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Multiple-Fatality Fires

FINDINGS

- Each year, an average of 450 fires involve multiple civilian deaths.
- In multiple-fatality fires, more people are likely to die than to be injured.
- Arson is the leading cause in multiple-fatality fires; open flame (candles, matches, lighters) is the leading form of heat of ignition.
- Smoke alarms were not present in 57% of multiple-fatality fires, and they did not operate in another 21% of fires.

Sources: NFPA and NFIRS

From 1996 to 1998, an average of 450 fires resulted in multiple fatalities.[1] On an annual basis, these fires were responsible for an estimated of 1,215 civilian deaths, 325 civilian injuries, and $31 million in fire loss.[2] This report examines the causes and characteristics of these multiple-fatality fires and, in several cases, compares them with single-fatality fires.

CAUSES

The leading cause of multiple-fatality fires is incendiary/suspicious (arson), followed closely by heating and cooking (Figure 1). In earlier years, the leading cause of multiple-fatality fires has traditionally been heating. Although the trend in alternative heating sources has decreased over the past decade, the reason for the shift toward arson fires is not known.

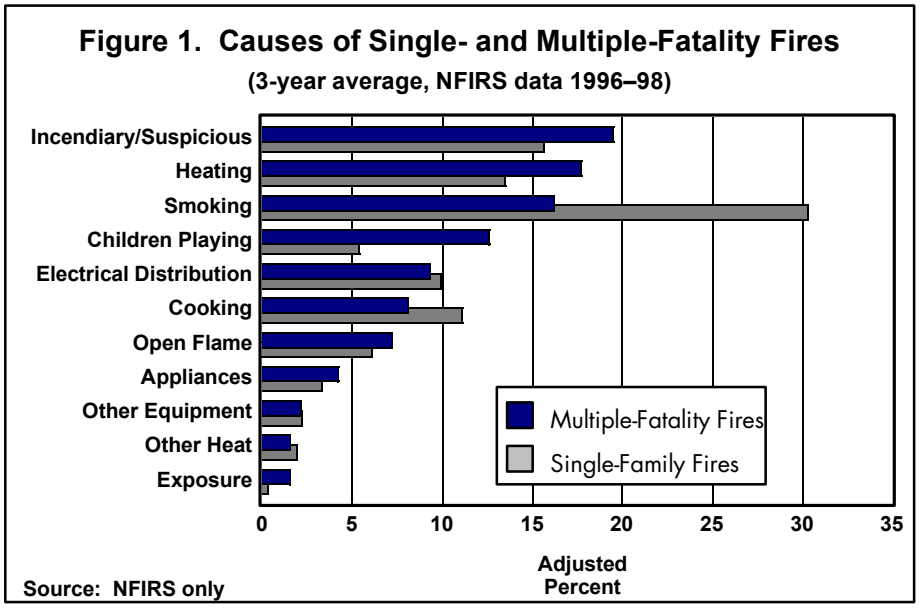
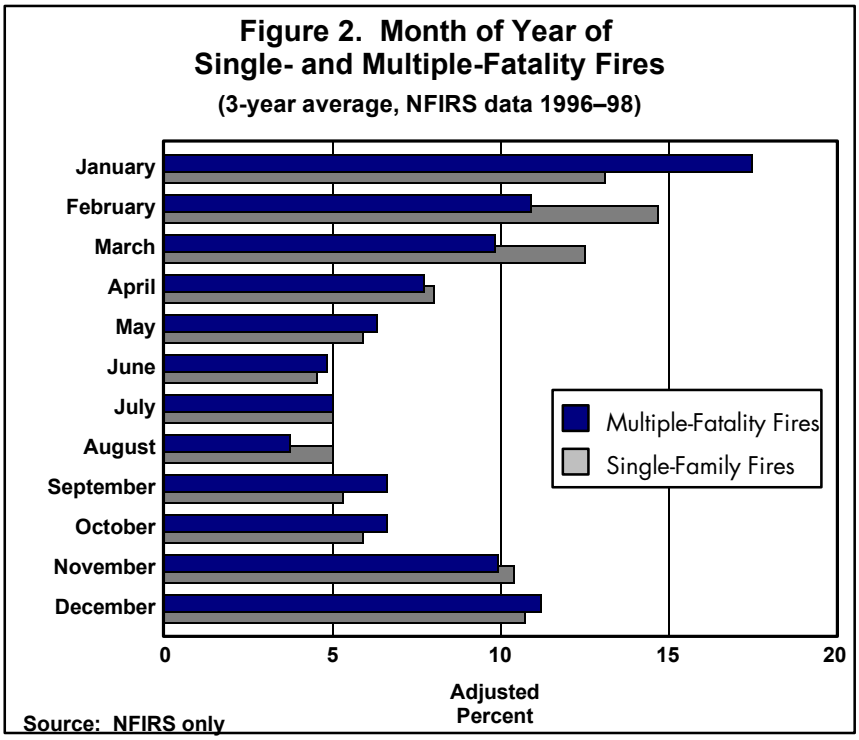


