



Translation of an excerpt of the investigation report

“Train collision Seelze station on 07/09/2022”

Status as of 09/09/2025, 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 07/09/2022 at around 2:34 pm, the freight train DGV 92947, which was travelling from Hausach to Padborg, collided with parked freight wagons of the freight train EZ 51593 on track 815 in the Seelze East part of the station of Seelze station.

1.2 Consequences

One person suffered minor injuries. There was considerable property damage amounting to around EUR 5,000,000 to the railway vehicles involved, the track superstructure, and the control and safety technology. The event also significantly impeded railway operation.

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 2020/572. Identified shortcomings in the emergency management are also addressed.

A system with designations in square brackets is used to provide better clarity about the factors and aspects of emergency management.

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
07/09/2022 / 2:22 PM Failure to open the air shut-off valves	Lack of continuity in the main brake pipe [F1]	-	-
07/09/2022 / from 2:22 PM Failure to perform a simplified brake check	Omitted test process to reveal operational errors [F2]	-	Safety culture within the company [S2]

Table 1: Summary of influencing factors

1.4 Safety recommendations

No safety recommendations have been issued.

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

In relation to the causal factor: “Lack of continuity in the main brake pipe” [F1]:

Evaluation of the electronic journey recording data showed that on the second attempt to successfully complete the coupling, the driver did indeed mechanically connect the screw coupling and possibly also the main brake pipe between the leading train and the train set, but it is highly likely that the driver failed to open the air shut-off valves of the main brake pipe. This meant that it is highly likely there was no longer continuity in the train’s main brake pipe when it departed at the Hanover-Hainholz part of the station. This was also proven by the calculation carried out by the Federal Authority for Railway Accident Investigation of the break forces actually applied by the brakes. This operational error that had occurred would still have been revealed in good time if the brake checks, which are provided for this purpose and are mandatory according to the regulations, had been carried out.

As the regulations provide a risk control measure, in the form of the mandatory brake check, that is established and tried-and-tested in the railway sector for identifying this kind of operational error in good time and so that there are no consequences, no separate safety recommendation will be issued in relation to causal factor [F1].

In relation to the causal factor “Omitted test process to reveal operational errors” [F2]:

The regulations for performing a simplified brake check on locomotive-hauled freight trains were specified in guideline 915. The investigation based on the electronic journey recording data showed that, following his operational error relating to coupling and opening the main brake pipe, the driver then also did not perform a brake check, which was a further operational error. Based on the actions registered according to the electronic journey recording, it could be seen that corresponding operations such as releasing and applying the brake, which would be the typical sequence for the brake check, were not carried out. This procedure would have been able to identify whether the pneumatic brake was working effectively on the train set,

or it would have revealed earlier operational errors such as the main brake pipe not being coupled continuously.

The Federal Authority for Railway Accident Investigation issued safety recommendation no 2014/06 in 2014: *“In the medium and long term, technical equipment should be used for the reliable performance of brake checks in freight transport throughout Europe in order to minimise the rate of human errors.”*

This remains relevant in relation to the occurrence of the identified operational error, which was subsequently classified as systemic factor [F2]. For this reason, no further safety recommendation will be issued in this case.

In relation to the systemic factor “Safety culture within the company” [S2]:

As a result, it was identified that the driver responsible at the time of the event had no situational awareness of the need to perform a simplified brake check, in spite of the fact that there was evidence of observations and regular further training being carried out. The driver already felt under time pressure to comply with the time-critical timetable in order to reach the border crossing into Denmark and then the construction site, and this was increased by phone calls from the railway undertaking during the driver’s journey. The driver took these calls even when approaching stop signals, which he was prohibited from doing according to the railway undertaking’s operational regulations. It must be assumed that this situation, which affected the driver, resulted in the identified operational errors and possibly also reduced the diligent observance of the activities required according to the regulations when changing direction and in relation to a required brake check. The processes during shunting carried out in only just over 14 minutes support this assumption. Based on the registered electronic journey recording data, it was possible to identify that the permitted shunting speed was exceeded and that the approach to the stationary train set was carried out from the rear driver’s cab.

As a result of this, it can be determined that observations and regular training are required in principle in order to instruct employees on operational reliability and to ensure that they are diligent when performing their duties.

