HOME STRUCTURE FIRES

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April 2013

National Fire Protection Association
Fire Analysis and Research Division

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Abstract
NFPA estimates that U.S. fire departments responded to an average of 366,600 home structure fires per year during the five-year-period of 2007-2011. These fires caused an estimated average of 2,570 civilian deaths, 13,210 civilian injuries, and $7.2 billion in direct property damage per year. Almost three-quarters (71%) of the reported home structure fires and 84% of the home fire deaths occurred in one- or two-family homes, including manufactured homes. The remainder occurred in apartments or other multi-family housing.

Cooking equipment is the leading cause of home structure fires and non-fatal home fire injuries. Smoking materials are still the leading cause of home fire deaths. Half of all home fire deaths result from incidents reported between 11:00 p.m. and 7:00 a.m. One-quarter (25%) of all home fire deaths were caused by fires that started in the bedroom; another quarter (24%) resulted from fires originating in the living room, family room, or den; and 16% were caused by fires starting in the kitchen. Three out of five home fire deaths resulted from fires in which no smoke alarms were present or in which smoke alarms were present but did not operate. Compared to other age groups, older adults were more likely to be killed by a home fire.

These estimates are 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.

Keywords: fire statistics, home fires, residential fires, apartment fires, dwelling fires, multi-family housing

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.

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Executive Summary

During the five-year period of 2007-2011, U.S. fire departments responded to an estimated average of 366,600 home structure fires per year. These fires caused an annual average of 2,570 civilian deaths, 13,210 civilian fire injuries, and $7.2 billion in direct property damage. On average, seven people died in U.S. home fires per day. Home fires accounted for three-quarters (74%) of all reported structure fires, 92% of civilian structure fire deaths, 87% of the civilian structure fire injuries, and two-thirds (68%) of direct structure fire property loss. Homes include one- and two-family homes, manufactured homes, and apartments or other multi-family housing, regardless of ownership. In general, any fire in or on a structure is considered a structure fire, including incidents in which only contents were damaged.

The statistics about fires and associated losses in this analysis are national estimates of fires reported to U.S. municipal fire departments. Fires reported only to federal or state agencies or industrial fire brigades are not captured here. These national estimates are projections based on the detailed information collected by the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS 5.0) and the National Fire Protection Association's (NFPA's) annual fire department experience survey.

During 2007-2011, roughly one of every 320 households per year had a reported home fire.

Results from NFPA's annual survey of fire department experience are provided annually in the, *Fire Loss in the United States* series, by Michael J. Karter, Jr. His estimates of home fires and losses for 2011 show that substantial progress has been made since 1980, the first year in which national estimates of specific fire problems were available. Reported home fires fell from 734,000 in 1980 to 370,000 in 2011, a 50% drop. Deaths resulting from these fires fell 52% from 5,200 in 1980 to a new low of 2,520 in 2011.

Understanding how home fires occur and the factors that contribute to injury or death is essential to finding better ways to prevent such incidents. In 2007-2011, people 65 and older were 2.4 times as likely to die from a home fire as the general population. People in the 50-64 age group were 1.4 times as likely to die in a home fire as the overall population. Children under five were 1.1 times as likely as the overall population to be killed by a home fire. This means that pre-school children now have a fire death risk only slightly greater than the overall population. The highest risk for non-fatal home fire injury was seen among adults age 20-49 or 85 and older. Members of these age groups were 1.2 times as likely to be injured in a home fire as the overall population.

In 2007-2011, 29% of home structure fires and more than one-third (37%) of home structure fire deaths occurred in the winter months of December, January and February. Reported home fires peaked around the dinner hours of 5:00 to 8:00 p.m. While just one-fifth (20%) of reported home fires occurred between 11:00 p.m. and 7:00 a.m., but half (51%) of the home fire deaths resulted from fires reported during these hours.

Cooking equipment continues to be the leading cause of reported home structure fires and civilian fire injuries. It is also the leading cause of unreported fires. In a survey of unreported residential fires in 2004-2005, the Consumer Product Safety Commission (CPSC) found that U.S. households had 50 cooking equipment fires they did not report for every such incident reported to the fire department.

Fires started by smoking materials have historically caused the largest number of fire fatalities. This was still true in 2007-2011. Heating equipment was the second leading cause of home fires and home fire deaths during this period. Heating equipment was actually the leading cause of fire deaths in one- or two-family homes. In an unusual development, deaths from fires involving cooking equipment exceeded those caused by heating equipment in 2011.

Most reported home fires were small. Fifty-eight percent were confined to the object of origin. The fire spread beyond the room of origin in only one-quarter (25%) of the reported fires in 2007-2011. Reported fires originating in the kitchen spread beyond the room of origin only 6% of the time.

Two of every five (42%) reported home fires in 2007-2011 started in the kitchen or cooking area. These fires caused 16% of the home fire deaths and more than one-third (38%) of the reported fire injuries. Apartment or multi-family housing fires were more likely to start in the kitchen than were fires in one- or two-family homes. Seven percent of home structure fires started in the bedroom. These incidents caused one-quarter (25%) of the home fire deaths and one-fifth (20%) of the civilian injuries. Six percent of home fires originated in and were confined to the chimney or flue. These fires resulted in less than 1% of civilian fire deaths, injuries or associated property damage. Only 4% of home structure fires originated in the living room, family room, or den, but these incidents caused one-quarter (24%) of the civilian fire deaths and 11% of the civilian injuries.

Almost two-thirds (64%) of home fire deaths in 2007-2011 resulted from fires in one of three areas -- the bedroom, the living room, family room or den; or the kitchen. These areas are examined in greater detail in this report. More than two-thirds (70%) of the victims of fatal bedroom fires were in the area of origin at the time of the incident, as were half (48%) of the victims of fires originating in the living room, family room or den, and two out of five (41%) of the fatalities from kitchen fires.

Seventy to eighty percent of the deaths caused by fires starting in these three areas resulted from fires that spread beyond the room of origin. However, four out of five (80%) injuries from kitchen fires were caused by fires that were confined to the kitchen.

Almost three-quarters of the deaths caused by fires that started in the bedroom resulted from fires that spread beyond the room, but less than one-third (29%) of the victims were outside of the bedroom when the fire started. This suggests that in most of these incidents, much of the fire growth occurred after the victims were incapacitated.

The leading items first ignited vary predictably by area of origin. Cooking materials, including food, were first ignited in almost two-thirds of the kitchen fires and kitchen fire injuries and in

one-third of kitchen fire deaths. Upholstered furniture was the item first ignited in one of every five fires starting in a living room, family room or den, and in almost half of the associated deaths. Mattresses or bedding were first ignited in almost one-third of the fires originating in the bedroom and almost half of the associated deaths and injuries. Some overlap does occur. Upholstered furniture was first ignited in 6% of fire deaths resulting from fires starting in the bedroom. Mattresses or bedding were first ignited in 5% of the deaths from fires starting in the living room.

More progress has been made in some areas than in others. Historically, the largest number of fire deaths resulted from fires starting in living rooms, family rooms, or dens. The difference between the three leading areas of origin for home fire deaths has shrunk over time, with deaths from fires starting in bedrooms now sometimes exceeding the number resulting from fires starting in living rooms, family rooms or dens. Compared to home fire deaths in 1980-1984, the average number of deaths in 2007-2011 resulting from fires starting in the living room, family room, or den fell 68%; deaths from fires beginning in the bedroom fell 47%; and deaths from kitchen fires dropped 38%.

The two leading items in home fire deaths remain upholstered furniture, first ignited in 18% of home fire deaths in 2007-2011, and mattresses and bedding, first ignited in 13% of the deaths. It is encouraging that the average number of deaths from home fires beginning with upholstered furniture was 63% lower than the 1980-1984 average, while deaths from fires starting with mattresses or bedding were down 57% from the earlier period.

The annual average death toll from fires started by smoking materials was 66% lower in 2007-2011 than it was in 1980-1984, while deaths from fires started by small open flames (lighters, candles, or matches) were down 56% compared to the earlier years. The death toll from fires started by some type of operating equipment was 45% lower in the more recent period than in 1980-1984.

Almost all home fires and associated losses result from fires in homes that are normally occupied. In recent years, the poor economy has led to an increase in housing units that are temporarily vacant or vacant year round. While 11% of housing units were vacant year-round in 2007-2011, only 6% of home structure fires occurred in vacant properties. Vacant properties do pose some special concerns. Half (50%) of the fires in vacant homes were intentionally set, compared to only 8% of home structure fires overall. Fire spread beyond the building of origin in 10% of vacant home fires compared to only 3% of home fires overall.

Considerable progress has been made but more is left to be done. Equipment and other product redesign, such as the "fire-safe" cigarette which was designed to stop burning if not actively smoked, or automatic shut-offs on heating equipment, cooking equipment, or irons can mitigate human error and improve safety. Such changes may be the most effective and inexpensive approach to fire prevention. The CPSC issues safety standards and recalls of unsafe consumer products.

Properly installed and maintained fire protection equipment can prevent most fire deaths. A smoke alarm was present in almost three-quarters of reported home fires, substantially less than

the 96% of homes with smoke alarms that were reported surveys done for NFPA in the past few years. However, three out of five home fire deaths resulted from fires in which no smoke alarm was present (37%) or at least one alarm was present but did not operate (23%). Forty percent of home fire deaths resulted from fires with operating smoke alarms. Only a minority of homes have interconnected smoke alarms. When smoke alarms are interconnected, all alarms will sound when one is activated, enabling the warning to sound throughout the home.

People who are in the room of fire origin may be intimately involved with ignition. Their clothing or the furniture they are sitting in or lying on may catch fire. Traditional means of fire protection may not save them. Even if they are not intimately involved, being in the room where the fire starts dramatically reduces the time they would have to escape.

Home fire sprinklers can control a fire until help arrives even when the occupants are unable to act. In his 2012 report, *U.S. Experience with Sprinklers*, John R. Hall, Jr. of NFPA noted that fire sprinklers were present in only 6% of reported home fires in 2006-2010. The death rate per 1,000 reported home fires was 83% lower when wet pipe sprinkler systems were present compared to reported home fires without any automatic extinguishing systems. For more information on how sprinklers can help, see firesprinklerinitiative.org.

Additional safety information on the topics discussed can be found at NFPA's website, nfpa.org. All of NFPA's codes and standards can be viewed at nfpa.org/freeaccess.

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U.S. Home Structure Fires Fact Sheet

U.S. fire departments responded to an estimated average of 366,600 home structure[1] fires per year during 2007-2011. These fires caused an annual average of

- 2,570 civilian fire deaths,
- 13,210 civilian fire injuries, and
- $7.2 billion in direct damage.

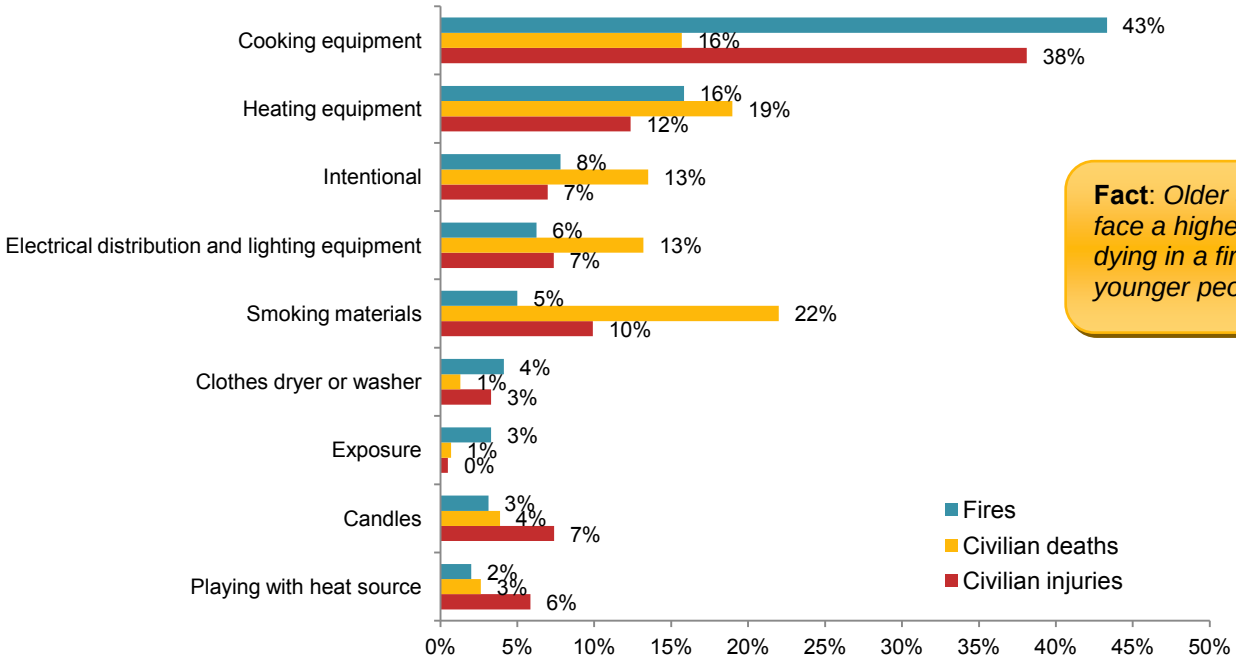
- 92% of all structure fire deaths resulted from home fires.
- On average, seven people died in U.S. home fires per day.

Causes and Circumstances of Home Fires

Cooking equipment was the leading cause of home structure fires and home fire injuries.

Smoking was the leading cause of civilian home fire deaths. Heating equipment was the second most common cause of home fire fatalities.

Leading Causes of Home Structure Fires: 2007-2011



Fact: *Older adults face a higher risk of dying in a fire than younger people.*

Almost all homes have at least one smoke alarm, but three out of five home fire deaths in 2007-2011 resulted from fires in homes in which no smoke alarm was present (37%) or at least one was present but none operated (23%).

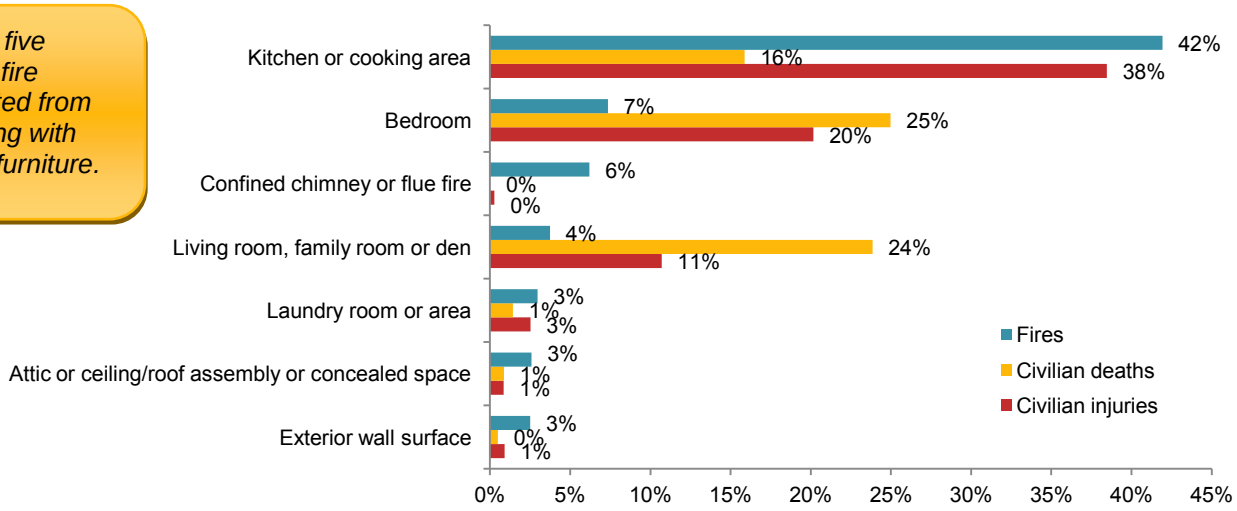
[1]Homes include one- or two-family homes, manufactured homes, as well as apartments or other multi-family housing. In general, any fire that occurs in or in a structure is considered a structure fire, even if the fire was limited to contents and the building itself was not damaged. Estimates were derived from USFA's National Fire Incident Reporting System and NFPA's annual fire department experience survey.

Where do home fires start?

- Two of every five (42%) reported home structure fires started in the kitchen. These fires caused more than one-third (38%) of civilian home fire injuries.
  - In addition, 16% of home fire deaths resulted from kitchen fires.
- Only 7% of reported home fires started in the bedroom, but these fires caused one-quarter (25%) of home fire deaths and one in five (20%) home fire injuries.
- Just 4% of home fires started in the living room, family room, or den but these incidents caused one-quarter (24%) of home fire deaths and 11% of the home fire injuries.
- Fires confined to chimneys or flues accounted for 6% of all reported home fires. These fires caused very few casualties.

Leading Areas of Origin in Home Structure Fires: 2007-2011

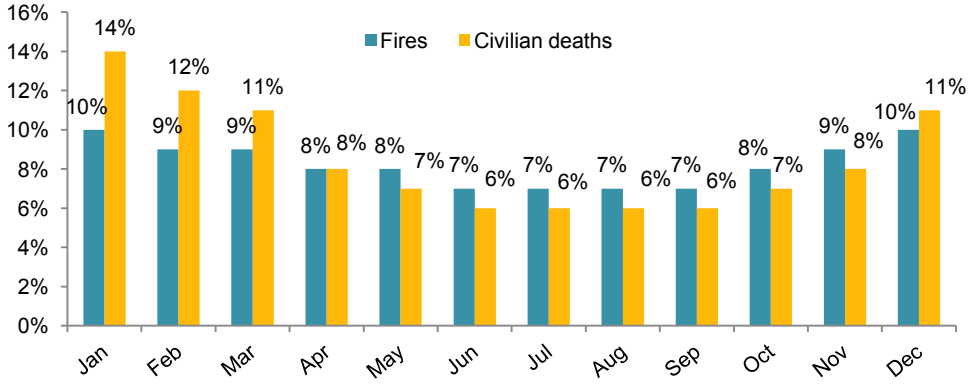
Fact: *One in five (18%) home fire deaths resulted from fires beginning with upholstered furniture.*



Home fires and home fire deaths peak in the cooler months. Patterns for time of day are different for fires than for deaths.

- Home structure fires peaked around the dinner hours between 5:00 and 8:00 p.m.
- Only one in five (20%) reported home structure fires occurred between 11:00 p.m. and 7:00 a.m. These fires caused half of all home fire deaths.

Home Structure Fires, by Month: 2007-2011



Home Fires: How Often and How Likely?

Sometimes it is easier to think of the statistics in terms of time. The statistics below are based on home structure fires reported during 2007-2011.

Reported home fires by time

On average, U.S. fire departments responded to an average of 1,000 home structure fires every day. This translates to 42 home fires every hour or one reported home fire every 86 seconds.

Home fires killed an average of seven people per day.

A civilian (non-firefighter) home fire injury was reported every 40 minutes.

Home fires caused roughly $228 in damage every second.

The odds of a reported fire

According to the U.S Census Bureau, in 2009 (the mid-point of this period), the U.S. had roughly 307 million residents living in roughly 117 million households. That means that, on average during this period,

- Roughly one of 840 people had a reported home fire each year.
- Roughly one of every 320 households had a reported home fire each year.
- On average, one of every 119,000 U.S. residents died in a home fire per year.

Fires handled without the fire department

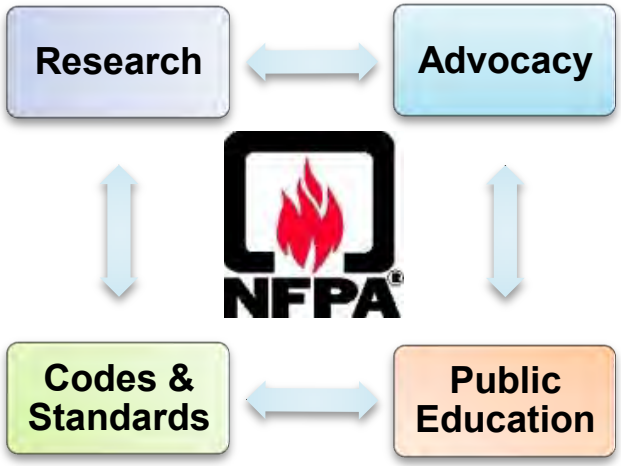
The Consumer Product Safety Commission's (CPSC's) 2004-2005 Residential Fire Survey found that U.S. households experience an average of 7.4 million home fires per year. Roughly 130,000 injuries or symptoms, usually minor, resulted from these fires. The fire department was called to only 3% of these fires.

Including unreported fires, one in 40 people has a home fire each year, as does one in 15 households. This means that over an average lifetime, an individual's household will experience five fires.

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.

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:

NFPA1: Fire Code;:

NFPA 101: Life Safety Code®; and

NFPA 13D: Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

The public can view NFPA's codes and standards at nfpa.org/freeaccess.

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 childhood education programs, educational messaging, grants & awards, and many other topics.

Home Structure Fires: Overview

366,600 home structure fires were reported per year.
During the five-year period of 2007-2011, U.S. fire departments responded to an estimated average of 366,600 home structure fires per year. These fires caused an annual average of 2,570 civilian (non-fire service) deaths, 13,210 civilian fire injuries, and $7.2 billion in direct property damage. On average, seven people died in U.S. home fires per day.

Table A provides a more detailed breakdown of losses by occupancy. Almost three-quarters (71%) of the reported home structure fires and 84% of the fatal home fire injuries occurred in one- or two-family homes, including manufactured homes.

Table A.
Reported Home Structure Fires by Property Use
2007-2011 Annual Averages

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
One- or two-family home, including manufactured home	260,200	(71%)	2,160	(84%)	8,930	(68%)	$5,959	(83%)
Apartment or other multi-family housing	106,400	(29%)	410	(16%)	4,280	(32%)	$1,248	(17%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)

On average, one of every 320 households reported a fire per year.
According to the U.S Census Bureau, in 2009 (the mid-point of this period), the U.S. had roughly 307 million residents living in roughly 117 million households.[1] Dividing the total number of households by the number of home fires yields a rate of roughly one reported fire for every 320 housing units annually.

92% of civilian structure fire deaths resulted from fires in the home.
Based on annual averages for 2007-2011, the 366,600 reported home structure fires accounted for 74% of the 498,400 structure fires, 92% of the 2,780 civilian structure fire deaths, 87% of the 15,220 civilian structure fire injuries, and 68% of the $10.7 billion in direct property loss.

The number of reported home structure fires has been cut in half since 1980.
The NFPA annual fire department experience survey provides the earliest estimates of reported home fires and associated losses although it lacks the detail about causes and circumstances found in NFIRS. Tables 1, 1A and 1B show the number of reported fires in homes, one- or two-family homes, and apartments or other multi-family housing, respectively, based on data collected by NFPA's survey.[2]

[1] U.S. Census Bureau, Table 8 "Intercensal Resident Population by Sax and Age," and Table 59, "Households, Families, Subfamilies, and Married Couples" in *Statistical Abstract of the United States,* 2012 edition.
[2] The NFPA survey is separate from NFIRS. Although the definitions are the same, the survey does not include provisions for capturing unknown data. National estimates derived solely from NFPA's survey will differ somewhat from estimates derived when NFIRS and NFPA survey are combined.

Data Sources, Definitions and Conventions Used in this Report

Unless otherwise specified, the statistics in this analysis are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. The 2007-20111 estimates are projections based on the detailed information collected in Version 5.0 of the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS 5.0) and the National Fire Protection Association's (NFPA's) annual fire department experience survey. Except for property use and incident type, fires with unknown or unreported data were allocated proportionally in calculations of national estimates.

What is included in NFPA's definition of "home?"

- detached dwellings, duplexes, and manufactured housing, and
- apartments, tenements, and flats, townhouses, rowhouses, and other multi-family housing, regardless of ownership.

In general, any fire that occurs in or on a structure is considered a structure fire, even if the fire was limited to contents and the building itself was not damaged.

What are" confined" and "non-confined" fires?

