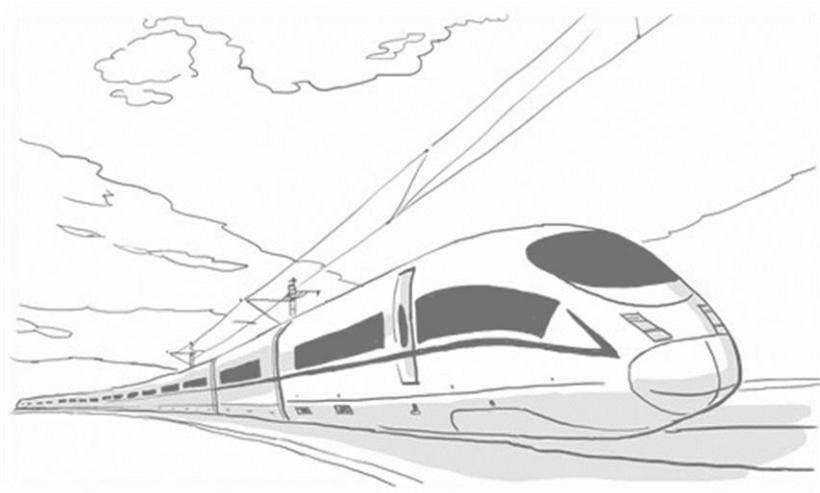




REPUBLIC OF CROATIA
AIR, MARITIME AND RAILWAY TRAFFIC ACCIDENTS INVESTIGATION AGENCY
Department for Railway Traffic Accidents Investigation

NIB CROATIA ANNUAL REPORT 2023

according to Article 24(3) of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast)



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- Art. 24(3) of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast),
- Art. 6(4)(5) of the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and
- Art. 132(7) of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

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ABBREVIATIONS

AIA/AIN	Air, Maritime and Railway Traffic Accidents Investigation Agency
NIB	National Investigating Body
EU	European Union
IM	Infrastructure Manager
RU	Railway Undertaking
NSA	National Safety Authority
ERA	European Union Agency for Railways
LC	Level crossing
RS	Rolling stock
SA	Serious accident
A	Accident
I	Incident
SR	Safety Recommendation
KM	Kilometer position of the railway

INTRODUCTION TO THE REPORT

A National Investigating Body (NIB) operates in the Republic of Croatia as the Department for Railway Traffic Accidents Investigation at the Air, Maritime and Railway Traffic Accidents Investigation Agency (AIA) for conducting independent investigations of railway accidents and incidents according to Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), which principles and requirements have been implemented into the Croatian national legislation. The aim of investigating railway accidents and incidents is to improve the safety of the railway system and prevent future accidents.

This annual report is issued by the Department for Railway Traffic Accidents Investigation of the AIA, for 2023, in accordance with Article 24(3) of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), Article 6(4)(5) of the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and Article 132(7) of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

The annual report contains information regarding:

- the NIB,
- railway accidents and incidents investigation system,
- review of completed accidents and incidents investigations in 2023,
- issued safety recommendations.

1 INTRODUCTION TO THE INVESTIGATING BODY

1.1 Legal Basis

The process of the implementation of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), into the national legislation of the Republic of Croatia was completed with two national legal Acts, the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

For accidents and incidents occurring from May 17, 2020, we are applying Commission Implementing Regulation (EU) 2020/572 of 24 April 2020 on the reporting structure to be followed in railway accident and incident reports with all 6 titles and their subtitles included in this Regulation and the English translation of the summary, safety recommendations and conclusions.

The AIA investigates accidents and incidents which, according to their nature and consequences, are divided into the following categories:

- serious accidents,
- accidents,
- incidents.

The accidents and incidents investigation performed by the AIA are independent of any other party and independent of the investigation conducted by other bodies, especially judiciary investigation and the investigation of the causes and circumstances of accidents and incidents conducted by Infrastructure Manager (IM) or Railway Undertakings (RU).

1.2 Role and Aim

The AIA was established on 29 July 2013 by the Act on Establishing of the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette No. 54/13, 96/18) as a legal person with public authorities. The founder of the Agency is the Republic of Croatia and the founder's rights are exercised by the Government of the Republic of Croatia. The Agency is functionally and organizationally independent of all authorities responsible for air, maritime and railway traffic and of all legal and natural persons. The national legislation of Republic of Croatia does not authorize the AIA to investigate accidents and incidents within trams, trolleybuses and cable-cars.

