



## Safety recommendation no. 132

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| <b>Date of the publication</b>                                   | 19.08.2018  |
| <b>Number of the final report</b>                                | 2016080801  |
| <b>Safety deficit</b>  | <p>A freight train with double traction at the front and a bank engine at the back was travelling from Domodossola to Spiez. Shortly before entering Hohtenn station (VS), an explosion occurred in the second locomotive and the engine room caught fire.</p> <p>The explosion and ensuing fire in the locomotive's engine room was caused by a defect in the NO 32/4 highvoltage tap changer.</p> <p>Although tap changers are monitored, damage to the tap changer housing by an explosion cannot be ruled out. If the tap changer's insulating oil is then sprayed in the engine room and an explosive gas mixture forms in the engine room through oil degradation, an ignition source is enough to trigger another explosion and an ensuing fire.</p> |
| <b>Safety recommendation</b>                                     | <p>The FOT should ask owners of traction units with a tap changer type NO 32/4 or tap changers with an identical operating principle to take measures to prevent the occurrence or spread of a fire after a tap changer explosion due to the release of flammable liquids or gases from leaks, or to reduce the effects.</p>  |
| <b>Addressees</b>  | Bundesamt für Verkehr   |
| <b>Stage of the implementation</b>                               | <p>Implemented. BLS has taken various measures in connection with the explosion of Re 425 169 on 8 August 2016. These relate both to the protection of personnel and to the maintenance and monitoring of the tap changers. With regard to the protection of personnel, measures have been taken against shock waves and flue gases. In addition, maintenance of the tap changers has been checked and adapted. The FOT has asked other owners of locomotives with the NO 32/4 tap-changer to take measures.</p>  |
| <b>Investigation report concerning the safety recommendation</b> | <u>Schlussbericht</u>   |