Translation of an excerpt of the investigation report

“Level crossing accident Hamburg-Harburg – Hittfeld on 11/02/2025”

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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 text presented here was translated fully automatically and without human review by the European Commission's eTranslation service.

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

At around 2:06 p.m. on 11 February 2025, InterCityExpress (ICE) 613 from Kiel Hauptbahnhof (Hbf) to München Hbf collided with semi-trailer truck loaded with rails at km 340.39 between the Hamburg-Harburg station (Bf) and Hittfeld station (Hp) at the level crossing (BÜ).

1.2 Consequences

In the event, a passenger was deadly injured. One passenger was severely injured and 23 others were slightly injured. Material damage to the vehicles involved and the existing railway infrastructure amounted to an estimated 11,520,000 euros.

1.3 Causes

As part of the investigation of the event, the following acts, omissions, incidents or circumstances were identified as safety-critical factors. These are differentiated into causal or contributing and systemic factors in accordance with Implementing Regulation (EU) 2020/572. In addition, identified shortcomings in emergency management are addressed.

For a better clarity of the factors and aspects of emergency management, a classification with markings in square brackets is used.

A detailed evaluation of the event under classification as safety-critical factors is given in the following chapters.

Done at: date/time, and Action / omission / circumstance / incident	Causal factor	Contributor factor	Systemic factor
2008 Ril 815.5000 stipulated in general terms that a width of 3.00 m beside the barrier tree was to be kept free for the clearance of the BÜ on the opposite side. Special features in the topology of BÜ were not taken into account	EBO in Ril 815 not fully implemented [F1]		Ril 815 of the EIU incomplete to take into account interactions vehicle type and topology [S1]
11.02.2025 14:05 The truck drove the BÜ Reller with v ≤ 6 km/h. Clearence was hindered by the barrier in Quadrant II.	Reduced clearence time due to obstruction of clearence by barrier tree not recognized as a safety risk [F2]		Insufficient knowledge transfer for Alv regarding BÜ [S2]
Since 2024	No control of risks arising from rights of		Context of the organisation of the

The EIU did not use the possibility of restricting the right of way for large vehicles for reasons of safety at the BÜ pursuant to § 2 of the authorisation agreement for the private road Reller	way on the private road of the EIU with BÜ [F3]		EIU operation of private roads insufficiently defined responsibilities and rules [S3]

Table1: Summary Influencing factors

1.4 Safety recommendations

Ref. No	Addressee and safety recommendation	Concerns companies
06/2026	Safety authority: It is recommended that Ril 815.5000 – Construction installations of technically secured BÜ plan –, Section 6 – Sites of barriers and semi-barriers plan – be supplemented in such a way that the requirements of the EBO, Annex 5, Figure 3, are fully implemented, also for BÜ with narrow local conditions, in particular for curves and bends in the course of the intersecting road.	EIU
07/2026	Safety authority: It is recommended that section 2 of Ril 815.8000 – Structural inspections and additional inspections at BÜ –, paragraph 10 – Measures to monitor traffic trends – be supplemented in such a way that account is taken not only of the traffic levels on the transverse road, but also of the type and size of road vehicles circulating on it.	EIU
08/2026	Safety authority: In the case of existing installations with narrow radii of the transversal roads in the evacuation area of BÜ, it is recommended to check the locations of the barrier drives and the length of the barrier trees with a view to a possible obstruction of the evacuation.	EIU
09/2026	Safety Authority It is recommended to review the internal responsibilities for the task of local risk control between road and rail transport at BÜ and, based on their definition, to conduct sufficient	EIU

	competence management for the personnel with this safety task to be able to compete (in accordance with Delegated Regulation (EU) 2018/762, Annex II, criteria 2.3.1 and 4.2.1).	
10/2026	Safety Authority It is recommended that the EIU describes in its SMS its own context as owner and operator of private roads and takes it into account when developing, implementing and maintaining the SMS for safety at BÜ, including with regard to affected business areas (according to Delegated Regulation (EU) 2018/762, Annex II, criterion 1.1)	EIU

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

At around 2:06 p.m. on 11 February 2025, ICE 613 from Kiel Hbf to München Hbf collided with a semi-trailer train loaded with rails at km 340.39 between the Bf Hamburg-Harburg and Hp Hittfeld stations on the BÜ. The acts, omissions, incidents or circumstances identified in this investigation report led to the event. Three causal factors and three systemic factors influencing the BEU event were identified.