NFIRS 5.0 includes a category of structure fires collectively referred to as "confined fires," identified by incident type. These include confined cooking fires, confined chimney or flue fires, confined trash fires, confined fuel burner or boiler fires, confined commercial compactor fires, and confined incinerator fires (incident type 113-118). Table A.1 in Appendix A shows that confined fires accounted for a larger share of fires in apartments or other multi-family housing than in one- and two-family homes. Losses are generally minimal in these fires, which by definition, are assumed to have been limited to the object of origin. Although causal data is not required for these fires, it is sometimes present.

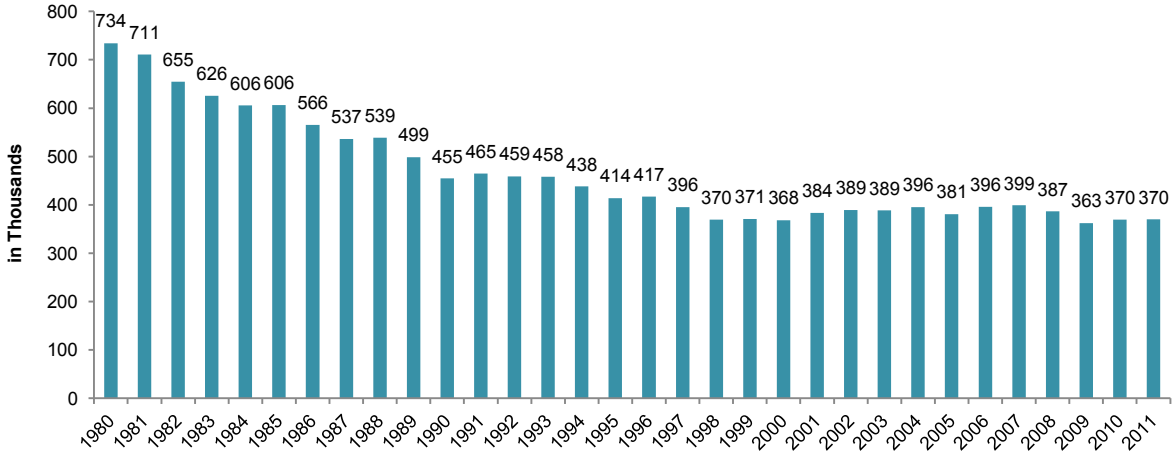
Confined and non-confined fires were analyzed separately and then summed for Cause of Ignition, Heat Source, Factor Contributing to Ignition, Area of Origin, and Item First Ignited. Non-confined fires and confined cooking fires were analyzed for Equipment Involved in Ignition. Other types of confined fires were not broken out further and were listed by incident type.

Additional information

Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Except for trend tables, property damage has not been adjusted for inflation. Fires are rounded to the nearest hundred, civilian deaths and injuries are generally rounded to the nearest ten (except for estimates based solely on the NFPA survey where deaths are rounded to the nearest five and injuries to the nearest 25), and direct property damage is rounded to the nearest million dollars. Additional details on the methodology may be found in Appendix A and B.

Figure 1A shows that the 370,000 home structure fires reported in 2011 is 50% less than the 734,000 fires reported in 1980. The decline was sharpest during the 1980s and continued more slowly in the 1990s. Home fires have increased slightly since the 2009 low of 362,500, with a negligible increase from 2010 to 2011.

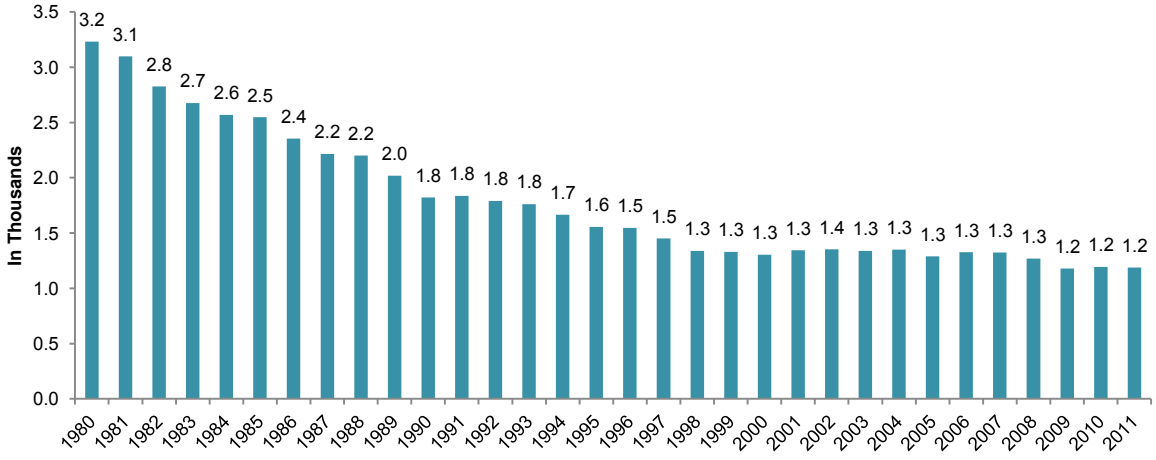
Figure 1A. Reported Home Structure Fires, by Year: 1980-2011



Source: NFPA survey.

Figure 1B shows that the drop in reported home structure fires was even greater when population growth was considered. The rate of reported home fires per million population fell 63% from was even greater 3,230 in 1980 to 1,187 in 2011.

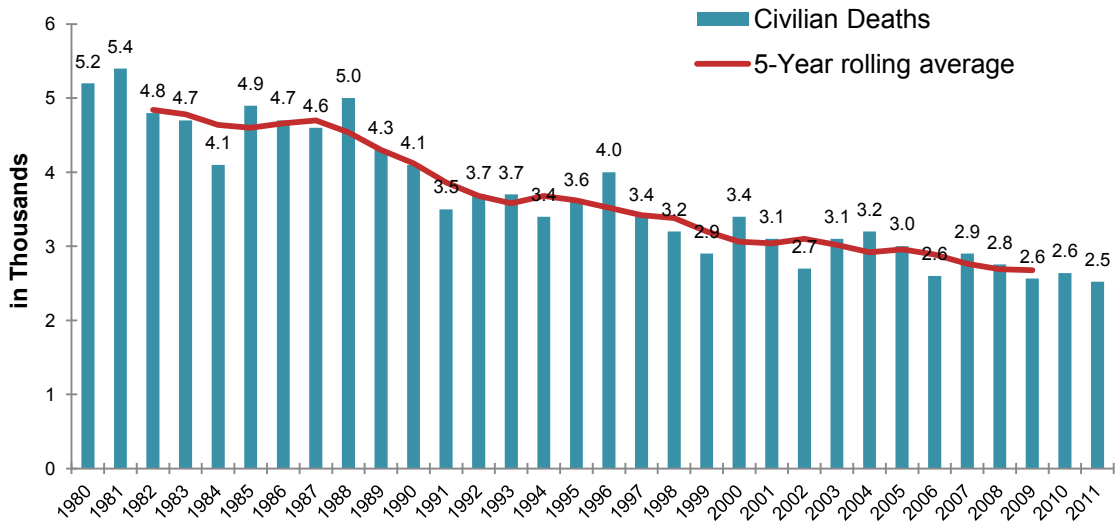
Figure 1B. Reported Home Structure Fires per Million Population, by Year: 1980-2011



Source: NFPA survey, U.S. Census Bureau

Home fire deaths hit a new low in 2011.
Figure 2A shows that the estimated home fire death toll of 2,520 in 2011 was 52% lower than the 5,200 reported in 1980. From 2010 to 2011, deaths fell by 5%. From 2006 on, home fire deaths have consistently been below 3,000, a mark that was reached only twice between 1980 and 2005.

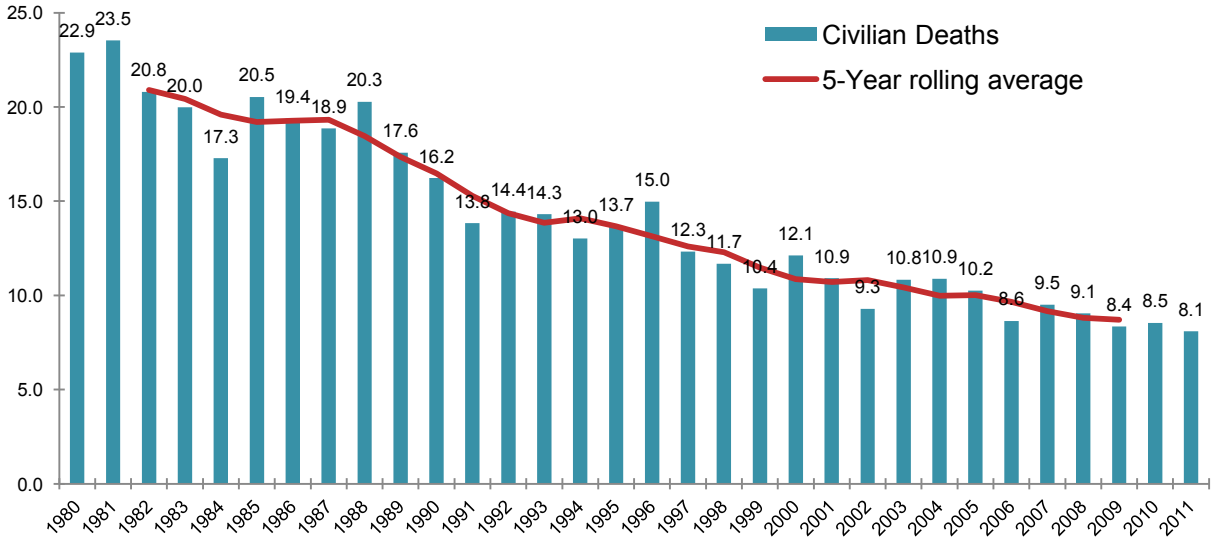
Figure 2A. Reported Home Structure Fire Deaths, by Year: 1980-2011



Source: NFPA survey.

Figure 2B shows the rate of home fire deaths per million population was also greater than the drop in actual fire deaths, falling 65% from 22.9 in 1980 to 8.1 in 2011.

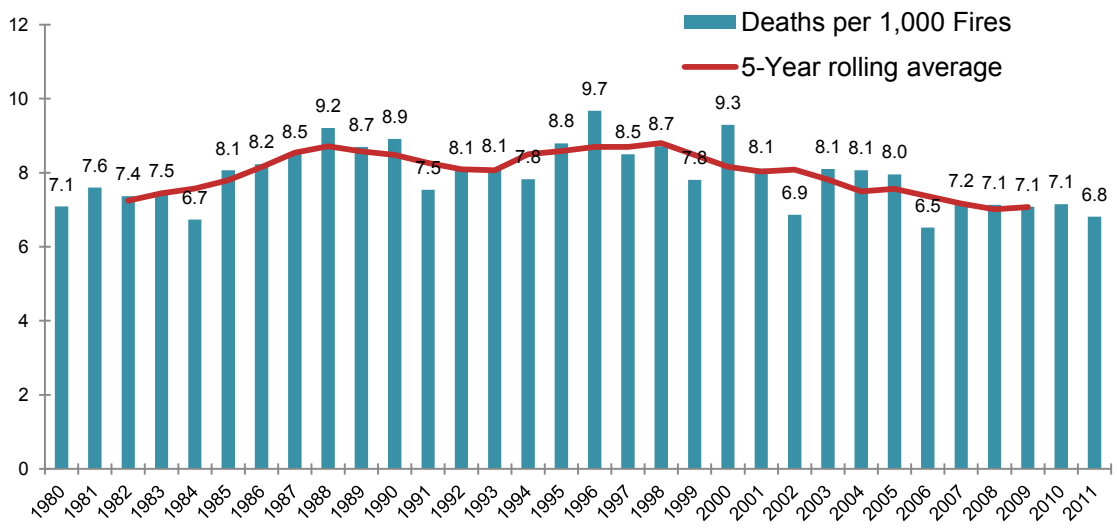
Figure 2B. Reported Home Structure Fire Deaths per Million Population, by Year: 1980-2011



Source: NFPA survey.

While consistent progress has been made in reducing the number and frequency of these fires and deaths, Figure 2C shows that the considerably less progress has been made in reducing the rate of home fire deaths per 1,000 reported fires.

Figure 2C. Reported Home Fire Deaths per Thousand Reported Fires, by Year: 1980-2011

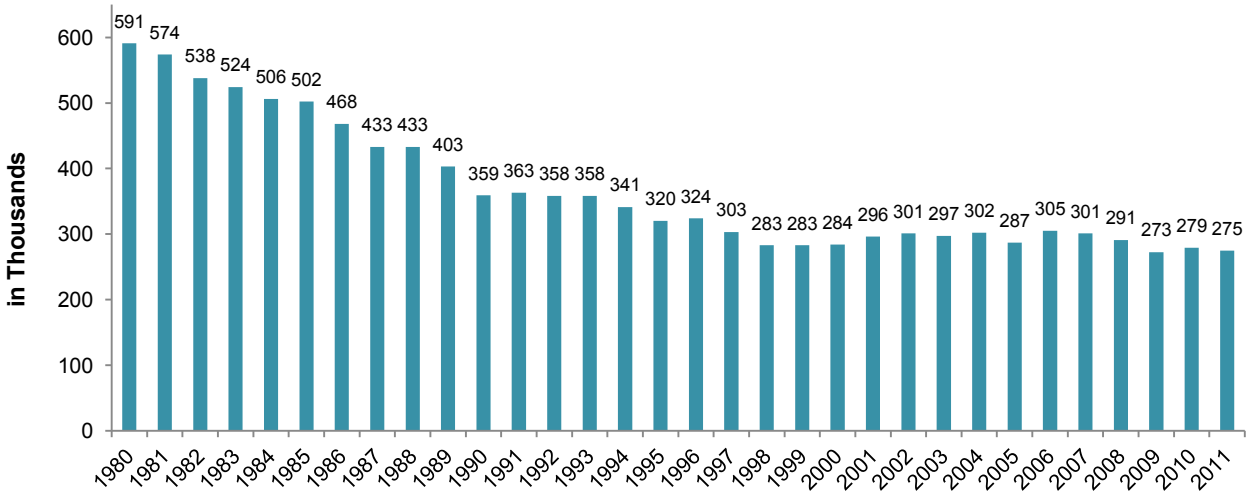


Source: NFPA survey.

The home fire problem is dominated by and resembles the fire experience of one-and two-family homes.

Figure 3 shows that the trend in reported one- and two-family home fires (including fires in manufactured housing) closely resembles that of fires in all homes.

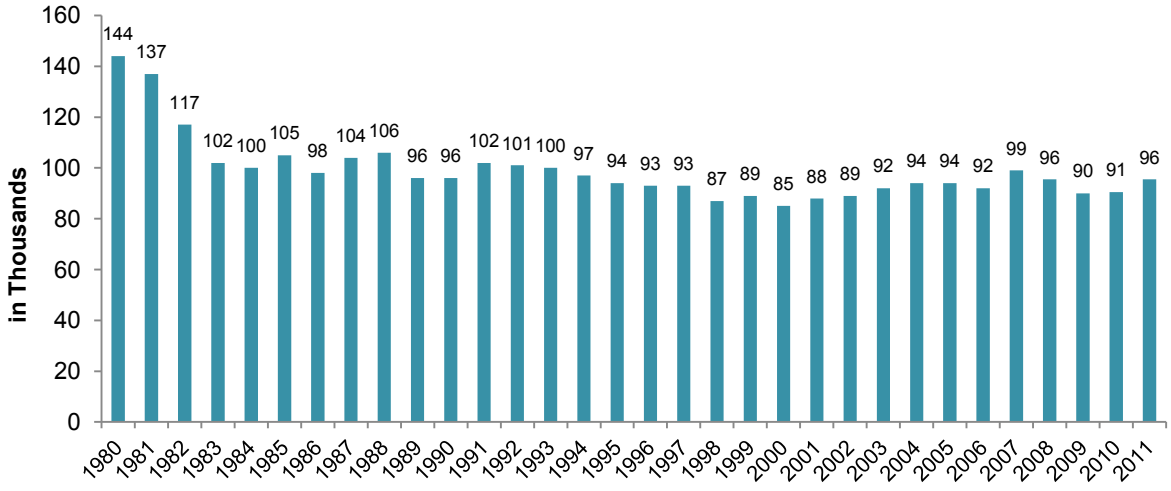
Figure 3. Reported Structure Fires in One- or Two-Family Homes by Year: 1980-2011



Source: NFPA survey.

Figure 4 shows that the trend is rather different in apartments or multi-family homes. These fires fell sharply in the early 1980s, declined more gradually in the 1990s, but have been relatively stable since then. From 2010 to 2011, these fires rose 6%. The smallest number of apartment or multi-family housing fires was reported in 2000. Two-thirds (68%) of the apartment fires reported during 2007-2011 had one of the confined structure fire incident types as compared to roughly one-third (37%) of the fires in one-and two-family homes. It is possible that minor apartment or multi-family housing fires are more likely to be reported than are minor fires in one- or two-family homes.

Figure 4. Reported Structure Fires in Apartments or Multi-family Housing, by Year: 1980-2011



Source: NFPA survey.

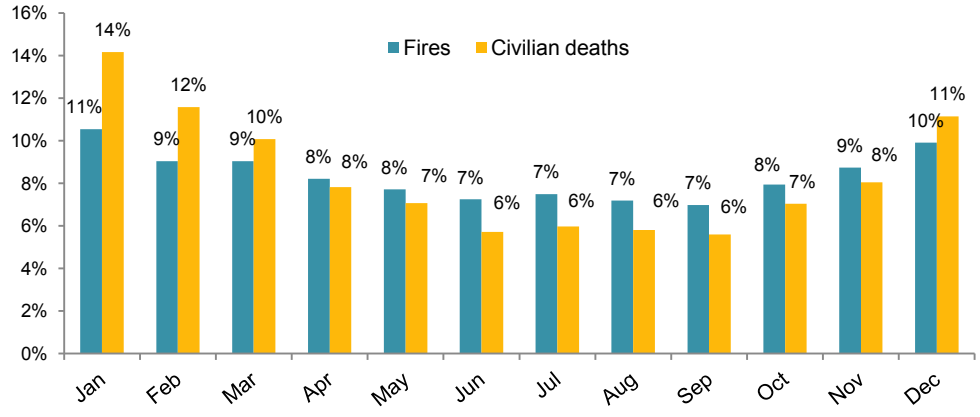
When Do Home Fires Occur?

Home fire deaths peak in the cooler months.

Figure 5 and Table 2 show that more than one-third (37%) of home structure fire deaths and 29% of home fires occurred during the winter months of December, January and February. Twenty-nine percent of the fires occurred in these months. This pattern reflects the influence of heating equipment fires and more time spent inside. If events were distributed evenly across the year, there would be 8.3% each month or 25% over the three-month period. Half (50%) of the home heating equipment fires in 2006-2010 were reported in these three months, as were more than half (56%) of home heating equipment fire deaths.[3] Sunday was the peak day for reported home fires with Saturday a close second. Home fire deaths and injuries peaked on Saturday. (See Table 3.)

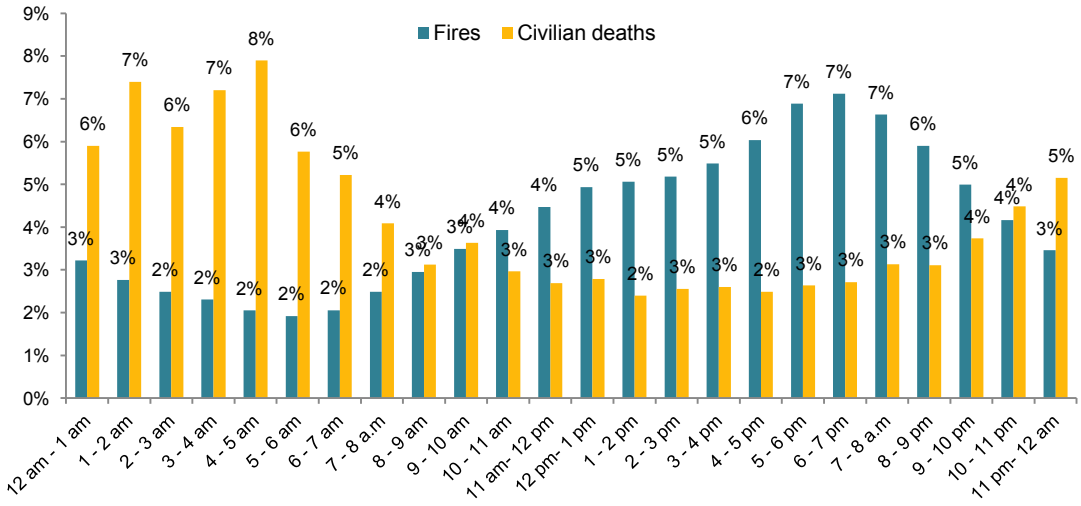
[3] John R. Hall, Jr. *Home Fires Involving Heating Equipment*, Quincy, MA: National Fire Protection Association, 2012, p. 29.

Figure 5. Home Structure Fires and Deaths, by Month: 2007-2011



Fires reported between 11 p.m. and 7 a.m. caused half of home fire deaths.
Figure 6 and Table 4 show that reported home fires peaked around the dinner hours of 5:00 to 8:00 p.m. Only one in five (20%) of the reported home fires occurred between 11:00 p.m. and 7:00 a.m. but half (51%) of the home fire deaths resulted from incidents reported during these hours. The patterns are similar in one- or two-family homes and in apartments or other multi-family housing.

Figure 6. Home Structure Fires, by Alarm Time: 2007-2011



Ages of Victims

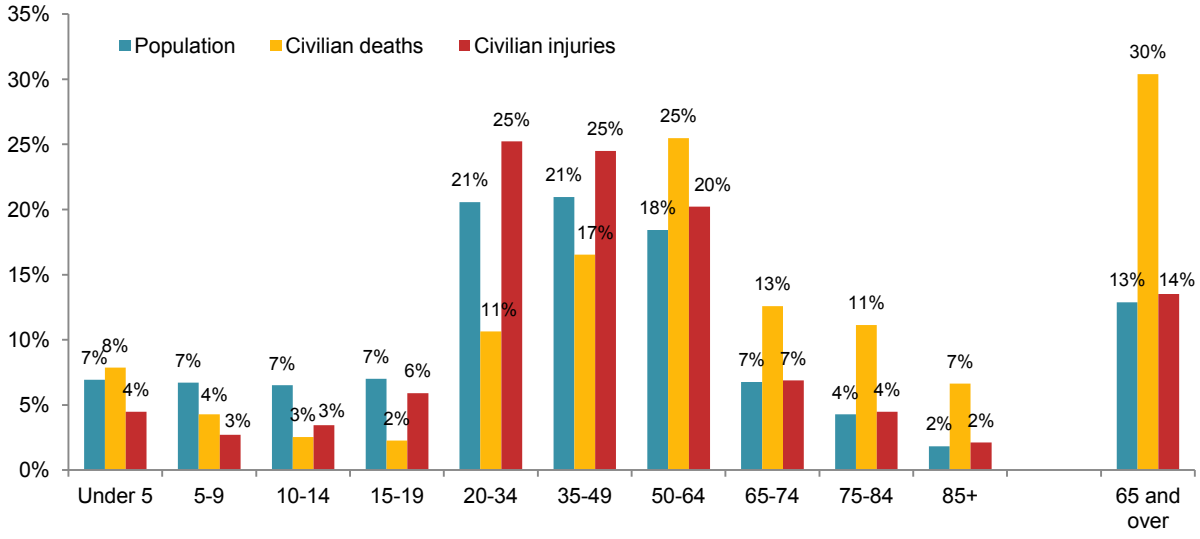
Older adults face a higher risk of dying in home fires than do young people.
To prevent fire deaths and injuries, it is necessary to know something about the victims and fire causes. Age data can be helpful when considering how to reach people. In 2009 (the midpoint of the five-year range of 2007-2011), people 65 and over made up only 13% of the U.S. population, but they accounted for 30% of the home fire deaths. (See Figure 7.) Children under 14 account for 20% of the population and 15% of the fire deaths.