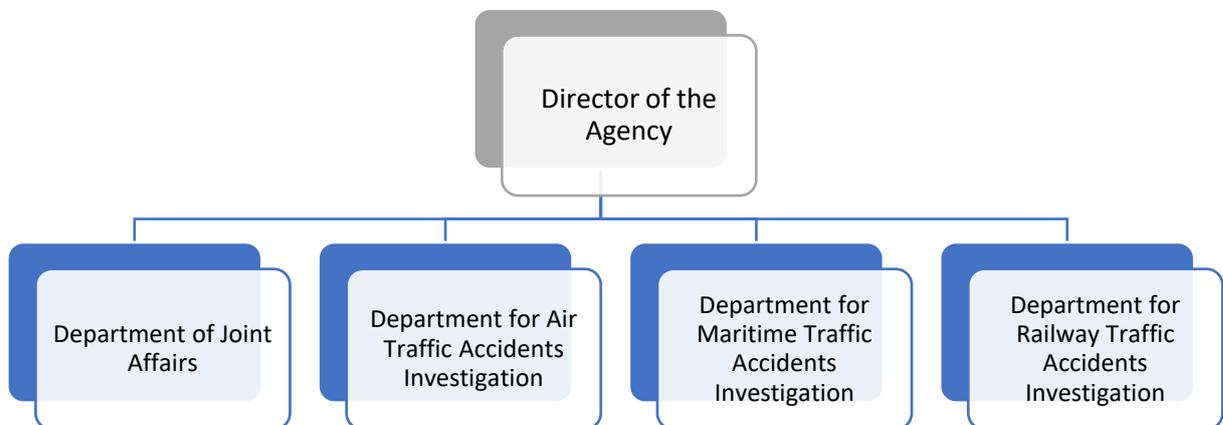
The main goal of the AIA work is to prevent future accidents and incidents. Therefore, the AIA:

- investigates the causal and other factors that preceded the occurrence of railway accidents and incidents,
- issues final reports and safety recommendations to RUs, IM, to the National Safety Authority (NSA) or other authorities and parties.

1.3 Organisation

The AIA is a multimodal institution, consisting of three independent departments for safety investigations. One of the departments is the Department for Railway Traffic Accidents Investigation, which was established in April 2014. The remaining two departments are the Department for Air Traffic Accidents Investigation and Department for Maritime Traffic Accidents Investigation. In 2023, the Department for Railway Traffic Accidents Investigation consisted of three responsible Investigators (of which one is the Chief Investigator).

Internal organization of the AIA



1.4 Organisational flow

The structure of railway sector in Republic of Croatia and relationships among the parties involved are defined in the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

The bodies responsible for the railway system in the Republic of Croatia are the Ministry of The Sea, Transport and Infrastructure, NSA and AIA. The Ministry for Transport is in charge of the national railway legislation, including implementation of the EU railway legislation. The Railway Safety Agency is the NSA which activities include tasks related to safety certificates, approvals, permits and other authorizations, as well as supervision and inspection in order to ensure continuous compliance with railway system safety requirements, keeping prescribed registers and performing other tasks determined by national legislation and EU regulations. The AIA is independent of any party in the railway system. Budget funds of the AIA are granted through the Ministry of The Sea, Transport and Infrastructure budget system.

2 INVESTIGATION PROCESSES

2.1 Occurrence to be investigated

The national legislation of Republic of Croatia orders the AIA, in accordance with European principles, to investigate the causal and other factors of extraordinary events occurring within the railway system.

When making decision whether to investigate or not an extraordinary event, the AIA must take into consideration the legal requirements, all in order to be able to issue a safety recommendation from the said accident, if necessary, and to avoid similar accidents in the future.

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:

- **IM or RU** conducts accident or incident investigations within the framework of the safety management system,
- **AIA** investigates the causal and other factors of accidents or incidents and issues safety recommendations,
- **State Attorney's Office and Police Directorate** investigate accident or incident with the aim of defining responsibility for the committing of offenses or criminal acts.

In order to facilitate the work of the on-site investigation procedure, a Memorandum of Understanding between the Police Directorate, State Attorney's Office and AIA was signed on July 22, 2015.

2.3 Investigation process and approach of the AIA

The aim of the investigation of the causal and other factors of railway accidents and incidents is to gain knowledge for the prevention of future accidents and incidents, reducing the consequences and increasing the safety of railways.

Investigation performed by the National Investigating Body of the Republic of Croatia, Department for Railway Traffic Accident Investigation, focuses on the following aspects of each occurrence:

- independent investigation of the causal and other factors of railway accidents or incidents (serious accidents, accidents and incidents).

When notified about an accident or incident by an IM or RU, the Department for Railway Traffic Accident Investigation will decide whether it will immediately go to the accident-site or not. At the accident-site the Department for Railway Traffic Accidents Investigation will launch an independent investigation or just make onsite overview and make decision about launching an investigation later.

Within 30 days of receiving notification of an accident or incident, the Department for Railway Traffic Accidents Investigation decides whether to initiate an investigation and informs all parties involved. Also, the Department for Railway Traffic Accidents Investigation is obliged to

inform European Union Agency for Railways (ERA) about the same within seven days from the day of making the decision to start the investigation.

