



Safety recommendation no. 105

Date of the publication	07.10.2016
Number of the final report	2016072601
Safety deficit	<p>On Monday 26th July 2016, at 07:22, a train, consisting of railcar BDe 4/4 no. 5, travelling from Le Locle to Les Brenets derailed on an open stretch of the line due to a fracture on the foremost axle. The axle fractured having travelled an extremely low total distance of 31,519 km.</p> <p>The axles are dimensioned for an indefinite lifespan. The occurrence of a fatigue fracture indicates a fault in construction. With this axle, the drive shaft's keyway extended into the radius between the axle and the body of the wheel. The sharp edges of the keyway allowed cracks to occur in the axle very quickly because of the notch effect, which ultimately led to the axle fracture. In the short-term, there is a high potential risk of axle fractures.</p>
Safety recommendation	The STSB recommends that the FOT has axles with non-compliant keyways replaced.
Addressees	Bundesamt für Verkehr
Stage of the implementation	Implemented. The FOT requested in a letter that the rail transport companies replace non-compliant axles, request approval with provision of a stress test should an anomalous axle be used and guarantee operational safety through monitoring procedures until non-compliant axles have been replaced.
Investigation report concerning the safety recommendation	<u>Rapport final</u>