Figure 8 shows that people 85 and older were 3.6 times as likely as the overall population to die of a home fire. For all people 65 or older, the relative risk was 2.4 times that of the overall population. Children under five have historically faced a higher risk of fire death than the overall population. In 2007-2011, this age group was 1.1 times as likely to die in a home fire as the general population. Table B and Figure 8 show that the relative risk was higher (1.4) for people in the 50-64 age group than it was for young children.

Relative Risk

Relative risk compares the risk of a specific group versus the population at large. The relative risk of fire death or injury for each age group was calculated by dividing the rate of death or injury per million population for each age group by the rate of the general population.

Figure 7. Home Structure Fire Civilian Deaths and Injuries, by Age Group: 2007-2011

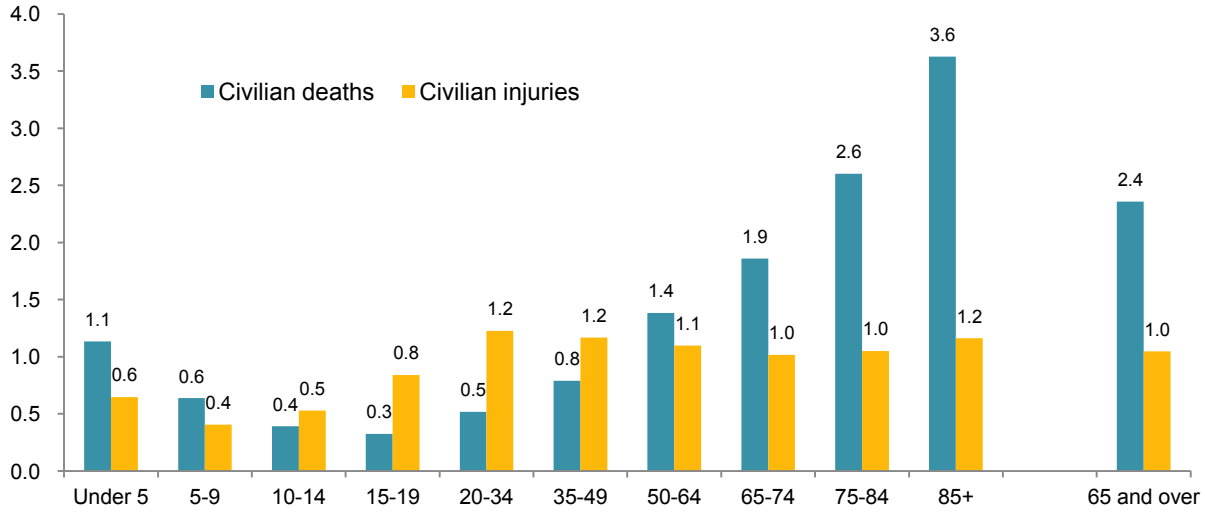


Compared to the general population, young adults were at greater risk of home fire injury.
The risk of home fire injury varies less by age than does the risk of home fire death Adults between 20 and 49 and those 85 or older faced the highest relative risk (1.2 times that of the general population) of home fire injury The risk of fire injury for children was lower than for the general population.

Table B. U.S. Civilian Fire Deaths and Injuries Reported in Home Structure Fires
2007-2011 Annual Averages

Age Group	2009 Population in Millions		Civilian Deaths		Deaths per Million	Relative Risk of Death	Civilian Injuries		Injuries per Million	Relative Risk of Injury
Under 5	21.3	(7%)	200	(8%)	9.5	1.1	590	(4%)	27.8	0.6
5-9	20.6	(7%)	110	(4%)	5.3	0.6	360	(3%)	17.4	0.4
10-14	20.0	(7%)	70	(3%)	3.3	0.4	460	(3%)	22.8	0.5
15-19	21.5	(7%)	60	(2%)	2.7	0.3	780	(6%)	36.2	0.8
20-34	63.1	(21%)	270	(11%)	4.3	0.5	3,330	(25%)	52.8	1.2
35-49	64.4	(21%)	430	(17%)	6.6	0.8	3,240	(25%)	50.3	1.2
50-64	56.5	(18%)	660	(25%)	11.6	1.4	2,670	(20%)	47.2	1.1
65-74	20.8	(7%)	320	(13%)	15.6	1.9	910	(7%)	43.7	1.0
75-84	13.1	(4%)	290	(11%)	21.8	2.6	590	(4%)	45.1	1.0
85+	5.6	(2%)	170	(7%)	30.4	3.6	280	(2%)	49.9	1.2
Total	307.0	(100%)	2,570	(100%)	8.4	1.0	13,210	(100%)	43.0	1.0
Selected age groups										
14 and under	61.9	(20%)	380	(15%)	6.1	0.7	1,410	(11%)	22.7	0.5
65 and over	39.6	(13%)	780	(30%)	19.8	2.4	1,780	(14%)	45.1	1.0

Figure 8. Relative Risk of Civilian Death and Injury from Home Structure Fires, by Age Group
2007-2011



Leading Causes of Reported Home Structure Fires

Table 5 and Figure 9 show the leading causes of home structure fires in 2007-2011 with data summarized from several NFIRS fields. Cooking equipment remained the leading cause of home structure fires and civilian fire injuries while smoking materials remained the leading cause of fire deaths.

Each of the causes shown in Figure 9 will be discussed in more detail on the following pages. Note that when some type of equipment is identified as a cause, it means the equipment was involved in the ignition and need not mean that the equipment was defective or malfunctioned. Improper use of equipment can also lead to fire.

The broad categories of cause of ignition, a field in NFIRS 5.0, are shown in Table 6. More detailed information on equipment involved in ignition may be found in Table 7. Table 8 shows more information on heat sources. Factors contributing to ignition are shown in Table 9.

How Leading Cause Categories Were Chosen and Calculated

In some cases, the equipment involved in ignition is most relevant; heat source, the field "cause," and factor contributing to ignition also provide relevant information. The causes shown here are not mutually exclusive when they have been pulled from different fields. Note also that multiple entries are allowed for factors contributing to ignition. Causal factors that lack detail (such as "unintentional" or "failure of equipment or heat source" in the cause field, or "heat from operating or powered equipment" or "arcing" in the heat source field) were not included in this summary table. The causes shown are those that are well defined, account for at least 2% of the fires, and have clear prevention strategies or have historically been of interest. Detailed information about the methodology and what is included may be found in Appendix B.

Leading fire causes differ for one- or two-family homes vs. apartments or multi-family housing.

Figure 10 and Tables 5A and 5B show that the cause profile for apartment or multi-family housing fires differs markedly from the profile for one- or two-family home fires, despite the fact that their two leading causes are the same. Heating equipment was the leading cause of death resulting from fires in one- or two-family homes but only the fifth leading cause of death from fires in apartments or other multi-family housing. Cooking equipment was the second leading cause of apartment or multi-family housing fire deaths, ranking behind smoking.

Because reported fires in one- or two-family homes outnumber apartment or multi-family housing fires by more than two to one, the fires in one- or two-family homes dominate the cause profile.

Figure 9. Leading Causes of Home Structure Fires: 2007-2011

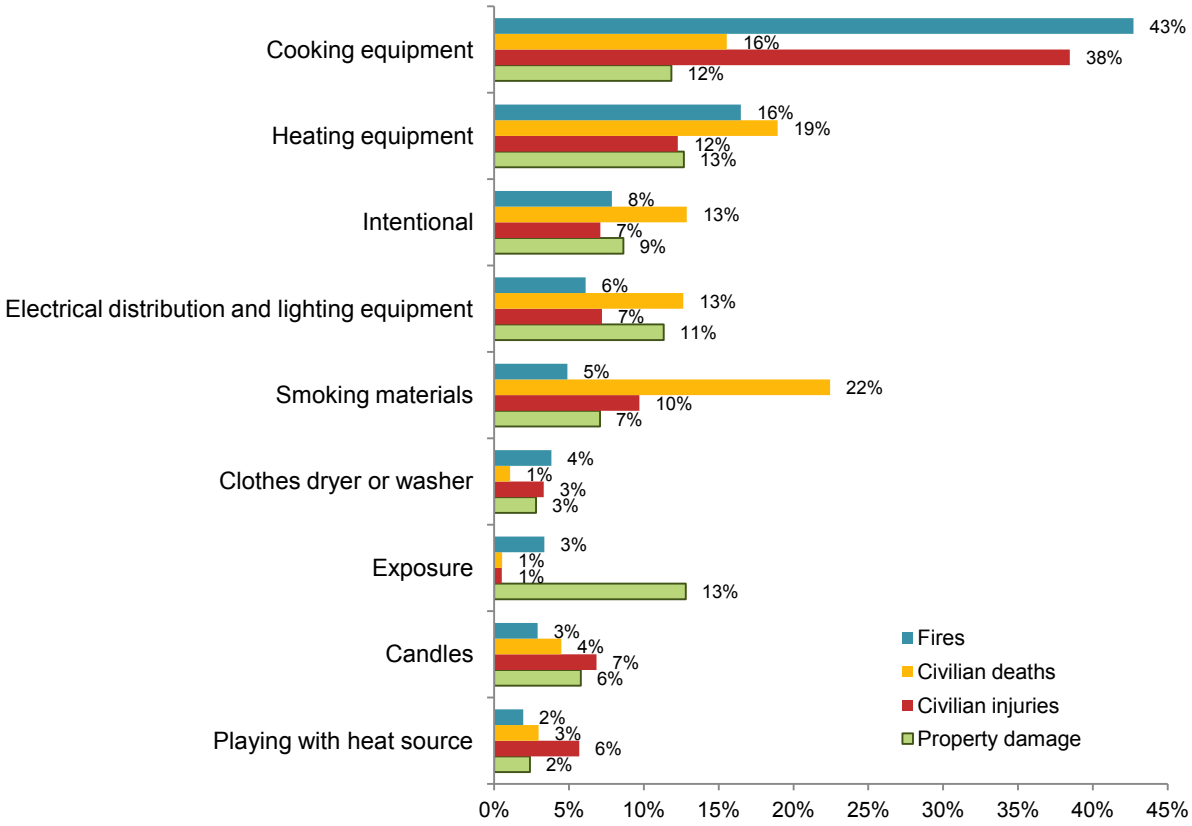
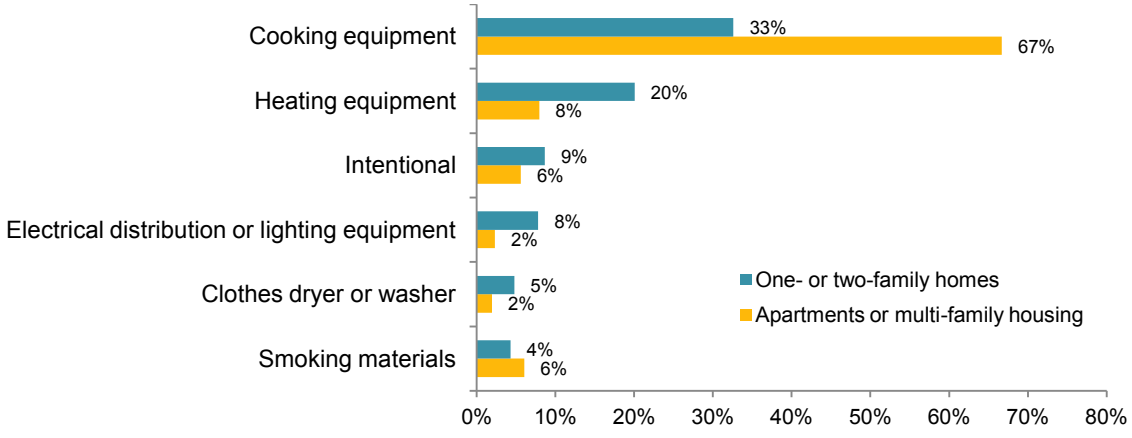


Figure 10. Leading Causes of Structure Fires in One- or Two-Family Homes vs. Apartments or Multi-Family Housing: 2007-2011



The systems that tend to be centrally installed, maintained and supervised in apartment buildings, such as heating, cause a smaller share of the fires in apartments than in one- or two-family homes. Those causes that are more likely to reflect the actions of the occupants, such as cooking, rank high in both kinds of properties. This is not surprising given the role human error plays in many fires.

It is also possible that more minor fires are reported when they occur in apartments or multi-family housing than in one- or two-family homes, resulting in a different cause distribution.

Human Error

Human error frequently plays a role in equipment-related fires. Regulatory standards or protocols can reduce error and improve safety.

Equipment and other product redesign, such as the "fire-safe" cigarette or automatic shut-offs on heating or cooking equipment can improve safety. This method may even be the most effective and inexpensive approach. Public education with respect to fire safety is clearly needed to address all types of home fires. Active fire protection systems – like smoke alarms and residential sprinklers – and practiced escape plans can provide safety margins in the event that a fire occurs.

Four of every ten reported home fires were cooking fires.
During 2007-2011, cooking equipment was the leading cause of home fires and home fire injuries, the third leading cause of home fire deaths and of direct property damage resulting from fire. According to the definitions used here, cooking equipment is equipment used to heat or warm food (unlike other kitchen equipment such as refrigerators, food processors, or can openers). All fires with incident types indicating a cooking fire confined to the cooking vessel were considered cooking fires. Human error was a factor in many cooking fires. For example, unattended equipment was a contributing factor in roughly one-third of the cooking fires reported in 2006-2010.[4] During 2007-2011, cooking equipment was involved in an estimated annual average of 156,600 reported home structure fires, 400 civilian fire deaths, 5,080 civilian injuries, and $853 million in direct property damage.

Cooking equipment was involved in 43% of the reported home structure fires, 16% of the home fire deaths, 38% of the home fire injuries, and 12% of the direct property damage. Cooking equipment was involved in two-thirds (67%) of the reported apartment fires but only one-third (33%) of the fires in one- or two-family homes, although it was the leading cause in both.[5] Ranges or cooktops were involved in three of every five (57%) home fires involving cooking equipment and one-quarter (24%) of all reported home fires.

Figures 11 and 12 show trend data for cooking fires and associated civilian deaths for recent years. During 2011, the latest data available, U.S. fire departments responded to an estimated 156,300 home fires involving cooking equipment. These fires caused 470 civilian deaths, 5,390 civilian injuries, and $1.0 billion in direct property damage. While the number of cooking fires has been

[4] Marty Ahrens. *Home Fires Involving Cooking Equipment*, Quincy, MA: National Fire Protection Association, 2012, p. 34.
[5] For purposes of this analysis, cooking equipment was assumed to be involved in all confined cooking fires.

fairly consistent, fire death estimates were more volatile. Cooking ranked second among causes of fire deaths in 2011, ahead of heating equipment. Although it is too soon to know if this will be a trend, it does bear watching.

Figure 11. Home Cooking Fires, by Year

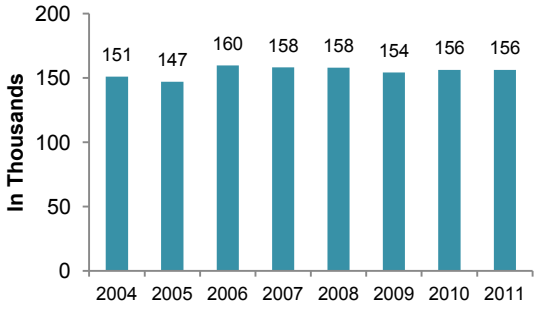
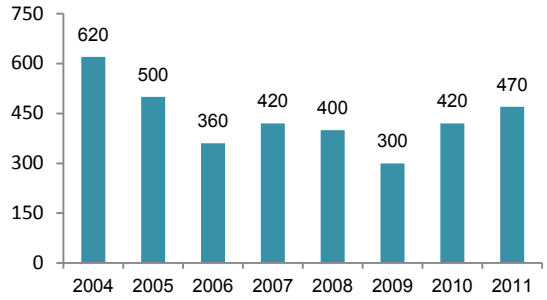


Figure 12. Home Cooking Fire Deaths, by Year



The 2004-2005 CPSC's Residential Fire Survey asked about all fires, including incidents that were not attended by the fire service.[6] The authors estimated that U.S. households experienced a total of 7.4 million fires per year, including 7.2 million that were not attended by the fire service. Cooking appliances were involved in 4.8 million home fires, including 4.7 million incidents that the fire department did not attend. One of every 22 occupied households had a cooking fire. The survey found that cooking equipment was involved in roughly two-thirds of home fire incidents, including 64% of the total and 65% of fires that the fire department did not attend. The overwhelming majority of cooking equipment fires (50 to one) did not have the fire department in attendance. The results closely mirror our own finding that cooking equipment was involved in two-thirds of reported apartment fires.

Additional information about reported home cooking fires may be found in NFPA's report, *Home Fires Involving Cooking Equipment*, by Marty Ahrens. Working together, the U.S. Fire Administration and NFPA produced a 2006 study, *Behavioral Mitigation of Cooking Fires*. This study includes a more comprehensive literature review about cooking fires, cooking fire safety, and non-fire cooking burns. An educational PowerPoint presentation and several short videos are available at nfpa.org/cooking.

Heating equipment was involved in one of every five home fire deaths.
Heating equipment is considered the cause of a fire when the equipment provided the heat to start the fire, even if the equipment itself was working properly. Home heating equipment includes central heating units, portable and stationary space heaters, fireplaces, chimneys, and heat transfer systems, as well as some devices not used to heat living spaces, most notably hot water heaters.

During 2007-2011, heating equipment was involved in the ignition of an estimated annual average of 60,400 reported home structure fires that resulted in an average of 490 civilian fire deaths, 1,620 civilian injuries, and $913 million in direct property damage per year.

[6] Michael A. Greene and Craig Andres. *2004-2005 National Sample Survey of Unreported Residential Fires.* U.S. Consumer Product Safety Commission, July 2009, pp. 102, 127-133. Online at http://www.cpsc.gov/library/foia/foia09/os/UnreportedResidentialFires.pdf .

Heating equipment was involved in 16% of the reported home structure fires, 19% of the home fire deaths, 12% of the home fire injuries, and 13% of the direct property damage. Overall, heating equipment ranked second in all four loss measures. Space heaters, including portable heaters and those that are permanently installed, were involved in four of every five home heating fire deaths and in 15% of overall home fire deaths.

Heating equipment was involved in 20% of the fires in one- or two-family homes but only 8% of the apartment fires. Almost one-quarter (22%) of the fatal fire injuries occurring in one- or two-family homes resulted from fires involving heating equipment compared to only 7% of the apartment or multi-family home fire deaths. For purposes of this analysis, all confined chimney or flue fires and confined fuel burner or boiler fires are considered heating equipment fires.

Figure 13 shows that home heating fires hit consecutive new lows from 2009 through 2011. Deaths have also been on a downward trend. Heating equipment was involved in an estimated 53,600 reported home fires in 2011, resulting in 400 civilian fire deaths, 1,540 civilian fire injuries, and $893 million in direct property damage. In 2011, fewer people died as a result of heating fires than of cooking fires, reversing the usual pattern.

Figure 13. Home Heating Fires, by Year

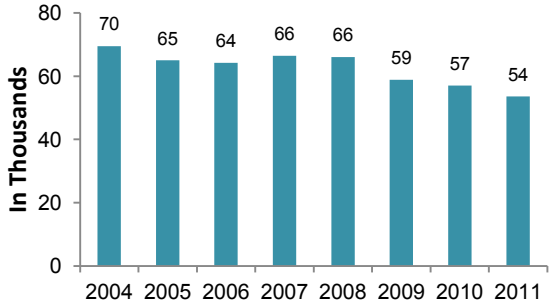
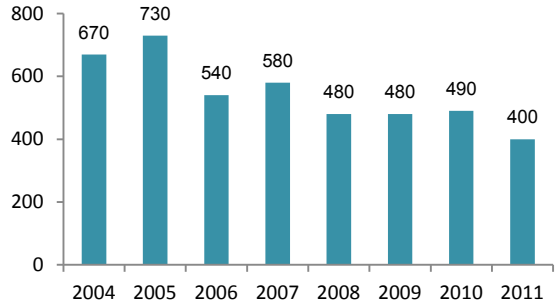


Figure 14. Home Heating Fire Deaths, by Year



Additional information about specific types of home heating equipment may be found in NFPA's report, *Home Fires Involving Heating Equipment*, by John R. Hall, Jr. His analysis also provides more details on the equipment involved in the confined heating equipment fires. Additional safety information may be found at nfpa.org/heating.

Smoking materials caused 22% of home fire deaths in 2007-2011.
Smoking materials have historically been the leading cause of home fire deaths. The pattern held true in this analysis. During 2007-2011, smoking materials were the heat source in an annual average of 17,900 reported home structure fires, 580 civilian fire deaths, 1,280 civilian fire injuries, and $509 million in direct property damage.[7]

[7] A proportional share of fires with heat sources from unclassified open flame or smoking materials are included in the candle and smoking material estimates.

Only 5% of reported home structure fires were started by smoking materials, but these fires caused 22% of the home fire deaths. Smoking materials also caused 10% of all reported home fire injuries and 7% of the direct property damage. Almost one-third (31%) of the apartment fire deaths resulted from fires started by smoking materials. Smoking material incidents ranked fifth in number of home fires, first in home fire deaths, third in home fire injuries and sixth in direct property damage. To help reduce these losses, all 50 states have passed legislation requiring cigarette manufacturers to produce only cigarettes that are less likely to continue burning if left unattended.

Figure 15 shows that in most recent years, smoking materials started 17,000 to 20,000 home structure fires. In 2011, smoking materials started an estimated 17,600 reported home structure fires, resulting in 490 civilian deaths, 1,370 civilian fire injuries, and $516 million in direct property damage. Figure 16 shows that deaths from these fires have declined steadily since 2005.

Figure 15. Home Smoking Material Fires by Year

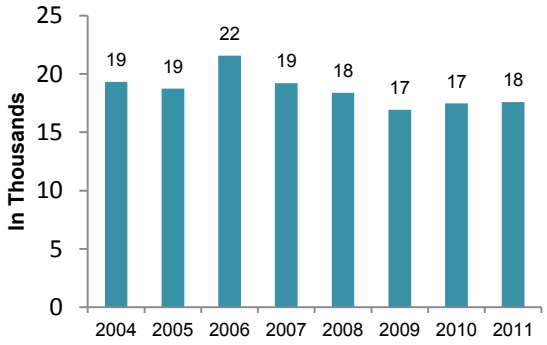
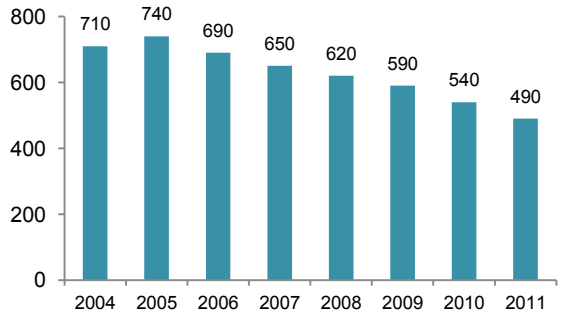


Figure 16. Home Smoking Material Fire Deaths by Year



Additional information about fires started by smoking materials and prevention may be found in NFPA's report, *The Smoking Material Fire Problem*, by John R. Hall, Jr., and at nfpa.org/smoking.

Intentionally set fires ranked third in home structure fires.
During 2007-2011, intentional firesetting caused an average of 28,900 reported home structure fires, 330 civilian fire deaths, 940 civilian injuries, and $623 million in direct property damage.

Eight percent of home structure fires were intentionally set. These fires caused 13% of the home fire deaths, 7% of the home fire injuries, and 9% of the direct property damage. Intentionally set fires ranked third in home fire frequency, tied for fourth in home fire deaths, and ranked fifth in civilian injuries and direct property damage. Intentional fires, defined in USFA's *NFIRS 5.0 Complete Reference Guide* as including fires started by a deliberate misuse of a heat source and fires of an incendiary nature, heavily overlap with, but are not identical to, legally defined arson fires. Note that "suspicious" is no longer a choice in NFIRS.

