

## R2017-03 Level crossing accident which led to four deaths at Raasepori on 26 October 2017

A rail bus travelling from Karjaa to Hanko collided with a Defence Forces high mobility terrain vehicle in Skogby, Raasepori, at an unprotected level crossing at 8am on Thursday 26 October 2017. A pioneer unit from the Uusimaa Brigade was engaged in an attack exercise, moving vehicles from Skogby to Syndalen in Hanko. There were eight conscripts in the high mobility terrain vehicle: three in the cabin and five on the platform. In addition to the driver, 15 passengers were travelling on the rail bus.

The conscripts in the cabin of the high mobility terrain vehicle did not notice the approaching train and did not hear its warning sound. There was insufficient time to reduce the speed of the rail bus, despite emergency braking by the train driver. The collision was serious. The conscripts travelling on the high mobility terrain vehicle were thrown out of the vehicle. Three conscripts and one rail bus passenger were killed in the accident. Three conscripts were seriously injured and two were slightly injured. Some rail bus passengers suffered minor injuries. The Defence Forces high mobility terrain vehicle was completely wrecked in the accident and the nose section of the rail bus was damaged. The total costs caused by the accident were around €270,000.

Skogby's level crossing was particularly dangerous due to the angle of the track and road and the lack of warning devices. From the cabin in the high mobility terrain vehicle, it was difficult to see the train approaching at an angle from the rear. The section of line had a speed limit of 120km/h. A lower train speed would give train and vehicle drivers more time to react and take action as they approach a level crossing, and would reduce the damage in possible collisions.

Level crossing improvements coordinated by the Finnish Transport Agency tend to have been made in order to increase the speed of railway lines. Because funds have been granted for the improvement of level crossings in conjunction with railway line projects, repairs have often not been targeted at the most dangerous level crossings. The Finnish Transport Safety Agency is aware of the problem, but has not developed a better mechanism for improving the safety of level crossings.

Because the use of level crossings during the attack exercise had not been identified as a risk in the Uusimaa Brigade's risk assessment for the exercise and the level crossings to be crossed had not been named, the conscripts could not be warned about them. The risk assessment form used did not direct users towards the precise identification and naming of risks in the exercise taking place at the scene. Level crossing safety has not been a criterion affecting the choice of routes in the Uusimaa Brigade, or elsewhere in the Defence Forces.

Seatbelts were not in use in the high mobility terrain vehicle. The use of seatbelts would have reduced the severity of the injuries suffered by the conscripts, and may even have saved lives. Seatbelts in the cargo space seating module are difficult to use when in combat gear. Seatbelts are often not used when travelling in a high mobility terrain vehicle.

Sufficient help was not initially available for all of the seriously injured people at the scene of the accident. There was a 4–5 minute delay in the arrival of emergency care, due to the route driven. The emergency response centre did not guide the vehicles in their choice of route. At

first, the emergency duty officer did not succeed in creating an accurate situational awareness of the accident. An operational area command (OAC) was not established close to the scene of the accident by the authorities. An OAC would have facilitated the coordination and communications of emergency care and rescue operations. Some of the next of kin and relatives of the victims of the accident found it difficult to obtain information on the status and location of the victims. There were problems in making official notifications of deaths. Many of the victims, their next of kin and relatives were assisted by crisis support efforts.

To avoid similar accidents and improve safety, the Accident Investigation Board recommends that:

- The Defence Forces develop the risk assessment of exercises in order to identify the actual risks and name those which are identified.
- The Finnish Transport Agency and the Finnish Transport Safety Agency ensure that resources are allocated to improving the safety of, or removing, the most dangerous level crossings.
- The Finnish Defence Forces develop seatbelts in the cargo space seating module so that they are easier to use, and enhance their monitoring of the use of seat belts.
- The Ministry of the Interior ensure that an operational area command (OAC) is set up by the public authorities in the case of long-term or exceptional multi-authority tasks.