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FIRE SAFETY IN THE UNITED STATES: THE STATISTICS

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The National Fire Protection Association (NFPA) website includes a number of “fact sheets” on statistics on building fires for various occupancies which can be downloaded from the NFPA site. These “fact sheets” provide us with a “snapshot” of fire safety in America.

The NFPA “fact sheet” on office occupancies indicates that an average of one American died annually as a result of fire in office buildings in the 5 year period between 2000 and 2004, excluding the terrorist attack which occurred on September 11th. Since 6 fatalities occurred in the fire at the Cook County Administration Building on October 17, 2003, it can be stated that typically no fire fatalities occur in office buildings in the United States in most years. It is of interest to note that the statistics for office buildings include both office buildings protected by sprinklers and also unsprinklered buildings.

The NFPA “fact sheet” for educational occupancies indicates that the statistics for schools are even better than those for office buildings. In the four years between 2003 and 2006, the average number of fire fatalities which occurred annually in educational occupancies in the United States was zero.

The “fact sheet” further indicates that *“none of the hotel or motel fire deaths occurred in properties with sprinklers in the fire area.”*

Of course, it is common knowledge that over 80 percent of the fire fatalities in the United States occur in residential occupancies so the statistics for residential occupancies should be of interest. According to the NFPA “fact sheet” for hotel occupancies, in the 4 years between 2002 and 2005, the annual average number of civilian fire fatalities occurring in hotel occupancies was 11. The “fact sheet” further indicates that *“none of the hotel or motel fire deaths occurred in properties with sprinklers in the fire area.”*

The “fact sheet” for dormitory and fraternity/sorority houses indicates that the number of civilian fire fatalities in these types of residential occupancies averaged 7 per year between 2003 and 2006. Although the “fact sheet” does not indicate the number of fire fatalities which occurred in these types of buildings when sprinkler protection was provided, it would be a good bet that the number is very close to zero.

Like office buildings, assembly occupancies, other than restaurants and drinking establishments, also have an excellent fire safety record. According to the NFPA “fact sheet” on these types of assembly occupancies, an average of 1 American died as a result of fire annually in the 5 year period between the 2000 and 2004.

The “fact sheet” for eating and drinking establishments indicates that the hazard of these types of assembly occupancies is just slightly greater. According to the NFPA, an average of 3 civilian fire deaths occurred in the United States annually in the 5 year period between 2000 and 2004. (And just in case you’re wondering, the fire at The Station nightclub in Rhode Island occurred on February 20, 2003. One hundred people died in The Station nightclub fire. Apparently, nightclubs are not included in this occupancy category.)

Surprising perhaps, two occupancies with the worst fire safety records, other than residential occupancies (and night clubs), are industrial and storage occupancies. The NFPA “fact sheet” on industrial occupancies indicate that, in the 5 year period between 2000 and 2004, the average annual number of civilian fire fatalities was 17, while the average annual number of civilian fire fatalities in storage occupancies, excluding refrigerated warehouses, in the 4 year period between 2003 and 2006 was 5.

Just to put the number of civilian fire fatality statistics into perspective, the National Highway Traffic Safety Administration (NHTSA) reports that the following number of fatalities occurred on roads and highways in the United States:

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2006	42,642 fatalities
2007	41,259 fatalities
2008	37,261 fatalities

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Conclusion

Based upon the statistics compiled by the National Fire Protection Association for various building occupancy types, it would appear that it is difficult to say that we have a serious fire problem in the United States in any occupancy, other than in residential occupancies. Although the NFPA “fact sheets” do not specifically address the impact of sprinkler protection on the civilian death statistics in many of the occupancies discussed above, the absence of any civilian fire fatalities in hotel/motel occupancies when sprinkler protection is provided is indicative of the fact that sprinklers are capable of protecting both property and life.

Given the statistics on the reduction in civilian fire fatalities in buildings protected by sprinklers in hotel/motel occupancies to zero, or very close to zero, it would seem that the reductions in passive fire protection allowed by building codes when sprinkler protection is provided certainly appear to be justified.

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Note: The following are links to the “fact sheets” on the NFPA website:

<http://www.nfpa.org/assets/files//PDF/PublicAssemblyfactsheet.pdf>

http://www.nfpa.org/assets/files//PDF/Dorm_fact_sheet.pdf

<http://www.nfpa.org/assets/files//PDF/Hotelsfactsheet.pdf>

<http://www.nfpa.org/assets/files//PDF/IndustrialFactSheet.pdf>

<http://www.nfpa.org/assets/files//PDF/Officefactsheet.pdf>

<http://www.nfpa.org/assets/files//PDF/Eatingfactsheet.pdf>

http://www.nfpa.org/assets/files//PDF/Sprinkler_Fact_Sheet.pdf

<http://www.nfpa.org/assets/files//PDF/WarehouseFactSheet.pdf>

Note: The statistics on the number of highway accident fatalities can be found at the following addresses:

<http://www-nrd.nhtsa.dot.gov/Pubs/TSF2006FE.PDF>

<http://www-nrd.nhtsa.dot.gov/Pubs/811172.pdf>

<http://www-nrd.nhtsa.dot.gov/Pubs/811162.PDF>