Figure 17 shows that 27,000-30,000 home structure fires were intentionally set annually in recent years. In 2011, U.S. fire departments responded to an estimated 28,900 home structure fires that were intentionally set. These fires caused 310 civilian deaths, 980 civilian injuries, and $544 million in direct property damage. Figure 18 shows that in most recent years, between 300 and 400 deaths resulted from home fires

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Figure 17. Intentional Home Fires, by Year

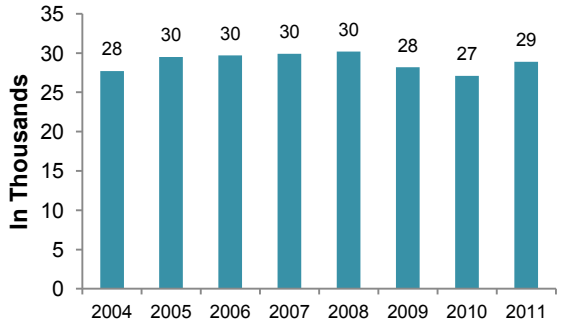


Figure 18. Intentional Home Fire Deaths, by Year

Additional information may be found in NFPA's report, *Intentional Fires and Arson*, by Ben Evarts. Fire and life-safety educators may be interested in using the PowerPoint presentation, "Preventing Arson Together." This presentation, developed with the Columbus, Ohio Fire Department through NFPA's 2008 Urban Fire Safety Project, may be downloaded from nfpa.org/arson.

On average, electrical distribution or lighting equipment was involved in an average of 22,400 home structure fires per year.

Electrical distribution and lighting equipment includes:

- fixed wiring, meters or meter boxes, and switches, receptacles or outlets;
- transformers or associated overcurrent or disconnect equipment;
- power switch gear or overcurrent protection devices;
- cords and plugs, and
- lighting equipment.

During 2007-2011, electrical distribution and lighting equipment was involved in the ignition of 22,400 reported home structure fires, on average, per year. These fires caused an annual average of 330 civilian fire deaths, 950 civilian fire injuries, and $817 million in direct property damage.

During this period, electrical distribution or lighting equipment was involved in 6% of the home structure fires (8% in one- or two-family homes and 2% in apartments), 13% of the home fire deaths, 7% of the home fire injuries, and 11% of the direct property damage.

Overall, electrical distribution and lighting equipment ranked fourth in home fires, home fire injuries and direct property damage and was tied for fourth in home fire deaths. Figure 19 shows that 19,000-25,000 fires involving electrical distribution and lighting equipment were reported annually in recent years. Figure 20 shows that annual death tolls from these incidents were quite volatile, ranging from 240 to 510. In 2011, electrical distribution or lighting equipment was involved in an estimated 21,300 home structure fires reported to U.S. fire departments. These fires caused 290 civilian deaths, 840 civilian injuries, and $822 million in direct property damage.

Figure 19. Home Electrical Distribution or Lighting Fires, by Year

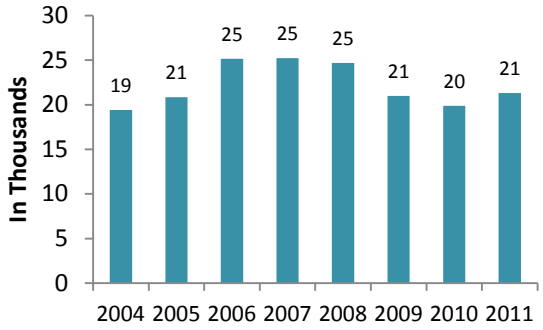
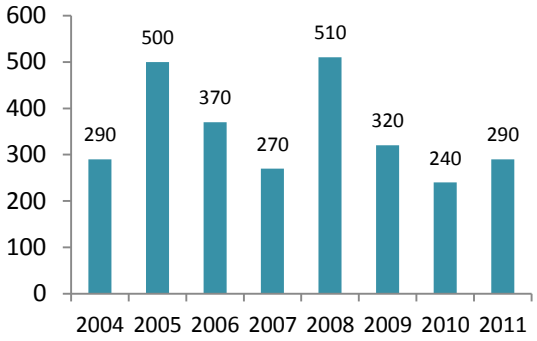


Figure 20. Home Electrical Distribution or Lighting Fire Deaths, by Year



Electrical factors can play a role in fires involving any type of equipment powered by electricity, such as cooking, heating, office and entertainment equipment, washers and dryers, etc. as well as electrical distribution and lighting equipment. Table 9 shows that electrical failures or malfunctions were factors in 13% of reported home fires and 18% of home fire deaths. Electrical failures or malfunctions were factors in 17% of the fires in one-or two family homes but only 6% of the reported apartment fires.

For more information on both fires involving electrical distribution and lighting equipment and on fires in which electrical failures or malfunctions were contributing factors, see NFPA's report, *Home Electrical Fires*, by John R. Hall, Jr. Information on NFPA70, National Electrical Code®, is available at nfpa.org/70. NFPA 70 provides detailed directions to ensure that electrical distribution equipment is installed safely. Consumer information about electrical safety and safety devices such as electrical circuit interrupters and tamper-resistant electrical receptacles is available at nfpa.org/electricalsafety.

Clothes dryers or washers were involved in 4% of home structure fires.
During 2007-2011, clothes dryers or washers were involved in the ignition of an average of 15,200 non-confined home structure fires per year.[8] These fires caused an annual average of 30 civilian fire deaths, 460 civilian fire injuries, and $216 million in direct property damage. Overall, clothes dryers or washers were involved in 4% of the home structure fires, 1% of the home fire deaths, 3% of the home fire injuries, and 3% of the direct property damage. Clothes dryers and washers together ranked sixth in home fires and eighth in the other loss measures. In 2011, clothes dryers or washers were involved in an estimated 14,600 non-confined home structure fires, resulting in 510 civilian injuries, and $231 million in direct property damage. No deaths were reported in these fires in 2011.

For more statistical information, see NFPA's report, *Home Fires Involving Clothes Dryers and Washing Machines*, by John R. Hall, Jr. Consumer safety information is also available on NFPA's website.

[8] These estimates exclude any dryer or washer fires with confined fire incident types, such as confined cooking fires, confined chimney or flue fires, and contained or confined trash or rubbish fires. For estimates that include confined fires, see NFPA's full report, *Home Fires Involving Clothes Dryers and Washing Machines*.

Exposure to other fires was the leading cause of direct property damage.
The term "exposure" indicates that a fire was caused by another fire nearby. These fires may result from direct flame, radiant heat, or flying embers or brands. While exposures are technically fires that spread from outside to a building or vehicle, or from one building or vehicle to another building or vehicle, some fire departments use the term to indicate that the fire has spread from the property of one individual to a property belonging to, or occupied by, someone else.

During 2007-2011, exposures caused an average of 12,300 reported home structure fires, 10 civilian fire deaths, 70 civilian fire injuries, and $922 million in direct property damage per year. Exposures caused 3% of the home structure fires, 1% of the home fire deaths and injuries, and 13% of the direct property damage. Exposure fires ranked seventh among the leading causes in number of reported home fires, ninth in home fire deaths and injuries, and first in direct property damage. Exposure fires were less costly in 2011 than the recent average. In 2011, 11,700 home structure fires were caused by exposure to another fire. These exposure fires resulted in 70 civilian fire injuries and $478 million in direct property damage. Fewer than ten deaths resulted from exposure fires in 2011.

Seven percent of home fire injuries resulted from fires started by candles.
During 2007-2011, candles caused an estimated annual average of 10,600 reported home structure fires, 120 home fire deaths, 900 home fire injuries, and $418 million in direct property damage.[9]

Candles caused 3% of the home fires, 4% of the home fire deaths, 7% of the home fire injuries, and 6% of the direct property damage. Candles ranked eighth among the leading cause categories in number of fires, sixth in home fire deaths, fifth in home fire injuries, and seventh in direct property damage. Home candle fires have been falling in recent years. In 2011, candles started an estimated 9,100 home fires, resulting in 90 civilian deaths, 870 civilian injuries, and $313 million in direct property damage.

Additional statistical information on this subject may be found in NFPA's report, *Home Candle Fires by* Marty Ahrens. For more safety information, see nfpa.org/candles.

Playing with heat source caused 2% of home fires but 6% of home fire injuries.
During 2007-2011, people, typically children, playing with fire or other heat sources started an estimated annual average of 7,100 home structure fires. These fires caused an average of 80 civilian fire deaths, 750 civilian fire injuries, and $172 million in direct property damage per year. Overall, the 2% of home structure fires started by someone playing with fire or some other heat source caused 3% of the home fire deaths, 6% of the home fire injuries, and 2% of the direct property damage. In 2011, an estimated 6,700 home structure fires started by someone playing caused 40 civilian deaths, 740 civilian injuries, and $165 million in direct property damage.

Additional information on this topic may be found in NFPA's report, *Children Playing with Fire*, by Ben Evarts. NFPA 1035, *Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention Specialist* identifies the job performance requirements for individuals to effectively intervene in this situation. See nfpa.org/1035 for more information.

[9] A proportional share of fires with heat sources from unclassified open flame or smoking materials are included in the candle and smoking material estimates.

More Detailed Information about Fire Circumstances

The previous section focused on major cause scenarios. This analysis also includes more detailed information based on several NFIRS data elements including equipment involved in ignition, heat source, factor contributing to ignition, area of fire origin, item first ignited, extent of fire spread, smoke alarms and automatic suppression systems. The more detailed information in this section may be used in a variety of fire prevention strategies.

Oxygen administration equipment was involved in 3% of home fire deaths.
Although most of the equipment involved in ignition shown in Table 7 was already discussed, oxygen administration equipment has not yet been mentioned. While this equipment was involved in less than 1% of reported home fires, it was involved in 80, or 3%, of the home fire deaths per year. Although the equipment involved in ignition field in NFIRS is intended to document the equipment that provided the heat of ignition, fire departments are sometimes using the field to document fires in which medical oxygen was a factor. On average, one of every three reported fires involving oxygen administration equipment resulted in a death. Most fires and burns involving home medical oxygen are not reported to the fire department. In 2003-2006, U.S. emergency rooms saw an average of 1,190 people who had been burned in incidents involving home medical oxygen.[10] The majority of these fires, fire deaths, and burn injuries involved smoking.

Home fires started by some type of operating equipment caused 40% of home fire deaths.
A variety of flammability standards focus on preventing ignition by smoking materials or small open flames. Less attention has been paid to scenarios involving equipment. Table 8 shows that some type of operating equipment was the heat source in an average of 1,020, or 40%, of the home structure fire deaths per year. Heat from operating equipment started an average of 194,500, or 53%, of all reported home fires annually. Operating equipment heat sources include:

- Radiated or conducted heat from operating equipment (73,600 fires and 340 deaths per year),
- Arcing (34,300 fires and 320 deaths per year);
- Sparks, embers or flames from operating equipment (23,300 fires and 130 deaths annually); and
- Unclassified heat from powered equipment (63,300 fires and 220 deaths per year).

Table 8 also shows that small open flames from candles, lighters or matches were the heat sources in an average of 350, or 14%, of the deaths per year and 29,600, or 8%, of the fires.

In one of every five fire deaths, the fire started when something that could catch fire was too close to a heat source.
Factors contributing to ignition provide information on how the heat source and/or equipment involved actually started the fire. Multiple entries are allowed. Percentages were calculated based on the number of fires, not the entries, so sums will exceed 100%.

[10] Marty Ahrens. *Fires and Burns Involving Home Medical Oxygen,* Quincy, MA: NFPA, 2008.

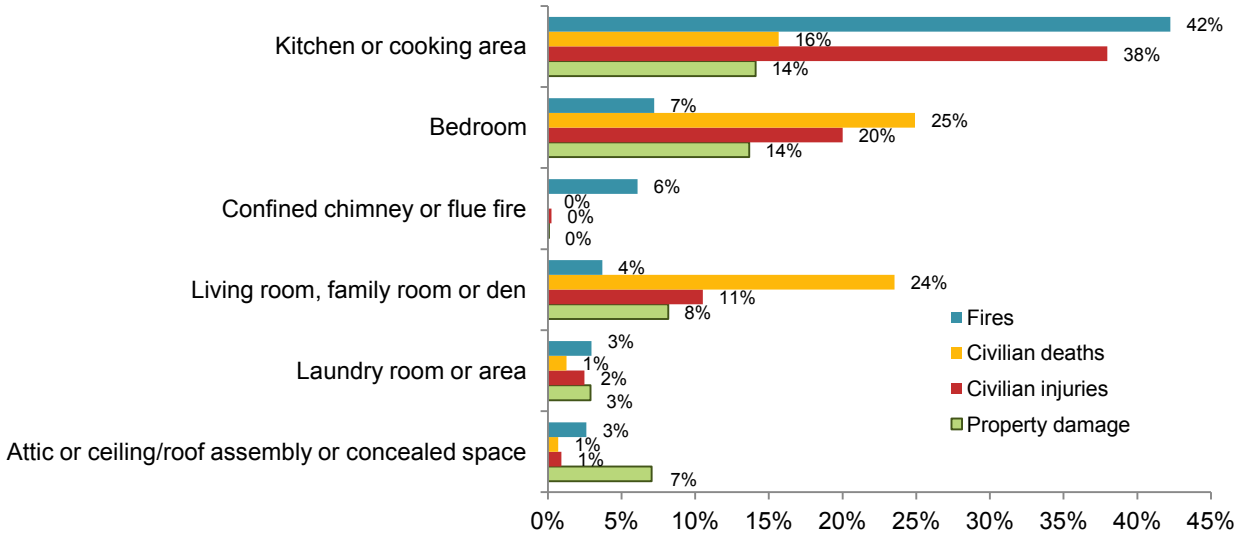
Table 9 shows that 550, or one-fifth (21%), of the home fire deaths resulted from fires in which a heat source was too close to a combustible. Heat sources in this scenario include cooking and heating equipment, candles, lamps and bulbs, and a variety of other products that produce heat. An open flame is not necessary to start a fire. Combustible materials include food and cooking materials, trash, mattresses and bedding, upholstered furniture, or anything that can catch fire.

As noted earlier, some type of electrical failure or malfunction was a factor in incidents resulting in 13% of home fires and 18% of the home structure fire deaths. Electrical failures may occur in any type of electric-powered equipment, including heating and cooking equipment, as well as in electrical distribution and lighting equipment.

Abandoned or discarded material was a factor in 11% of the home fires and 16% of the associated deaths, while unattended equipment contributed to 15% of the fires and 7% of the deaths.

Kitchens were the leading area of origin for home structure fires.
Figure 21 and Table 10 show that two of every five (42%) home structure fires started in the kitchen or cooking area. Sixteen percent of the civilian deaths, 38% of the civilian injuries, and 14% of the direct property damage resulted from these fires. Two-thirds (66%) of the reported apartment or multi-family housing fires and one-third (33%) of the fires in one- or two-family homes originated in the kitchen.

Figure 21. Leading Areas of Origin in Home Structure Fires: 2007-2011



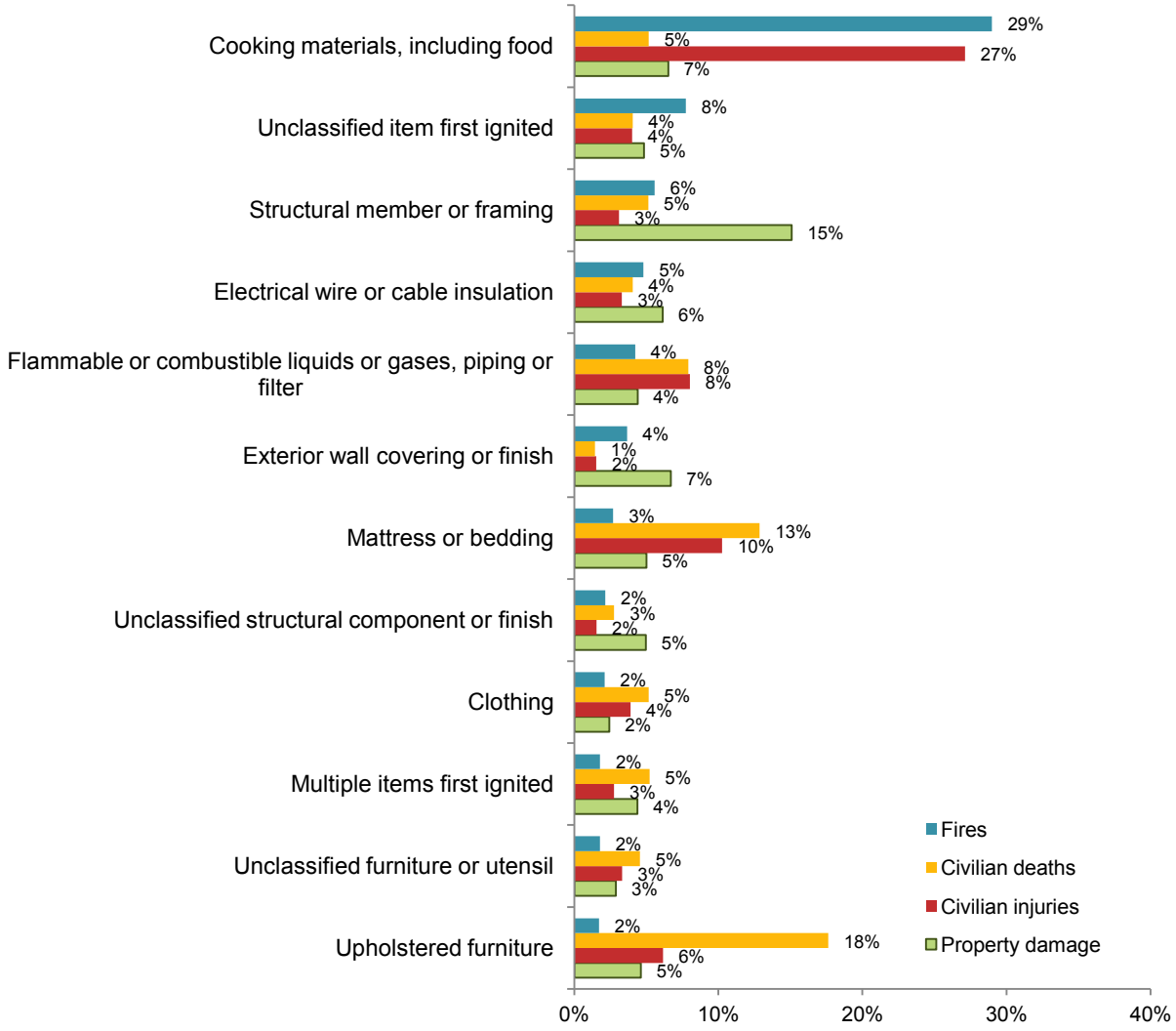
The 7% of home structure fires originating in the bedroom caused one-quarter (25%) of the civilian deaths, one of every five (20%) civilian injuries, and 14% of the direct property damage. The 4% of home structure fires originating in the living room, family room, or den caused one-quarter (24%) of the civilian fire deaths, 11% of the civilian injuries, and 8% of the direct property damage. Fires originating in the kitchen, bedroom, and living room, family or den, are discussed in greater detail later in this analysis.

Six percent of home fires (8% in one- or two-family homes and 1% in apartments) were reported as confined chimney or flue fires.

Only 2% of the home structure fires began with upholstered furniture but these fires caused one of every five home fire deaths

Cooking materials, including food, were the items first ignited in more than one-quarter (29%) of the reported home structure fires. Eight percent of the reported home fires began with an unclassified item, 6% started with the ignition of structural members or framing, and 5% started when electrical wire or cable insulation ignited.

Figure 22. Leading Items First Ignited in Home Structure Fires: 2007-2011



Although mattresses or bedding were first ignited in only 3% of the fires, 13% of the home fire deaths and 10% of the home fire injuries resulted from these incidents. Only 2% of the home structure fires began with upholstered furniture but these fires accounted for 18% of the home fire deaths and 6% of the home fire injuries. See Figure 12 and Table 11 for more details. Figure 22 shows only items that were associated with at least 5% of the fires or associated losses. NFPA also has detailed reports on fires that began specifically with upholstered furniture and with mattresses and bedding.

Fire spread beyond the room of origin in only one-quarter of the fires.
Almost half (46%) of the reported home fires (more than one-third [37%] in one- or two-family homes and two-thirds [68%] in apartments) were confined or contained fires identified by NFIRS incident type. As discussed earlier, Version 5.0 of NFIRS requires less detail about fires confined to a cooking vessel, chimney or flues, incinerators or compactors, or fuel burners or boilers; and contained or confined trash or rubbish fires in or on structures with no flame damage to the structure or other contents.

In addition to the 46% of home fires with incident types indicating contained or confined fires, Table 12 shows that the fire did not spread beyond the object of origin in another 12% of reported home structure fires. Only 25% spread beyond the room of origin. Four out of five (80%) of home fire deaths resulted from fires that extended beyond the room of origin. This scenario was more common in one- and two-family homes, where 84% of the fire deaths resulted from fires extending beyond the room of origin compared to 63% of the fire deaths in apartments.

In fires that spread beyond the room of origin, structural members or framing were the most common item first ignited.
Table 13 shows that structural members or framing were first ignited in 15% of the fires that spread beyond the room of origin, exterior wall covering or finish was first ignited in 11%, and electrical cable or wire insulation was first ignited in 6%. For fire deaths resulting from these fires, the three most common items were the same as for overall fire deaths: upholstered furniture (16%), mattresses or bedding (11%), and flammable or combustible liquids, gases or associated piping or filters (9%). Flame spread is more difficult to categorize for fires that do not start in conventional rooms. This is especially true for fires that start in concealed spaces or in or on exterior areas. Caution should be used when considering estimates about fires originating in these areas or with items commonly found in these areas.

The item contributing most to flame spread in fires beyond the room of origin is shown in Table 14 and Figure 23.

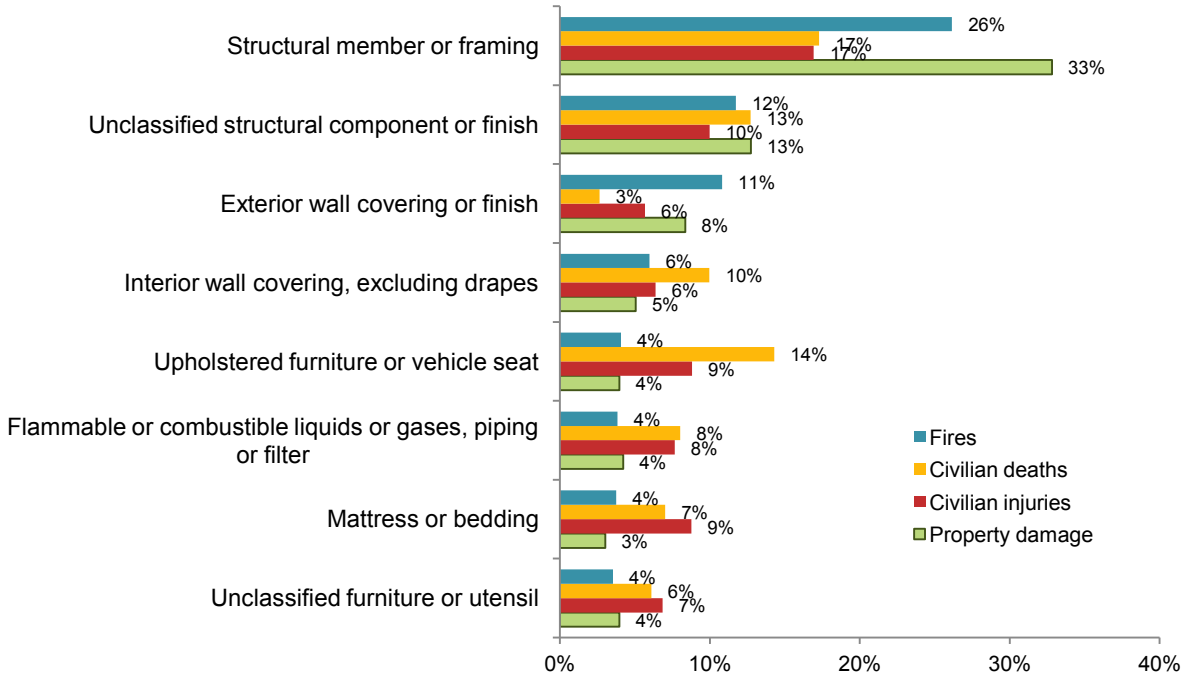
A structural member or framing was the main contributor to flame spread beyond the room of origin in one-quarter (26%) of these fires and 17% of the deaths. An unclassified structural component or finish contributed most to spread in 12% of the fires and 13% of the deaths. Exterior wall covering or finish contributed to fire spread in 11% of the fires and 3% of the deaths. Interior wall covering contributed in 6% of the fires and 10% of the deaths; upholstered furniture in 4% of the fires and 14% of the deaths.

