

Bus fires in city buses

1. General information

- The information were collected from Budapest Transport Company (BKV) and Budapest Fire Department (BTP)
- The bus fleet of BKV consists of 1400 units, slowly decreasing in years.
- Between 2002-2005 there were 19 fires in BKV buses, the observations are based on these cases. (The fires occurred in 5 different bus types)

2. BKV's rule for the driver in case of bus fire

- Stop the bus immediately in a safe way
- Open the doors
- Switch off the electricity
- Help the passengers to evacuate the bus
- Call the BKV centre and BTP
- Try to extinguish the fire

3. Some information about 19 BKV bus fires

3.1. Who observed, recognized the fire?

bus driver	6
passenger	1
outside person	1
no information	11

3.2. Cause of the fire

electric	4
fuel leaking	7
oil contamination	2
no information	6

3.3. Location of the fire

engine compartment	12
out of engine compartment	5
no information	2

3.4. Way of extinguishing the fire

bus driver, with extinguisher	8
fire brigade	8
completely burned out	3

3.5. Bus operation mode

Empty bus running to or from the garage	5
Waiting at the end station with running engine	3
Being in normal service	11

3.6. Casualties

No casualties in the 19 fire cases. Being in service (11) the driver stopped the bus, opened the doors and the passengers could evacuate in 1-2 minutes.

4. Further information from BTP

BTP is called not only to city bus fires, but all kind of bus fires in Budapest and its metropolitan area. Some experiences from their practice:

- In the early stage of the fire (5-8 min.) the bus driver generally can extinguish it.
- If the fire can develop in the passenger compartment, the driver can not extinguish it anymore with the standard fire-extinguisher.
- In the city the fire-bridge needs – as an average – 15-20 minutes (from the alarm) to start the extinguishing. Outside the city this time period could be 30-40 minutes.
- Essential difference between city buses and coaches: the city buses do not have tire-fire (low speed, many stops, smaller distances between the end stations, where the driver can check the tires).

5. BTP proposals

On the question: “What could you propose to decrease the fire risk in buses?” the experts of BTP had the following ideas:

- more specific requirements for fixing the electric wiring and fuel lining in buses, especially where the bus parts, components can have relative displacement to each other;
- specific requirement for approved fire-wall between the passenger compartment and engine, -heating device compartments and rear wheel arches (coaches);
- approved fire indicators (smoke or temperature sensors) in the engine, -heating device compartments. Periodical checks shall be required for these sensors, similarly to the fire-extinguishers;
- better specification is needed for the permissible flammability of materials used in buses;
- in the engine compartment a central fire-extinguisher (having more injectors) could be useful, which is driver controlled and operated from outside, without opening the door of the engine compartment.