The causal factor 'EBO not fully implemented in Ril 815' [F1]

With the flat-rate determination in Ril 815 to plan barriers and semi-barriers in such a way that a road width of 3.00 m remains free for evacuation in the opposite direction, the EBO requirement, according to which the length of the barriers must be dimensioned in such a way that road users can evacuate the BÜ unhindered, could not be met at the present BÜ. This requirement was already not met for a three-axle garbage truck. When laying out further towing curves, it also became apparent that the barrier tree in Quadrant II in the lower end position or in self-reducing movement hindered the clearence of large vehicles, such as semi-trailers or trucks, in their mandatory arch travel. The consideration of towing curves in the planning of the locations of the drives and the length of the barrier trees is not explicitly prescribed in Ril 815.5000.

The regulatory gaps in the Ril 815 rulebook meant that the safety deficits at the BÜ Reller were not detected. Recognising the shortcomings at the BÜ and taking measures to remedy the security deficits would have prevented the event.

Also, the facts were not recognized in the context of structural inspections and additional inspections. Measures to monitor traffic development are aimed exclusively at a change in traffic strength and a necessary change in the type of security, in particular for non-technically secured BÜ, due to the EBO. However, a change in the type of traffic, in particular the size of the rolling stock, is also crucial for the stock of BÜs that are technically secured with light signals and half-barriers. Therefore, the BEU recommends Safety Recommendation No.

07/2026 to consider a traffic development not only with regard to the existing traffic levels, but also with regard to the type of traffic on the BÜ.

On the systemic factor 'Ril 815 incomplete for taking into account vehicle type/topology interactions' [S1]

The Ril 815.5000 defines a general clear road width of 3.00 m next to the barrier tree in the lower end position in the clearence direction. This circumstance contributed significantly to the occurrence of the event. The requirement from Ril 815.5000 was complied with at the BÜ Reller. The narrow bend in the area of the BÜ with very low curve radii led to increased area consumption when driving on the BÜ by vehicles of all sizes, which can be detected by towing curves. In the quadrants II and III, there was a constriction due to the very narrow curve radius, which began with a bend within the area closed off by the barriers. On the basis of the towing curves, it was clearly evident that the lowered barrier tree in quadrant II blocked the areas occupied by vehicles in slow or rapid travel during the clearance of the BÜ. Such a special case was not taken into account in Ril 815.5000 by the flat-rate determination of a free road width of 3.00 m. However, in Annex 5, Figure 3, the EBO stipulates that the length of the (semi-)barriers at BÜ must be dimensioned in such a way that they do not impede clearence. It was clear from the towing curves shown for a three-axle garbage truck in Figure 6 and for a semi-trailer in Figure 7 that this requirement of the EBO at the BÜ Reller was not met. There, the clearence for passenger cars would not have been obstructed even with a lowered barrier tree in Quadrant II. For vehicles the size of a three-axle garbage truck or larger vehicles, a conflict-free space of the BÜ was not possible with a lowered barrier in the quadrant II. The accident was ultimately due to the fact that the barrier in Quadrant II was lowered on the rail transport and thus hindered the clearence. Therefore, safety recommendation No 06/2026 is issued by the BEU to review and supplement the regulations in Ril 815.5000. The safety problem described here cannot be ruled out for other existing installations of technically secured BÜ. Therefore, safety recommendation No 08/2026 is also adopted to check the location of the barrier drives and the length of the barrier trees in existing installations with narrow radii of the crossing roads in the evacuation area of BÜ with a view to a possible obstruction of the evacuation.

The causal factor 'Reduced clearence time due to obstruction of clearence by barrier tree not recognised as a safety risk' [F2]

The BÜ Reller was remotely monitored from the ESTW Harburg Süd and equipped with semi-barriers. Remote monitoring means that the system is switched on by driving on switch-on contacts. The system sends information about its operational readiness at all times, but not about a potentially occupied by a vehicle danger room. The freedom of the danger zone is ensured by the use of semi-barriers. The possibility of vacating a BÜ in good time is essential for safety in railway operations. Therefore, according to the EBO, Annex 5, Figure 3, Explanatory Note 3, the length of barriers must be dimensioned in such a way that they do not impede the evacuation of the BÜ. In principle, it must not occur on a BÜ with semi-barriers to lay barrier trees on vehicles or to break through the barrier tree as an emergency measure to evacuate a BÜ.