Important caution about estimates of item contributing most to flame spread

Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved.

A flammable or combustible liquid, gas or associated piping or filter was the main contributor in 4% of these fires and 8% of the deaths. A mattress or bedding was the main contributor to flame spread in 4% of the fires and 7% of the deaths. An unclassified furniture or utensil contributed most to flame spread in 4% of the fires and 6% of the deaths.

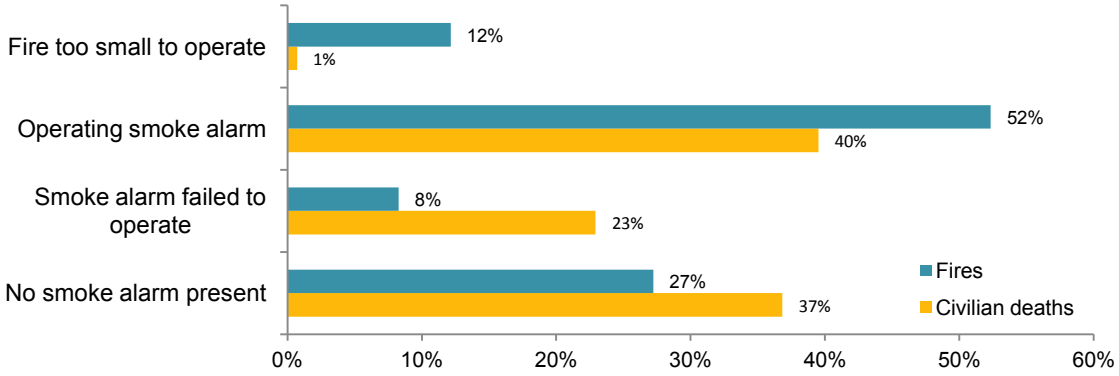
Figure 23. Leading Items Contributing to Flame Spread Beyond the Room of Origin in Home Structure Fires: 2007-2011



The vast majority of all households have smoke alarms but households with fires tend to have less smoke alarm protection.
Results from a 2010 telephone survey indicate that 96% of all homes have at least one smoke alarm.[11] In the 2004-2005 CPSC survey, Green and Andres compared smoke alarm coverage and performance in households that did not have fires with households that had fires that were handled without summoning the fire department (unreported fires). In 93% of the unreported fires, at least one smoke alarm was present, slightly less than the 97% of households without fires that had smoke alarms. Compared to households that did not have fires, households with fires were less likely to have smoke alarms in every bedroom (31% vs. 22%) or to have interconnected smoke alarms (19% vs. 13%). Interconnected smoke alarms were more likely to alert occupants to a fire than were alarms that were not interconnected.[12]

Three of every five home fire deaths resulted from fires in properties without working smoke alarms.
Smoke alarms were present in three-quarters (73%) of reported home fires, a substantial but considerably smaller majority than that found in CPSC's study of unreported fires. Figure 24 shows that smoke alarms operated in half (52%) of the reported home fires. The fire was too small to operate the smoke alarm in 12% of the fires. Three of every five (60%) home fire deaths resulted from fires with no working smoke alarms, including more than one-third (37%) of the deaths that resulted from fires with no smoke alarms at all and one-quarter (23%) from fires in which smoke alarms were present but failed to operate. For more information, see NFPA's report, *Smoke Alarms in U.S. Home Fires*. NFPA 72®, *National Fire Alarm and Signaling Code*, contains detailed information about smoke alarm and smoke detector installation, testing and maintenance. Consumer information is available at nfpa.org/smokealarms.

Figure 24. Home Structure Fires and Deaths, by Smoke Alarm Performance 2007-2011



[11] Harris Poll® National Quorum National Fire Protection Association – Smoke Alarms, 2010.
[12] Michael A. Greene and Craig Andres. *2004-2005 National Sample Survey of Unreported Residential Fires.* U.S. Consumer Product Safety Commission, July 2009, pp. 73-91, 150-180.

The fire death rate per 1,000 reported home fires was 7.3 when no automatic extinguishing equipment was present, six times the rate of 1.3 in home fires with wet-pipe sprinklers. Table C shows that in 2006-2010, sprinklers were present in 6% of the reported home fires, excluding fires in properties under construction and fires with automatic extinguishing equipment that was not present in the fire area.[13]

When sprinklers were present and the fire was large enough to activate them, sprinklers operated in 95% of the fires. When sprinklers operated, they were effective in controlling the fire in 97% of the incidents. In reported fires with sprinklers that were large enough to activate them, sprinklers operated and were effective 92% of the time. These statistics were taken from John Hall's March 2012 NFPA report, *U.S. Experience with Sprinklers*.

Eighty-nine percent of the sprinklers found in reported home fires were wet-pipe sprinklers. In 95% of the home fires in which wet pipe sprinklers operated, only one or two sprinklers operated. Regardless of operation, the death rate of 1.3 per 1,000 reported home fires in properties with wet pipe sprinklers was 83% lower than the 7.3 deaths per 1,000 reported fires with no automatic extinguishing equipment. The average loss per fire was 69% lower in reported fires in which wet pipe sprinklers were present, compared to fires in properties without automatic extinguishing equipment.

Table C.
Sprinkler Systems in Reported Home Structure Fires
Excluding Fires in Properties in Construction and
Fires in Which Automatic Extinguishing Equipment Was Present, but Not in Fire Area
2006-2010 Annual Averages

Share of reported home fires with sprinklers present	6%
When present, operating in fires large enough to activate*	95%
When operating, effective in controlling fire*	97%
When present and fire large enough, operated *and* effective*	92%
Civilian deaths per 1,000 reported fires	
Without automatic extinguishing equipment	7.3
When wet-pipe sprinkler were present regardless of operation	1.3
Percent reduction	83%
Average loss per fire	
Without automatic extinguishing equipment	$20,000
When wet-pipe sprinklers were present regardless of operation	$6,000
Percent reduction	69%

*Fires with confined fire incident types 113-118 were excluded from these calculations because of the small number with usable data.

The 2009 American Housing Survey found that 5% of occupied year-round homes had sprinklers, including 2% of single-family homes and 13% of the units in housing with two or more units.[14]

[13] John R. Hall, Jr., *U.S. Experience with Sprinklers,* Quincy, MA: National Fire Protection Association, Fire Analysis and Research Division, 2012.

Fire Sprinkler Initiative is working to get sprinklers in more homes
Fire sprinklers are found in a small minority of homes despite their demonstrated ability to save lives. One- and two-family homes are much less likely to have this protection than apartments. The Fire Sprinkler Initiative is working to bring sprinklers into all new homes, including one- or two-family homes and apartments or multi-family homes. See www.firesprinklerinitiative.org.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, *and* NFPA 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*, provide detailed information about these systems.

Changes in Fire Death Patterns over Time

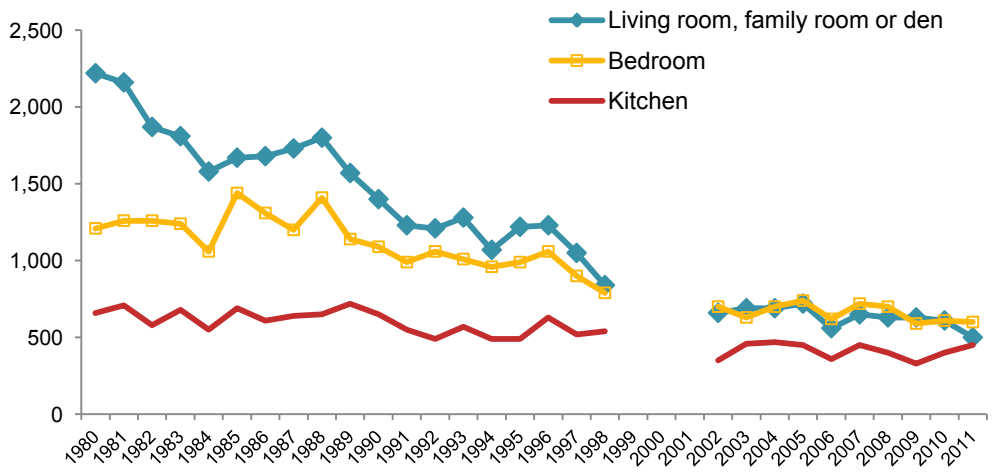
Over the years, a variety of strategies have been employed to reduce the number of fire deaths. Flammability standards for upholstered furniture, mattresses and bedding, and other products reduce the likelihood that these items will be ignited or sustain buring. Automatic shut-offs in portable heaters activate if the device is tipped over. Other types of equipment, such as irons and coffee makers, will automatically shut off after a period of time. Arc fault circuit interrupters can prevent an electrical fault from causing a fire. Smoke alarms provide early warning of fire, allowing more time for escape. Automatic sprinklers can control a fire and limit its spread before the fire department arrives.

This section compares trends in a few major fire death scenarios. Averages are shown for two five-year periods: 1980-1984, the earliest years of national data available, and 2007-2011, the latest data available. Due to the instability of estimates for 1999-2001, the transition years to NFIRS 5.0, estimates for these years are not shown in the graphs but are included in the tables.[15]

Deaths from fires originating in living rooms, family rooms, or dens fell more sharply than deaths from fires starting in bedrooms and kitchens.
Table 15 and Figure 25 show that the differences between the three leading areas of origin for home fire deaths have shrunk over time. Deaths from fires starting in bedrooms now sometimes exceed the number resulting from fires starting in living rooms, families or dens.

[14] *American Housing Survey 2009*, U.S. Department of Commerce and U.S. Department of Housing and Urban Development, September 20101, Table 2-4, and a special analysis by the survey report authors "Units in Structure by Selected Characteristics—Occupied Units (Safety Equipment)."
[15] The total death estimates shown in Tables 15-18 were derived from the NFIRS and the NFPA survey together and consequently differ slightly from the estimates shown in Table 1 that are derived solely from the NFPA survey.

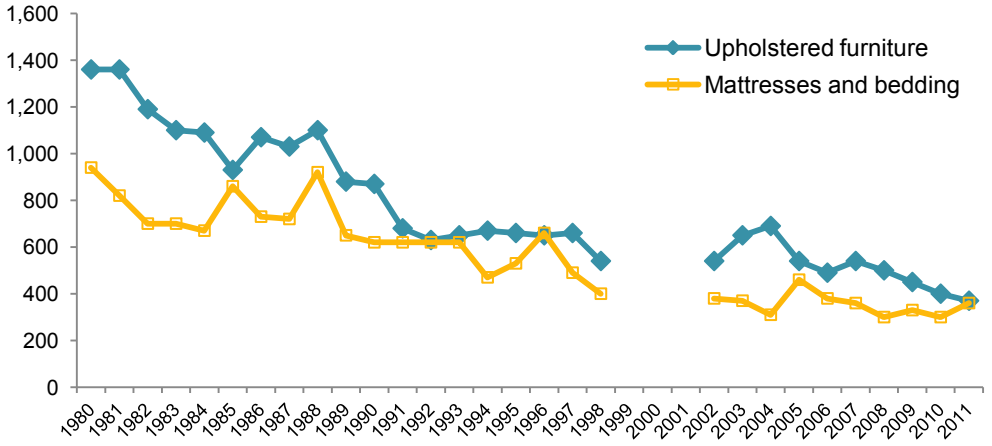
Figure 25. Home Fire Deaths by Area of Origin and Year



Deaths from fires in living rooms, family rooms, or dens (combined) fell 68% from the 1980-1984 average of 1,930 per year to the 2007-2011 average of 610 per year. Over the same periods, deaths from bedroom fires fell 47% from 1,210 per year to 640 per year. While kitchens ranked third in fire deaths, the decline in kitchen deaths was the smallest seen in the three areas, falling 38% from an average of 640 per year in 1980-1984 to 400 per year in 2007-2011.
Because these three areas of origin have together accounted for almost two-thirds of home fire deaths, they will be examined in more detail in the next section.

Fire deaths from upholstered furniture and mattress and bedding fires fell 63% and 57%, respectively, since the early 1980s.
Figure 26 and Table 16 show trends for the two leading items first ignited in home fire deaths: 1) upholstered furniture, and 2) mattresses and bedding. Deaths from home fires that began with upholstered furniture fell 63% from an average of 1,220 per year in 1980-1984 to 450 per year in 2007-2011. Deaths from fires beginning with mattresses and bedding fell 57% from an average of 770 per year in 1980-1984 to 330 per year in 2007-2011.

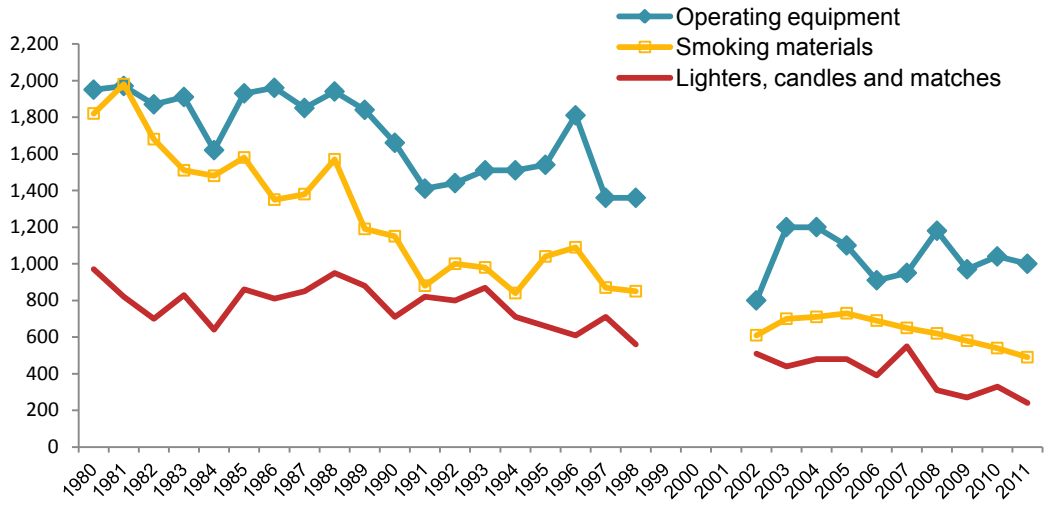
Figure 26. Home Fire Deaths from Fires Starting with Upholstered Furniture and Mattresses and Bedding, by Year



Deaths from fires started by operating equipment and small open flames have not fallen as much as deaths from fires started by smoking materials.
Some flammability standards are intended to prevent ignition by cigarettes. Others address small open flames. Operating equipment is a diverse category involving a wide variety of equipment types and scenarios. In 1980 and 1981, the number of deaths resulting from fires started by smoking materials was similar to the number from fires started by operating equipment.[16]

Table 17 and Figure 27 show that the average number of deaths from home fires started by operating equipment fell 45% from 1,860 per year in 1980-1984 to 1,020 per year in 2007-2011. This is consistent with the overall drop in fire deaths over the two periods. It is important to remember that many, if not most, fires started by operating equipment involve some type of human error, such as unattended cooking, or leaving something that can catch fire too close to a heat source.

Figure 27. Home Fire Deaths, by Selected Heat Sources and Year



Fires started by small open flames (lighters, candles and matches) fell 56%, dropping from an average of 790 such deaths per year in 1980-1984 to 350 deaths per year in 2007-2011. The decline in deaths from smoking materials was steeper, dropping 66% from an average of 1,690 per year in 1980-1984 to 580 per year in 2007-2011.

[16] In 1980-1998, operating equipment identified by form of heat of ignition codes for heat from fuel-fires, fuel-powered objects, heat from electrical equipment arcing or overloaded, electric lamps, and properly and improperly operating equipment (form of heat of ignition codes 10-29, 54, 56, and 57). From 1999 on, operating equipment was identified by heat source codes for operating equipment (heat source 10-13).

Fires and Fire Deaths in the Leading Areas of Origin

More than half of reported home fires, roughly two-thirds of home fire deaths and injuries, and more than one-third of the direct property damage resulted from fires in just three types of rooms: 1) kitchens; 2) bedrooms; and 3) living rooms, family rooms, or dens. These three areas accounted for three of the top four areas of fire origin. This section examines:

* the item first ignited in these rooms,
* the extent of flame spread,
* the item first ignited in fires originating in these rooms that spread beyond the room of origin,
* the item contributing most to flame spread when these fires spread beyond the room, and
* victim location in fires originating in these areas.

Fires with incident types indicating they were confined to the chimney or flue accounted for 6% of reported home fires, ranking third. More information on chimney fires is available in NFPA's report, *Home Fires Involving Heating Equipment*, by John R. Hall, Jr. Because the losses from confined chimney or flue fires are less than 1% on all three measures, they are not discussed further here.

During 2007-2011, U.S. fire departments responded to an estimated average of 154,900 (42%) fires originating in the kitchen per year. These fires caused an average of 400 (16%) civilian deaths, 5,010 reported civilian injuries (38%), and $1.0 billion (14%) in direct property damage annually. On average, one of every 384 reported kitchen fires resulted in a death, while one in every 31 resulted in an injury.

Fire departments also responded to an annual average of 26,400 (7%) fires that started in a bedroom. These fires caused an average of 640 (25%) civilian deaths, 2,640 reported civilian injuries (20%), and $985 million (14%) in direct property damage annually. On average, one of every 41 reported bedroom fires resulted in death, while one of every 10 resulted in injury.

Only 13,600 reported home fires (4%) per year started in the living room, family room or den, but these incidents caused an average of 610 (24%) civilian deaths, 1,390 (11%) civilian fire injuries, and $589 million (8%) in direct property damage. On average, one of every 22 reported living room, family room, or den fires resulted in death, while one of every 10 resulted in injury. Note that chimneys are a separate area of origin. Fire in living room chimneys are not included in these estimates.

Figure 28 and Tables 18-20 show 70-80% of the deaths from fires beginning in these three areas resulted from fires that spread beyond the room of origin. The vast majority of kitchen fires were small. Only 6% spread beyond the room of origin.

Four out of five non-fatal fire injuries from kitchen fires resulted from fires that were confined to the room of origin. Only 20% of the non-fatal injuries from kitchen fires resulted from fires that spread beyond the room of origin compared to more than half of the injuries from fires originating in the bedroom or living room, family room or den.

Figure 28. Fire Spread Beyond Room of Origin, by Area of Origin: 2007-2011

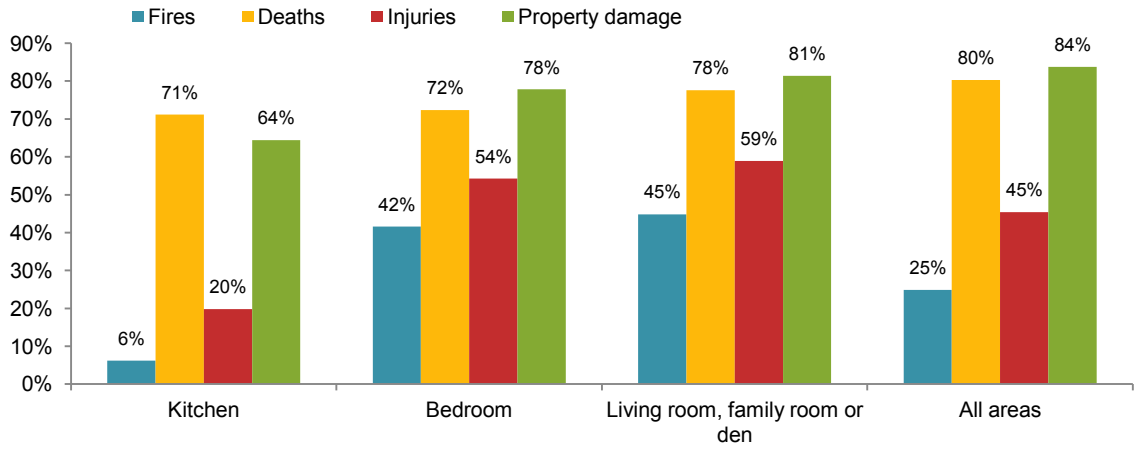


Figure 29 shows that more than two-thirds (450, or 70%) of the people who died as a result of fires originating in the bedroom were in the bedroom at the time of the incident.[17] This was true for half (290, or 48%) of the victims of fires originating in the living room, family room or den, and two of every five (160, or 41%) victims of fatal kitchen fires. Overall, half (51%) of home fatal fire victims were in the area of origin when fire started.

Figure 29. Home Fatal Fire Victims, by Area of Origin and Location at Time of Incident: 2007-2011

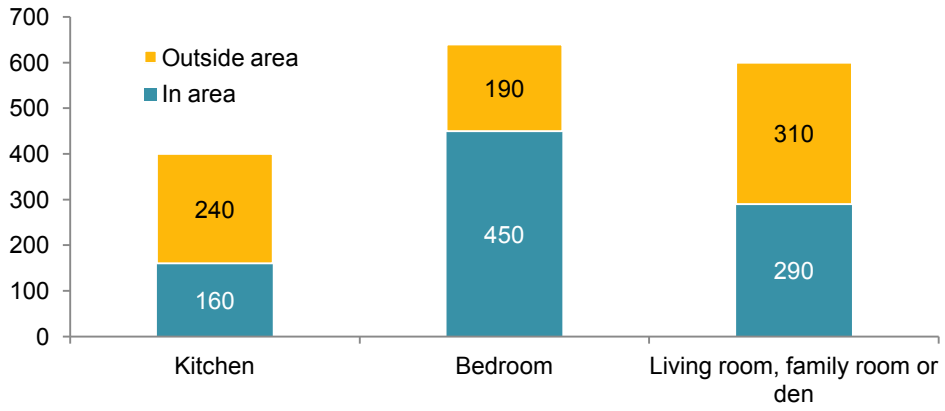
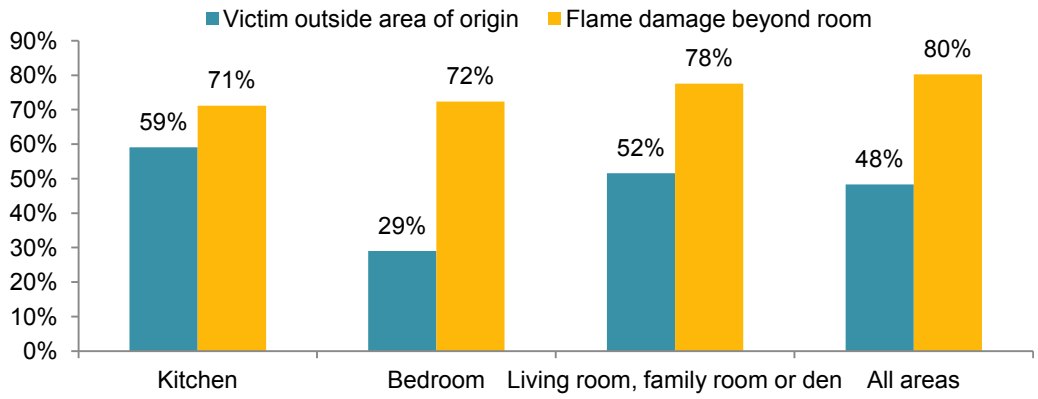


Figure 30 compares the percentage of victims who were outside the area of origin at the time of the incident to the percentage of deaths resulting from fires that spread beyond the room of origin. The greatest difference was seen in fires originating in the bedroom. While almost three-quarters (72%) of these deaths resulted from fires that spread beyond the bedroom, less than one-third (29%) of the victims were outside of the bedroom when the fire started. This suggests that in most of these incidents, much of the fire growth occurred after the victims were incapacitated.