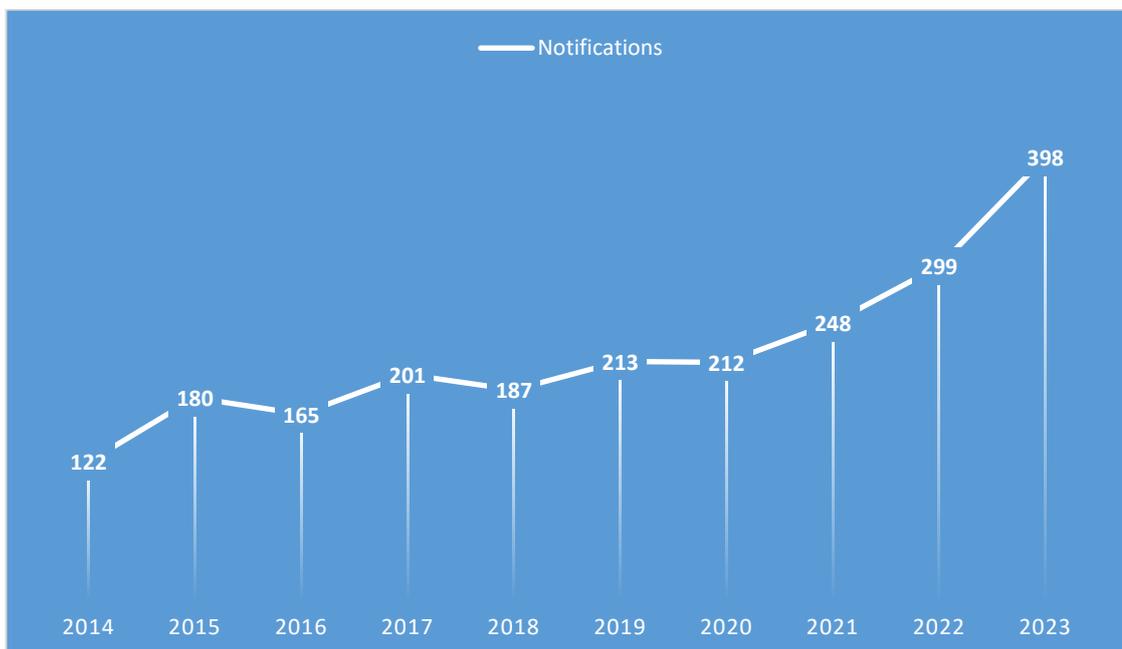
The Department for Railway Traffic Accidents Investigation will publish the conclusions of its investigation in Investigation Reports, the structure of which is based on the requirements of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast) and Commission Implementing Regulation (EU) 2020/572 of 24 April 2020 on the reporting structure to be followed for railway accident and incident investigation reports.

3 INVESTIGATIONS

The Department for Railway Traffic Accidents Investigation has ensured telephone availability of railway accident investigators at any time on the basis of 7/24/365, in order to be able to react as soon as possible and perform an immediate accident-site in accordance with the provisions of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020). Also, the e-mail address railway.safety@ain.hr has been established in the AIA as a central location where users of railway services can submit all reports of railway accidents and incidents, as well as all other relevant information relating to the field of railway traffic.

In 2023, we received a total of 398 notifications of occurrence in the railway system, of which 3 notifications referred to serious accidents, 69 to accidents, 306 to incidents and 20 notifications related to suicides that the AIA does not investigate.

All notifications received in 2023 were entered into the Database of received notifications kept in the AIA, in which a total of 2225 notifications were recorded from 2014 to the end of 2023:



Following the received notifications, in 2023, we decided to perform an immediate accident-sites on 27 accidents/incidents, in accordance with national and EU Laws.

On the basis of the immediate accident-sites and additionally collected information, 6 new investigations were commenced in 2023 as it was determined that there were failures in the railway system in specific events.

In 2023, we completed with Final reports and closed 5 investigations.

3.1 Overview of investigations completed in 2023, identifying key trends

Trends of completed investigations in 2023

Type of accidents investigated	Number of accidents	Number of victims		Damages in € (approx.)	Trends in relation to previous year
		Deaths	Ser. injuries		
Collisions	2	3	2	>150.000	100%
Derailments	0	0	0	<150.000	-100%
LC-accidents	1	0	0	<150.000	-50%
Accidents to persons involving RS in motion	1	1	0	<150.000	0%
Fire in RS	0	0	0	<150.000	0%
Other	1	0	0	<150.000	0%

3.2 Investigations completed and commenced in 2023

Investigations completed in 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
28 March 2022	Passenger train number 2011 running over worker on the track between stations Novska-Okučani	SA	05 June 2023
01 August 2022	LC Milja, accident between train No. 89717 and road vehicle	A	22 June 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska	SA	11 April 2023
14 November 2022	Train collision between train number 62077 and a group of wagons at station Škrljevo	A	29 December 2023
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula	A	22 December 2023

SA-Serious accident, A-Accident, I-Incident

Investigations commenced in 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula	A
05 May 2023	Trains collision near miss between passenger trains numbers 2018 and 2011 between stations Andrijevci and Garčin	I
22 June 2023	Trains collision near miss between trains numbers 45997 and 69029 at station Sušak Pećine	I
27 September 2023	Train number 89135 running over worker on the track between stations Zagreb Žitnjak and Velika Gorica	A
14 November 2023	Wagons derailment at station Zagreb Ranžirni	A
11 December 2023	Trains collision between train number 81218 and a special purpose vehicle between stations Meja and Škrljevo	SA

SA-Serious accident, A-Accident, I-Incident

3.3 Research studies (or Safety Studies) commissioned and completed in 2023
Safety Studies completed in 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
	none		

Safety Studies commenced in 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
	none		

3.4 Summaries of investigations completed in 2023

See the Annex of this annual report.

