Translation of an excerpt of the investigation report

**“Train derailment Ludwigshafen-Oggersheim on 31/10/2024”**

Status as of 20/10/2025, 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 31/10/2024 at around 10:46 pm, the signaller at Ludwigshafen-Oggersheim station approved the arrival of the EZK 55240 with a written instruction, even though points W7 and W9 were not in the required end position and were displayed as faulty. The EZK 55240 subsequently derailed at points W7.

## 1.2 Consequences

The event did not result in any injuries. Property damage was caused to the infrastructure and the traction unit (TU) of the EZK 55240.

## 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.

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:<br>Date/time, and<br>action/failure/circum-stance/incident | Causal factor | Contributing factor | Systemic factor |
|---|---|---|---|
| 31/10/2024<br>Action<br>At an unknown time on the day of the event, a third party placed objects in the moving parts of points W7 and W9. | Interference with the functionality of operating equipment [F1] | | |
| 31/10/2024, 10:41 PM<br>Failure<br>After becoming aware of the faults on points W7 and W9, the signaller failed to determine the correct position of the points in the outdoor installation. | No determination of the correct position of the points [F2] | | |
| 31/10/2025, 10:42 PM<br>Action<br>The signaller approved the arrival of the EZK 55240, even though the requirements necessary for this purpose were not met. | Requirements for train movement not met [F3] | | |

Table 1: Summary of influencing factors

## 1.4 Safety recommendations

The Federal Authority for Railway Accident Investigation is not issuing a safety recommendation relating to the present event.

# 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 train derailment of the EZK 55240 was attributed to three causal factors. Firstly, a third party placed objects in the moving parts of points W7 and W9 [F1], which meant that they could no longer be brought into the right position required for the train movement. The resulting actions of the responsible signaller at Ludwigshafen-Oggersheim station resulted in the derailment, because she did not determine the correct position of the points in question in the outdoor installation [F2] and she then allowed the arrival of train movement EZK 55240 into the station, even though the requirements necessary for this purpose were not met [F3]. Factors [F2] and [F3] were situational individual errors in the application of relevant operating procedures by the signaller, without it being possible to identify a systemic deficiency.

**In relation to the causal factor "Interference with the functionality of operating equipment" [F1]**

The obstructions in the moving parts of points W7 and W9 were caused by a third party in the period between 10:06 pm and 10:41 pm. This action was the starting point of the subsequent chain of events relevant for the safety investigation. As this causal factor [F1] is a factor not related to the railways, the Federal Authority for Railway Accident Investigation has not issued a safety recommendation.

**In relation to the causal factor "No determination of the correct position of the points" [F2]**

Due to the objects placed in points W7 and W9, it was not mechanically possible for the two remote-controlled points to be brought into the right position. When any attempt was made, this resulted in a corresponding fault message on the Ludwigshafen-Oggersheim signaller's control desk. In accordance with guideline 408.0601 Section 1(1)(c), in this case as part of the track examination the signaller should have determined the correct position of the points in the outdoor installation or should have had this determined by a suitable colleague. The applicable operating regulations are relevant for this point. If the signaller had determined the correct position of the points in the outdoor installation, she would probably also have found

the objects between the point blades and stock rails. After removing the objects, the points would have probably moved into the end position and the train movement EZK 55240 would have been able to pass Ludwigshafen-Oggersheim station as signalled. The investigation was not able to clarify why the signaller ignored this point of guideline 408 and did not determine the correct position of the points in the outdoor installation.

As guideline 408 is clear on dealing with fault messages for remote-controlled points as part of a track examination, no safety recommendation is made in relation to causal factor [F2].

**In relation to the causal factor "Requirements for train movement not met" [F3]**

In accordance with guideline 408.0231 section 1(1), before a train movement can be allowed into a station, among other things, the points to be travelled on must be in the correct position. The investigation showed that it was not mechanically possible to bring track points W7 and W9, which were needed for the train movement of the EZK 55240, into the right position required for the train movement. This resulted in fault messages for the Ludwigshafen-Oggersheim signaller about both points. As shown in factor [F2], the signaller should have determined the correct position of the points in the outdoor installation as part of the track examination. As she did not do this, the requirements for approval of the train movement were not met at the time when the signaller sent the written instruction to the driver of the EZK 55240. The signaller therefore should not have approved the train movement of the EZK 55240 at this time. Causal factors [F2] and [F3] are therefore closely related to each other. During the investigation it was not possible to clarify why the Ludwigshafen-Oggersheim signaller still approved the journey of the EZK 55240.

As guideline 408 is relevant for the track examination and therefore the requirements for a train movement in a station, no safety recommendation is issued in relation to causal factor [F3].

During the investigation of the event, it was determined that there were shortcomings in human actions when implementing the corresponding regulation requirements. With the final report on the train collision between Meinersen station and Leiferde (b. Gifhorn) halt, the Federal Authority for Railway Accident Investigation issued safety recommendation no. 04/2025, which recommended improvement of competence management. This safety recommendation can be applied without restriction to the shortcomings identified in this case.

### 5.2 Measures taken since the event

The signaller was taken out of operational service after the event and given retraining. The retraining included theoretical instruction and simulation training, both on various possible general faults and on the fault that occurred on the day of the event and how they should be dealt with in line with the regulations. Following the retraining, it was intended that the signaller would take another operating test for Ludwigshafen-Oggersheim signal box. However, this did not take place because during a training session with assessment of results it was determined that the signaller did not demonstrate sufficient operational reliability. According to the infrastructure manager, the employee will therefore not be used as a signaller until further notice.

### 5.3 Additional observations

Not applicable.

## 6 Safety recommendations

Based on the results of the investigation and the conclusions reached, no safety recommendation is issued.