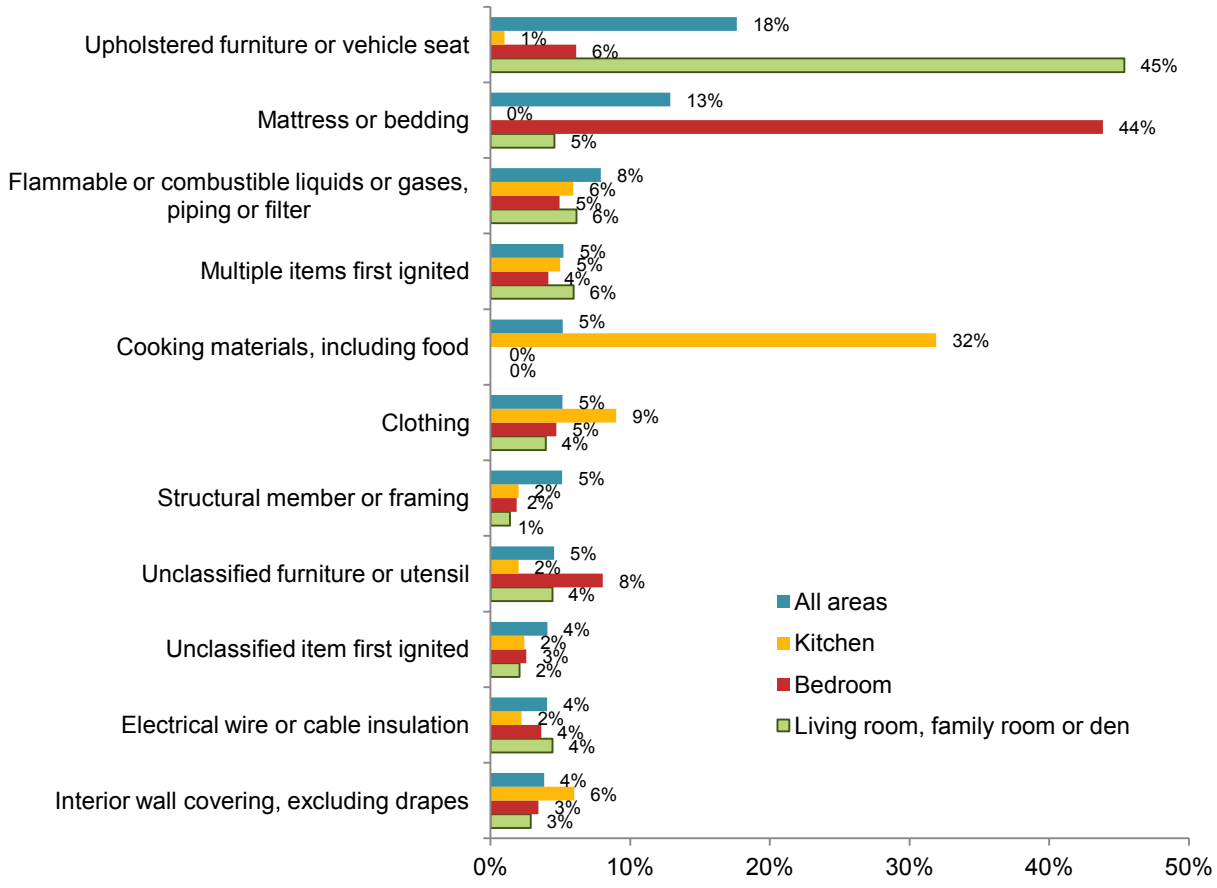
[17] Roughly 1% of the victims were in an unclassified area at the time of incident and are not shown in the graph.

Figure 30. Fatal Fire Victim Outside of Area and Fire Spread Beyond Room of Origin by Area of Origin: 2007-2011



Leading items first ignited vary predictably by area of origin.
Tables 21-23 show the leading items first ignited and associated losses in fires originating in these three areas. Not surprisingly, cooking materials, including food, were first ignited in almost two-thirds (64%) of the kitchen fires and kitchen fire injuries (65%) and in one-third of the associated deaths (32%). Clothing was first ignited in less than 1% of the kitchen fires but 9% of the kitchen fire deaths resulted from clothing ignitions.

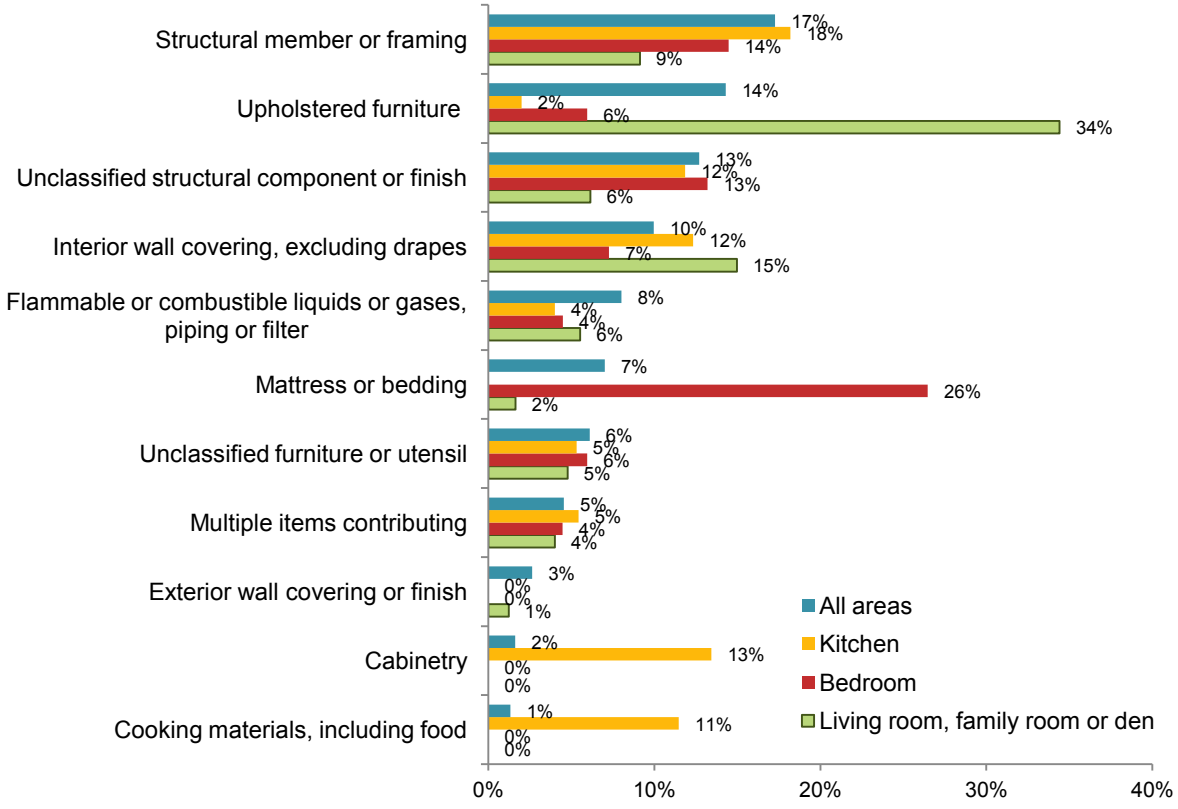
Figure 31. Item First Ignited in Home Fire Deaths, by Area of Origin: 2007-2011



Mattresses or bedding were first ignited in almost one-third (30%) of the fires originating in the bedroom and almost half of the associated deaths (44%) and injuries (45%). Upholstered furniture was the item first ignited in one of every five (19%) fires starting in a living room, family room or den, in almost half (45%) of the associated deaths, and one-third (34%) of the injuries. Items typically found in one room are sometimes found in another. Figure 31 shows that upholstered furniture was first ignited in 6% of fire deaths resulting from fires starting in the bedroom and 1% from fires originating in the kitchen. Mattresses or bedding were first ignited in 5% of the deaths from fires starting in the living room, family room or den.

Tables 24-26 show the items first ignited in fires originating in these three areas that spread beyond the room of origin. Tables 27-29 show the item contributing most to flame spread in fires originating in these three areas.[18] Figure 32 shows that structural members or framing and interior wall coverings were in the top five items contributing most to fire spread for fires and deaths in all three areas and overall.

Figure 32. Items Contributing Most to Flame Spread in Fire Deaths when Fire Spread Beyond Room of Origin, by Area of Origin: 2007-2011



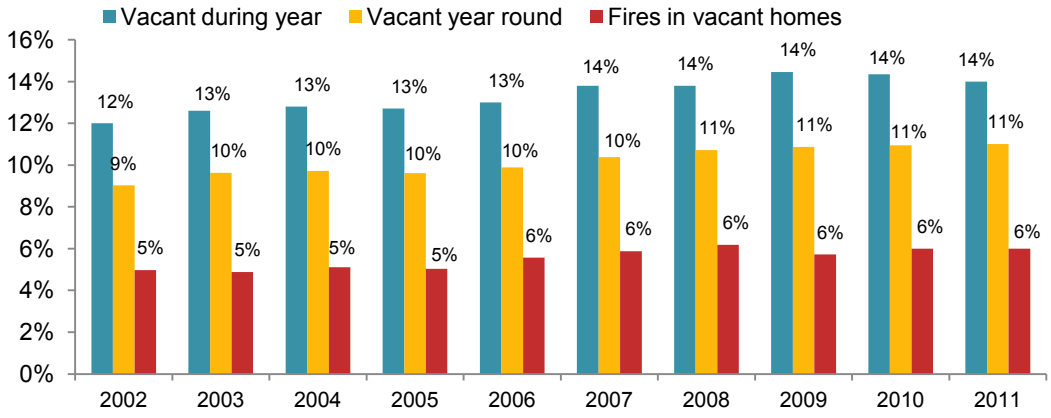
[18] Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved.

Fires in Occupied and Vacant Homes

Almost all home fires and associated losses result from fires in homes that are normally occupied.
Table 30 shows that 91% of reported home fires, 97% of home fire deaths, 98% of home fire injuries, and 86% of the direct property damage resulted from fires in properties that are normally occupied. This includes properties in which the residents are not at home but would be expected to return soon, perhaps after work or a vacation. Six percent of the home fires occurred in properties that were vacant, including properties that were secured and unsecured. Note that the vacancy rate is measured in terms of housing units while fire data measure the number of structures involved.

Table 31 and Figure 33 show that the percentage of housing units that were vacant (including properties used seasonally) and that were vacant year-round has been higher in recent years than in the past, although the percentage of vacant housing units has dropped very slightly. The percentage of home fires in properties that are vacant has hovered around 6% in recent years after several years at 5%. Even so, the percentages of fires in vacant properties is roughly half the percent of housing units that are vacant year-round and less than half the percentage of housing units that had been vacant during the year. In other words, a vacant housing unit has a *lower* risk of having a fire than an occupied housing unit, largely because so many fires are associated with human activity. However, these buildings do pose special problems. Table 32 shows that half (50%) of vacant home fires were intentionally set. Table 6 showed that only 8% of home fires overall were started intentionally. Vacant housing units are at higher risk for intentional fire while at a lower risk of fire overall.

Figure 33. Vacant Housing Units and Fires in Vacant Homes, by Year 2007-2011



Source: U.S. Census Bureau. Housing Vacancy Survey for vacancy rates and NFIRS 5.0 and NFPA survey for fires.

Fires in vacant homes were also more likely to spread beyond the structure of origin than were fires in homes overall. Table 33 shows that fire spread beyond the structure of origin in 10% of vacant home fires, three times the 3% seen in overall home fires. For all these reasons, vacant housing units have much lower average rates of civilian deaths (1.7) and civilian injuries (6.2) per thousand reported fires, but they have a higher average rate of direct property damage per fire ($27,700) than overall home structure fires which had 7.0 deaths per 1,000 reported fires, 36.0 civilian injuries per 1,000 fires, and an average loss per fire of $19,700..

Unreported Home Fires

U.S. households handle more than 7 million fires a year without calling the fire department. Most of this analysis has focused on fires that were reported to the fire department. However, the vast majority of fires are handled without fire department assistance. In a telephone survey done for the CPSC in 2004-2005, respondents were asked about "any incident, large or small, that resulted in unwanted flames or smoke, and could have caused damage to life or property if left unchecked.[19]

Their findings revealed that in 2004-2005:

- U.S. households experienced an average of 7.4 million fires per year.
- In 7.2 million household fires per year, the fire department did not attend. These fires caused an estimated 130,000 injuries or illnesses. Serious injuries at unattended fires were very rare. Three-quarters of those injured received no medical attention and one-quarter received first aid at the scene. Three-quarters of the injuries or illnesses from unattended fires involved burns.
- 18% of the fires self-extinguished; 78% of fires were put out by a household member using a variety of methods, tools or materials, including: water, shutting off power, smothering, removing the fuel from the heat source, and fire extinguishers.
- The combined estimates of unreported and reported fires, one of every 15 households experienced a fire. This translates to 6.6 fires per 100 households. The rate for unattended fires only was 6.3 per 100 households.
- Cooking equipment was involved in almost two-thirds (64%) of all fires with 50 unattended fires for every incident attended by the fire service.
- Households that experienced any fire, including those without fire department attendance, were more likely to rent than own their home, to have more people in the household, to have occupants who smoke, and to have someone living in the household under 18 but no one over 65.
- Three-quarters (76%) of all households had fire extinguishers. Extinguishers were used in 5% of the fires. When an extinguisher was used, it put out the fire completely in half of the cases and minimized the fire but did not completely put it out in almost one-quarter of the fires. In roughly one-fifth of the fires, an extinguisher was used to little or no effect.

[19] Michael A. Greene and Craig Andres. *2004-2005 National Sample Survey of Unreported Residential Fires*, U.S. Consumer Product Safety Commission, July 2009.

Other Types of Fires on Home Properties

133,500 outside and other fires per year, on average, were reported at homes.
During 2007-2011, an estimated annual average of 133,500 outside and other fires on home properties caused an average of 20 deaths, 300 civilian injuries, and $66 million in direct property damage per year. An average of 13,900 vehicle fires reported on these properties (without structural involvement) caused an average of 10 civilian deaths, 140 civilian injuries, and $65 million in direct property damage per year.

An NFPA analysis of brush, grass and forest fires handled by local fire departments found that in 2004-2008, 31,700, or 9% of the total such incidents occurred on properties coded as one-or two-family homes. An additional 3,200 occurred at apartments or multi-family dwellings.[20] NFPA's Firewise program provides information about how people can protect their homes and communities from these types of fires. See www.firewise.org/.

Detached residential garages were not captured in this report.
NFIRS 5.0 has a separate property use code detached residential garages. While most of these fires probably occurred on home properties, some may have been associated with other types of residential properties. In 2007-2011, fire departments responded to an estimated average of 4,700 detached residential garage fires, resulting in an average of 10 civilian deaths, 90 civilian injuries, and $82 million in direct property damage annually.

Additional Information Sources

NFPA offers more information.
Three chapters found in the 20th edition of the NFPA *Fire Protection Handbook*, "One- or Two-Family Dwellings" by James K. Lathrop, "Manufactured Housing" by Kirsten M. Paoletti, and "Apartment Buildings" by Kenneth Bush, describe some of the special fire safety concerns for these properties.

NFPA offers a wide variety of statistical information at www.nfpa.org/osds.
Members may download a number of related reports. *Manufactured Home Fires*, by John R. Hall, Jr., focuses specifically on these homes and examines the impact of the 1976 federal standards and fire risks relative to other types of dwellings. *Characteristics of Home Fire Victims*, by Jennifer D. Flynn, examines factors such as relative risk, leading causes, and victim activities, conditions and characteristics by age and gender among civilians who were injured or killed in home fires. The report also shows a breakdown of victim ages for the major fire causes. NFPA also offers reports on a wide variety of equipment involved in home fires.

The Safety Information tab on NFPA's home page leads to information for consumers, children and life safety educators. NFPA's codes and standards may be viewed without charge at nfpa.org/freeaccess.

[20] Marty Ahrens. *Brush, Grass and Forest Fires*, Quincy, MA: National Fire Protection Association, 2010, p. 22. .

Find out about CPSC's product recalls.
The Consumer Product Safety Commission (CPSC) is the federal body with primary regulatory authority for the safety of most household products. In some cases, the Commission issues mandatory standards products must meet. They can also order the recall of products that have been determined to be unsafe. The CPSC has established a publicly available database about consumer product safety information at http://www.saferproducts.gov/. This database includes recalls and reports that have been submitted about unsafe products.

Public safety officials, other government agencies, child service providers, and members of the public may report incidents involving unsafe products. Details are requested about the product involved, date of incident, the manufacturer or private labeler, any illness, injury or death and treatment received, any threat of injury or death, photographs and other detailed documentation. People who report asked if they are willing to allow the report to be published in the database and whether they are willing to provide their name and contact information to the manufacturer or private labeler. Contact information must be provided with the initial report for a report to be included in the public database. Businesses are given an opportunity to review the report and submit a comment to the database about the incident. Recall information may also be accessed at this site.

CPSC staff review all reports although they cannot investigate every report received. Other organizations can also review information about products to assess needs for new standards or safety information.

Table 1.
Reported Home Structure Fires by Year: 1980-2011

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions) As Reported	In 2011 Dollars
1980	734,000	5,200	19,700	$2,848	$7,776
1981	711,000	5,400	19,125	$3,128	$7,718
1982	654,500	4,820	20,450	$3,147	$7,319
1983	625,500	4,670	20,750	$3,205	$7,224
1984	605,500	4,075	18,750	$3,362	$7,260
1985	606,000	4,885	19,175	$3,693	$7,701
1986	565,500	4,655	18,575	$3,464	$7,107
1987	536,500	4,570	19,965	$3,599	$7,117
1988	538,500	4,955	22,075	$3,897	$7,409
1989	498,500	4,335	20,275	$3,876	$7,029
1990	454,500	4,050	20,225	$4,157	$7,156
1991	464,500	3,500	21,275	$5,463[1]	$9,011[1]
1992	459,000	3,705	21,100	$3,775	$6,048
1993	458,000	3,720	22,000	$4,764[2]	$7,408[2]
1994	438,000	3,425	19,475	$4,215	$6,394
1995	414,000	3,640	18,650	$4,264	$6,286
1996	417,000	4,035	18,875	$4,869	$6,981
1997	395,500	3,360	17,300	$4,453	$6,234
1998	369,500	3,220	16,800	$4,273	$5,896
1999	371,000	2,895	16,050	$4,965	$6,694
2000	368,000	3,420	16,975	$5,525	$7,214
2001	383,500	3,110	15,200	$5,516	$7,003
2002	389,000	2,670	13,650	$5,931	$7,410
2003	388,500	3,145	13,650	$5,949[3]	$7,272[3]
2004	395,500	3,190	13,700	$5,833	$6,947
2005	381,000	3,030	13,300	$6,729	$7,742
2006	396,000	2,580	12,500	$6,832	$7,615
2007	399,000	2,865	13,600	$7,389[4]	$8,003[4]
2008	386,500	2,755	13,560	$8,243[5]	$8,613[5]
2009	362,500	2,565	12,650	$7,616	$7,975
2010	369,500	2,640	13,350	$6,928	$7,146
2011	370,000	2,520	13,910	$6,914	$6,914

[1]Includes $1.5 billion in damage caused by the Oakland Fire Storm, most of which entailed damage to homes but for which no detailed breakdown by property type was available.
[2]Includes $809 million in damage caused by Southern California wildfires
[3] This does not include the Southern California wildfires that caused an estimated property damage of $2 billion.
[4]This does not include the California Fire Storm 2007 that caused an estimated property damage of $1.8 billion.
[5]Does not include the California wildfires 2008 with an estimated property damage of $1.4 billion
Source: *Fire Loss in the United Sates* series of NFPA annual reports by Michael J. Karter, Jr. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

Table 2.
Reported Home Structure Fires, by Month
2007-2011 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	38,600	(11%)	360	(14%)	1,410	(11%)	$742	(10%)
February	33,100	(9%)	300	(12%)	1,280	(10%)	$629	(9%)
March	33,100	(9%)	260	(10%)	1,260	(10%)	$639	(9%)
April	30,100	(8%)	200	(8%)	1,090	(8%)	$580	(8%)
May	28,300	(8%)	180	(7%)	1,010	(8%)	$560	(8%)
June	26,500	(7%)	150	(6%)	960	(7%)	$547	(8%)
July	27,400	(7%)	150	(6%)	1,020	(8%)	$569	(8%)
August	26,300	(7%)	150	(6%)	940	(7%)	$528	(7%)
September	25,600	(7%)	140	(6%)	910	(7%)	$448	(6%)
October	29,100	(8%)	180	(7%)	1,000	(8%)	$686	(10%)
November	32,000	(9%)	210	(8%)	1,080	(8%)	$589	(8%)
December	36,300	(10%)	290	(11%)	1,260	(10%)	$691	(10%)
Totals	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Monthly average	30,500	(8%)	210	(8%)	1,100	(8%)	$601	(8%)

Table 3.
Reported Home Structure Fires, by Day of Week
2007-2011 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	56,400	(15%)	380	(15%)	1,970	(15%)	$1,166	(16%)
Monday	52,300	(14%)	350	(14%)	1,840	(14%)	$1,052	(15%)
Tuesday	50,400	(14%)	340	(13%)	1,890	(14%)	$970	(13%)
Wednesday	50,500	(14%)	340	(13%)	1,830	(14%)	$945	(13%)
Thursday	51,100	(14%)	340	(13%)	1,840	(14%)	$975	(14%)
Friday	50,600	(14%)	380	(15%)	1,780	(14%)	$993	(14%)
Saturday	55,100	(15%)	440	(17%)	2,050	(16%)	$1,107	(15%)
Totals	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Daily average	52,400	(14%)	370	(14%)	1,890	(14%)	$1,030	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4.
Reported Home Structure Fires, by Alarm Time
2007-2011Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight-12:59 a.m.	11,800	(3%)	150	(6%)	580	(4%)	$446	(6%)
1:00-1:59 a.m.	10,100	(3%)	190	(7%)	570	(4%)	$339	(5%)
2:00-2:59 a.m.	9,100	(2%)	160	(6%)	530	(4%)	$333	(5%)
3:00-3:59 a.m.	8,500	(2%)	190	(7%)	530	(4%)	$319	(4%)
4:00-4:59 a.m.	7,500	(2%)	200	(8%)	480	(4%)	$290	(4%)
5:00-5:59 a.m.	7,000	(2%)	150	(6%)	430	(3%)	$250	(3%)
6:00-6:59 a.m.	7,500	(2%)	130	(5%)	390	(3%)	$214	(3%)
7:00-7:59 a.m.	9,100	(2%)	110	(4%)	370	(3%)	$175	(2%)
8:00-8:59 a.m.	10,800	(3%)	80	(3%)	420	(3%)	$215	(3%)
9:00-9:59 a.m.	12,800	(3%)	90	(4%)	470	(4%)	$288	(4%)
10:00-10:59 a.m.	14,400	(4%)	80	(3%)	480	(4%)	$244	(3%)
11:00-11:59 a.m.	16,400	(4%)	70	(3%)	550	(4%)	$273	(4%)
Noon-12:59 p.m.	18,100	(5%)	70	(3%)	580	(4%)	$295	(4%)
1:00-1:59 p.m.	18,500	(5%)	60	(2%)	580	(4%)	$327	(5%)
2:00-2:59 p.m.	19,000	(5%)	70	(3%)	570	(4%)	$330	(5%)
3:00-3:59 p.m.	20,100	(5%)	70	(3%)	600	(5%)	$336	(5%)
4:00-4:59 p.m.	22,100	(6%)	60	(2%)	670	(5%)	$332	(5%)
5:00-5:59 p.m.	25,300	(7%)	70	(3%)	710	(5%)	$373	(5%)
6:00-6:59 p.m.	26,100	(7%)	70	(3%)	710	(5%)	$323	(4%)
7:00-7:59 p.m.	24,300	(7%)	80	(3%)	700	(5%)	$317	(4%)
8:00-8:59 p.m.	21,600	(6%)	80	(3%)	650	(5%)	$322	(4%)
9:00-9:59 p.m.	18,300	(5%)	100	(4%)	600	(5%)	$292	(4%)
10:00-10:59 p.m.	15,300	(4%)	120	(4%)	530	(4%)	$285	(4%)
11:00-11:59 p.m.	12,700	(3%)	130	(5%)	510	(4%)	$292	(4%)
Totals	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Average by hour	15,300	(4%)	110	(4%)	550	(4%)	$300	(4%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5.
Leading Causes of Reported Home Structure Fires
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	156,600	(43%)	400	(16%)	5,080	(38%)	$853	(12%)
Heating equipment	60,400	(16%)	490	(19%)	1,620	(12%)	$913	(13%)
Intentional	28,900	(8%)	330	(13%)	940	(7%)	$623	(9%)
Electrical distribution or lighting equipment	22,400	(6%)	330	(13%)	950	(7%)	$817	(11%)
Smoking materials	17,900	(5%)	580	(22%)	1,280	(10%)	$509	(7%)
Clothes dryer or washer*	15,200	(4%)	30	(1%)	460	(3%)	$216	(3%)
Exposure	12,300	(3%)	10	(1%)	70	(1%)	$922	(13%)
Candles	10,600	(3%)	120	(4%)	900	(7%)	$418	(6%)
Playing with heat source	7,100	(2%)	80	(3%)	750	(6%)	$172	(2%)

∗ These estimates exclude any dryer or washer fires with confined fire incident types, such as confined cooking fires, confined chimney or flue fires, and contained or confined trash or rubbish fires. For estimates that include confined fires, see NFPA's full report, *Home Fires Involving Clothes Dryers and Washing Machines*.

