



busworld.
academy

Means of Escape from Fire in Buses and Coaches

Mike Hagen CEng BEng CFIFireE
Managing Director Fire Safety Platform
Former Deputy Fire Chief, Merseyside
Istanbul 25 April 2014



Mike Hagen CEng BEng CFIFireE

- 33 Years Fire Service Experience
- Firefighter to Deputy Fire Chief
- Led Change in the Fire & Rescue Service to do both Prevention and Emergency Response
- Spoken internationally about ways of making citizens safer from Fire
- Now MD of Fire Safety Platform
(www.firesafetyplatform.org)





Urumchi, China – Electrical Fire

At about 11:35 on August 5, 2013, a bus suddenly caught fire in motion in the city of Urumchi, China. So far, one passenger was killed and 6 were severely injured.

According to the witnesses, the head of the bus initially caught fire and then quickly the fire spread to the whole bus. The door was unable to open and the passengers had to escape from the windows. Within just 10 minutes, the bus was burned to framework. According to the initial investigation, it was aged circuit that caused the fire.

20 elderly people killed when a fire broke out on a coach as it travelled down the A2 motorway near Hanover in northern Germany. It is thought that some of the elderly passengers who perished had walking disabilities and were unable to escape in time. The driver, who had managed to pull over, and 12 other passengers managed to flee the burning bus. Many were injured and three of them suffering serious burns.



Escape Principles

- Passengers should be able to reach a place of safety in the event of a Fire:
 - Without Passing the Fire
 - Without Help
 - Without Harm
- Critical Time v Reaction Time
 - Fire Development
 - Passenger Characteristics
 - Escape Route
 - Information



Exit Routes

- Predict where a fire may start
- Provide True Alternative Exits
- Of Sufficient Capacity
- Make them Accessible
- Well Marked
- Safe to Use



Time v Fire Behaviour

Schoolbus explodes in huge fireball just moments after teenage pupils flee to safety. The sudden fire was said to have been caused by an electrical fault in the bus's engine compartment, causing smoke which was spotted by eagle-eyed Diane Bates, who ordered the pupils off.

In a shocking incident, 25 students of CTK High School in Mumbai's suburb Panvel were injured when the school bus they were traveling in caught fire. There were 40 children on-board the bus. The bus was engulfed in flames after a short circuit. The alert children used the emergency exit to escape, but the ones at the front of the bus were injured, some critically.



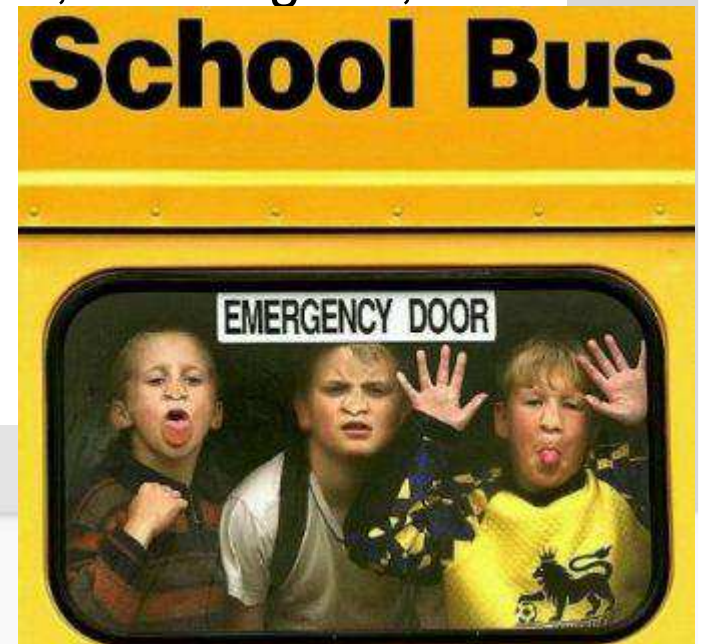
Passenger Behaviour

- Short v Long Distance Travel
- Awake/Alert?
- Familiar with Escape Routes?
- How Mobile are they?
- Very Young/Old?
- Driver (Responsible Person) Training



Conclusion

- Reduce Likelihood of Fire by Design
- Mitigate Fire by Suppression
- Reduce Fire Development
- Exits
 - Adequate Number, True Alternatives, Well Signed, Easy to Use and Safe
- Know your Passengers
- Driver Training





busworld.
academy

Means of Escape from Fire in Buses and Coaches

Mike Hagen CEng BEng CFIFireE
Managing Director Fire Safety Platform
Former Deputy Fire Chief, Merseyside
Istanbul 25 April 2014