3.5 Comment and introduction or background of the investigations
Investigations commenced in 2023 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			

3.6 Accidents and incidents investigated during last nine years (in 2014-2023)
Rail investigations completed in the period 2014–2023

The Department for Railway Traffic Accidents Investigation started its work in April 2014, so first investigation was opened in 2014.

The table groups investigations by year of their completion

Accidents investigated		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
Serious accidents	Train collision	0	0	0	0	0	0	0	0	1	1	2
	Train collision with an obstacle	0	0	0	0	0	0	0	0	0	0	0
	Train derailment	0	0	0	0	0	0	0	0	0	0	0
	Level-crossing accident	0	0	1	1	0	0	0	1	1	0	4
	Accident to person caused by RS in motion	0	0	0	2	0	0	0	0	1	1	4
	Fire in RS	0	0	0	0	0	0	0	0	0	0	0
	Involving dangerous goods	0	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	1	0	0	0	0	1
Accidents	Train collision	0	1	0	1	0	0	0	0	0	1	3
	Train collision with an obstacle	0	1	1	0	1	0	0	0	0	0	3
	Train derailment	1	3	2	4	4	3	5	3	1	0	26
	Level-crossing accident	0	2	1	1	0	1	2	2	1	1	11
	Accident to person caused by RS in motion	0	0	1	0	1	0	0	0	0	0	2
	Fire in RS	0	1	0	0	0	0	0	1	0	0	2
	Involving dangerous goods	0	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0	0	0	1	1
Incidents	0	2	1	2	2	1	1	2	1	0	12	
TOTAL	1	10	7	11	8	6	8	9	6	5	71	

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 AIA. Safety recommendation is usually issued when an accident occurred without any violation of legislation or internal regulations of IM and/or RUs, or if there are other findings relevant for the safety. When a recommendation is issued, RUs and IM are obliged to adopt their own preventative safety measures based on issued safety recommendation.

Implementation of recommendations during 2014 – 2023

Recommendations issued		Recommendation implementation status					
		Implemented		In progress		Not implemented	
Year	[No.]	[No.]	[%]	[No.]	[%]	[No.]	[%]
2014	4	2	50%	1	25%	1	25%
2015	7	4	57%	2	29%	1	14%
2016	11	3	27%	1	9%	7	64%
2017	11	8	73%	2	18%	1	9%
2018	3	3	100%	0	0%	0	0%
2019	3	3	100%	0	0%	0	0%
2020	13	6	46%	6	46%	1	8%
2021	9	9	100%	0	0%	0	0%
2022	15	6	40%	5	33%	4	27%
2023	15	5	33%	10	67%	0	0%
TOTAL	91	49	54%	27	30%	15	16%

Accidents with safety recommendations issued in 2014 – 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
11 July 2014	Derailment of a RS near station Mađarevo, SR/14	Implemented	22 December 2014
19 September 2014	Collision on LC in city Krapina, SR 1/14	Implemented	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 2/14	Accepted	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 3/14	Not implemented	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 1/15	Accepted	02 April 2015
4 September 2014	Fire in RS at station Varaždin, SR 2/15	Not implemented	18 May 2015
22 June 2014	Trains collision was avoided at station Dugo Selo, SR 3/15	Implemented	23 October 2015
10 November 2014	Derailment of maneuver locomotive at station Sisak, SR 4/15	Implemented	5 December 2016
11 November 2014	Accident caused by rolling stock in motion, Zdenčina, SR 5/15	Accepted	02 November 2015
12 January 2015	Collision on LC at place Kupinec, SR 6/15	Implemented	22 December 2015
11 September 2014	Derailment of locomotive due to rock slide near station Kaštel Stari, SR 7/15	Implemented	03 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 1/16	Accepted	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 2/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 3/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 4/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 5/16	Not implemented	07 March 2016
10 July 2015	Serious accident on LC at place Švogari, SR 6/16	Implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 7/16	Implemented	12 September 2016

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
10 July 2015	Serious accident on LC at place Švogari, SR 8/16	Not implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 9/16	Not implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 10/16	Not implemented	12 September 2016
30 June 2015	Accident to person caused by RS in motion at station Split Predgrađe, SR 11/16	Implemented	16 January 2017
28 December 2015	Collision on LC Male Sredice, SR 1/17	Implemented	07 July 2017
28 December 2015	Collision on LC Male Sredice, SR 2/17	Accepted	07 July 2017
12 May 2016	Passenger train crossed an unprotected LC at station Vinkovci, SR 3/17	Implemented	28 June 2017
16 July 2016	Derailment of wagons at Sljeme Tunnel, SR 4/17	Not implemented	31 August 2017
17 October 2016	Collision on LC Kuljevića near town Ivanec, SR 5/17	Accepted	11 October 2017
17 October 2016	Collision on LC Kuljevića near town Ivanec, SR 6/17	Implemented	11 October 2017
05 September 2016	Collision of two special railway vehicles on the station Zagreb Ranžirni, SR 7/17	Implemented	25 October 2017
05 October 2016	Trains crossed an unprotected LC Danica, SR 8/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 9/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 10/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 11/17	Implemented	27 February 2018
27 March 2017	Derailment of wagons at station Zagreb Ranžirni, SR 1/18	Implemented	12 February 2018
27 March 2017	Derailment of wagons at station Zagreb Ranžirni, SR 2/18	Implemented	12 February 2018
04 April 2017	Passenger falling out of the wagon at station Križevci, SR 3/18	Implemented	09 May 2018
02 June 2018	Unauthorised movement of train No. 69327 at station Kutina, SR 1/19	Implemented	19 August 2019
02 June 2018	Unauthorised movement of train No. 69327 at station Kutina, SR 2/19	Implemented	19 August 2019
27 June 2018	Derailment of 2 freight wagons which hit the parapet during maneuver at station Slavonski Brod, SR 3/19	Implemented	30 September 2019
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 1/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 2/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 3/20	Accepted	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 4/20	Implemented	14 July 2020

