



Translation of an excerpt of the investigation report

“Train collision Eberbach station on 22/07/2024”

Status as of 04/06/2025, version 1.0.

Note:

In accordance with Article 3 of Implementing Regulation (EU) 2020/572, points 1, 5 and 6 of Annex I of an investigation report shall be written in a second official European language. This translation should be available no later than three months after the delivery of the report.

The following English translation is a corresponding excerpt of the investigation report. The German language version is authoritative.

Excerpt translation:

1 Summary

The first section contains a brief description of the event, as well as information on the consequences, primary causes and safety recommendations provided in the individual case.

1.1 Brief description of the event

On 22/07/2024 at 8:14 pm, the EZ 51978 hit a child on a bike when passing through platform 3 in Eberbach station at the level pedestrian crossing protected by an electric sliding barrier.

1.2 Consequences

The child was fatally injured as a result of the collision. The mother, who was with her child, and the train driver of the EZ 51978 suffered minor injuries due to shock.

1.3 Causes

During the investigation of the event, the following actions, failures, incidents or circumstances were identified as safety-critical factors. These are differentiated into causal or contributing and systemic factors according to Implementing Regulation (EU) 2020/572. A

system with designations in square brackets is used to provide better clarity about the factors. A detailed assessment of the event with classification as safety-critical factors is provided in the sections below.

What happened: Date/time, and action/failure/circumstance/incident	Causal factor	Contributing factor	Systemic factor
22/07/2024, 8:14 PM Incident Child goes into the danger zone of the pedestrian crossing	Accessing the pedestrian crossing while a train was running [F1]		Awareness and perception of hazards by users [S1]
Circumstance Closed barrier between the platforms	Design of the pedestrian crossing does not sufficiently protect all passengers against the hazards of railway operations [F2]		Legal admissibility [S2a] and intra- company grandfather policy [S2b]

Table 1: Summary of influencing factors

1.4 Safety recommendations

The following safety recommendation is issued in accordance with section 6 of the Eisenbahn-Unfalluntersuchungsverordnung (EUV, German railway accident investigation regulation) and Article 26(2) of Directive (EU) 2016/798:

In order to ensure the safety of passengers according to the obligation resulting from Section 13(4) Eisenbahn-Bau- und Betriebsordnung [EBO, German Ordinance on the Construction and Operation of Railways], it is recommended that the risks of existing pedestrian crossings, as a minimum those with one-sided barriers, should be reassessed according to Regulation (EU) 2018/762 Annex II Section 3.1.1.1, and if necessary safety measures should be developed.

5 Conclusions

The following section contains a summary of the identified causal, contributing and systemic factors. In addition, two further subsections are provided containing information about measures already taken, and additional comments

5.1 Summary and conclusion

The event was caused by the child entering the platform danger zone at the pedestrian crossing, and therefore being hit by the passing EZ 51978 [F1]. The design of the old system was not suitable to systematically and safely avoid errors by passengers in general, and by the child in particular, or to stave off the consequences of these errors [F2]. The background to this involves organisational and management specific factors [S1]/[S2].

With the development of guideline 816 and/or its predecessors from 2002 onwards, it became clear that significant risks needed to be controlled in the various safety measures that had been used at pedestrian crossings up until this point. In the meantime, the requirements of guideline 816 have come to be seen as acknowledged rules of technology. In contrast, without any time limitation, the infrastructure manager specified that these further-developed rules did not have to be applied to old systems, such as the pedestrian crossing in Eberbach, even though the rules were suitable to reduce the risks at pedestrian crossings to an acceptable and reasonable level. The dynamic operator responsibility defined in Section 4(3) AEG [German General Railway Act] in essence means that systems must be critically examined on a regular basis in terms of their safety and must be adjusted in the event of new findings or specific events. In this case, there was no documentation showing that the infrastructure manager had conducted a corresponding examination and consideration reflecting the development of the relevant rules for the existing system in Eberbach station. Against this background, there is an urgent need to examine the established practice concerning the grandfather policy for old pedestrian crossing systems.

In addition, social change contributes to an altered perception of systems of this kind and the resulting risks. In this respect, there is cause to question whether the delegated regulations of the EBO, which dates from 1967, can still be seen as up to date against the background of the event. This is all the more true because practical experience gained in the past has resulted in corresponding updates to the EBO. The ban on accessing a pedestrian crossing when the barrier between the platforms is closed, which is anchored in the EBO, does not provide

systematic protection of the group of people mentioned in section 4.4 and therefore its effectiveness must be questioned.

This event clarifies the need to critically examine the general internal stipulation made by the infrastructure manager of a grandfather policy for old pedestrian crossing systems. According to Regulation (EU) 2018/762, Annex II, section 3.1.1.1, the requirement to identify, analyse and evaluate all operational, organisational and technical risks relevant to the nature and scope of operations carried out by the organisation and to develop safety measures also applies for these old systems and the associated operation. The Federal Authority for Railway Accident Investigation is issuing a safety recommendation related to this, see section 6.

According to the requirements from Section 4(3) AEG and the scope of operating system maintenance as per Section 2(7f) AEG, it may be necessary to extend the further-developed principles of guideline 816, which are valid as acknowledged rules of technology, to existing old systems or types, or to expand the content in order to further minimise the risks at pedestrian crossings, including those from foreseeable passenger errors.

5.2 Measures taken since the event

After the event, the infrastructure manager renewed the white safety lines on the ground indicating the danger zone of the pedestrian crossing. According to the infrastructure manager, no further measures, particularly structural measures, are planned because in the infrastructure manager's opinion the grandfather policy expressed in guideline 816 would otherwise cease to apply.

The workplace manual regulations for Eberbach station concerning the pedestrian crossing have been stated more precisely. Among other things, a specific time allowance of at least five minutes before the arrival of a train on platform 5 has now been stipulated for opening the sliding barrier.

The infrastructure manager has informed the Federal Railway Authority that, against the background of the event and in consideration of human organisational factors, it is intended that this type (these types) of protection will be assessed in line with Regulation (EU) 402/2013.

In the letter dated 16/01/2025, the Federal Police Inspectorate in Karlsruhe informed the Federal Railway Authority of its safety concerns in relation to the continued operation of the pedestrian crossing.

Since 06/02/2025, the infrastructure manager has temporarily blocked operations on platforms 3 and 4, which run across the pedestrian crossing.

5.3 Additional observations

None.

6 Safety recommendations

The following safety recommendation is made in accordance with Section 6 of the EUV and Article 26(2) of Directive (EU) 2016/798:

No	Addressee and safety recommendation	Relates to company
12/2025	<p>Safety authority:</p> <p>In order to ensure the safety of passengers according to the obligation resulting from Section 13(4) EBO, it is recommended that the risks of existing pedestrian crossings, as a minimum those with one-sided barriers, should be reassessed according to Regulation (EU) 2018/762 Annex II Section 3.1.1.1, and if necessary safety measures should be developed.</p>	Infrastructure manager