The breach of EBO's requirements was therefore ultimately decisive for the accident. Due to the clearence conflict described above, the time for clearence of the BÜ was significantly shortened, especially for long vehicles. For such vehicles, the time available for clearence was reduced to the time points between the activation of the BÜ fuse and the beginning of the lowering of the semi-barriers. This meant that for these vehicles, which took a particularly long time to cross the BÜ due to their length and the local circumstances, a particularly small time quota was available for the evacuation of the BÜ. The damage to the guard rails in the BÜ area recorded in the inspection record of 16 October 2024 suggests that precarious situations had already arisen in the past during the evacuation of the BÜ. From the towing curves available, it was apparent that the reduced time quota for clearence was applicable to all vehicles, except passenger cars. The fact that the accidental vehicle was subject to a derogation pursuant to Section 70(1)(1) and (2) of the StVZO was not decisive for the accident. Without obstruction by the barrier in Quadrant II of the BÜ Reller, the vehicle would have had a time of 44 seconds to clear the BÜ. It can be assumed that, even under the aggravating local conditions, it would have been highly likely that this vehicle, in the existing configuration, would have managed to clear the BÜ in good time during that period. The obstruction of the clearence by the barrier and the associated loss of more than two thirds of the time quota for the clearence of the BÜ, as well as the fact that this was not recognised by the EIU, was therefore the cause of the occurrence of the event.

It should also be noted that, in view of the behaviour shown by the driver of road transport after lowering the barrier on his vehicle, it could no longer be expected that further dangers would be averted in a deliberate and rapid manner. Instead, from that point on, there was a situation no longer controlled with regard to further safety for road users and road users.

The systemic factor 'insufficient knowledge transfer for Alv regarding BÜ' [S2]

The exercise of responsibility for safety at BÜ requires basic knowledge of the persons involved, both with regard to railway installations and with regard to road installations in the BÜ area. The responsible Alv superstructure, as well as its predecessors, did not recognize the safety deficits at the BÜ Reller. But he wasn't trained for it either. According to the applicable regulations, the training programme for district road managers only provided for eight out of 256 teaching hours for the imparting of knowledge about BÜ. Although the minutes of the assessment meeting on the Alv superstructure in the Maschen maintenance district contained the topic of BÜ, they were not sufficiently detailed with regard to the contents to draw conclusions for the knowledge imparted with regard to the disclosed risk at BÜ Reller. There were no indications in the Ril valid at the time of the accident that towing curves or the analysis of towing curve representations belonged to the contents of the training for the construction supervision railway superstructure / structural engineering or the district ladder roadway. The low number of hours spent on content transfer to BÜ in relation to the overall level of training suggests that the Alv Oberbau lacked or only had very limited knowledge of the road design criterion. It can therefore be assumed with a high degree of probability that the Alv Oberbau could not identify the safety risks at the BÜ Reller and that these also remained undetected within the EIU due to the lack of further responsibilities. Therefore, no company or construction measures were initiated by any instance to eliminate them.

The Alv superstructure is responsible for the roadway in its maintenance district. The requirement profile for the maintenance of BÜ is so complex in itself that the entire scope of the required knowledge can only be imparted incompletely during training. Basic knowledge of the recognized rules of technology in road design and road construction, in particular for the application and interpretation of towing curves, can therefore not be fundamentally assumed for Alv Oberbau. The timelines in the run-up to the accident and in connection with the accident, the non-recognition or ignoring of the safety risks at the BÜ Reller by all those responsible at the EIU since 2014 confirm this.

Maintaining Alv's insufficient competence with regard to BÜ in terms of content may again lead to dangerous situations in similar circumstances in the future. From the BEU's point of view, it should therefore be noted that the EIU's SMS did not fully identify the competences necessary for the safety-related tasks of an Alv with regard to cross-system risks at BÜ, as required by CSM SMS, Annex II, criterion 4.2.1, and therefore did not provide them in the training programme. However, the imparting of this knowledge must also be preceded by the entrepreneurial decision according to an appropriate competence of the tasks according to CSM SMS, Annex II, criterion 2.3.1.

From the point of view of the BEU, the question arises as to whether this task should remain the responsibility of the Alv Oberbau.

The BEU therefore recommends Safety Recommendation No 09/2026 to review the internal responsibilities for the task of local risk control between road and rail transport at BÜ and, on the basis of their definition, to operate a sufficient competence management system for the employees commissioned with this safety task in the future. For this purpose, reference is made to the criteria of Delegated Regulation (EU) 2018/762, Annex II, criteria 2.3.1 and 4.2.1. relevant for the EIU.

