

**HOME FIRES THAT BEGAN WITH
UPHOLSTERED FURNITURE**

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August 2011**



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Abstract

Based on data from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual fire department experience survey, NFPA estimates that during 2005-2009, upholstered furniture was the item first ignited in an average of 7,040 reported home structure fires per year. (Homes include one- and two-family dwellings, apartments or other multiple family dwellings, and manufactured housing.) These fires caused an estimated annual average of 500 civilian deaths, 890 civilian injuries, and \$442 million in direct property damage. Upholstered furniture is the leading item first ignited in home fire deaths. Although upholstered furniture fires started by smoking materials have fallen sharply since 1980, smoking materials remain the leading cause of these fires and associated losses.

Keywords: upholstered furniture; small open flame; fires; home fires, fire causes, fire statistics; smoking materials.

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem.

We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

For more information about the National Fire Protection Association, visit www.nfpa.org or call 617-770-3000. To learn more about the One-Stop Data Shop go to www.nfpa.org/osds or call 617-984-7443.

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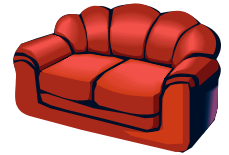
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Home Structure Fires that Began with Upholstered Furniture

In 2005-2009, U.S. fire departments responded to an average of 7,040 home structure fires per year in which upholstered furniture was the first item ignited. These fires caused an annual average of 500 civilian fire deaths, 890 civilian fire injuries, and \$442 million in direct property damage.

On average, one of every 14 reported upholstered furniture fires resulted in death.

Overall, fires beginning with upholstered furniture accounted for 2% of reported home fires but one of every five (19%) home fire deaths.

Major Causes of Upholstered Furniture Fires

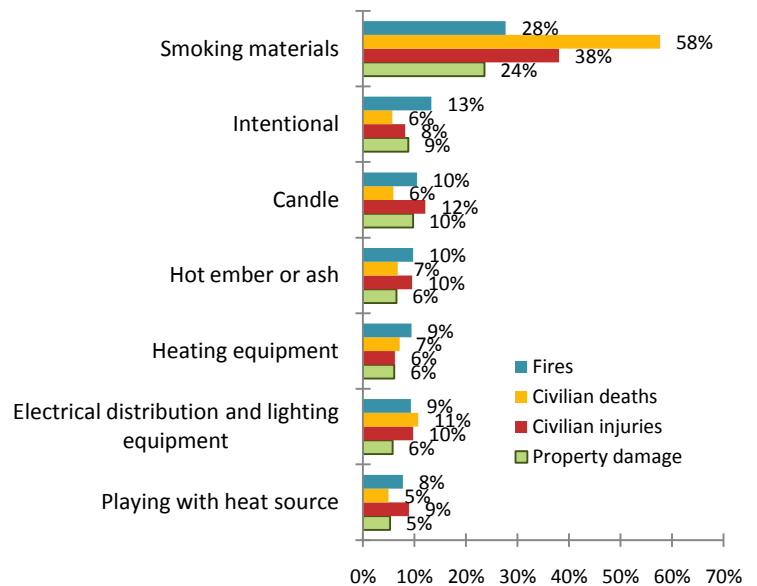
Smoking materials remain the leading cause of upholstered furniture fires and losses. One of every six such fires started by smoking materials resulted in death.

Portable and fixed space heaters were involved in 8% of the upholstered furniture fires and 7% of the associated deaths.

Operating equipment was the heat source in 22% of the fires and 15% of the deaths.

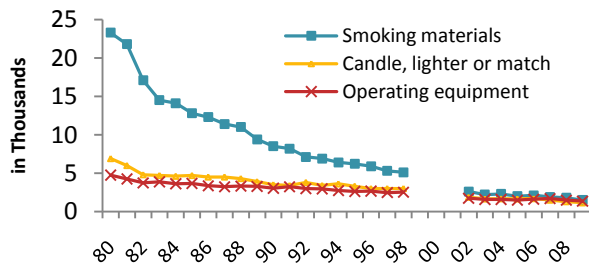
Together, candles, matches and lighters were involved in 21% of the fires and 12% of the deaths.

Electrical failures or malfunctions were factors in 14% of the home upholstered furniture fires and 10% of the deaths. These failures were in all types of electrical appliances, not just electrical distribution or lighting equipment.