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6.
Reported Home Structure Fires, by Cause of Ignition (from NFIRS Cause Field)
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	263,100	(72%)	1,870	(73%)	10,740	(81%)	$4,441	(62%)
Non-confined	125,500	(34%)	1,870	(73%)	9,090	(69%)	$4,410	(61%)
Confined	137,600	(38%)	0	(0%)	1,650	(13%)	$31	(0%)
Failure of equipment or heat source	50,900	(14%)	310	(12%)	1,280	(10%)	$1,036	(14%)
Non-confined	36,200	(10%)	310	(12%)	1,220	(9%)	$1,031	(14%)
Confined	14,700	(4%)	0	(0%)	60	(0%)	$5	(0%)
Intentional	28,900	(8%)	330	(13%)	940	(7%)	$623	(9%)
Non-confined	18,300	(5%)	330	(13%)	900	(7%)	$622	(9%)
Confined	10,600	(3%)	0	(0%)	40	(0%)	$1	(0%)
Unclassified cause	17,900	(5%)	50	(2%)	190	(1%)	$802	(11%)
Non-confined	12,200	(3%)	50	(2%)	170	(1%)	$802	(11%)
Confined	5,800	(2%)	0	(0%)	20	(0%)	$0	(0%)
Act of nature	5,800	(2%)	10	(0%)	50	(0%)	$306	(4%)
Non-confined	5,300	(1%)	10	(0%)	50	(0%)	$306	(4%)
Confined	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 7.
Reported Home Structure Fires, by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns in non-confined fires and confined cooking fires were allocated proportionally)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	156,600	(43%)	400	(16%)	5,080	(38%)	$853	(12%)
Range or cooktop	89,100	(24%)	340	(13%)	3,910	(30%)	$604	(8%)
Non-confined fire	29,800	(8%)	340	(13%)	2,930	(22%)	$587	(8%)
Confined fire	59,300	(16%)	0	(0%)	980	(7%)	$17	(0%)
Oven or rotisserie	25,200	(7%)	20	(1%)	280	(2%)	$36	(1%)
Non-confined fire	2,900	(1%)	20	(1%)	130	(1%)	$34	(0%)
Confined fire	22,300	(6%)	0	(0%)	150	(1%)	$2	(0%)
Microwave oven	7,100	(2%)	0	(0%)	150	(1%)	$31	(0%)
Non-confined fire	1,400	(0%)	0	(0%)	110	(1%)	$28	(0%)
Confined fire	5,700	(2%)	0	(0%)	40	(0%)	$3	(0%)
Portable cooking or warming device	6,400	(2%)	20	(1%)	210	(2%)	$63	(1%)
Non-confined fire	1,900	(1%)	20	(1%)	160	(1%)	$62	(1%)
Confined fire	4,500	(1%)	0	(0%)	50	(0%)	$1	(0%)
Grill, barbecue or hibachi	3,800	(1%)	10	(0%)	100	(1%)	$93	(1%)
Non-confined fire	1,500	(0%)	10	(0%)	80	(1%)	$93	(1%)
Confined fire	2,300	(1%)	0	(0%)	20	(0%)	$0	(0%)
Other known cooking equipment or confined cooking fire	27,900	(8%)	20	(1%)	620	(5%)	$147	(2%)
Other known cooking equipment in non-confined fire	3,800	(1%)	10	(1%)	220	(2%)	$143	(2%)
Confined cooking fire with other or unknown equipment	24,100	(7%)	0	(0%)	390	(3%)	$4	(0%)
No equipment involved in ignition	74,900	(20%)	1,080	(42%)	3,840	(29%)	$3,697	(51%)
Heating equipment	60,400	(16%)	490	(19%)	1,620	(12%)	$913	(13%)
Fireplace or chimney fire*	26,300	(7%)	30	(1%)	120	(1%)	$227	(3%)
Fireplace or chimney with non-confined incident type	4,000	(1%)	30	(1%)	90	(1%)	$222	(3%)
Confined chimney or flue fire*	22,300	(6%)	0	(0%)	30	(0%)	$6	(0%)
Furnace, central heat, or boiler*	14,500	(4%)	20	(1%)	130	(1%)	$73	(1%)
Furnace or boiler with non-confined incident type	2,300	(1%)	20	(1%)	80	(1%)	$71	(1%)
Confined fuel burner or boiler fire *	12,200	(3%)	0	(0%)	50	(0%)	$2	(0%)

* The estimates of fires involving fireplaces or chimneys include all fires with the confined chimney or flue incident type regardless of what may have been coded as equipment involved. Likewise, the estimates of fires involving furnaces, central heat or boilers include all fires with confined fuel burner or boiler incident type. The estimates shown should be considered upper bounds. Except for confined cooking fires, the estimates for equipment involved in ignition did not break out the confined fires further. John Hall's report, *Home Fires Involving Heating Equipment,* shows a detailed breakdown of the equipment involved in the confined heating fires.

Table 7. (continued)
Reported Home Structure Fires, by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns in non-confined fires and confined cooking fires were allocated proportionally)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Fixed or portable space heater	14,100	(4%)	400	(15%)	1,110	(8%)	$465	(6%)
Water heater	4,700	(1%)	30	(1%)	230	(2%)	$113	(2%)
Other known heating equipment in non-confined fire	700	(0%)	10	(0%)	30	(0%)	$35	(0%)
Electrical distribution and lighting equipment	22,400	(6%)	330	(13%)	950	(7%)	$817	(11%)
Wiring and related equipment	14,100	(4%)	160	(6%)	410	(3%)	$474	(7%)
Lamp, bulb or lighting	4,500	(1%)	50	(2%)	260	(2%)	$180	(2%)
Cord or plug	2,500	(1%)	100	(4%)	200	(2%)	$97	(1%)
Contained trash or rubbish fire	14,700	(4%)	0	(0%)	60	(0%)	$2	(0%)
Clothes dryer or washer*	15,200	(4%)	30	(1%)	460	(3%)	$216	(3%)
Fan	3,800	(1%)	10	(1%)	120	(1%)	$73	(1%)
Air conditioner	2,300	(1%)	10	(0%)	100	(1%)	$58	(1%)
Other known equipment involved in ignition	17,300	(5%)	230	(9%)	1,000	(17%)	$595	(8%)
Total	366,600	(100%)	2,570	(100%)	13,210	(110%)	$7,208	(100%)
The following types of equipment were involved in fewer than 1% of the fires but at least 2% of the fire deaths								
Oxygen administration equipment			80	(3%)				

* These estimates exclude any dryer or washer fires with confined fire incident types, such as confined cooking fires, confined chimney or flue fires, and contained or confined trash or rubbish fires. For estimates that include confined fires, see NFPA's full report, *Home Fires Involving Clothes Dryers and Washing Machines*.

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. The same approach was used with confined cooking fires. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires in that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). The same approach was used with confined cooking fires. The estimates of fires involving fireplace or chimney include all fires with the confined chimney or flue incident type regardless of what may have been coded as equipment involved. Likewise, the estimates of fires involving furnaces, central heat or boilers include all fires with confined fuel burner or boiler incident type. The estimates shown should be considered upper bounds. Non-cooking confined fires were not analyzed separately. Estimates of other types of equipment exclude confined fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 8.
Reported Home Structure Fires, by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Radiated or conducted heat from operating equipment	73,600	(20%)	340	(13%)	3,060	(23%)	$835	(12%)
Non-confined	29,000	(8%)	340	(13%)	2,370	(18%)	$827	(11%)
Confined	44,600	(12%)	0	(0%)	690	(5%)	$8	(0%)
Unclassified heat from powered equipment	63,300	(17%)	220	(9%)	2,070	(16%)	$736	(10%)
Non-confined	26,600	(7%)	220	(9%)	1,640	(12%)	$724	(10%)
Confined	36,700	(10%)	0	(0%)	440	(3%)	$12	(0%)
Arcing	34,300	(9%)	320	(13%)	1,150	(9%)	$1,041	(14%)
Non-confined	31,300	(9%)	320	(13%)	1,140	(9%)	$1,041	(14%)
Confined	3,000	(1%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified heat source	30,900	(8%)	190	(7%)	730	(6%)	$480	(7%)
Non-confined	12,800	(3%)	190	(7%)	550	(4%)	$477	(7%)
Confined	18,200	(5%)	0	(0%)	180	(1%)	$3	(0%)
Unclassified hot or smoldering object	25,300	(7%)	120	(5%)	650	(5%)	$412	(6%)
Non-confined	13,800	(4%)	120	(5%)	540	(4%)	$408	(6%)
Confined	11,400	(3%)	0	(0%)	110	(1%)	$4	(0%)
Hot ember or ash	23,900	(7%)	120	(5%)	450	(3%)	$417	(6%)
Non-confined	11,900	(3%)	120	(5%)	430	(3%)	$415	(6%)
Confined	11,900	(3%)	0	(0%)	30	(0%)	$2	(0%)
Spark, ember or flame from operating equipment	23,300	(6%)	130	(5%)	770	(6%)	$360	(5%)
Non-confined	9,900	(3%)	130	(5%)	670	(5%)	$358	(5%)
Confined	13,400	(4%)	0	(0%)	100	(1%)	$2	(0%)
Smoking materials	17,900	(5%)	580	(22%)	1,280	(10%)	$509	(7%)
Non-confined	13,100	(4%)	580	(22%)	1,250	(9%)	$508	(7%)
Confined	4,800	(1%)	0	(0%)	30	(0%)	$1	(0%)
Heat from direct flame or convection currents	13,500	(4%)	30	(1%)	280	(2%)	$197	(3%)
Non-confined	5,100	(1%)	30	(1%)	220	(2%)	$196	(3%)
Confined	8,400	(2%)	0	(0%)	60	(0%)	$1	(0%)
Candle	10,600	(3%)	120	(4%)	900	(7%)	$418	(6%)
Non-confined	9,800	(3%)	120	(4%)	890	(7%)	$417	(6%)
Confined	900	(0%)	0	(0%)	10	(0%)	$0	(0%)
Match	9,500	(3%)	80	(3%)	270	(2%)	$104	(1%)
Non-confined	3,400	(1%)	80	(3%)	250	(2%)	$104	(1%)
Confined	6,100	(2%)	0	(0%)	20	(0%)	$0	(0%)

Table 8. (Continued)
Reported Home Structure Fires, by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Lighter	9,400	(3%)	150	(6%)	880	(7%)	$231	(3%)
Non-confined	6,900	(2%)	150	(6%)	860	(6%)	$231	(3%)
Confined	2,500	(1%)	0	(0%)	30	(0%)	$0	(0%)
Other known heat source	31,000	(8%)	170	(7%)	700	(5%)	$1,468	(20%)
Non-confined	23,700	(6%)	170	(7%)	620	(5%)	$1,466	(20%)
Confined	7,400	(2%)	0	(0%)	80	(1%)	$2	(0%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 9.
Reported Home Structure Fires, by Factors Contributing to Ignition
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment unattended	54,400	(15%)	190	(7%)	2,300	(17%)	$421	(6%)
Non-confined	15,900	(4%)	190	(7%)	1,670	(13%)	$414	(6%)
Confined	38,500	(11%)	0	(0%)	630	(5%)	$7	(0%)
Electrical failure or malfunction*	49,000	(13%)	480	(18%)	1,570	(12%)	$1,533	(21%)
Non-confined	44,000	(12%)	480	(18%)	1,550	(12%)	$1,532	(21%)
Confined	5,000	(1%)	0	(0%)	10	(0%)	$1	(0%)
Heat source too close to combustibles	40,900	(11%)	550	(21%)	2,260	(17%)	$980	(14%)
Non-confined	26,200	(7%)	550	(21%)	2,130	(16%)	$974	(14%)
Confined	14,800	(4%)	0	(0%)	140	(1%)	$5	(0%)
Abandoned or discarded material or product	40,500	(11%)	400	(16%)	1,620	(12%)	$721	(10%)
Non-confined	20,200	(6%)	400	(16%)	1,400	(11%)	$718	(10%)
Confined	20,300	(6%)	0	(0%)	220	(2%)	$3	(0%)
Failure to clean	29,000	(8%)	20	(1%)	160	(1%)	$74	(1%)
Non-confined	4,400	(1%)	20	(1%)	120	(1%)	$72	(1%)
Confined	24,600	(7%)	0	(0%)	40	(0%)	$2	(0%)
Unclassified misuse of material or product	27,700	(8%)	300	(12%)	1,480	(11%)	$396	(6%)
Non-confined	13,400	(4%)	300	(12%)	1,260	(10%)	$392	(5%)
Confined	14,300	(4%)	0	(0%)	220	(2%)	$5	(0%)
Unclassified factor contributed to ignition	26,800	(7%)	310	(12%)	1,000	(8%)	$522	(7%)
Non-confined	13,100	(4%)	310	(12%)	820	(6%)	$518	(7%)
Confined	13,700	(4%)	0	(0%)	170	(1%)	$4	(0%)
Mechanical failure or malfunction*	25,100	(7%)	110	(4%)	580	(4%)	$453	(6%)
Non-confined	14,300	(4%)	110	(4%)	520	(4%)	$450	(6%)
Confined	10,800	(3%)	0	(0%)	60	(0%)	$2	(0%)
Unintentionally turned on or not turned off	13,200	(4%)	30	(1%)	440	(3%)	$124	(2%)
Non-confined	4,200	(1%)	30	(1%)	310	(2%)	$123	(2%)
Confined	9,000	(2%)	0	(0%)	120	(1%)	$2	(0%)

* Electrical failures or malfunctions and mechanical failures or malfunctions were summed from NFIRS factors contributing to ignition codes 30-37 and 20-27, respectively. NFPA's report *Home Electrical Fires,* by John R. Hall, Jr, analyzed other data elements associated with the various electrical failures and malfunctions and eliminated double counting. Without the double counting associated with multiple entries, electrical failures or malfunctions in 2007-2011 were involved in an estimated average of 46,200 (13%) non-confined and confined home fires, 450 (18%) civilian deaths, 1,510 civilian injuries (11%) and $1,477 (20%) million in direct property damage. These estimates include an average of 42,900 *non-confined* fires with associated losses of 450 civilian deaths, 1,500 civilian injuries, and $1, 476 million in direct property damage and 3,400 *confined* fires with associated losses of 10 civilian injuries, and $1 million in direct property damage. No fatalities resulted from these confined fires.

Table 9. (Continued)
Reported Home Structure Fires, by Factors Contributing to Ignition
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Exposure fire	12,300	(3%)	10	(1%)	70	(1%)	$922	(13%)
Non-confined	12,100	(3%)	10	(1%)	70	(1%)	$922	(13%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Playing with heat source	7,100	(2%)	80	(3%)	750	(6%)	$172	(2%)
Non-confined	5,800	(2%)	80	(3%)	740	(6%)	$172	(2%)
Confined	1,200	(0%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified operational deficiency	5,500	(2%)	20	(1%)	180	(1%)	$64	(1%)
Non-confined	2,100	(1%)	20	(1%)	140	(1%)	$64	(1%)
Confined	3,400	(1%)	0	(0%)	30	(0%)	$0.5	(0%)
Other known factor contributing to ignition	49,700	(14%)	340	(13%)	1,670	(13%)	$1,385	(19%)
Non-confined	31,900	(9%)	340	(13%)	1,500	(11%)	$1,380	(19%)
Confined	17,700	(5%)	0	(0%)	170	(1%)	$6	(0%)
Total fires	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)
Total factors	381,100	(104%)	2,820	(110%)	14,070	(107%)	$7,769	(108%)
Non-confined	207,600	(57%)	2,820	(110%)	12,230	(93%)	$7,730	(107%)
Confined	173,500	(47%)	0	(0%)	1,840	(14%)	$38	(1%)

The following factors were involved in less than 2% of the fires but were factors in at least 2% of the deaths.		
Flammable liquid or gas spilled	80	(3%)
Flammable liquid used to kindle fire	40	(2%)
Unclassified fire spread or control	40	(2%)

Note: Multiple entries are allowed which can result in sums higher than totals. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 10.
Reported Home Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen or cooking area	154,900	(42%)	400	(16%)	5,010	(38%)	$1,016	(14%)
Non-confined	41,200	(11%)	400	(16%)	3,430	(26%)	$991	(14%)
Confined	113,600	(31%)	0	(0%)	1,590	(12%)	$26	(0%)
Bedroom	26,400	(7%)	640	(25%)	2,640	(20%)	$985	(14%)
Non-confined	25,500	(7%)	640	(25%)	2,630	(20%)	$985	(14%)
Confined	900	(0%)	0	(0%)	10	(0%)	$0	(0%)
Confined chimney or flue fire*	22,300	(6%)	0	(0%)	30	(0%)	$6	(0%)
Non-confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Confined	22,300	(6%)	0	(0%)	30	(0%)	$6	(0%)
Living room, family room or den	13,600	(4%)	610	(24%)	1,390	(11%)	$589	(8%)
Non-confined	12,600	(3%)	610	(24%)	1,380	(10%)	$589	(8%)
Confined	1,000	(0%)	0	(0%)	10	(0%)	$0	(0%)
Laundry room or area	10,800	(3%)	30	(1%)	330	(2%)	$208	(3%)
Non-confined	9,600	(3%)	30	(1%)	320	(2%)	$208	(3%)
Confined	1,200	(0%)	0	(0%)	10	(0%)	$0	(0%)
Attic or ceiling/roof assembly or concealed space	9,600	(3%)	20	(1%)	120	(1%)	$507	(7%)
Non-confined	9,500	(3%)	20	(1%)	120	(1%)	$507	(7%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Exterior wall surface	9,200	(2%)	10	(0%)	120	(1%)	$201	(3%)
Non-confined	9,000	(2%)	10	(0%)	120	(1%)	$201	(3%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Garage or vehicle storage area**	8,900	(2%)	40	(1%)	450	(3%)	$562	(8%)
Non-confined	7,900	(2%)	40	(1%)	450	(3%)	$562	(8%)
Confined	1,000	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified function area	8,900	(2%)	260	(10%)	610	(5%)	$365	(5%)
Non-confined	8,000	(2%)	260	(10%)	610	(5%)	$365	(5%)
Confined	900	(0%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified outside area	8,400	(2%)	10	(0%)	60	(0%)	$99	(1%)
Non-confined	3,500	(1%)	10	(0%)	60	(0%)	$98	(1%)
Confined	4,900	(1%)	0	(0%)	0	(0%)	$1	(0%)
Unclassified area of origin	7,900	(2%)	50	(2%)	110	(1%)	$142	(2%)
Non-confined	4,600	(1%)	50	(2%)	100	(1%)	$142	(2%)
Confined	3,300	(1%)	0	(0%)	10	(0%)	$0	(0%)

* NFIRS 5.0 does not have a separate area of origin code for fires starting in chimneys. Any home fire with NFIRS incident type 114 - "Chimney of fire originating in and confined to a chimney or flue" is captured here.
** Does not include fires with property use coded as residential garage.

