

REGULATION No.34
(Fire Risks)

Information on Fuel and Oil Leaks from Large vehicles

This is an informal paper identifying the extent of fuel tank leaks and oil leaks from heavy goods vehicles (HGVs) and public service vehicles (PSVs) in the UK.

The UK Vehicle and Operator Services Agency are responsible for checking the roadworthiness of all large vehicles in the UK. This includes checking for fuel and oil leaks. The following tables indicate the percentages of UK large vehicles which have been found to have fuel or oil leaks during the annual test or roadside checks. As can be seen, the numbers of vehicles with these defects is declining year on year and around only 1.5% of all large vehicles in the UK are affected.

FUEL TANK LEAKS	2005 - 2006	2006 - 2007	2007 - 2008	Apr 2008 to Jan 2009
HGV (Motor Vehicles)	1.05%	0.99%	0.90%	0.81%
HGV (Trailers)	0.15%	0.14%	0.13%	0.11%
PSV	1.59%	1.38%	0.72%	0.60%

OIL LEAKS	2005 - 2006	2006 - 2007	2007 - 2008	Apr 2008 to Jan 2009
HGV (Motor Vehicles)	0.44%	0.39%	0.36%	0.32%
HGV (Trailers)	0.02%	0.02%	0.02%	0.02%
PSV	0.62%	0.57%	0.49%	0.42%

Further to this, UK fire statistics indicate that the numbers of vehicle fires are also declining and that in 2006 HGV fires accounted for 3.1% and PSVs for 1.2% of the total. It must be noted that these statistics cannot identify fires related to fuel leaks and that, for HGVs and PSVs the percentage of fires that are deliberately started would be very much lower than the overall 71% stated in the table.

Fires in UK Road Vehicles by Cause and Type of Vehicle 2000 to 2006									
Year	Total Fires	Cause			Type of vehicle				
		Deliberate		Accidental or unspecified	Cars	Vans	Lorries	Coaches, Buses & minibuses	Other road vehicles
2000	94,947	70,806	75%	24,141	82,002	6,079	2,224	697	3,946
2001	102,224	79,241	78%	22,983	88,301	6,264	2,321	799	4,538
2002	101,177	80,205	79%	20,972	87,437	6,215	2,020	767	4,738
2003	92,768	72,869	79%	19,899	78,594	5,933	2,175	849	5,217
2004	72,785	55,000	76%	17,784	60,340	4,823	2,046	818	4,759
2005	65,226	47,799	73%	17,427	52,702	4,638	1,913	860	5,113
2006	59,244	42,093	71%	17,151	47,293	4,296	1,859	707	5,089

Whilst the UK has not carried out any research specific to fuel tank leaks, the results of a research project completed in March 2000, on Fire Risks and Prevention in Large Passenger Vehicles revealed that the incidence of fire in large passenger vehicles is low and a common view at the time, between industry and the Government, was that the most

effective solution was passenger evacuation rather than attempting to extinguish the fire. There has been little incentive, therefore, to develop and fit systems designed to protect against fire by vehicle manufacturers. Reviews of experimental research, however, showed that escape times from buses and coaches in some circumstances, for example when the bus was on its side, were somewhat longer than the time taken for the fire to spread and become harmful. Smoke generation in the passenger compartment was found to be particularly rapid and caused breathing problems.

It was found that whilst fires were most likely to start in the engine compartment, the seat material was the most flammable component and the most likely to cause the fire to spread. Compartmentalisation of the engine bay was thought to be the best way to reduce the risk of the fire reaching the passenger area. This could be achieved with the use of intumescent sealing materials and better protection and routing of cables and fuel lines.

The examination of the performance of fire extinguishers showed that powder extinguishers should not be used in the passenger compartment because the large quantity of particles emitted can cause breathing difficulties for passengers whilst evacuating the vehicle. Water based systems work well in the passenger compartment but are not as effective as powder systems in extinguishing engine fires. Automatic systems were found to be ideal for engine compartments but were not suitable for the passenger compartment because there is no control over the extent and direction of the spray. Conversely, manual systems were judged to be effective only if the operating staff were trained in their use.