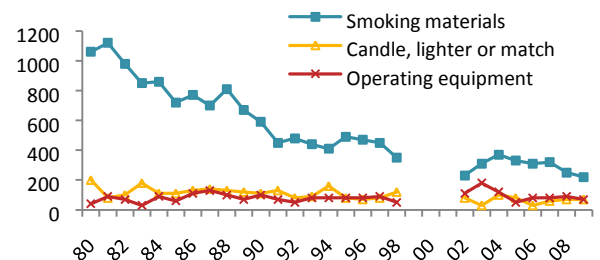


Upholstered furniture fires started by smoking materials and associated deaths fell sharply since 1980. The declines in upholstered furniture fires started by candles, matches or lighters and by operating equipment were not as sharp. No clear trend was seen for upholstered furniture deaths from candles, matches and lighters or operating equipment.

Home Upholstered Furniture Fires Started by: Smoking Materials; Candles, Lighters and Matches; or Operating Equipment; by Year 1980-2009



Civilian Deaths from Home Upholstered Furniture Fires Started by: Smoking Materials; Candles, Lighters and Matches; or Operating Equipment; by Year 1980-2009



NFPA's Fire Safety Resources

NFPA's wealth of fire-related research includes investigations of technically significant fire incidents, fire data analysis, and the Charles S. Morgan Technical Library, one of the most comprehensive fire literature collections in the world. In addition, NFPA's Fire Protection Research Foundation is a source of independent fire test data. Find out more at: www.nfpa.org/research

Properly installed and maintained smoke alarms are necessary to provide a warning of any fire to all occupants. You can find out more information about smoke alarms here: [NFPA Smoke Alarm Information](#)

Home fire sprinkler systems provide even greater protection. These systems respond quickly to reduce the heat, flames, and smoke from a fire until help arrives. More information about home fire sprinklers may be found at www.firesprinklerinitiative.org

Simply put, smoke alarms and fire sprinklers save lives.

Research

Advocacy



Codes & Standards

Public Education

NFPA also develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. Among these are:

[NFPA 101: Life Safety Code®](#)

[NFPA1: Fire Code](#)

[NFPA 260: Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components Upholstered Furniture](#)

[For consumers:](#) NFPA has consumer safety information regarding causes, escape planning, fire & safety equipment, and many other topics.

[For Kids:](#) Sparky.org has important information for kids delivered via fun games, activities, and cartoons.

[For public educators:](#) Resources on fire safety education programs, educational messaging, grants & awards, and many other topics.

Executive Summary

During 2005-2009, upholstered furniture was the item first ignited in an average of 7,040 reported home structure fires per year. These fires caused an estimated annual average of 500 civilian deaths, 890 civilian injuries, and \$442 million in direct property damage. Overall, fires beginning with upholstered furniture accounted for 2% of reported home fires but 19% of home fire deaths. These statistics were derived from the detailed information collected by the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual fire department experience survey.

Upholstered furniture fires in the home environment have fallen sharply, dropping 84% from a high of 36,900 in 1980, the first year of usable data, to a 30-year low of 5,900 in 2009. Even with a 67% drop in the number of associated deaths from highs of 1,360 in 1980 and 1981 to a low of 450 in 2009, upholstered furniture remains the leading item first ignited in home fire deaths. During 2005-2009, upholstered furniture was the item first ignited in 2% of reported home fires. These incidents caused one of every five (19%) home fire deaths.

Smoking materials remain the leading heat source in upholstered furniture fires and associated deaths although their share has fallen dramatically over time. In the early 1980s, almost two-thirds (59-64% in 1980-1984) of home

upholstered furniture fires were ignited by smoking materials. These fires caused more than three-quarters (77-82%) of the associated death. During 2005-2009, in contrast, smoking materials caused roughly one-quarter (28%) of the upholstered furniture fires and three of every five (58%) associated deaths. In 2008 and 2009, the two most recent years of available data, only half (49-50%) of the home upholstered furniture deaths resulted from fires started by smoking materials.

More than half (53%) of the victims of upholstered furniture fires started by smoking materials in 2005-2009 were in the area of origin and involved in the ignition. An additional 11% were in the area but not involved.

