



Safety recommendation no. 154

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Safety deficit	<p>At 01:09 on Sunday, 1 March 2020, a passenger's hand got caught in the closing boarding door of a Eurocity passenger coach of the Intercity (IC) Bern-Interlaken Ost at Bern station. The train left a short time later. The passenger ran alongside the car and tried to free his hand. After running alongside the car for about 45 metres, he finally managed to pull his hand out of the rubber door seals. He sustained minor injuries in his efforts.</p> <p>The accident involving a person occurred because technical and construction failures led to the premature deactivation of the anti-trap system in the entrance doors as the doors closed.</p> <p>The following contributed to the accident:</p> <ul style="list-style-type: none">• The use of an anti-trap protection strip with unsuitable material properties.• The maintenance measures introduced to improve the quality of the anti-trap protection were not sufficient to prevent the latter from being deactivated too early as the doors closed.• A person reached their hand into a closing door space.• Only one person was responsible for the departure process in the given situation (train length, wagon types, place of departure, conditions on the platform). <p>The reliability of the switching point of the 'Doors 98% closed' sensor that deactivates the pneumatic anti-trap system is not guaranteed, which means that the anti-trap function cannot be guaranteed before the 98% door closure, contrary to its specification.</p> <p>The pneumatic anti-trap system has been designed to switch off shortly before the doors close. This means there is a risk of parts of the body (e.g. fingers, hands) becoming trapped every time the doors close. This also means that there is always a risk that a person trapped in doorway could be dragged along once the train starts moving. The risk exists for all car types with the same or similarly designed door closure.</p>
Safety recommendation	<p>The STSB recommends that the Federal Office of Transport (FOT) request the vehicle owners concerned to replace systems with an inactive anti-trap protection circuit, such as those installed on Eurocity passenger coaches, standard carriages IV and Intercity driving trailers, with a reliable system that also prevents hands from being trapped.</p>
Addressees	Bundesamt für Verkehr
Stage of the implementation	Partially implemented. The FOT reports that the replacement of the door system of EW IV, EC and driving trailers for SBB passenger transportation is in progress. According to SBB's plans, the upgrading will be completed in 2025.

At the same time, other rolling stock owners were asked whether cars with such door controls are in use and how the transport companies deal with them. No additional risk or need for further action on the part of the FOT is apparent from the survey and the analysis of the railways' responses. Apart from SBB, there are no other railways whose vehicles need to be adapted in the door area.

**Investigation report concerning
the safety recommendation**

Vorbericht
Schlussbericht
Zwischenbericht
