

## **Extract from the final investigation report the on level crossing accident occurred on 02/06/2008**

### **Summary**

At about 1.55 pm on Monday, 2 June 2008, a bus carrying school children was struck by a Regional Express train near the village of Allinges (Haute Savoie). The accident occurred on level crossing No 68 on the railway line between Evian and Annemasse and the RD 233 that connects Allinges to the RD 1005, on the shores of the Lake of Geneva.

The accident resulted in 7 deaths and 33 people injured (3 of whom were seriously injured). All were passengers in the bus.

The principal cause of this accident was due to the fact that the bus had come to a standstill on the level crossing with the back fouling the railway line.

At the conclusion of this enquiry, BEA-TT made three recommendations aimed at:

- specifying the actions to be taken when difficulties of crossing by certain road vehicles are detected during safety checks of level crossings;
- adapting the rules fixing the time between the announcement of the train and the closing of the barriers in order to take account of the actual time taken to cross the level crossing by authorised road vehicles;
- specifying the field of application of additional flashing red lights which can be placed behind the right side red lights of level crossings.

### **Causes of the accident**

The principal cause of this accident was the fact that the bus had come to a stand on the level crossing with the back fouling the gauge of the railway.

It has not been possible to establish exactly why the bus was stationary but it was possibly due to a combination of mechanical problems (injection, gearbox) and human factors (panic of the driver, bad operation).

Two factors connected to the configuration and the method of operation of the level crossing also played a part in this accident:

- the difficult geometry of the road crossing meant that heavy vehicles took a long time to pass over the level crossing because they were obliged to travel very slowly;
- the narrow margin of safety offered by the period of time from the announcement of the trains (firstly before the lowering of the half barriers and secondly before the arrival of the train) for a vehicle arriving just at the moment when the announcement signal is triggered.

The mechanical condition of the bus and the driver's lack of experience on this vehicle may also have played a part in this accident.

## **Recommendations**

The analysis of the factors that led to the accident resulted in three recommendations.

### **Recommendation R1 (Department for Transport, Roads and their Equipment - Sétra):**

The note accompanying the safety inspection programme for level crossings mentions that the detection of bad conditions of crossing by certain authorised road vehicles must lead the inspectors to recommend to the building owner that he should:

- prohibit the passage of vehicles which are unable to cross the level crossing in acceptable safety conditions;
- carry out a complementary study aimed at determining the measures to be introduced to ensure an easy crossing of the level crossing for all authorised vehicles.

### **Recommendation R2 (Directorate for Infrastructures, Transport and the Sea – DGITM):**

Complete the decree dated 18 March 1991 (Article 10) by stating that the delay in closing a level crossing must enable any authorised heavy road vehicle arriving at the moment when a train is announced to have cleared the entry barrier in the opposite direction of movement before it comes down.

The check of this condition must be carried out in consultation with the manager of the road infrastructure in order to determine the time it takes authorised vehicles to cross.

If this consideration leads to a time that is too long vis-à-vis other considerations leading to limit the warning time (for example, the risk of foolhardy users running through the half barriers in chicane) and consider forbidding the passage of road vehicles which cannot cross the level crossing in the time allowed.

### **Recommendation R3 (Directorate for Infrastructures Transport and the Sea – DGITM):**

In the decree dated 18 March 1991 (Article 9), to deal with the case of additional flashing colour lights placed behind the colour lights on the right of level crossings.

Specify the field of use of these additional colour lights (for example, insufficient visibility of the left light, level crossing situated on a curve of the road, impossibility of road vehicles crossing or long times for passing over the crossing).

*Moreover, the training of drivers and the information campaigns carried out for the safety of level crossings should deal with the question of the maximum time taken to cross or the minimum speed to be observed by road users, and, in particular, the drivers of heavy vehicles.*