



## Safety recommendation no. 101

<b>Date of the publication</b>	22.09.2016
<b>Number of the final report</b>	2015022001
<b>Safety deficit</b>	<p>On 20th February 2015, shortly after 06:40 in Rafz, on the track near the exit towards Schaffhausen, a regional train collided with the side of an S-Bahn train. The collision can be attributed to the fact that the S-Bahn train driver incorrectly believed that he could depart when a 'Stop' signal was displayed.</p> <p>During the investigation, the cause of the accident was identified to include the following factor: the kind of cooperation in the driver's cab, which gave the impression of mutual control and thereby made it impossible to recognise the error in a timely manner. The investigation found that, among others, the following factors contributed to the accident:</p> <ul style="list-style-type: none"><li>– The coincidental synchronisation of the signal positions which the locomotive crew involved mistakenly believed to be applicable to their own train.</li><li>– Self-imposed time pressure.</li></ul> <p>During the investigation, the cause of the accident was identified to include the following factor: the ability of the S-Bahn train to accelerate to such an extent that it could no longer be stopped by the train control system before the danger point. After the driver's cab has been started up, the ATC indicator displays '8888' which refers to the monitoring of the train's possible top speed. This enables a departure with the greatest amount of acceleration possible, irrespective of the signal placement that is to follow. A speed can thereby be reached at which – with a full application of the emergency brakes by the train control system – it is no longer possible to stop the train before the danger point.</p>
<b>Safety recommendation</b>	<p>The FOT should effect that, after the driver's cab has been started up and until information on the infrastructure has been received, the speed is monitored to ensure it is at a level at which it still remains possible to stop the train before the danger point with a full application of the emergency brakes by the train control system.</p>
<b>Addressees</b>	Bundesamt für Verkehr
<b>Stage of the implementation</b>	<p>Implemented. The FOT states that this safety recommendation is being implemented. The FOT says it is engaged in conversations with the manufacturer of the ZUB262ct train control system regarding this recommendation. An examination is being carried out as to whether the speed of the train could be limited to 40 km/h after the driver's cab has been started up and until information on the infrastructure has been received. Other ZUB train control systems are no longer being developed further. With the implementation of ETCS L1LS by the end 2017, there will continually be fewer trains</p>

running with Euro- ZUB train control systems. With the ECTS L1LS system, the speed is limited to 40 km/h in cases such as this. This safety recommendation has been substantively implemented (not from a technical point of view, but operationally by 'paper cover') by means of the operational measures in regulation I 30111, 6.3, clause 4.1 (SBB/BLS/SOB).

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**Investigation report concerning  
the safety recommendation**

Schlussbericht

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