

## R2016-06 Collision of a freight train with wagons standing on the tracks in the Oulu freight yard on 13 August 2016

An empty timber train on its way from Kemi to Kontiomäki was about to arrive at the Oulu freight yard, where it was intended to stop for two hours and change drivers. The traffic controller ordered the switchman to protect the route to the *Nokela* track 208. The switchman protected the route via track 118 and reported this to the traffic controller.

A freight train arrived on track 118 and collided with the empty wagons standing on the tracks at 16:49 at a speed of 33 km/h. The first two wagons standing on the track reared up due to the force of the impact. The first wagon that reared up broke the right front corner of the first locomotive on the side of its driving table. The second wagon damaged the electric railway portal. Finally, both wagons fell on top of the timber wagons on the neighbouring tracks. The third and fourth wagons standing on the track were derailed. The first locomotive of the train was derailed and tilted heavily to the left. In the accident, the engine driver was injured on the right side of the body.

The accident caused a disturbance mainly affecting traffic in the freight yard, because the main track was constantly in use. Freight trains had to be cancelled from 13 to 15 August 2016. Trains passing through the Oulu freight yard had to be moved using diesel locomotives due to the power cut. Repairs to electrification and rails at the railway yard were completed on 22 August 2016. Damage to stock and equipment due to the accident amounted to a total of €830,000 in value.

The switches at the Oulu railway yard are manually operated, the switches do not have technically implemented position control and there is no indication of occupied tracks on the tracks. Regardless of this, the route was protected for a train.

Risk assessments conducted at the railway yard failed to identify the risks related to the working methods and practices used. For example, overlapping instructions that are not fully consistent were seen as a problem. Some instructions are drawn up for common use, but some of their content cannot be followed everywhere. The instructions are not consistent in all parts, and some of the actors do not know which instructions should be applied to which function.

Neither instructions nor training had been provided on the procedure used to protect a route. The procedure used by the switchman to ensure that the track was unoccupied led to the switchman failing to notice the wagons on track 118. The procedure used in route protection is vulnerable to errors. The switchman alone made the decision to protect the route, and this was not verified in any way.

In addition, the engine driver's attention prior to the collision had been on things other than driving the train. It is likely that greater attentiveness from the engine driver would have either prevented the accident, or at least considerably reduced the damage caused.

In order to avoid similar accidents in the future, the Safety Investigation Authority, Finland, recommends that the Finnish Transport Safety Agency (Trafi), for its part, ensure the implementation of the following new recommendations:

1. The Finnish Transport Agency should restrict trains running on tracks that are not under technical centralised traffic control.
2. The Finnish Transport Agency should harmonise and clarify the instructions on centralised traffic control.
3. The Finnish Transport Safety Agency (Trafi) should order that engine drivers keep a lookout when in train traffic.

In its other comments, the Safety Investigation Authority states that if the intention in Oulu is still to protect the route of a train instead of using shunting operations, a route allowing trains to drive through the Oulu freight yard under the control and monitoring of centralised traffic control could be built at reasonable cost. For example, the route could be built via tracks 121 and 123 to the *Nokela* track, 208. All 17 switches of the route should be replaced by electrically operated ones, and the tracks should be equipped with indicators showing their unoccupied status.