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 5/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 6/20	Accepted	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 7/20	Accepted	14 July 2020
21 October 2018	Derailment of passenger train No. 783 at on the railway section Dugo Selo-Vrbovec, SR 8/20	Accepted	27 July 2020
21 October 2018	Derailment of passenger train No. 783 at on the railway section Dugo Selo-Vrbovec, SR 9/20	Not implemented	27 July 2020
5 May 2019	Falling of two containers from freight train No. 62006 while passing through station Škrljevo, SR 10/20	Accepted	24 August 2020
5 May 2019	Falling of two containers from freight train No. 62006 while passing through station Škrljevo, SR 11/20	Implemented	24 August 2020
23 September 2019	Collision of special purpose railway vehicle registered as the train No. 89949 with personal vehicle at LC Vartilen-Podrute, SR 12/20	Accepted	21 October 2020
18 June 2019	Derailment of the wagon of freight train No. 61153 due to the fracture of the axle at station Novoselec, SR 13/20	Implemented	25 November 2020
20 March 2020	Derailment of passenger train No. 3300 on derailer No. I-3 at station Čakovec, SR 1/21	Implemented	26 January 2021
19 October 2019	Broken wheel on locomotive 1141 of train No. 42811 at station Prečec, SR 2/21	Implemented	10 March 2021
22 June 2020	Collision of freight train No. 29713 with personal road vehicle at LC Kupljenovo, SR 3/21	Implemented	11 June 2021
07 September 2020	Collision of freight train No. 48974 with personal road vehicle at LC Pračno, SR 4/21	Implemented	30 September 2021
15 November 2020	Self-starting of freight train No. 41991 due to lack of braking at station Lipovljani, SR 5/21	Implemented	20 October 2021
15 November 2020	Self-starting of freight train No. 41991 due to lack of braking at station Lipovljani, SR 6/21	Implemented	20 October 2021
16 October 2020	Fire on diesel engine sets No. 7121-101/102 as part of train No. 6016 near station Našice, SR 7/21	Implemented	16 November 2021
16 October 2020	Fire on diesel engine sets No. 7121-101/102 as part of train No. 6016 near station Našice, SR 8/21	Implemented	16 November 2021
13 January 2021	Derailment of freight wagons during maneuvering at station Bregi, SR 9/21	Implemented	15 December 2021
27 January 2021	Derailment of train No. 61019 at station Meja, SR 1/22	Accepted	08 February 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 2/22	Accepted	06 May 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 3/22	Implemented	06 May 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 4/22	Implemented	06 May 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 5/22	Implemented	06 May 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 6/22	Implemented	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 7/22	Implemented	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 8/22	Accepted	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 9/22	Accepted	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 10/22	Implemented	04 July 2022
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle, SR 11/22	Not implemented	05 July 2022
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle, SR 12/22	Accepted	05 July 2022
11 November 2021	SPAD at station Novska, SR 13/22	Not implemented	28 October 2022
11 November 2021	SPAD at station Novska, SR 14/22	Not implemented	28 October 2022
11 November 2021	SPAD at station Novska, SR 15/22	Not implemented	28 October 2022
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 1/23	Accepted	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 2/23	Accepted	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 3/23	Implemented	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 4/23	Implemented	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 5/23	Accepted	11 April 2023

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 6/23	Implemented	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 7/23	Accepted	11 April 2023
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, SR 8/23	Implemented	11 April 2023
28 March 2022	Passenger train number 2011 running over worker on the track between stations Novska-Okučani, SR 9/23	Accepted	05 June 2023
28 March 2022	Passenger train number 2011 running over worker on the track between stations Novska-Okučani, SR 10/23	Accepted	05 June 2023
01 August 2022	LC Milja, accident between train No. 89717 and road vehicle, SR 11/23	Implemented	22 June 2023
14 November 2022	Train collision between train number 62077 and a group of wagons at station Škrljevo, SR 12/23	Accepted	29 December 2023
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula, SR 13/23	Accepted	22 December 2023
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula, SR 14/23	Accepted	22 December 2023
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula, SR 15/23	Accepted	22 December 2023

4.2 Safety Recommendations issued in 2023

No. of the recommendation: SR 1/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
Addressed to the NSA	
All towing railway vehicles that operate on the railway network of the Republic of Croatia should be equipped with devices with a digital record of movement speed during the first modernization or regular repair, and no later than July 01, 2027.	
STATUS : Accepted (all railway undertakings)	

