



# U.S. Fire Administration



## Methodology Used in the Development of the Topical Fire Research Series

Analyses in the U.S. Fire Administration's Topical Fire Research Series are based primarily on data from the National Fire Incident Reporting System (NFIRS). NFIRS is a data system maintained by the U.S. Fire Administration (USFA). Established in 1975, NFIRS is the largest fire data set in the world. The NFIRS data set is updated annually with nearly one million new fire incident records. Fire departments from all regions of the country report the number and types of fires to which they respond. Although the system is voluntary, an estimated one-third to one-half of the nation's fire departments participate in NFIRS.

Limitations of the NFIRS data set are that it is incomplete—11 states and many fire departments within participating states do not participate in NFIRS—and that an enormous number of smaller fires are not reported to the fire service at all. These unreported fires are generally industrial or residential fires that burn themselves out or are extinguished by the occupant. Despite these shortcomings, the distribution of participants in NFIRS is at least reasonably representative of the entire nation, even though the sample is not random.

Since the data set is incomplete and represents only a sample of American fire departments, many of the numbers in this analysis are national estimates or percentages, rather than raw totals or absolute numbers. Many estimates

are derived by computing a percentage from NFIRS and multiplying it by the total number of fires, deaths, injuries, or dollar loss from the NFPA annual survey. Further, in making national estimates, the "unknowns" (entries left blank or reported as unknown) should not be ignored. In this report, included are an estimate for both the specific item and well as an estimate in which unknowns are distributed in the same proportion as the knowns.

Other sources of data may have been used in the preparation of this analysis. These include the National Fire Protection Association's (NFPA) annual survey of fire departments; mortality data from the National Center for Health Statistics; population data from the Bureau of the Census; arson data from the Bureau of Alcohol, Tobacco, and Firearms; firefighter fatality statistics from the National Institute for Occupational Safety and Health – Firefighter Fatality Investigation and Prevention Program and the USFA's Firefighter Fatality Project; and statistical information from the Consumer Product Safety Commission. The USFA gratefully acknowledges the use of these data and cites these sources where used.

This methodology has been adopted by the USFA; see *Fire in the United States, 1987–1996*, published by the USFA and available at the USFA website (<http://www.usfa.fema.gov>), for a complete explanation.