

*The full, official version of the final report is only available in Hungarian language*

## **2009-531-5**

On 17 October 2009 at 12:10 hrs, passenger train no. 6588 collided with a car at LC AS2179 - protected with warning lights and half barriers - between Ebes and Debrecen stations. The car was torn in two and part of it was crushed underneath the locomotive. After stopping, the part of the car under the locomotive caught fire which spread onto the driver's cab of the locomotive. The driver of the car died at the site of the accident.

The IC established the following:

- The half barrier of the LC was in vertical (open) position at the time of the accident.
- Train no. 6588 had closed LC no. AS2132 between Ebes and Debrecen stations, however, it remained closed for a longer time than usual (it did not open automatically) and therefore after the timing it went into failure mode (the warning lights turned dark and the half barriers opened).
- The right track on which the train travelled was polluted. This pollution was found almost at full length of the track between Ebes and Debrecen stations, between railway sections 2096 and 2198.
- The fire brigade arrived at the accident site at 12:28 hrs, however they only started extinguishing it at 13:10 hrs (42 minutes later).
- The warning lights and the signposts on the road were well visible.
- The reduced visibility triangle (clearance) was continuously ensured from the prescribed distance.
- The Institute for Forensic Sciences examined the substances sent to them. According to the expert's opinion, the substance on the rails isolates electrically, as a consequence of which the train running on it may not be able to close the track circuit (i.e. close the LC).
- Train no. 6588 travelled with the permitted speed.
- The IC issued a safety recommendation as follows: "Having regard to the fact that the fire-extinguishing began with a significant delay (42 minutes) as the work permit was not granted on time, the IC recommends MÁV Zrt to compile a regulation - in cooperation with the Disaster Prevention - which ensures that the fires under the overhead contact lines can be extinguished as soon as possible."

The justification of the safety recommendation is that the fire-extinguishing could have begun with an even longer delay should the fire have broken out at other locations and other time.

## **CONCLUSIONS**

### **Factual statements directly connected to the occurrence of the accident**

- The IC established in the course of the site survey that there was pollution of unknown origin on the right track (both rails) on an uninterrupted line between Ebes

and Debrecen stations, which formed a deposit on the wheels of the train. This substance has an isolation effect, as a consequence of which the train running on it was unable to close the track circuit. Therefore LC AS2179 could not detect the locomotive. The barriers of the LC opened after train IC605 had run through it in opposite direction and the next road vehicle intending to cross the LC collided with train no. 6588.

- The signposts on the road indicating the level crossing nearby are intact and clean in both directions.
- Train no. 6588 did not exceed the speed limit.
- The warning lights were distinctly visible.

### **Factual statements indirectly connected to the occurrence of the accident**

n.a.

### **Other risk factors**

The IC believes that the fact that the fire extinguishing began with a delay posed further risks and also increased the material damage.