No. of the recommendation: SR 2/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska

Addressed to the NSA
All towing railway vehicles that participate in the transport of passengers and operate on the railway network of the Republic of Croatia should be equipped with video train recording devices during the first modernization or regular repair, and no later than July 01, 2027.
STATUS : Accepted (all railway undertakings)

No. of the recommendation: SR 3/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
Addressed to the NSA	
The involved railway undertaking, HŽPP, should include in the content for the professional training of train drivers more attention to the danger of train passing signals that prohibit further driving, as well as more attention to the mandatory application of the provisions of the Regulation on signals, signal signs and signal markings in railway traffic (Official Gazette 94/15) and the Regulation on the manner and conditions for safe operation and management of railway traffic (Official Gazette 107/16).	
STATUS : Implemented (HŽ Putnički prijevoz d.o.o.)	

No. of the recommendation: SR 4/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
Addressed to the NSA	
The involved railway undertaking, HŽPP, should revise its own safety management system, in terms of train drivers work procedures.	
STATUS : Implemented (HŽ Putnički prijevoz d.o.o.)	

No. of the recommendation: SR 5/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
Addressed to the NSA	
Railway undertakings in the territory of the Republic of Croatia are obliged to harmonize the time of the video train recording devices and devices with a digital record of movement speed of movement on a regular basis once a month.	
STATUS : Accepted (all railway undertakings)	

No. of the recommendation: SR 6/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
Addressed to the NSA	

Infrastructure manager, HŽI, is obliged to carry out the harmonization of time on devices that record the data once a month.
STATUS : Implemented (HŽ Infrastruktura d.o.o.)

No. of the recommendation: SR 7/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
<p>Addressed to the NSA</p> <p>On all towing railway vehicles operating on the territory of the Croatian railway area in cases of driving by order when crossing the balise, the installed auto-stop equipment on the vehicles should limit the driving speed to $V_{max}=40$ km/h, and driving to the next spatial signal is limited to $V_{max}=30$ km/h. In case that the currently installed auto-stop equipment cannot meet the aforementioned requirements, the deadline is July 1, 2025 at the latest for the vehicles to be adapted to the required requirements.</p>	
STATUS : Accepted (all railway undertakings)	

No. of the recommendation: SR 8/23	
Date of occurrence	Title of the investigation
09 September 2022	Trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska
<p>Addressed to the NSA</p> <p>Infrastructure manager, HŽI, should improve the supervision of SS devices in accordance with the provisions of the Regulation of the maintenance of signal-security devices (HŽI-400) and the Instructions of the procedure of executive service workers with signal-security and telecommunication devices (HŽI-432).</p>	
STATUS : Implemented (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 9/23	
Date of occurrence	Title of the investigation
28 March 2022	Passenger train number 2011 running over worker on the track between stations Novska-Okučani
<p>Addressed to the NSA</p> <p>The infrastructure manager, HŽI, should improve its own safety management system by introducing and monitoring safety measures for the safe performance of work of track workers on an open track, and identify and assess risks resulting from human and organizational factors (e.g. reduced attention and awareness when performing work tasks, workload, job description,...).</p>	
STATUS : Accepted (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 10/23	
Date of occurrence	Title of the investigation
28 March 2022	Passenger train number 2011 running over worker on the track between stations Novska-Okučani

Addressed to the NSA The infrastructure manager, HŽI, should include in the additional content of regular training for track workers greater attention to analyzing all the risks of working on an open track.
STATUS : Accepted (HŽ Infrastruktura d.o.o.)

No. of the recommendation: SR 11/23	
Date of occurrence	Title of the investigation
01 August 2022	LC Milja, accident between train No. 89717 and road vehicle
Addressed to the NSA The infrastructure manager, should introduce additional measures and procedures to ensure the safe flow of traffic in cases where the cause of the failure cannot be accurately determined on the signal safety devices, and which is eliminated by manually resetting the signal security device.	
STATUS : Implemented (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 12/23	
Date of occurrence	Title of the investigation
14 November 2022	Train collision between train number 62077 and a group of wagons at station Škrljevo
Addressed to the NSA The infrastructure manager should further develop the technological process of the Škrljevo station for the cases of disassembling freight trains with the final destination at the Šoići station.	
STATUS : Accepted (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 13/23	
Date of occurrence	Title of the investigation
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula
Addressed to the NSA The involved Railway Undertaking should, until the procedures for testing the accuracy of the handbrake in situations of prolonged detention of a diesel motor train 7122 series due to a failure on the track regardless of the track slope are developed, prescribe that in addition to the use of the handbrake the manual stop shoes that are in the vehicle should also be placed.	
STATUS : Accepted (HŽ Putnički prijevoz d.o.o.)	

No. of the recommendation: SR 14/23	
Date of occurrence	Title of the investigation
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula
Addressed to the NSA The involved Railway Undertaking in cooperation with the authorized vehicle maintainer should work out the procedures for testing the accuracy of the handbrake on the diesel motor train 7122 series.	
STATUS : Accepted (HŽ Putnički prijevoz d.o.o.)	

