

# FIRE CASE STUDY

## Transportation



# Mont Blanc Tunnel, Europe

March 24, 1999

### Statistics

#### Type of fire

Multi vehicle fire inside a tunnel, large calorific energy

#### Ignition Source

Believed to be a cigarette entering the filter system on board the Belgian truck with a refrigerated trailer

#### Duration of fire

53 hours

#### Number of casualties

38 people died

#### Cost to industry

Significant loss of life. Damage to the tunnel, and remained closed for 3 years. French and Italian companies receiving suspended jail terms for manslaughter and fines of up to £100,000 for inadequate safety standards

#### References

BBC NEWS. 1999.[Online]. [Accessed 9 December 2014]. <http://news.bbc.co.uk/1/hi/world/europe/4721445.stm>  
BBC NEWS. 1999.[Online]. [Accessed 9 December 2014]. <http://news.bbc.co.uk/1/hi/world/europe/1858436.stm>  
Seconds From Disaster Film. 1999.[Online]. [Accessed 9 December 2014]. <https://www.youtube.com/watch?v=EzXHYnuSITc>

### Event

Opened in 1965 up until this incident vehicle fires had been extinguished by tunnel staff. At around 10:50 the Belgian truck enters the 11.6km tunnel within 5 minutes smoke from the truck was seen and the driver alerted by on coming commuters. Tunnel alarms sensed smoke and switched on the cameras in the vicinity (French side but not the Italian side, it had been disabled due to a false alarm the previous day), only the camera observed the scene as the driver stopped the truck and stepped out of the cab as the truck exploded into flames, the monitor operator was still unaware at this point. The driver along with other commuters ran for their lives while other commuters kept their windows closed waiting to be rescued. The truck had travelled some 6km into the tunnel, the black smoke rapidly moving in both directions inside the tunnel decreasing visibility. 10 minutes into the fire lighting and emergency lighting systems failed. Increasing hot toxic gases raising temperatures to around 1500 to 1800°C heat so intense a motorbike chassis was found melted into the tarmac. 14 minutes into the fire the first fire engine leaves its base contacted by the monitor operator having received an emergency call from within the tunnel, with the fire by now well established and engulfing the vehicles around it consuming some 30 vehicles up to a distance of 6km away from the initial fire.

### Lessons Learned

The inquiry discovered that in 34 years of operation the facility only practiced one fire drill and led to reassessment of safety

- The tunnel has now had fire-resistant sheeting fitted to its walls.
- More traffic lights and flashing warning signs.
- 37 concrete lined shelters located at 300meter intervals.
- 116 smoke extraction systems, one located every 100meters and 76 fresh air vents.
- Heat detection at both ends of the tunnel to detect overheating before vehicles enter the tunnel and allowing those to be redirected.
- 120 video cameras to monitor traffic 24hrs.
- Central command post managed 24hrs

