



Safety recommendation no. 113

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Safety deficit	<p>On Friday 2 October 2015 at 08:28 the empty goods train TRAVYS 8008, made up of control car BDt no. 53 and engine Be 4/4 no. 2, ran away a little after the station at Ste- Croix, on a line with a gradient of up to 44 ‰, and derailed on open track in a left-hand curve between the stations at Trois-Villes and Six-Fontaines. The driver jumped from the train when it was travelling at a speed of 30 to 40 km/h. He suffered contusions. The control car, at the head of the train, landed on the rails after ripping off two contact line masts, and came to a stop below the track about 150 m after derailing. The engine derailed and became embedded in a contact line mast. Train 8008 ran away because, during the two emergency stops, the level of automatic braking acting on the train had diminished, following various incidents of improper handling, so that the brake effort necessary to render the train composition immobile on a gradient of 40 ‰ was no longer sufficient. Vehicles Be 4/4 no. 1 and no. 2, as well as control cars, which were placed into service in the late 1970s, have particular technical characteristics concerning the automatic brake and the door closure warning system. Regarding the automatic brake, action of the fail-safe or the automatic train stop system causes drainage of the brake pipe and simultaneously of the supply line. Regarding monitoring systems, the door closure warning system (monitoring function) is grafted onto the circuits of the fail-safe (safety function). The solutions adopted on these vehicles differ from those normally realised on other vehicles of that era. Should these devices fail, lack of knowledge of these peculiarities on the part of driving staff may create risk situations.</p> <p>The door closure warning system (control function) is grafted onto the circuits of the fail-safe (safety function) and causes drainage of the brake pipe and simultaneously of the supply line if a door fault appears.</p>
Safety recommendation	The STSB recommends that the FOT separate the circuits of the door closure warning system from those of the fail-safe.
Addressees	Bundesamt für Verkehr
Stage of the implementation	Not implemented. The number of vehicles to modify, the complexity and the costs of such a modification should be evaluated by the transport company. The plan for deploying these vehicles should also be considered, as well as their remaining service life. A count should also be made of the number of cases in which the emergency release system for doors was used by passengers while operating these vehicles. With all these parameters in hand it will be possible to evaluate the necessity (proportionality criteria) of ordering a modification or not.

The company TRAVYS indicates that the two Be 4/4 II are no longer used in commercial passenger service for reasons of comfort and access, but only to service the infrastructure. TRAVYS estimates that the modification would cost around CHF 4,000 for each vehicle. The transformation consists of disconnecting the power supply instead of acting on the fail-safe.

In view of this, the FOT considers that modifying two vehicles that are used only to service the infrastructure would be disproportionate in terms of cost and effectiveness. In view of this, the FOT declines this recommendation. In any case, this specificity should be instructed to driving staff during their initial and continuing training. See also recommendation no. 112 with regard to staff training.

**Investigation report concerning
the safety recommendation**

Rapport final