The causal factor 'No control of the risks arising from rights of way on the private road of the EIU with BÜ' [F3]

As a road load carrier, the EIU had the traffic safety obligation for the road Reller. At the latest as a result of the traffic show on 26 August 2014, the EIU was aware that long vehicles used the BÜ Reller. The use of the BÜ for construction site traffic initiated by the EIU should not have led exclusively to a check of the locations for signage with VZ 208 and 308, but to a general check of the suitability of the BÜ for such traffic. The towing curves not only clearly demonstrated the clearence conflict, they also revealed the generally tight conditions at the BÜ. The damage recorded during the inspection on 16 October 2024 could also be interpreted as an indication of problems with the use of the BÜ by long vehicles. In connection with a general review of the suitability of the BÜ for extensive traffic with long vehicles, the EIU should also have communicated with all residents, including Vossloh Rail Services Deutschland GmbH, with regard to all traffic taking place. In the course of the investigation, the EIU was not able to demonstrate that the safety risks at the BÜ had been identified and that appropriate measures had been taken to ensure safety at the BÜ.

The accidental tractor unit was registered in the Republic of Romania and operated in the Federal Republic of Germany with a derogation pursuant to § 70 (1) No. 1 and 2 StVZO, combined with a licence pursuant to § 29 (3) StVO. In accordance with German case-law, the derogation/permit also applied to roads which, like Straße Reller, were not dedicated to public transport but on which public transport actually took place. In the specific case, the transport vehicle was configured with a length of 20.40 m and a width of 2.55 m. The load protruded about 1.40 m above the rear end of the tractor unit. The semi-trailer thus complied with the requirements of the exemption/permit and was therefore allowed to drive on the roads of the territory of the Federal Republic of Germany without a hearing. The permit pursuant to § 29(3) StVO contained the conditions for checking the routes with regard to possible conflicts and crossing BÜ at a speed of at least 20 km/h and without manoeuvring. For public transport routes, i.e. dedicated transport routes, a road user must be able to assume that they are built and maintained in accordance with the recognised rules of technology. The same applies to private traffic routes within the framework of the traffic safety obligation. Specific restrictions on the use of the Reller road by residents, i.e. also for transports to and from the Hamburg welding plant, were not recognizable to users either by the signs or by physical obstacles. Nor had the residents themselves been given any restrictive requirements by the EIU for their traffic or traffic carried out by commissioned third parties.

In this respect, the driver of the transport could in principle assume that the BÜ Reller was passable for its transport. In application of the derogation/permit and as a resident, the use of the BÜ Reller for this rail transport appeared possible, and even mandatory in terms of route and accessibility. According to § 2, the authorisation agreement from 2008 between the EIU and the owner of the Hamburg welding plant would have given the EIU the opportunity to block the BÜ Reller for large vehicles. This could have been done in terms of traffic by limiting the length or load or physically by means of barriers, bollards or other obstacles along the road. The prerequisite for this, however, was the detection of safety risks from the traffic of long vehicles on the BÜ.

According to the BEU's investigations, the EIU, as the operator of the private road, did not have any basic organisational rules for the performance and organisation of this task. Therefore, with regard to safety improvements, reference should be made to the following comments on the systemic factor [S3].

The systemic factor ‘Context **of the organisation of the EIU with regard to Operation of private roads, insufficiently defined responsibilities and rules ’ [S3]**

The operation of private roads, especially those on which public transport takes place, requires processes that must be established as part of the traffic safety obligation to control risks. The EIU could not provide the BEU with established processes and rules for the operation of private roads owned by the BEU.

The road safety obligation, which is in principle the responsibility of the owner of the road, in this case the EIU, would have required such processes. Basically, this required to have knowledge of the property as such and the resulting owner obligations. This continued through the organized definition of responsibilities and a reproducible competence management of the personnel entrusted with tasks. The implementation and enforcement of safety-related measures on such roads required detailed knowledge of their design, construction and operation. The investigation revealed that the EIU did not fully comply with the responsibility arising from ownership of the Reller road. As the person responsible for the operation of the Reller road, the EIU referred to the Alv superstructure for the Maschen maintenance district. However, it could not prove its jurisdiction. Nor could the EIU prove that the group of persons allegedly involved in the operation of the road had the necessary skills and knowledge to maintain the road in accordance with the recognised rules of technology and also to legally accompany the use of the road by residents and their visitors or agents.

For the Alv superstructure for the mesh network district, which has been in charge since 2010, special knowledge in the field of road design was also undetectable. In the general internal development stages for the Alv superstructure of the EIU, no knowledge of this kind was imparted. It was also not possible to understand whether Alv Oberbau, designated by the EIU as responsible for Straße Reller, had been made aware of his competence or the content of the authorisation agreement from 2008 by the EIU.

