

## R2016-03 Collision of tank wagons with buffer stop during shunting in Mussalo, Kotka, on 8 July 2016

A radio-controlled shunting unit collided with a rail barrier and two tank wagons loaded with SPB gasoline were derailed at the port of Mussalo in Kotka on the night of Friday 8 July 2016. As the first wagon was derailed, the end of the second wagon mounted the under-frame of the first wagon. Because the height difference was so great, the override protection on the central buffer coupling was unable to prevent the couplings from detaching from each other. A dent around 25 cm deep and almost a metre in diameter was made in the tank of the first wagon, due to the force exerted by the central buffer coupling of the second wagon. However, no leak occurred. No injuries or disruptions of rail or road traffic occurred as a result of the accident. The total costs caused by the accident were around €30,000.

The shunting foreman directed the shunting movement that led to the collision from an adjacent road, observing from the estimated cut-off point of the wagons. He was around 200 metres from the buffer stop when steering the shunting movement towards it. He stopped the movement and separated the wagons left on the track. He only noticed the accident after performing the next shunting movement.

An emergency call was made to the emergency response centre nine minutes after the derailment. A lot of time was taken to notice the collision and raise the alarm, which was not important in this case, however. The delay was partly caused by the fact that there are differences between the instructions of different operators in the port area on raising the alarm about accidents.

The immediate cause of the accident was the placing of the shunting foreman during shunting, where he could not see the end of the track during the final stage of shunting. The choice of place from which to control the shunter affected his assumption that the unit's cut-off point would be inside the gate.

The current instructions do not precisely define the placing of the shunting foreman, or observation by radio-control during work. According to regulations, such work should be done in a way that allows the shunting unit to be stopped before reaching any obstacle whatsoever. In general, shunting accidents happen because the control station chosen is incorrect. The safety management system was unable to address this erroneous practice effectively. In the case of shunting, supervision by the foreman does not work as required by the safety management system.

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 Safety Agency (Trafi) and railway operators should improve the supervision of shunting work.
2. Infrastructure managers are responsible for ensuring that the usable track length in railway yards are consistent regardless of the system.
3. Railway undertakings should comply with local emergency plans in ports and other areas where other companies are also operating.
4. Infrastructure managers should modernise buffer stops on tracks where shunting work is done related to the transport of dangerous goods.

As other observations, the Safety Investigation Authority notes that because the *Government Decree on the Transport of Dangerous Goods by Rail* is reviewed every two years and VR Group Ltd's dangerous goods refresher training is arranged every five years, in the worst case scenario there could be two amendments of the Decree between refresher training. Such amendments should therefore be covered by refresher Traffic Safety Training (LIITU), for example.