

## **The battery load in a trailer caught fire during transport**

May 2010

### **Load**

Transport document: UN 2794 (batteries, wet, filled with acid) in bulk, 25000 kg

### **Event description**

During the driving of a semi-trailer carrying dangerous goods (waste batteries, wet, filled with acid) the fire took place on the right-hand curve of the city's busy-traffic sub-roads. There are two lanes on the road in both directions. In the immediate vicinity of the site (approx. 200 m), there is a large residential area and commercial buildings on both sides of the regional roads. Extensive road work is underway on the site and in its immediate vicinity.

The cargo space was sheeted and equipped with a durable coating for protection of the corrosive substance in the batteries. The batteries were used batteries that entered the recycling after normal use and were transported as waste on the basis of the transport document and the consignment note. The transport unit was marked with hazard identification number 80 and UN number 2794. In addition, both sides of the transport unit had the appropriate placards.

After loading, the intention was to drive the load to the port city and continue from there on a passenger ship to a neighboring state. The batteries were going to the waste treatment facility. The journey took 59 km before the accident (estimate). There was not restrictions in route for the transport of dangerous goods. A1 was driving the right-hand lane of the sub-roads and approaching the location of the event in a slight right-turn curve at very low speed (congestion traffic, estimation).

In the curve, A1 discovered in the rear-view mirror that smoke was coming out of the trailer. He stopped the transport unit at the right edge of the highway. After he stopped, he managed to remove the first vehicle from the burning trailer.

At the time of the event, the weather was bright and sunny. The road surface was dry. The condition was +20oC. Due to road work, there was a speed limit of 50 km/h.

### **Event and risk factors**

The load of batteries in trailer caught fire during transport.

The battery load of the trailer included some spare power batteries with full charge. Batteries reacted dangerously (short circuit) to each other during transport. As a result of the reaction, the cargo space was set on fire.

Initially, the batteries were stored in battery boxes up to 1 m<sup>3</sup>, but the battery boxes were emptied to the vehicle by pouring. Transporting batteries properly packed would probably have prevented the accident.

In bulk transport, the batteries had not been attached in any way in the cargo space. Individual batteries had the possibility to move and, as a result, to be damaged in the cargo space. Because of the loading, there was damage to the battery enclosures and, taking into account the likely consequences on the outer surfaces of the batteries, traces of acid were also generated.

It is likely that the loading method was generally used by the company.

### **Background factors**

The mode of transport seemed to allow the road transport of spent batteries in bulk in accordance with the special provisions for bulk transport (7.3.3) VV14. However, the special provision is partly incompatible with the general provisions on bulk transport (7.3.1) and the provisions on loading (7.5).

### **Damage to the transport unit and injuries**

The first vehicle of the transport unit wasn't damaged in the accident. Before the fire spread, A1 disconnected the first vehicle from the trailer and thus prevented it from burning.

Because of the trailer fire, the coating of the cargo space from the inside was damaged and the tarpaulin was destroyed. In addition, the surface of the trailer was damaged.

Driver A1 was not injured in the accident.

### **Consequences**

The fire took place on a very busy regional road at a time of rush hour.

The rapid fire and the burning of hazardous substances at the scene of the accident endangered those who stopped at the scene and bystanders, especially before the rescue services arrived.

### **Proposals for improvement and safety recommendations on road transport**

The transport of spent batteries in bulk shall be prohibited. The special provision for bulk transport (7.3.3), point VV14, should be deleted.

Spent batteries must be packed in the packaging required by the legislation.

When loading dangerous goods, packages must be protected against damage.

The consignor and the transport operator shall ensure that each person performing tasks related to the transport of dangerous goods has the awareness-raising training and task-specific training required by the legislation.

The provision of information to those carrying and handling dangerous substances should be further increased and developed. Particular emphasis should be placed on avoiding all risk-taking.

The general duty of care and caution in transport related to the transport of dangerous goods must be emphasised in information and training.

The control of the transport of dangerous goods must be intensified and better targeted.

(The accident investigation has been carried out to improve road safety. The Traffic Accident Investigation Committee has not discussed liability for accidents or liability for damages. The use of the investigation report for purposes other than improving safety shall be avoided and its data shall not be combined with personal data.)