

HOME FIRES THAT BEGAN WITH UPHOLSTERED FURNITURE

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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 2002-2005, upholstered furniture was the item first ignited in an average of 7,630 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 600 civilian deaths, 920 civilian injuries and \$309 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, smoke alarms.

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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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Table of Contents

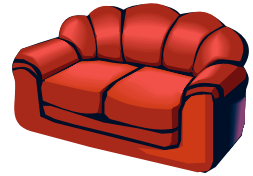
| | |
|---|-----|
| Table of Contents | i |
| List of Tables and Figures | iii |
| Home Fires That Began With Upholstered Furniture – Fact Sheet | vii |
| Executive Summary | ix |
| Overview | 1 |
| Fires Started by Smoking Materials vs. Candles, Matches or Lighters | 8 |
| Smoke Alarms and Home Upholstered Furniture Fires | 14 |
| Additional Information | 17 |
| Safety Tips | 17 |
| Appendix A. How National Estimates Are Calculated | 35 |
| Appendix B. Previously Published Upholstered Furniture Fire Incidents | 40 |
| Smoking Materials | 40 |
| Candle, Match or Lighter | 42 |
| Heating Equipment | 44 |
| Electrical Distribution or Lighting Equipment | 46 |
| Other or Undetermined Sources of Upholstered Furniture Ignition or Fire Spread to Upholstered Furniture | 47 |
| Appendix C. Methodology and Definitions Used in Leading Cause Graph | 53 |

List of Tables

| | | |
|-----------|--|----|
| Table 1. | Home Structure Fires that Began with Upholstered Furniture, by Year | 18 |
| Table 2. | Home Structure Fires that Began with Upholstered Furniture by type of Material First Ignited | 19 |
| Table 3. | Home Structure Fires that Began with Upholstered Furniture by Area of Origin | 20 |
| Table 4. | Home Structure Fires that Began with Upholstered Furniture By Extent of Flame Damage | 21 |
| Table 5. | Home Structure Fires that Began with Upholstered Furniture, by Cause | 21 |
| Table 6. | Home Structure Fires that Began with Upholstered Furniture, by Factor Contributing to Ignition | 22 |
| Table 7. | Home Structure Fires that Began with Upholstered Furniture, by Heat Source | 23 |
| Table 8. | Home Structure Fires that Began with Upholstered Furniture, by Equipment Involved in Ignition | 24 |
| Table 9. | Home Upholstered Furniture Fires Started by Smoking Materials by Year | 25 |
| Table 10. | Home Upholstered Furniture Fires Started by Candles, Matches or Lighters, by Year | 26 |
| Table 11. | Home Upholstered Furniture Fires Started by Smoking Materials By Extent of Flame Damage | 27 |
| Table 12. | Home Upholstered Furniture Fires Started by Candles, Matches or Lighters by Extent of Flame Damage | 27 |
| Table 13. | Home Upholstered Furniture Fires Started by Smoking Materials by Factor Contributing to Ignition | 28 |
| Table 14. | Home Upholstered Furniture Fires Started by Candles, Matches or Lighters, by Factor Contributing to Ignition | 29 |
| Table 15. | Home Structure Fires that Began with Upholstered Furniture, by Smoke Alarm Status | 30 |
| Table 16. | Victims of Home Upholstered Furniture Fires with Operating Smoke Alarms, by Age Group | 31 |
| Table 17. | Victims of Home Upholstered Furniture Fires with Smoke Alarms that Did Not Operate, by Age Group | 32 |
| Table 18. | Victims of Home Upholstered Furniture Fires with No Smoke Alarms Present, by Age Group | 33 |
| Table 19. | Home Upholstered Furniture Fires Started by Smoking Materials by Smoke Alarm Status | 34 |
| Table 20. | Home Upholstered Furniture Fires Started by Candles, Matches or Lighters, by Smoke Alarm Status | 34 |