However, it was also possible to identify that there are significant gaps in terms of safety consciousness within the organisation of the company. This is proven by the findings about a lack of safety considerations and incomplete processes relating to driving with restricted

knowledge of the route, as well as production processes with tight time frames that affect the driver's working situation.

At the time of the event, Regulation 1158/2010 and the criteria of its Annex II provided the standards for a safety system to be set up at the railway undertaking. In derogation from Regulation (EU) 1158/2010, now Section 7.2.3 of Delegated Regulation (EU) 2018/762 requires a company to provide a strategy to continually improve safety. This includes the company creating a safety culture within its organisation, within which, in relation to this event, a driver is aware that correct conduct when preparing the train and performing a brake check is much more important than the economic interests of a railway undertaking, and acts accordingly.

The term safety culture was only established in the harmonised legal framework with this introduction of Delegated Regulation (EU) 2018/762 as the superseding legal regulation; refer to the relevant recital (7):

“The way safety is perceived, valued and prioritised in an organisation reflects the real commitment to safety at all levels in the organisation. Therefore, it is also important for railway undertakings and infrastructure managers to identify the actions and behaviours that can shape a positive safety culture and to promote through their safety management system this culture of mutual trust, confidence and learning in which staff are encouraged to contribute to the development of safety by reporting dangerous occurrences and providing safety-related information.”

For this purpose, Delegated Regulation (EU) 2018/762, Annex II, defines, among other things, new supporting criteria for the railway undertaking's safety management system:

Based on criterion 2.1.1.j), the top management is obliged to improve the effectiveness of the SMS by

“...promoting a positive safety culture.”

Criterion 7.2.3 requires a strategy to improve the safety culture:

The organisation shall provide a strategy to continually improve its safety culture, relying on the use of expertise and recognised methods to identify behavioural issues affecting the different parts of the safety management system and to put in place measures to address these.

In relation to the identified safety culture, there are therefore requirements that have now been substantiated for the railway undertaking, which could have provided support for the development and implementation of the operational planning and performance processes that were significantly inadequate in this event. The railway undertaking is now required by law to establish a positive safety culture and an appropriate strategy, and is responsible for this as part of meeting its obligations as an operator. A strengthened positive safety culture in the daily operational life of the railway undertaking may, for example, be expressed in corresponding attitudes and values of employees, by avoiding the occurrence of time pressure, and by performing safety-relevant testing work, such as a brake check, based on a conscious conviction.

From the perspective of the Federal Authority for Railway Accident Investigation, there is therefore no need for a corresponding safety recommendation.

5.2 Measures taken since the event

After the event, the railway undertaking informed the Federal Authority for Railway Accident Investigation that corrective measures were being implemented relating to the following aspects:

- A reintegration plan was prepared and implemented for the driver in the form of three days of retraining with subsequent testing. The subsequent redeployment of the driver was carried out according to a plan stipulated by the railway undertaking.
- The railway undertaking issued an operational instruction prohibiting trains being hauled from being coupled to the leading train with both the main reservoir pipe and the main brake pipe.
- The simplified brake check on the first vehicle behind the coupling point, which is permissible according to guideline 915.0104A01, was invalidated for the railway undertaking's employees with the content of the following instruction from the railway undertaking:

"[...] Even if the simplified brake check is carried out by the train driver alone, the testing of the continuity of the main brake pipe and the effectiveness of braking

on the last vehicle must not be omitted. Bear in mind the additional time that will be required for this work.

First service braking following departure of a train

After the departure of the train, and also after changing direction and changes to the train formation, always check the effectiveness of braking as part of service braking (main brake pipe pressure reduction 0.8 bar). This “test braking” must be performed promptly and in a suitable location. During this process, check whether the braking action achieved matches the specifications on the braking sheet.

If this is not the case, the permitted speed must be reduced to the extent that operational hazards can be excluded. The complete brake check must be repeated at the next station.”¹

- The railway undertaking revised the rules in the operational regulations SPITZKE.5301. The acquisition and maintenance of full and restricted knowledge of the route are now documented. In addition, new rules have been defined relating to monitoring knowledge of the route.
- The subjects in the regular further training lessons for the drivers have been adjusted.

5.3 Additional observations

Not applicable.

6 Safety recommendations

No safety recommendations have been issued.

¹ Source: Operational instruction Spitzke.04_2022