In 1980-1984, candles, lighters or matches caused almost one of every five (17-19%) upholstered furniture fires and 6-16% of the associated deaths. In 2005-2009, candles (10% of the fires and 6% of the deaths), lighters (8% of the fires and 5% of the deaths), and matches (3% of the fires and 1% of the deaths) together caused more than one in five (22%) upholstered furniture fires and 12% of the associated deaths. Someone playing with the candle, lighter or match was a factor in roughly one-third of these small open flame ignitions and associated deaths. In almost one-third of these ignitions, the candle, lighter or match was too close to something that could catch fire. This would be more common with candles than the other two open flames.

Roughly one-quarter of the small open flame ignitions were intentionally set. However, playing with heat source was a contributing factor in most of these intentional fires.

Almost half (46%) of the victims of upholstered furniture fires started by candles, lighters or matches were in the area of origin and involved in ignition. An additional 12% were in the area but not involved.

In 1980-1984, operating equipment caused 13-16% of these fires and 3-9% of the associated deaths. In 2005-2009, operating equipment caused 22% of the home upholstered furniture fires and 15% of the associated deaths. Electrical distribution or lighting equipment was involved in more than one-third of these operating equipment fires and three out of five associated deaths (9% of all home upholstered furniture fires and 11% of the deaths). Cords or plugs were the leading type of equipment involved in upholstered furniture deaths. Heating equipment was involved in roughly one-third of the operating equipment fires and associated deaths (9% of all home upholstered furniture fires and 7% of the associated deaths), with fixed or portable space heaters, including wood stoves, accounting for the majority of heating equipment involved.

Only 19% of the victims of operating equipment fires were in the area of origin and involved in ignition. An additional 8% were in the area but not involved.

Hot embers or ashes caused 10% of the upholstered furniture fires and resulting deaths. Sleep was a factor in 12% of the ignitions and 28% of the associated deaths.

Assessing the probable impact of any one approach to fire safety is challenging. New materials enter the marketplace. Upholstered furniture is a durable product. New furniture is likely to meet current flammability standards. Over time, things get spilled on the furniture, the fabric may wear out, and the furniture may pass to a different household. It is important to remember that these statistics are based on all upholstered furniture, some of which may be very old.

Changes in the environment also complicate the issue. Homes are much more likely to have smoke alarms today than they were in 1980. This means that more fires may be discovered before fire department assistance is required. The Consumer Product Safety Commission (CPSC) required lighters to be child-resistant beginning in 1994, resulting in a drop in fires started by children playing. The increase in candle sales in the 1990s was accompanied by an increase in candle fires. Laws requiring “fire-safe” cigarettes that extinguish when not inhaled have been passed, and as of July 1, 2011, are in effect in all 50 states. Home fire sprinklers can control a fire until the fire department arrives. More information about home fire sprinklers is available at firesprinklerinitiative.org.

Safety Tips

- If you smoke, smoke outside. Be careful when smoking around upholstered furniture. Use large, deep, sturdy ashtrays and do not rest them on a sofa or chair. When lighting cigars, pipes, or cigarettes, make sure sparks from matches do not land on the couch or chair. In addition, whenever there has been smoking in a room, check under cushions and in cracks for discarded butts before going to bed or leaving the home. If you smoke, only smoke when you feel alert. Do not smoke when drowsy, intoxicated or medicated. Never smoke where medical oxygen is used.
- Cigarette ignition-resistant upholstered furniture is more common now, but be aware of potential higher fire risk when purchasing antique or used furniture.
- Keep heaters and upholstered furniture at least three feet (1 meter) away from each other. See the manufacturer's instructions for how to operate and install the appliance safely.
- Do not place furniture near a fireplace or wood stove. Leave adequate space for ventilation. The furniture should be at least three feet (1 meter) away from a heat source.
- Eight percent of upholstered furniture fires were begun by someone, usually a child, playing with fire. Keep matches and lighters up high, out of the reach of children, preferably in a locked cabinet. Encourage children to tell an adult when they find matches and lighters.
- Extinguish all candles when leaving the room or going to sleep. Make sure candles are placed on a stable piece of furniture in sturdy holders that won't tip over.
- Avoid putting cords against or under furniture.

For safety tip sheets on a variety of topics, go to www.nfpa.org/safetytips. For all EMAC tips, go to www.nfpa.org/emac.