List of Figures

| | | |
|------------|--|----|
| Figure 1. | Home Structure Fires that Began with Upholstered Furniture, by Year | 2 |
| Figure 2. | Civilian Fire Deaths Resulting from Home Structure Fires that Began with Upholstered Furniture, by Year | 3 |
| Figure 3. | Home Structure Fires that Began with Upholstered Furniture by Extent of Flame Damage | 4 |
| Figure 4. | Major Causes of Home Structure Fires that Began with Upholstered Furniture: 2002-2005 | 5 |
| Figure 5. | Home Structure Fires that Began with Upholstered Furniture by Leading Factor Contributing to Ignition | 7 |
| Figure 6. | Home Structure Fires that Began with Upholstered Furniture by Leading Heat Sources | 8 |
| Figure 7. | Home Upholstered Furniture Fires Started by Smoking Materials and Candles, Matches and Lighters, by Year | 9 |
| Figure 8. | Civilian Deaths Resulting from Home Upholstered Furniture Fires Started by Smoking Materials and Candles, Matches and Lighters, by Year | 10 |
| Figure 9. | Home Upholstered Furniture Fires by Time of Alarm and Smoking Materials vs. Candles, Matches and Lighters | 10 |
| Figure 10. | Home Upholstered Furniture Fire Deaths by Time of Alarm and Smoking Materials vs. Candles, Matches and Lighters | 11 |
| Figure 11. | Home Upholstered Furniture Fire Deaths by Extent of Flame Damage and Smoking Materials vs. Candles, Matches and Lighters | 11 |
| Figure 12. | Home Upholstered Furniture Fire Deaths by Victim's Location at Time of Fatal Injury and Smoking Materials vs. Candles, Matches and Lighters | 12 |
| Figure 13. | Smoke Alarm Status in Home Upholstered Furniture Fires and All Non-Confined Home Fires | 13 |
| Figure 14. | Reason for Failure when Smoke Alarms Did Not Operate in Home Upholstered Furniture Fires | 14 |
| Figure 15. | Relative Risk of Death by Age Group and Smoke Alarm Status in Home Upholstered Furniture Fires | 15 |
| Figure 16. | Home Upholstered Furniture Fire Deaths from Fires with Smoke Alarms Present by Smoke Alarm Operation and Smoking Materials vs. Candles, Matches and Lighters | 15 |



Home Fires that Began with Upholstered Furniture

In 2002-2005, U.S. fire departments responded to an average of 7,630 home structure fires per year in which upholstered furniture was the first item ignited. These fires caused an annual average of 600 civilian fire deaths, 920 civilian fire injuries, and \$309 million in direct property damage.

On average, one of every 13 upholstered furniture fires resulted in death.

Overall, fires beginning with upholstered furniture accounted for 2% of reported home fires but 21% of home fire deaths.

Major Causes of Upholstered Furniture Fires

Smoking materials remain the leading cause of upholstered furniture fires and losses.

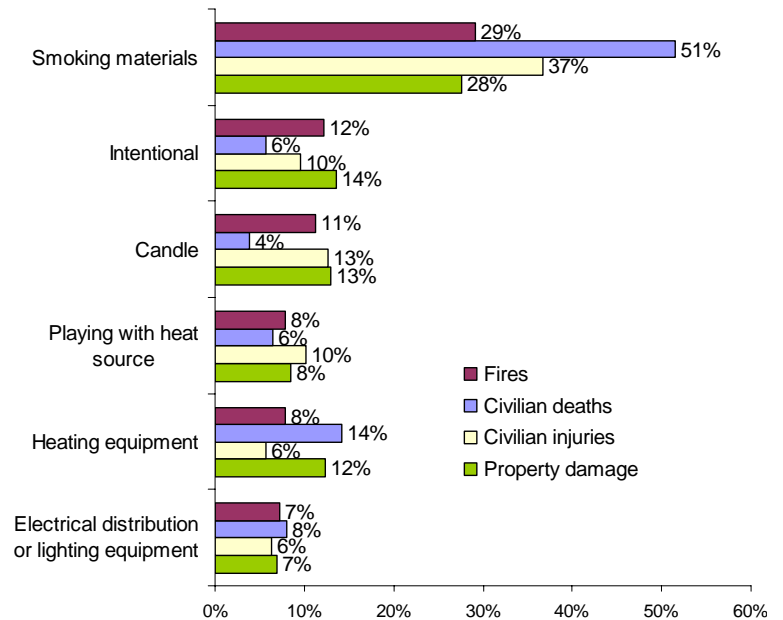
- One of every seven upholstered furniture fires started by smoking materials resulted in death.

