Translation of an excerpt of the investigation report

“Train derailment at Saarbrücken station marshalling yard 06/12/2022”

Status as of 15/10/2025, 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 06/12/2022 at around 1:45 pm, six wagons of the freight train KT 41229, which was travelling from Forbach (France) to Saarbrücken marshalling yard, derailed when pulling into track 125 in Saarbrücken station marshalling yard North Group on points W62.

1.2 Consequences

There were no injuries or fatalities. Six wagons in positions 3 to 8 derailed. Load spilled from a tank container.

Material damage was caused to vehicles, the track infrastructure as well as the control and safety system amounting to EUR 890,000.

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.

Action/failure/circumstance/incident	Causal factor	Contributing factor	Systemic factor
Incident: Derailment of a wheelset at points W62	Partial lack of frictional connection between ribbed plate and sleeper [F1]		
Incident: Malfunction of the track superstructure system	Combined individual faults in the track position of points W62 [F2]		Insufficient wear reserve [S2a] Extensive discretionary powers when inferring suitable maintenance measures [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:

It is recommended that, in order to ensure the safety of railway systems, the risks when using the regulation for inspection of the track superstructure, in particular when individual faults occur in combination, must be reassessed in accordance with Regulation (EU) 2018/762 Annex II section 5.2.4 in conjunction with section 3.1.1.1 .

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

Despite the atypical evidence about the process of the derailment, it was assumed that the initial derailment already took place in the area of track points W62. It was not possible to identify any influences from the driving behaviour, loading level or the maintenance condition of the vehicles.

The derailment of the KT 41229 when pulling into Saarbrücken station marshalling yard is therefore deemed to have been caused by superstructure faults in points W62 not being remedied in a sustainable manner.

In relation to the causal factors "partial lack of frictional connection between ribbed plate and sleeper" [F1] and "combined individual faults in the track position of points W62" [F2]

The partial lack of frictional connection between ribbed plates and sleepers [F1], in conjunction with individual faults occurring in combination [F2], resulted in a wheelset of the train set losing secure track guidance at points W62 and triggering the derailment events. The track position faults in the area of the derailment were attributed to the maintenance condition of the rail support on the right in the direction of travel in points W62 and were the result of a prolonged trend in which the condition deteriorated.

In relation to the systemic factors "insufficient wear reserve" [S2a] and "extensive discretionary powers when inferring suitable maintenance measures" [S2b]

Due to maintenance measures not being sufficient or not being performed in a sustainable manner after previous measurements that exceeded limits, the wear reserve was considerably reduced. Contrary to Regulation (EU) 2018/762 Annex II section 5.2.2, the safe operational state and the expected level of performance of the assets was no longer permanently guaranteed. The track position faults manifested themselves in increasingly short intervals and more extreme characteristics, meaning that the wear reserve decreased further and therefore, contrary to guideline 821, the safe condition of the system was already no longer guaranteed between conducting the inspection and performing maintenance.

In general, the infrastructure manager's regulations do not provide any supporting inspection and assessment standards for combined individual faults on other main tracks. The responsibility for initiating and performing work is solely a matter for the expertise and individual assessment of the designated person responsible for the system for train operation. This does not correspond with the requirements of Regulation (EU) 2018/762 Annex II section 5.2.4, according to which a systematic approach is needed to control risks where relevant for the supply of maintenance.

The described procedure of DB Netz AG relating to the identification, classification and remedial measures to be initiated for individual faults occurring in combination resulted in the identified maintenance condition. In accordance with the requirements of Regulation (EU) 2018/762, a risk-oriented reassessment therefore seems to be needed, which is why the Federal Authority for Railway Accident Investigation is issuing safety recommendation 14/2025 in relation to this. In accordance with Regulation (EU) 2018/762 Annex II section 3.1.1.1, risks must be identified and analysed, and evaluated by applying appropriate risk assessment methods. According to the Regulation, the risks that need to be considered include human and organisational factors, as well as the suitability of maintenance procedures.

5.2 Measures taken since the event

The track position faults that caused the event have been rectified by the infrastructure manager.

In the reply process, the infrastructure manager contested the aforementioned findings and conclusions of the Federal Authority for Railway Accident Investigation. However, at this point the infrastructure manager was not able either to provide an internal investigation report or to provide evidence of the extent to which the maintenance-related incidents identified by the investigation conducted by the Federal Authority for Railway Accident Investigation had been identified internally and further remedial measures to improve the internal organisation had been introduced.

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
14/2025	Safety authority: It is recommended that, in order to ensure the safety of railway systems, the risks when using the regulation for inspection of the track superstructure, in particular when individual faults occur in combination, must be reassessed in accordance with Regulation (EU) 2018/762 Annex II section 5.2.4 in conjunction with section 3.1.1.1 .	Infrastructure manager