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FIRE SAFETY IN THE UNITED STATES: 1977 AND 2009

By Richard Schulte

The National Fire Protection Association (NFPA) has put together a summary of data on fires and fire casualties in the United States from 1977 to 2009 in a table titled "*The U.S. Fire Problem*" which appears on the NFPA website (www.nfpa.org). The following table is an excerpt of some of the data included in the NFPA table.

Year	Number of Fires	Civilian Fire Fatalities	Civilian Fire Injuries	Firefighter Fatalities	Firefighter Injuries
1977	3,264,000	7,395	31,190	157	112,540
1990	2,019,000	5,195	28,600	108	100,300
2000	1,708,000	4,045	22,350	103	84,550
2009	1,348,500	3,010	17,050	82	78,150

Based upon the NFPA data, it seems clear that we have made substantial progress against the hazard of fire in the United States, particularly when the increase in the US population over this time period is considered.

Also of interest might be the ratio of the number of fires to both civilian and fire fighter fatalities and injuries. The following are the ratios based upon the NFPA statistics.

Year	Number of Fires	Number of Fires:Civilian Fire Fatalities	Number of Fires: Civilian Fire Injuries	Number of Fires: Firefighter Fatalities	Number of Fires: Firefighter Injuries
1977	3,264,000	441.4	104.6	20,789.8	29.0
1990	2,019,000	388.6	70.6	18,694.4	20.1
2000	1,708,000	422.2	76.4	16,582.5	20.2
2009	1,348,500	448.0	79.1	16,445.1	17.3

While the ratio of fires to civilian fire fatalities has remained relatively constant over the time period between 1977 and 2009, the rate of civilian injuries and both fire fighter fatalities and injuries on a "per fire" basis appears to have increased substantially.

Some in the field have voiced their opinion that the increase in the civilian fire injury rate and fire fighter fatality and injury rate as an indication that somehow fires are now more aggressive due to a change in the combustible contents of our buildings. If that were the case, this would likely also be reflected in the ratio of the number of fires to civilian fire fatalities. Given that it is not, it seems reasonable to assume that the cause for the increases in the rates of civilian injuries and fire fighter fatalities and injuries is due to some other cause.

While there seems to be no obvious explanation for the increase in the rate of civilian injuries, a reasonable explanation for the increase in the rate of fire fighter fatalities and injuries is better protective clothing and self-contained breathing apparatus (SCBA) provided for fire fighters, along with the use of more aggressive fire fighting tactics. The use of more aggressive fire fighting tactics facilitated by better protective clothing allows fire fighters to take greater risks, in which case, greater injury rates would be expected. In other words, safer fire fighting has led to more risky behavior, much the same as safer automobiles have led to more risky behavior by drivers.

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Editor's Note: Richard Schulte is a 1976 graduate of the fire protection and safety engineering program at the Illinois Institute of Technology (IIT) in Chicago. Schulte worked as the fire protection engineer for the San Jose (California) Fire Department from 1980-1982. Schulte was named as one of ENR's "Top 25 Newsmakers of 2004" by Engineering News-Record for his work on critiquing the National Institute of Standards and Technology (NIST) investigation into the collapse of the World Trade Center towers on 9/11.