The lack of competence management with regard to the legal and structural-constructive tasks and issues prevented the Alv superstructure from fulfilling the task of ensuring the safe operation of the Reller road. The lack of appropriate rules on responsibilities and operational aspects of own roads in the SMS of the EIU meant that the possibility of excluding the journeys of large road vehicles for the purpose of sufficient safety of the railway crossing over the course of the Reller road was not availed. The restrictions could have been made, for example,

by structural measures, such as bollards or barriers, as well as in consultation with the competent traffic authority in the preceding public road area, by appropriate signage.

In the course of the investigation, the BEU found that the EIU had not internalised its inherent context as the owner and operator of private roads with partly public transport and therefore had not placed any further organisational restrictions on them. In particular, the SMS lacked clearly defined responsibilities for all tasks arising from the operation of such roads, associated responsibilities, responsibilities and corresponding competence management for the personnel entrusted with the respective tasks. Particularly in the case of BÜ with comparable local conditions, the organisational maturity of the EIU found may lead to similar events in the future.

For the future improvement of safety, the EIU must therefore describe its own context as owner and operator of private roads with BÜ in its SMS. The EIU has to identify the resulting safety risks for its own railway operations, as they exist comparatively for public BÜs and are controlled there by the road construction and road traffic authorities. Since its tasks fall to the EIU itself for its own private roads, it must be determined to the extent that it is involved with itself.

In doing so, it is also responsible for identifying and maintaining the legal and other safety requirements for the construction and operation of the private road with effect on safety at the BÜ. These include, for example, the definition and implementation of the appropriate design of the road traffic area and the enforcement of necessary traffic rules. These requirements must be taken into account in the development, implementation and maintenance of the SMS. This also entails specifying and taking into account the scope of the SMS in this respect, specifying the business areas concerned. This includes, for example, the internal responsibilities for the construction and operation of the private road, in conjunction with the definition of the responsibilities of the personnel, and the operation of appropriate competence management. Also, own or located within the encompassing group of Deutsche Bahn AG business areas may be affected, for example, with regard to the sale of land discussed in the investigation or contractual management of the use of the private road by residents.

The safety improvement measures described correspond to the legal requirements already applicable to the EIU in accordance with Delegated Regulation (EU) 2018/762, Annex II, criterion 1.1.

The BEU therefore issues Safety Recommendation No 10/2026 that the EIU describes its own context as owner and operator of private roads in its SMS and takes this fully into account when developing, implementing and maintaining the SMS for level crossing security, including with regard to affected business areas.

5.2 Measures taken since the event

As an immediate measure, the road Reller in the area of the BÜ was closed by the EIU after the event. Vossloh Rail Services Deutschland GmbH currently handles rail transport by rail and plans to build a new access route in the future, which will connect to the public road network without a level-level BÜ. In the future, according to the EIU, the BÜ Reller will remain permanently closed to vehicles with a length of more than 9.90 m and should be abandoned as soon as possible.

5.3 Additional observations

Not applicable.

6 Safety recommendations

Pursuant to § 6 EUV and Article 26(2) of Directive (EU) 2016/798, the following safety recommendations are issued:

Ref. No	Addressee and safety recommendation	Concerns companies
06/2026	Safety authority: It is recommended that Ril 815.5000 – Construction installations of technically secured BÜ plan –, Section 6 – Sites of barriers and semi-barriers plan – be supplemented in such a way that the requirements of the EBO, Annex 5, Figure 3, are fully implemented, also for BÜ with narrow local conditions, in particular for curves and bends in the course of the intersecting road.	EIU
07/2026	Safety authority: It is recommended that section 2 of Ril 815.8000 – Structural inspections and additional inspections at BÜ –, paragraph 10 – Measures to monitor traffic trends – be supplemented in such a way that account is taken not only of the traffic levels on the transverse road, but also of the type and size of road vehicles circulating on it.	EIU

08/2026	Safety authority: In the case of existing installations with narrow radii of the transversal roads in the evacuation area of BÜ, it is recommended to check the locations of the barrier drives and the length of the barrier trees with a view to a possible obstruction of the evacuation.	EIU
09/2026	Safety Authority It is recommended to review the internal responsibilities for the task of local risk control between road and rail transport at BÜ and, based on their definition, to conduct sufficient competence management for the personnel with this safety task to be able to compete (in accordance with Delegated Regulation (EU) 2018/762, Annex II, criteria 2.3.1 and 4.2.1).	EIU
10/2026	Safety Authority It is recommended that the EIU describe in its SMS its own context as owner and operator of private roads and take it into account when developing, implementing and maintaining the SMS for safety at BÜ, including with regard to affected business areas (according to Delegated Regulation (EU) 2018/762, Annex II, criterion 1.1)	EIU