinks that the lorry driver drove onto the LC without enough attention and caution. He had been unable to cross the LC before the train arrived, which resulted in the collision.

Safety recommendations

Safety recommendation was not issued.

2009-263-5

Railway accident

On 13 June 2009, the chief ticket inspector of a train running from Nyíregyháza-átrakó to Dombrád and Balsa (on a narrow gauge railway line) fell off /under/ the train between Buj and Herminatanya stations and died at the site.

Factual statements directly connected to the occurrence of the accident

The chief ticket inspector began to detach the gangway en route.

Factual statements indirectly connected to the occurrence of the accident

The condition of the rail track affects work done on the moving train (e.g. more likely to lose one's balance).

Other risk factors

The outdated structure of gangways poses dangers to staff and passengers walking trough them.

Safety recommendations

During the period of TSB's investigation, MÁV Zrt. took measures to prohibit the usage of gangways. As the IC agreed with the actions taken, it does not wish to issue safety recommendations.

2009-273-5

Railway accident

On 19 June 2009 a regional passenger train collided with a trailer towed by a tractor at a normally operating LC between Tiszavasvári and Hajdúnánás stations.

As a consequence of the accident, the motor coach of the train crashed and pushed the trailer aside which swept away a cyclist waiting at the LC.

Factual statements directly connected to the occurrence of the accident

The tractor drove into the LC regardless of the Stop signal of the warning lights.

Other risk factors

The visibility triangle at the LC was not ensured (from the road the tractor was driving on) from the prescribed distance, however, the signals of the warning lights were still visible.

Safety recommendations

Safety recommendation was not issued.

3.5 Other recommendations

In 2009, TSB issued a safety recommendation suggesting immediate preventive actions before the completion of the investigation (based on the initial findings) on one more occasion. The addressee accepted it and implemented the measures immediately. This was as follows:

„BA2009-503-5-01A: *The IC recommends the NTA to obligate the infrastructure manager (BKV Zrt.) to ensure the so called visibility triangle prescribed by law between Tököl and Szigetcsép stations at the LC at railway section no. 267. In case it is not feasible, the LC itself should be secured.*

The justification of the above safety recommendation is that the visibility is not ensured at the LC in railway section no. 267, therefore the LC does not comply with the regulations in 26.3.g) section of Decree 20/1984 (XII.27.)

On 23 November 2009, the NTA instructed BKV Zrt to ensure the visibility triangle at the LC. The measure was implemented by BKV Zrt.

The list of safety recommendations issued by TSB in 2009 can be found in point 3.4 of this report.

3.6 Experiences of the technical investigations

The Railway Department has been in operation since March 2006. Based on the experience that have been gathered since then, the following observations can be made:

– Similarly to the previous years and to the other modes of transport in which TSB investigates accidents and incidents, the majority of the occurrences were caused by human factors. Among the technical causes, the defects of the rail track are still the most frequent. Among the accidents occurred at LCs, 3 were caused by a fault in the LC/warning lights structure (on two occasions they were dark and on one occasion they mistakenly signalled flashing white lights towards the road).

– In 2009, trains were endangers without negative consequences on 12 occasions. These were of the following kinds: Signal passed at danger, trains running on the same track in opposing directions, signalling trains onto occupied track. These types of occurrences can lead to serious accidents, therefore it is worth drawing an attention to them. In most cases, their causes were related to human factor, which also indicates how necessary it would be to apply improved, modern signal boxes and train control systems.

– The number of accidents at LCs was still high in 2009 (108), thus TSB put special emphasis on this topic in its investigations. Based on the experiences of the technical investigations, it shall be noted that the traffic culture (and that people disregard the warning lights at LCs) plays a significant role in the accidents caused by signals passed at danger (or road vehicles passing the Red light signal). This topic has also arisen at professional forums. In this regard, not only the drivers on the roads but the railway profession should also take actions. There are still quite a few LCs (warning lights) in operation - indicating flashing white lights towards the road - at locations where the rail tracks are no longer in place or are overgrown with vegetation. Another harmful factor is that when an LC is closed for a long time due to the heavy railway traffic or other reasons and some drivers on the road lose their patience and decide to cross the LC regardless of the Red lights or closed half barriers. Therefore it is important to take measures to solve these problems and to improve the traffic morals.

– In compliance with the EU directives, TSB addresses most of its safety recommendations to the National Transport Authority whose scope of authority is still limited. Unfortunately there was no development in 2009 in this regard as no new national safety indicators were issued (despite the EU requirements) and thus the Authority can still only approve rules, it cannot codify them. Consequentially, TSB received numerous answers to safety recommendations from NTA that they agree with them, however, they have no authority to implement them.

3.7 International cooperation

In 2009, the international practice was no different from the previous years, namely that the investigating bodies contact each other in relation to concrete accidents when more members states are concerned (from the operator's, manufacturer's, maintenance's side or staff, etc), Such was the cooperation between TSB and the Austrian investigating body in 2009 when the latter organisation requested information from TSB for the investigation of accidents occurred in the end of 2008 as well as requesting assistance to the common site surveys.

Participation in technical investigations upon request from foreign investigating organisations:

12. 09. 2008	Lgss type wagon owned by a Hungarian company derailed at Linz marshalling yard.	Railway accident
18. 10. 2008	Lgss type wagon owned by a Hungarian company derailed at Pöchlam station.	Railway accident

The TSB continued to participate actively in the work of the European Railway Agency (ERA) in 2009. The cooperation within the ERA extends to the compiling of methodology guidelines as well as to the development and operation of data collecting systems. The cooperation with the ERA (with its costs covered by the EU) offers the opportunity for KBSZ to participate in compiling the methodologies relevant to future activities in the railway sector. This way KBSZ can not only learn the system at first hand, but there is also a chance to enforce interests arising from national specialities in this field. Furthermore, we can also learn from the good practices of other EU member states.

Outside of the ERA, some of the European investigating bodies (e.g. Germany, Austria, Switzerland, Czech Republic, Holland, Luxemburg, etc) established a regional cooperation forum in whose work the TSB also participates. Within the framework of this forum, - besides discussing local problems and making recommendations towards the ERA - there is an opportunity to learn about the investigation procedure of certain accidents and gain experience in the investigation of various types of rarely occurring occurrences.

4. SUMMARY OF RECOMMENDATIONS

It was characteristic for 2009 too that although safety recommendations should be addressed to the National Safety Authority, in one third of the cases - especially concerning safety regulation questions - TSB addressed its recommendations directly to the relevant parties/organisations for the sake of efficiency. The reason for this is that currently, such regulations are part of the railway undertakings' internal regulation systems which are although subject to the Authority's assent, the creator of the regulations are still the railway undertakings themselves. The Authority may only give its opinion on the prepared regulations, and even though it agrees with them, it has no authority to order the implementation of the safety recommendations.

In 2009, the Railway Department of TSB closed the investigation of 25 occurrences with final report and issued 24 safety recommendations to 10 occurrences.

Summary of responses to safety recommendations issued in 2007-2009

	2007	2008	2009
Accepted and implemented	4	15	11
Accepted and partially implemented	2	2	-
Accepted, implementation in progress	7	3	7
Accepted, no information on implementation	-	3	-
Rejected	2	4	3
No answer	-	1	3

Reasons for rejection of safety recommendations issued in 2009 included: no scope of authority, the addressee is solving the problem by other methods/solutions.

3.4 contains a detailed list of the issued safety recommendations.