Together, candles, matches and lighters were involved in 22% of the fires and 12% of the deaths.

- On average, one of every 23 such fires resulted in death.

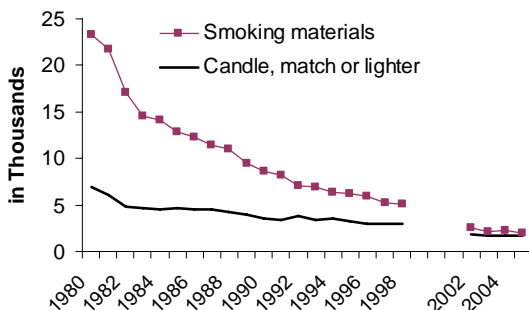
Portable and fixed space heaters were involved in 6% of the upholstered furniture fires and 12% of the associated deaths.

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

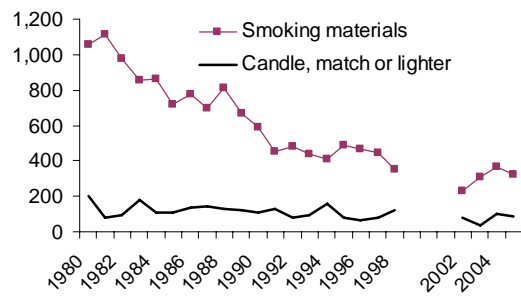


Upholstered furniture fires started by smoking materials and associated deaths fell sharply since 1980. The decline in upholstered furniture fires started by candles, matches or lighters was not as sharp. No clear trend was seen for upholstered furniture deaths from candles, matches and lighters.

Home Upholstered Furniture Fires Started by Smoking Materials vs. Candles, Matches and Lighters, by Year



Civilian Deaths from Home Upholstered Furniture Fires Started by Smoking Materials vs. Candles, Matches and Lighters, by Year



Executive Summary

During 2002-2005, upholstered furniture was the item first ignited in an average of 7,630 reported home structure fires per year. These fires caused an estimated annual average of 600 civilian deaths, 920 civilian injuries and \$309 million in direct property damage. Overall, fires beginning with upholstered furniture accounted for 2% of reported home fires but 21% of home fire deaths.

Upholstered furniture fires in the home environment have decreased sharply, with a very large decrease seen in fires started by smoking materials. However, upholstered furniture remains the leading item first ignited in home fire deaths. Smoking materials remain the leading heat source. Voluntary standards have played a role in reducing these fires and deaths, but mandatory standards have been proposed to reduce them further. In the early 1980s, more than three times as many upholstered furniture fires were started by smoking materials as by candles, matches or lighters. That gap narrowed considerably over time. Upholstered furniture fires from candles, matches and lighters have also declined, but not as sharply. Deaths from these small flame ignitions show no clear pattern, but are much less frequent than deaths from upholstered furniture fires started by smoking materials.

The term “upholstered furniture” is not further defined in the National Fire Incident Reporting System (NFIRS), the source of detailed data about these fires. The CPSC uses a narrower definition in its proposed flammability standard. Furniture that is intended for outdoor use would not be covered under that standard. In 2002-2005, an average of 1,690 fires per year on home properties were either coded

- a) with incident types identifying the fire as outside or unclassified, or
- b) as structure fires that began in outside or open spaces such as balconies, patios or by exterior walls.

Assessing the probable impact of standards is challenging. Upholstered furniture is a durable product. New furniture is likely to meet current 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 ranging from very old and heavily used to newly purchased and never used.

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 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. New materials enter the marketplace. “Fire-safe” cigarettes that extinguish in minutes when not inhaled are required in increasingly more states.

While playing with fire dominates the candle, match or lighter scenarios for small open flames, a candle flame is likely to impinge on the furniture differently than a match or lighter held by a child. Intentional fires are often excluded from the discussion, but the large number of intentional fires that had playing with heat source as a contributing factor suggest that these fires may be intentionally set by children, not determined arsonists.

Many upholstered furniture fires were not started by smoking materials or open flames. For example, 15% of the upholstered furniture fires and 22% of the associated deaths involved either heating equipment or electrical distribution or lighting equipment. Equipment such as heaters or cords may be under or adjacent to the furniture. Scenarios with convective or radiant heat transfer should be included in the discussions.