



Safety recommendation no. 127

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Safety deficit	<p>On Tuesday 26 July 2016 at 07:22, train 6 from Le Locle to Les Brenets, made up of railcar BDe 4/4 no. 5, derailed on open track at kilometre point 2.1, following failure of the leading axle shaft. No one was injured in this derailment. Apart from the axle breaking, damage to the railcar or the infrastructure were minimised. The derailment of railcar BDe 4/4 no. 5 was due to the failure of axle 4, the leading axle in the direction train 6 was moving. Factors contributing to the axle failure:</p> <ul style="list-style-type: none">– Inadequate layout of the keyway on the axle shaft;– Sharp angles at the intersection of the keyway and the journal fillet connecting the crown wheel and the wheel centre;– The state of the rough surface of the machining of the keyway;– The lack of a defined radius between the base and the keyway. <p>The technical documentation provided by the suppliers for vehicles placed into service in the 1950s and the 1960s is not very detailed. The wide range of designs submitted for appraisal demonstrates a certain difficulty in the technical follow-up of these vehicles. Technological development, the often very limited period during which spare parts can be ordered from the initial supplier, and the turnover of maintenance staff could favour the loss of technical knowledge.</p>
Safety recommendation	The STSB recommends that the FOT have the TransN safety management system supplemented to include the process of obsolescence management for safety components of rolling stock.
Addressees	Bundesamt für Verkehr
Stage of the implementation	<p>Partially implemented. The safety management system (SMS) shows how a company deals with safety-relevant aspects in a systematic and targeted manner. The responsibility for this lies with the respective railway company. During the substantive examination of the SMS with regard to the requirements defined in (EU) Regulations No. 1158/2010 (Annexes II and III) and No. 1169/2010 (Annex II), the FOT takes into account the activities and the complexity of the company. The applicant company must ensure that all operational risks are monitored and managed, and that the regulations are complied with. TransN has safety authorisation and a safety certificate which is valid until 1 December 2018. The requirement for risk control regarding maintenance and material procurement (requirement B) was reviewed as part of the renewal in November 2015. In the process, evidence was provided that TransN has the necessary procedures for:</p> <ul style="list-style-type: none">– The clear allocation of responsibilities for maintenance,– The definition of the necessary requirements and

– The identification of risks resulting from defects, design errors or malfunctions during the operating life. The official policies for defining the various limits for safety-relevant parts of the rolling stock were not checked or were not available.
This requirement and the corresponding policies has been examined in more detail as part of a management discussion.

**Investigation report concerning
the safety recommendation**

Rapport final