Figure 1 also compares the causes of single-fatality fires with multiple-fatalities fires. The leading cause of single fatality fires is smoking, followed by arson and heating. Smoking has consistently been a primary cause of fatal fires, particularly those with only one fatality. Smoking fires are usually small and kill only the smokers themselves. Children playing fires, however, are generally more deadly and often kill not only the child playing with fire-starting materials, but also other family members in the home.

When Fires Occur

Figure 2 compares the incidence of single- and multiple-fatality fires in residential structures by month of the year. Both types of fires peak during the winter months when people are most likely to be indoors. Also, during these months, heating fires are a particular problem. (See the topical reports "Heating Fires," "Portable Heating Fires," and "Winter Fires" at www.usfa.fema.gov/nfdc/tfrs.htm.)



Where Fires Originate

The leading area where multiple-fatality fires originate is the lounge area, such as living rooms and family rooms. Fires originating in lounge areas accounted for 33% of multiple-fatality fires; 22% originate in bedrooms and 15% originate in the kitchen.

What Catches Fire

The leading form of material ignited in multiple-fatality fires is upholstered sofas and chairs (20%), followed by structural framing, interior wall coverings, and bedding. These materials are consistent with the predominance of arson and heating fires.

Source of Ignition

The leading form of heat of ignition for multiple-fatality fires is open flame (26%), which includes candles, matches, and lighters. In single-fatality fires, open flame igni-

tions account for 19% of fatalities. Only 20% of multiple-fatality fires are ignited by smoking materials, as compared to nearly one-third of single-fatality fires. In 8% of multiple-fatality fires, the ignition source is a lighter; 83% of these fires are attributed to children playing. For single-fatality fires, children playing fires account for only 52% of lighter fires.

SMOKE ALARM PERFORMANCE

As with single-fatality fires, in more than half (57%) of multiple-fatality fires no smoke alarm was present (Figure 3). In 21% of these fires, an alarm was present but did not operate, possibly due to dead or missing batteries. This is a slightly higher percentage than is found for single-fatality fires. A smoke alarm was present and activated in 22% of both single- and multiple-fatality fires.

Figure 3. Smoke Alarm Performance
(3-year average, NFIRS data 1996–98)

	ADJUSTED PERCENT	
SMOKE ALARM	SINGLE-FATALITY FIRES	MULTIPLE-FATALITY FIRES
Operated	22%	22%
Did Not Operate	18%	21%
No Alarm Present	59%	57%

Source: NFIRS only

EXAMPLES

- In November 1999, two sisters were killed when a fire trapped them on the second floor of their home. Their younger brother started the fire while he was playing with a lighter. The smoke alarm alerted the family, but the fire overcame the victims before firefighters could rescue them.[3]

- In July 2001, a woman and her 10-year-old daughter were killed when the woman's husband started a fire while they slept. The man was charged with first-degree murder; officials allege he started the fire to collect insurance money to pay off credit card and other debts.[4]

- In October 2001, a woman and her four daughters were killed as they tried to heat their home with their oven. The rental home they lived in had been cited for numerous violations, including a lack of working smoke alarms and a defective furnace.[5]

CONCLUSION

As with all fires, those claiming the lives of multiple victims can largely be prevented. Through the increased use of smoke alarms, arson prevention programs, and juvenile firesetter intervention, it should be possible to decrease the incidence of multiple-fatality fires. Moreover, homeowners must be diligent about maintaining heating systems and ensuring that combustibles are kept a safe distance from ignition sources. For further information, contact your local fire department or the USFA.

NOTES:

1. For the purposes of this analysis, *multiple-fatality fires* refer to fire incidents that resulted in two or more civilian fatalities. Residential structures are the focus of this analysis since they account for the majority of multiple-fatality fires.
2. National estimates are based on data from the National Fire Incident Reporting System (NFIRS) (1996–1998) and the National Fire Protection Association's (NFPA's) annual survey, *Fire Loss in the United States.*
3. "Frantic Rescuers Can't Save 2," *Omaha World-Herald,* November 7, 1999.
4. Rowden, Tim, "Charges Are Upgraded in Fatal Fire," *St. Louis Post Dispatch,* August 13, 2001.
5. Green, Andrew, "House in Fatal Fire Had Code Violations," *The Baltimore Sun,* October 2, 2001.

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