No. of the recommendation: SR 15/23	
Date of occurrence	Title of the investigation
14 January 2023	Collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula
Addressed to the NSA The involved Railway Undertaking should provide further training to the engine crew about the use and operation of the handbrake on the diesel motor train 7122 series.	
STATUS : Accepted (HŽ Putnički prijevoz d.o.o.)	

INVESTIGATIONS COMPLETED IN 2023 SUMMARY

Serious accident, trains collision between passenger train number 2506 and freight train 41200 between stations Okučani-Novska, on 09 September 2022



Type of occurrence:	Serious accident
Date and time:	09 September 2022, 09:28 p.m.
Occurrence type:	Trains collision
Description:	On September 09, 2022, at 09:28 p.m. local time, on the line M104 Novska-Tovarnik-state border, between the stations Okučani-Novska on the right track at km 294+485, an occurrence of the category "serious accident" occurred, a collision of passenger train number 2506 (HŽPP) to freight train number 41200 (ENNA TRANSPORT) which was stopped on the track in order to eliminate the perceived disturbance.
Type of train:	Passenger and freight train
Location:	Line No. M104, between the stations Okučani-Novska
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Putnički prijevoz Ltd. (RU), ENNA TRANSPORT Ltd. (RU)
Consequences:	In a serious accident, three people were fatally injured, the driver, conductor and a juvenile male passenger of passenger train number 2506. In total eleven passengers of the passenger train were injured, of which two were seriously injured and nine were minor injured. Great material damage was recorded to the railway infrastructure and railway vehicles.
Direct cause:	Driving of passenger train number 2506 was not fully performed in accordance with written notices, passing of the passenger train number 2506 due to the activation of the driving by command button over the spatial signals 6222 and 6322 at the moment when there was a red light on it (that is, the "STOP" sign) instead of stopping and then after 383m behind spatial signal 6322 collision into the stopped freight train number 41200 due to the technical eliminated of the perceived disturbance.

Safety recommendations: **AIN/06-SR-01/2023:** All towing railway vehicles that operate on the railway network of the Republic of Croatia should be equipped with devices with a digital record of movement speed during the first modernization or regular repair, and no later than July 01, 2027.

AIN/06-SR-02/2023: All towing railway vehicles that participate in the transport of passengers and operate on the railway network of the Republic of Croatia should be equipped with video train recording devices during the first modernization or regular repair, and no later than July 01, 2027.

AIN/06-SR-03/2023: The involved railway undertaking, HŽPP, should include in the content for the professional training of train drivers more attention to the danger of train passing signals that prohibit further driving, as well as more attention to the mandatory application of the provisions of the Regulation on signals, signal signs and signal markings in railway traffic (Official Gazette 94/15) and the Regulation on the manner and conditions for safe operation and management of railway traffic (Official Gazette 107/16).

AIN/06-SR-04/2023: The involved railway undertaking, HŽPP, should revise its own safety management system, in terms of train drivers work procedures.

AIN/06-SR-05/2023: Railway undertakings in the territory of the Republic of Croatia are obliged to harmonize the time of the video train recording devices and devices with a digital record of movement speed of movement on a regular basis once a month.

AIN/06-SR-06/2023: Infrastructure manager, HŽI, is obliged to carry out the harmonization of time on devices that record the data once a month.

AIN/06-SR-07/2023: On all towing railway vehicles operating on the territory of the Croatian railway area in cases of driving by order when crossing the balise, the installed auto-stop equipment on the vehicles should limit the driving speed to $V_{max}=40$ km/h, and driving to the next spatial signal is limited to $V_{max}=30$ km/h. In case that the currently installed auto-stop equipment cannot meet the aforementioned requirements, the deadline is July 1, 2025 at the latest for the vehicles to be adapted to the required requirements.

AIN/06-SR-08/2023: Infrastructure manager, HŽI, should improve the supervision of SS devices in accordance with the provisions of the Regulation of the maintenance of signal-security devices (HŽI-400) and the Instructions of the procedure of executive service workers with signal-security and telecommunication devices (HŽI-432).

**Serious accident, passenger train number 2011 running over worker on the track between stations
Novska-Okučani, on 28 March 2022**



Type of occurrence:	Serious accident
Date and time:	28 March 2022, 10:31 a.m.
Occurrence type:	Accident to person caused by RS in motion
Description:	On March 28, 2022, at 10:31 a.m., on the line M104 at KM 294+100, between stations Novska and Okučani, passenger train number 2011 struck and fatally injured an employee of company HŽ Infrastruktura Ltd. Train number 2011 was traveling on the route Zagreb Main Station - Vinkovci, and the track worker was moving on the left track in front of train number 2011, performing an inspection of the left track on the section Okučani - Rajić.
Type of train:	Passenger train
Location:	Line No. M104, between stations Novska and Okučani
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Putnički prijevoz Ltd. (RU)
Consequences:	In serious accident, a track worker who was performing the duties of a railway manager was fatally injured.
Direct causes:	the track worker was inside the left track while performing his work task, the track worker did not take into account the risk of standing inside the left track nor did he look and listen for the approaching train number, due to reduced attention and concentration, the track worker was not aware of the dangerous situation of the approaching train number 2011.
Safety recommendations:	AIN/06-SR-09/2023: The infrastructure manager, HŽI, should improve its own safety management system by introducing and monitoring safety measures for the safe performance of work of track workers on an open track, and identify and assess risks resulting from human and organizational factors (e.g. reduced attention and awareness when performing work tasks, workload, job description,...). AIN/06-SR-10/2023: The infrastructure manager, HŽI, should include in the additional content of regular training for track workers greater attention to analyzing all the risks of working on an open track.

