



## Safety recommendation no. 129

<b>Date of the publication</b>	12.12.2017
<b>Number of the final report</b>	2016090101
<b>Safety deficit</b>	<p>On 1 September 2016 at 07:51 a driverless shunting tractor with four passenger train carriages rolled away from the railway siding at Andermatt station towards Göschenen. Below the Teufelsbrücke bridge the vehicles derailed in the Bänzberg gallery and were thereby stopped. There was no one in the vehicles. There was major material damage to the infrastructure and the vehicles. Railway operations between Andermatt und Göschenen were interrupted for several days. The runaway can be attributed to inadequate clamping force of the shunting tractor's parking brake as the design of the brake rods could not ensure the required friction. Contributing factors to the accident were:</p> <p>Because the parking brake's braking rods are independent of the shunting brake, the brake pads never rubbed against the rotating wheel discs and were never bedded in to the wheel discs. The lack of a guideline for the adjustment and assessment of the parking brake's braking effect. The following factors were neither causal nor contributing in this accident, they were, however, recognised as risky:</p> <p>In the event of a shunting brake failure only the shunting tractor's parking brake is still effective. In this regard, it is safety-relevant that, as a minimum, the parking brake provides the clamping force required for a gradient of up to 40 ‰. The current parking brake does not meet this requirement.</p> <p>The parking brake is mechanically and pneumatically independent of the shunting brake. It is exclusively used when the vehicle is stationary. The brake pads never rub against the rotating wheel disc and are therefore never bedded in to the disc. There is the risk that the friction surface between the brake pads and the wheel disc is too small and the expected braking effect cannot be provided. The shunting brake's brake pads, on the other hand, are worn during operation and are bedded in to the disc across the entire friction surface. In the event of a shunting brake failure on a solo shunting tractor, only the parking brake on the shunting tractor is still effective. In this regard, it is safety-relevant that, as a minimum, the parking brake provides the clamping force required for a gradient of up to 40 ‰.</p>
<b>Safety recommendation</b>	The FOT should prompt the braking concept on shunting tractors of an identical type to be adjusted so that the parking brake is sufficiently effective at all times.
<b>Addressees</b>	Bundesamt für Verkehr
<b>Stage of the implementation</b>	Shunting locomotive 'Tm 2/2 4971' operated by MGB was modified to comply with the safety recommendation on 23.02.2018.

**Investigation report concerning  
the safety recommendation**

## Schlussbericht

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