



Safety recommendation no. 116

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Safety deficit	<p>On 20 January 2016 the rearmost axle of a Habbillnss type Wascosa wagon, which was lined up in the sixth position of a pushed shunting movement consisting of eight wagons, derailed at the Zürich-Mülligen station at set of points 318. The derailment of the rearmost axle of wagon no. 33 85 2891 025-4 at set of points 318 can be attributed to an imbalanced load on the set of wheels. The imbalanced load on the set of wheels was caused by a combination of the following factors:</p> <ul style="list-style-type: none">– Pre-existing damage to the buffers caused by excessive buffer pressures as a result of couplings not being loosened in tight track bends.– Excessive lateral forces at the end of the wagon, caused by excessive buffer pressures.– Pushed, empty wagons crossing diverging points. <p>When travelling through bends or through a set of points with wagons that are coupled too tightly, strong forces develop between the buffers on the inside of the bend, generating lateral forces that affect the wagon body. This process has a significant influence on the risk of derailment in the running behaviour of longer wagons with a larger overhang. If, in particular with empty freight wagons, the ratio between the axle load and lateral force becomes unfavourable, it is possible for an imbalanced load on the set of wheels to occur at any time.</p>
Safety recommendation	The FOT should make certain that technical means in the screw couplings ensure that no inadmissible buffering forces can develop when longer freight wagons travel on track curves with small radii.
Addressees	Bundesamt für Verkehr
Stage of the implementation	Implemented. The FOT advises that UIC standards and, if need be, technical specifications for interoperability (TSI) would need to be adapted to implement technical measures on the screw couplings. From the FOT's point of view using technical means would therefore not be possible within a reasonable period of time and appeared to be disproportionate. However, the FOT sees potential for a significant improvement in the implementation of operational measures. The analysis of the coupling regulations defined in the Swiss transport service guidelines (FDV), which are of higher authority, is one of the points that needs to be actioned as part of the A2020 (year 2020) development plan. Thus, this measure is not exclusively limited to railway sidings (see safety recommendation no. 117) but extends to the entire railway infrastructure.

Investigation report concerning

the safety recommendation