Accident, LC Milja accident between train No. 89717 and road vehicle, on 01 August 2022



Type of occurrence:	Accident
Date and time:	01 August 2022, 09:38 p.m.
Occurrence type:	LC accident
Description:	On August 01, 2022, at 09:38 p.m., on the LC "Milja", actively secured (light, sound and half-bumper) on the line M202 Zagreb - Rijeka at km 634+828, engine train number 89717 ran into road passenger vehicle while operated on the route Rijeka - Ogulin.
Type of train:	Machine train
Location:	Line No. M202, LC Milja
Participants:	HŽ Infrastruktura Ltd. (IM), Rail Cargo Carrier – Croatia Ltd. (RU), road vehicle
Consequences:	In the accident, a passenger in a personal road vehicle was minor injured, and there was major material damage to the personal road vehicle and minor material damage to the locomotive of the train.
Direct cause:	Passing of train number 89717 over the LC on which the safety device was not activated and the collision of the train with a personal road vehicle that was crossing the unsecured LC at that moment.
Safety recommendation:	AIN/06-SR-11/2023: The infrastructure manager, should introduce additional measures and procedures to ensure the safe flow of traffic in cases where the cause of the failure cannot be accurately determined on the signal safety devices, and which is eliminated by manually resetting the signal security device.

Accident, train collision between train number 62077 and a group of wagons at station Škrljevo, on 14 November 2022



Type of occurrence:	Accident
Date and time:	14 November 2022, 02:19 a.m.
Occurrence type:	Trains collision
Description:	On November 14, 2023, at 02:19 a.m. on the line M202 at station Škrljevo on the third track at km 641+ 103, the freight train number 62077 ran into a group of 11 freight wagons left by train number 81278, which were waiting for the return of locomotive train number 81278 from station Soici and their dispatch to station Soici. As a result of the ran into of locomotive 91 78 1141 203-5 of freight train number 62077 on a group of wagons, there was significant damage to the locomotive as well as damage to eight freight wagons that were on the 3rd, 4th, and 6th tracks.
Type of train:	Freight train
Location:	Line No. M202, station Škrljevo
Participants:	HŽ Infrastrukura Ltd. (IM), HŽ Cargo Ltd. (RU)
Consequences:	The driver of freight train number 62077 was slightly injured in the accident and material damage was caused to the railway vehicles and infrastructure.
Direct cause:	The impact of freight train number 62077 on a group of 11 freight wagons from the disassembled freight train number 81278 on the 3rd track of the Škrljevo station. The collision occurred as a result of the improper handling of the block device by the internal train dispatcher at Škrljevo railway station, who gave permission to the train driver of train 62077 to pass by the entrance signal "B" which showed the signal sign "Stop", without personally making sure that 3. track free for passage.
Safety recommendation:	AIN/06-SR-12/2023: The infrastructure manager should further develop the technological process of the Škrljevo station for the cases of disassembling freight trains with the final destination at the Šoići station.

Accident, collision of passenger train number 4717 into a road vehicle parked on the industrial track of the station Pula, on 14 January 2023



Type of occurrence:	Accident
Date and time:	14 January 2023, 09:51 p.m.
Occurrence type:	Other accidents
Description:	<p>On January 14, 2023, at 09:51 p.m., train number 4717 broke down and stopped between stations Vodnjana and Pula at km 114+600 on the track R101 DG - Buzet - Pula. At 10:53 p.m., the train self-started and moved uncontrollably in the direction of station Pula. Arriving and passing through the station Pula at 11:00 p.m. at km 000+186 (Industrial track "Uljanik"), passenger train number 4717 who was traveling on the route Lupoglav - Pula collided with a van parked on the industrial track.</p>
Type of train:	Passenger train
Location:	Line No. R101, station Pula
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Putnički prijevoz Ltd. (RU), road vehicle
Consequences:	No one was injured in the accident, and there was major material damage to the van road vehicle and minor material damage to the passenger train.
Direct cause:	Self-starting of passenger train number 4717 due to insufficiently applied handbrake.
Safety recommendations:	<p>AIN/06-SR-13/2023: The involved Railway Undertaking should, until the procedures for testing the accuracy of the handbrake in situations of prolonged detention of a diesel motor train 7122 series due to a failure on the track regardless of the track slope are developed, prescribe that in addition to the use of the handbrake the manual stop shoes that are in the vehicle should also be placed.</p> <p>AIN/06-SR-14/2023: The involved Railway Undertaking in cooperation with the authorized vehicle maintainer should work out the procedures for testing the accuracy of the handbrake on the diesel motor train 7122 series.</p> <p>AIN/06-SR-15/2023: The involved Railway Undertaking should provide further training to the engine crew about the use and operation of the handbrake on the diesel motor train 7122 series.</p>