Table 10. (Continued)
Reported Home Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Wall assembly or concealed space	7,000	(2%)	30	(1%)	140	(1%)	$234	(3%)
Non-confined	6,900	(2%)	30	(1%)	140	(1%)	$234	(3%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Lavatory, bathroom, locker room or check room	7,000	(2%)	30	(1%)	280	(2%)	$124	(2%)
Non-confined	6,300	(2%)	30	(1%)	280	(2%)	$124	(2%)
Confined	800	(0%)	0	(0%)	10	(0%)	$0	(0%)
Exterior balcony or unenclosed porch	7,000	(2%)	50	(2%)	210	(2%)	$312	(4%)
Non-confined	6,100	(2%)	50	(2%)	210	(2%)	$312	(4%)
Confined	900	(0%)	0	(0%)	10	(0%)	$0	(0%)
Heating equipment room	6,700	(2%)	20	(1%)	150	(1%)	$119	(2%)
Non-confined	3,200	(1%)	20	(1%)	130	(1%)	$119	(2%)
Confined	3,500	(1%)	0	(0%)	20	(0%)	$1	(0%)
Unclassified structural area	5,600	(2%)	80	(3%)	170	(1%)	$272	(4%)
Non-confined	5,100	(1%)	80	(3%)	160	(1%)	$271	(4%)
Confined	600	(0%)	0	(0%)	10	(0%)	$0	(0%)
Other known area of origin	52,200	(14%)	300	(12%)	1,370	(10%)	$1,465	(20%)
Non-confined	38,300	(10%)	300	(12%)	1,310	(10%)	$1,463	(20%)
Confined	13,900	(4%)	0	(0%)	50	(0%)	$2	(0%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 11.
Reported Home Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	106,300	(29%)	130	(5%)	3,580	(27%)	$471	(7%)
Non-confined	21,500	(6%)	130	(5%)	2,340	(18%)	$452	(6%)
Confined	84,800	(23%)	0	(0%)	1,240	(9%)	$19	(0%)
Unclassified item first ignited	28,300	(8%)	100	(4%)	530	(4%)	$350	(5%)
Non-confined	10,000	(3%)	100	(4%)	440	(3%)	$346	(5%)
Confined	18,300	(5%)	0	(0%)	90	(1%)	$4	(0%)
Structural member or framing	20,500	(6%)	130	(5%)	410	(3%)	$1,088	(15%)
Non-confined	20,000	(5%)	130	(5%)	410	(3%)	$1,088	(15%)
Confined	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Electrical wire or cable insulation	17,600	(5%)	100	(4%)	440	(3%)	$443	(6%)
Non-confined	15,600	(4%)	100	(4%)	430	(3%)	$442	(6%)
Confined	2,000	(1%)	0	(0%)	10	(0%)	$1	(0%)
Flammable or combustible liquids or gases, piping or filter	15,500	(4%)	200	(8%)	1,060	(8%)	$317	(4%)
Non-confined	7,500	(2%)	200	(8%)	960	(7%)	$315	(4%)
Confined	8,000	(2%)	0	(0%)	100	(1%)	$2	(0%)
Rubbish, trash, or waste	14,800	(4%)	50	(2%)	270	(2%)	$162	(2%)
Non-confined	5,300	(1%)	50	(2%)	240	(2%)	$160	(2%)
Confined	9,500	(3%)	0	(0%)	30	(0%)	$1	(0%)
Exterior wall covering or finish	13,400	(4%)	40	(1%)	200	(2%)	$483	(7%)
Non-confined	13,200	(4%)	40	(1%)	200	(2%)	$483	(7%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Appliance housing or casing	12,100	(3%)	30	(1%)	290	(2%)	$132	(2%)
Non-confined	5,800	(2%)	30	(1%)	240	(2%)	$130	(2%)
Confined	6,300	(2%)	0	(0%)	50	(0%)	$2	(0%)
Household utensils	10,200	(3%)	20	(1%)	220	(2%)	$47	(1%)
Non-confined	2,200	(1%)	20	(1%)	130	(1%)	$46	(1%)
Confined	7,900	(2%)	0	(0%)	90	(1%)	$2	(0%)
Mattress or bedding	9,900	(3%)	330	(13%)	1,360	(10%)	$361	(5%)
Non-confined	9,400	(3%)	330	(13%)	1,350	(10%)	$361	(5%)
Confined	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified organic materials	8,200	(2%)	10	(0%)	60	(0%)	$64	(1%)
Non-confined	2,000	(1%)	10	(0%)	50	(0%)	$63	(1%)
Confined	6,300	(2%)	0	(0%)	10	(0%)	$1	(0%)
Unclassified structural component or finish	7,900	(2%)	70	(3%)	200	(2%)	$358	(5%)
Non-confined	7,400	(2%)	70	(3%)	200	(2%)	$358	(5%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)

Table 11. (Continued)
Reported Home Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Clothing	7,700	(2%)	130	(5%)	520	(4%)	$176	(2%)
Non-confined	6,800	(2%)	130	(5%)	500	(4%)	$176	(2%)
Confined	900	(0%)	0	(0%)	20	(0%)	$0	(0%)
Interior wall covering, excluding drapes	7,500	(2%)	100	(4%)	290	(2%)	$313	(4%)
Non-confined	7,300	(2%)	100	(4%)	290	(2%)	$312	(4%)
Confined	300	(0%)	0	(0%)	0	(0%)	$0	(0%)
Multiple items first ignited	6,600	(2%)	130	(5%)	360	(3%)	$316	(4%)
Non-confined	4,900	(1%)	130	(5%)	360	(3%)	$316	(4%)
Confined	1,700	(0%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified furniture or utensils	6,500	(2%)	120	(5%)	440	(3%)	$209	(3%)
Non-confined	5,000	(1%)	120	(5%)	410	(3%)	$208	(3%)
Confined	1,500	(0%)	0	(0%)	20	(0%)	$0	(0%)
Upholstered furniture	6,300	(2%)	450	(18%)	810	(6%)	$334	(5%)
Non-confined	6,100	(2%)	450	(18%)	810	(6%)	$334	(5%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Insulation within structural area	6,000	(2%)	10	(0%)	90	(1%)	$177	(2%)
Non-confined	5,800	(2%)	10	(0%)	90	(1%)	$177	(2%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Cabinetry	5,900	(2%)	50	(2%)	330	(2%)	$169	(2%)
Non-confined	4,700	(1%)	50	(2%)	310	(2%)	$168	(2%)
Confined	1,200	(0%)	0	(0%)	20	(0%)	$1	(0%)
Magazine, newspaper, or writing paper	5,700	(2%)	60	(2%)	210	(2%)	$87	(1%)
Non-confined	2,900	(1%)	60	(2%)	200	(2%)	$87	(1%)
Confined	2,800	(1%)	0	(0%)	10	(0%)	$0	(0%)
Other known item first ignited	49,700	(14%)	290	(11%)	1,540	(12%)	$1,152	(16%)
Non-confined	33,900	(9%)	290	(11%)	1,470	(11%)	$1,149	(16%)
Confined	15,800	(4%)	0	(0%)	70	(1%)	$3	(0%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)
The following items were first ignited in fewer than 2% of the fires but at least 2% of the deaths.								
Floor covering, rug, carpet or mat			100	(4%)				
Unclassified soft goods or wearing apparel			50	(2%)				

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.
Source: NFIRS 5.0 and NFPA survey.

Table 12.
Reported Home Structure Fires, by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined Fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)
Confined to object of origin	42,200	(12%)	120	(4%)	1,090	(8%)	$316	(4%)
Confined to room of origin	64,100	(17%)	390	(15%)	4,350	(33%)	$818	(11%)
Confined to floor of origin	17,400	(5%)	260	(10%)	1,460	(11%)	$669	(9%)
Confined to building of origin	62,600	(17%)	1,450	(56%)	3,740	(28%)	$4,299	(60%)
Extended beyond building of origin	11,000	(3%)	350	(14%)	800	(6%)	$1,068	(15%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Fire spread extended beyond room of origin	91,100	(25%)	2,070	(80%)	5,990	(45%)	$6,036	(84%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 13.
Home Fires that Spread beyond the Room of Origin, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	13,800	(15%)	140	(7%)	380	(6%)	$1,013	(17%)
Exterior wall covering or finish	9,800	(11%)	40	(2%)	190	(3%)	$465	(8%)
Electrical wire or cable insulation	5,400	(6%)	90	(5%)	250	(4%)	$356	(6%)
Unclassified structural component or finish	4,900	(5%)	70	(3%)	170	(3%)	$334	(6%)
Cooking materials, including food	4,200	(5%)	110	(5%)	640	(11%)	$276	(5%)
Mattress or bedding	4,200	(5%)	220	(11%)	770	(13%)	$286	(5%)
Interior wall covering, excluding drapes	4,100	(5%)	90	(5%)	200	(3%)	$264	(4%)
Unclassified item first ignited	4,100	(4%)	90	(4%)	220	(4%)	$286	(5%)
Flammable or combustible liquids or gases, piping or filter	3,700	(4%)	180	(9%)	550	(9%)	$283	(5%)
Multiple items first ignited	3,600	(4%)	130	(6%)	280	(5%)	$285	(5%)
Upholstered furniture	3,400	(4%)	330	(16%)	510	(9%)	$271	(4%)
Insulation within structural area	2,800	(3%)	10	(0%)	60	(1%)	$154	(3%)
Rubbish, trash, or waste	2,600	(3%)	50	(2%)	150	(3%)	$143	(2%)
Floor covering rug, carpet, or mat	2,600	(3%)	90	(4%)	170	(3%)	$143	(2%)
Unclassified furniture or utensil	2,400	(3%)	90	(4%)	270	(4%)	$165	(3%)
Exterior roof covering or finish	2,100	(2%)	0	(0%)	30	(0%)	$185	(3%)
Clothing	2,000	(2%)	60	(3%)	200	(3%)	$117	(2%)
Light vegetation including grass	1,600	(2%)	10	(0%)	40	(1%)	$77	(1%)
Interior ceiling cover or finish	1,600	(2%)	30	(2%)	50	(1%)	$103	(2%)
Cabinetry	1,500	(2%)	40	(2%)	110	(2%)	$110	(2%)
Other known item first ignited	10,900	(12%)	210	(10%)	740	(12%)	$718	(12%)
Total	91,100	(100%)	2,070	(100%)	5,990	(100%)	$6,036	(100%)
The following items were first ignited in less than 2% of these fires, but were first ignited in at least 2% of the associated fire deaths.								
Magazine, newspaper or writing paper			50	(3%)				

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 14.
Home Fires that Spread Beyond the Room of Origin
by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	23,800	(26%)	360	(17%)	1,010	(17%)	$1,981	(33%)
Unclassified structural component or finish	10,700	(12%)	260	(13%)	600	(10%)	$769	(13%)
Exterior wall covering or finish	9,800	(11%)	50	(3%)	340	(6%)	$505	(8%)
Interior wall covering, excluding drapes	5,400	(6%)	210	(10%)	380	(6%)	$305	(5%)
Upholstered furniture	3,700	(4%)	300	(14%)	530	(9%)	$240	(4%)
Flammable or combustible liquids or gases, piping or filter	3,500	(4%)	170	(8%)	460	(8%)	$255	(4%)
Mattress or bedding	3,400	(4%)	150	(7%)	520	(9%)	$182	(3%)
Unclassified furniture or utensil	3,200	(4%)	130	(6%)	410	(7%)	$239	(4%)
Multiple items first ignited	2,900	(3%)	90	(5%)	220	(4%)	$204	(3%)
Cabinetry	2,400	(3%)	30	(2%)	210	(4%)	$138	(2%)
Unclassified item first ignited	2,300	(3%)	40	(2%)	120	(2%)	$149	(2%)
Insulation within structural area	2,300	(2%)	0	(0%)	60	(1%)	$125	(2%)
Interior ceiling cover or finish	2,200	(2%)	50	(2%)	120	(2%)	$133	(2%)
Exterior roof covering or finish	2,100	(2%)	20	(1%)	60	(1%)	$179	(3%)
Clothing	1,500	(2%)	30	(2%)	170	(3%)	$62	(1%)
Cooking materials, including food	1,500	(2%)	30	(1%)	200	(3%)	$75	(1%)
Other known item first ignited	10,500	(11%)	160	(8%)	570	(10%)	$497	(8%)
Total	91,100	(100%)	2,070	(100%)	5,990	(100%)	$6,036	(100%)

Note: Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 15.
Reported Home Fire Deaths in Selected Areas of Origin
by Year 1980-2011
(Unknowns were allocated proportionally)

Year	Living Room, Family Room or Den		Bedroom		Kitchen		Other Area of Origin		Total Deaths	
1980	2,220	(42%)	1,210	(23%)	660	(13%)	1,160	(22%)	5,240	(100%)
1981	2,160	(41%)	1,260	(24%)	710	(13%)	1,180	(22%)	5,320	(100%)
1982	1,870	(39%)	1,260	(26%)	580	(12%)	1,130	(23%)	4,840	(100%)
1983	1,810	(39%)	1,240	(27%)	680	(15%)	950	(20%)	4,680	(100%)
1984	1,580	(39%)	1,060	(26%)	550	(13%)	910	(22%)	4,100	(100%)
1985	1,670	(34%)	1,440	(30%)	690	(14%)	1,060	(22%)	4,860	(100%)
1986	1,680	(36%)	1,310	(28%)	610	(13%)	1,040	(22%)	4,640	(100%)
1987	1,730	(38%)	1,200	(27%)	640	(14%)	950	(21%)	4,520	(100%)
1988	1,800	(36%)	1,410	(28%)	650	(13%)	1,130	(23%)	4,990	(100%)
1989	1,570	(36%)	1,140	(26%)	720	(17%)	910	(21%)	4,350	(100%)
1990	1,400	(35%)	1,090	(27%)	650	(16%)	860	(22%)	4,010	(100%)
1991	1,230	(35%)	990	(28%)	550	(15%)	760	(22%)	3,520	(100%)
1992	1,210	(33%)	1,060	(29%)	490	(13%)	910	(25%)	3,670	(100%)
1993	1,280	(34%)	1,010	(27%)	570	(15%)	880	(23%)	3,730	(100%)
1994	1,070	(31%)	960	(28%)	490	(14%)	880	(26%)	3,410	(100%)
1995	1,220	(34%)	990	(27%)	490	(14%)	910	(25%)	3,600	(100%)
1996	1,230	(31%)	1,060	(27%)	630	(16%)	1,060	(27%)	3,980	(100%)
1997	1,050	(32%)	900	(27%)	520	(16%)	850	(26%)	3,330	(100%)
1998	840	(27%)	790	(25%)	540	(17%)	1,000	(31%)	3,170	(100%)
1999	660	(23%)	630	(22%)	540	(19%)	1,030	(36%)	2,870	(100%)
2000	860	(27%)	790	(24%)	530	(16%)	1,060	(33%)	3,250	(100%)
2001	790	(26%)	700	(23%)	460	(15%)	1,070	(36%)	3,010	(100%)
2002	660	(26%)	700	(28%)	350	(14%)	810	(32%)	2,520	(100%)
2003	690	(23%)	630	(21%)	460	(15%)	1,220	(41%)	3,010	(100%)
2004	690	(23%)	700	(23%)	470	(15%)	1,200	(39%)	3,070	(100%)
2005	720	(25%)	740	(26%)	450	(16%)	960	(33%)	2,870	(100%)
2006	560	(23%)	620	(25%)	360	(14%)	950	(38%)	2,480	(100%)
2007	650	(23%)	720	(26%)	450	(16%)	990	(35%)	2,800	(100%)
2008	630	(24%)	700	(26%)	400	(15%)	950	(35%)	2,670	(100%)
2009	630	(26%)	590	(24%)	330	(14%)	880	(36%)	2,440	(100%)
2010	610	(24%)	610	(24%)	400	(16%)	930	(36%)	2,545	(100%)
2011	500	(21%)	600	(25%)	450	(18%)	880	(36%)	2,430	(100%)
1980-1984 average	1,930	(40%)	1,210	(25%)	640	(13%)	1,070	(22%)	4,830	(100%)
2007-2011	610	(24%)	640	(25%)	400	(16%)	920	(36%)	2,570	(100%)
Change from 1980-1984 to 2007-2011	-1,320	(-68%)	-570	(-47%)	-240	(-38%)	-150	(-14%)	-2,260	(-47%)

Note: Estimates from 1999 on are based on NFIRS 5.0 data and include deaths from confined fires. Because of low participation in NFIRS 5.0 during 1999-2001, estimates for these years are highly uncertain and must be used with caution. Estimates of total deaths vary slightly from those in Table 1. Estimates in Table 1 were based solely on NFPA survey data.

Source: NFIRS and NFPA survey.

Table 16.
Reported Home Fire Deaths from Fires
Starting with Upholstered Furniture or Mattresses and Bedding
by Year: 1980-2011
(Unknowns were allocated proportionally)

Year	Upholstered Furniture		Mattress or Bedding		Other Item		Total Deaths	
1980	1,360	(26%)	940	(18%)	2,940	(56%)	5,240	(100%)
1981	1,360	(26%)	820	(15%)	3,140	(59%)	5,320	(100%)
1982	1,190	(25%)	700	(14%)	2,950	(61%)	4,840	(100%)
1983	1,100	(24%)	700	(15%)	2,880	(62%)	4,680	(100%)
1984	1,090	(27%)	670	(16%)	2,340	(57%)	4,100	(100%)
1985	930	(19%)	860	(18%)	3,070	(63%)	4,860	(100%)
1986	1,070	(23%)	730	(16%)	2,840	(61%)	4,640	(100%)
1987	1,030	(23%)	720	(16%)	2,770	(61%)	4,520	(100%)
1988	1,100	(22%)	920	(18%)	2,970	(60%)	4,990	(100%)
1989	880	(20%)	650	(15%)	2,820	(65%)	4,350	(100%)
1990	870	(22%)	620	(15%)	2,520	(63%)	4,010	(100%)
1991	680	(19%)	620	(18%)	2,220	(63%)	3,520	(100%)
1992	630	(17%)	620	(17%)	2,420	(66%)	3,670	(100%)
1993	650	(17%)	620	(17%)	2,460	(66%)	3,730	(100%)
1994	670	(20%)	470	(14%)	2,270	(67%)	3,410	(100%)
1995	660	(18%)	530	(15%)	2,410	(67%)	3,600	(100%)
1996	650	(16%)	660	(17%)	2,670	(67%)	3,980	(100%)
1997	660	(20%)	490	(15%)	2,180	(65%)	3,330	(100%)
1998	540	(17%)	400	(13%)	2,230	(70%)	3,170	(100%)
1999	480	(17%)	210	(7%)	2,180	(76%)	2,870	(100%)
2000	580	(18%)	460	(14%)	2,210	(68%)	3,250	(100%)
2001	620	(21%)	460	(15%)	1,930	(64%)	3,010	(100%)
2002	540	(21%)	380	(15%)	1,610	(64%)	2,520	(100%)
2003	650	(22%)	370	(12%)	1,980	(66%)	3,010	(100%)
2004	690	(23%)	310	(10%)	2,070	(68%)	3,070	(100%)
2005	540	(19%)	460	(16%)	1,870	(65%)	2,870	(100%)
2006	490	(20%)	380	(15%)	1,610	(65%)	2,480	(100%)
2007	540	(19%)	360	(13%)	1,890	(68%)	2,800	(100%)
2008	500	(19%)	300	(11%)	1,870	(70%)	2,670	(100%)
2009	450	(19%)	330	(14%)	1,650	(68%)	2,440	(100%)
2010	400	(16%)	300	(12%)	1,840	(72%)	2,545	(100%)
2011	370	(15%)	360	(15%)	1,700	(70%)	2,430	(100%)
1980-1984 average	1,220	(25%)	770	(16%)	2,850	(59%)	4,830	(100%)
2007-2011 average	450	(18%)	330	(13%)	1,790	(69%)	2,570	(100%)
Change from 1980-1984 to 2007-2011	-770	(-63%)	-440	(-57%)	-1,060	(-37%)	-2,260	(-47%)

Note: Estimates from 1999 on are based on NFIRS 5.0 data and exclude deaths from confined fires. Because of low participation in NFIRS 5.0 during 1999-2001, estimates for these years are highly uncertain and must be used with caution. Estimates of total deaths vary slightly from those in Table 1. Estimates in Table 1 were based solely on NFPA survey data.

Source: NFIRS and NFPA survey.

Table 17.
Reported Home Fire Deaths, by Selected Types of Heat Sources and Year
1980-2011
(Unknowns were allocated proportionally)

Year	Operating Equipment		Smoking Materials		Lighters, Candles and Matches		Other Heat Source		Total Deaths	
1980	1,950	(37%)	1,820	(35%)	970	(19%)	490	(9%)	5,240	(100%)
1981	1,970	(37%)	1,980	(37%)	820	(15%)	550	(10%)	5,320	(100%)
1982	1,870	(39%)	1,680	(35%)	700	(14%)	580	(12%)	4,840	(100%)
1983	1,910	(41%)	1,510	(32%)	830	(18%)	440	(9%)	4,680	(100%)
1984	1,620	(39%)	1,480	(36%)	640	(16%)	360	(9%)	4,100	(100%)
1985	1,930	(40%)	1,580	(33%)	860	(18%)	490	(10%)	4,860	(100%)
1986	1,960	(42%)	1,350	(29%)	810	(18%)	510	(11%)	4,640	(100%)
1987	1,850	(41%)	1,380	(31%)	850	(19%)	450	(10%)	4,520	(100%)
1988	1,940	(39%)	1,570	(31%)	950	(19%)	530	(11%)	4,990	(100%)
1989	1,840	(42%)	1,190	(27%)	880	(20%)	430	(10%)	4,350	(100%)
1990	1,660	(41%)	1,150	(29%)	710	(18%)	490	(12%)	4,010	(100%)
1991	1,410	(40%)	880	(25%)	820	(23%)	410	(12%)	3,520	(100%)
1992	1,440	(39%)	1,000	(27%)	800	(22%)	420	(11%)	3,670	(100%)
1993	1,510	(41%)	980	(26%)	870	(23%)	370	(10%)	3,730	(100%)
1994	1,510	(44%)	840	(25%)	710	(21%)	350	(10%)	3,410	(100%)
1995	1,540	(43%)	1,040	(29%)	660	(18%)	360	(10%)	3,600	(100%)
1996	1,810	(45%)	1,090	(27%)	610	(15%)	470	(12%)	3,980	(100%)
1997	1,360	(41%)	870	(26%)	710	(21%)	390	(12%)	3,330	(100%)
1998	1,360	(43%)	850	(27%)	560	(18%)	400	(13%)	3,170	(100%)
1999	940	(33%)	830	(29%)	370	(13%)	720	(25%)	2,870	(100%)
2000	1,140	(35%)	860	(26%)	650	(20%)	560	(17%)	3,250	(100%)
2001	1,110	(37%)	760	(25%)	560	(19%)	580	(19%)	3,010	(100%)
2002	800	(32%)	610	(24%)	510	(20%)	610	(24%)	2,520	(100%)
2003	1,200	(40%)	700	(23%)	440	(15%)	660	(22%)	3,000	(100%)
2004	1,200	(39%)	710	(23%)	480	(16%)	690	(22%)	3,070	(100%)
2005	1,100	(38%)	730	(26%)	480	(17%)	570	(20%)	2,870	(100%)
2006	910	(36%)	690	(28%)	390	(16%)	490	(20%)	2,480	(100%)
2007	950	(34%)	650	(23%)	550	(20%)	490	(20%)	2,800	(100%)
2008	1,180	(44%)	620	(23%)	310	(12%)	560	(21%)	2,670	(100%)
2009	970	(40%)	580	(24%)	270	(11%)	610	(25%)	2,440	(100%)
2010	1,040	(41%)	540	(21%)	330	(13%)	630	(25%)	2,545	(100%)
2011	1,000	(41%)	490	(20%)	240	(10%)	690	(28%)	2,430	(100%)
1980-1984 average	1,860	(39%)	1,690	(35%)	790	(16%)	490	(10%)	4,830	(100%)
2007-2011	1,020	(40%)	580	(22%)	350	(14%)	630	(24%)	2,570	(100%)
Change from 1980-1984 to 2007-2011	-840	(-45%)	-1,110	(-66%)	-440	(-56%)	140	(29%)	-2,260	(-47%)

Table 17. (Continued)
Reported Home Fire Deaths, by Selected Types of Heat Sources and Year
1980-2011

Note: Estimates from 1999 on are based on NFIRS 5.0 data and exclude deaths from confined fires. Because of low participation in NFIRS 5.0 during 1999-2001, estimates for these years must be used with caution. In 1980-1998, operating equipment identified by form of heat of ignition codes for heat from fuel-fires, fuel-powered objects, heat from electrical equipment arcing or overloaded, electric lamps, and properly and improperly operating equipment (form of heat of ignition codes 10-29, 54, 56, and 57). Beginning in 1999, operating equipment was identified by heat source codes for operating equipment (heat source 10-13). The 1980-1998 estimates of lighter, candles, and matches include proportional shares of deaths from fires in which the form of heat of ignition was an unknown-type of open flame. Estimates for open flame and smoking material beginning in 1999 include a proportional share of deaths in which the heat source was an unclassified open flame or smoking material. Estimates of total deaths vary slightly from those in Table 1. Estimates in Table 1 were based solely on NFPA survey data.

Source: NFIRS and NFPA survey.

Table 18.
Home Fires Originating in the Kitchen, by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	113,600	(73%)	0	(0%)	1,590	(32%)	$26	(3%)
Confined to object of origin	8,500	(5%)	20	(5%)	360	(7%)	$50	(5%)
Confined to room of origin	23,200	(15%)	100	(24%)	2,070	(41%)	$286	(28%)
Confined to floor of origin	2,500	(2%)	40	(10%)	310	(6%)	$115	(11%)
Confined to building of origin	6,500	(4%)	210	(51%)	600	(12%)	$481	(47%)
Extended beyond building of origin	600	(0%)	40	(10%)	80	(2%)	$58	(6%)
Total	154,900	(100%)	400	(100%)	5,010	(100%)	$1,016	(100%)
Fire spread extended beyond room of origin	9,500	(6%)	290	(71%)	990	(20%)	$654	(64%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 19.
Home Fires that Originating in the Bedroom, by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	900	(3%)	0	(0%)	10	(1%)	$0	(0%)
Confined to object of origin	4,000	(15%)	30	(5%)	230	(9%)	$38	(4%)
Confined to room of origin	10,500	(40%)	140	(22%)	960	(36%)	$180	(18%)
Confined to floor of origin	3,300	(12%)	100	(16%)	470	(18%)	$173	(18%)
Confined to building of origin	7,000	(26%)	310	(49%)	820	(31%)	$526	(53%)
Extended beyond building of origin	800	(3%)	50	(8%)	140	(5%)	$68	(7%)
Total	26,400	(100%)	640	(100%)	2,640	(100%)	$985	(100%)
Fire spread extended beyond room of origin	11,000	(42%)	460	(72%)	1,430	(54%)	$767	(78%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 20.
Home Fires that Originating in the Living Room, Family Room or Den
by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	1,000	(7%)	0	(0%)	10	(1%)	$0	(0%)
Confined to object of origin	2,200	(16%)	20	(4%)	120	(9%)	$21	(4%)
Confined to room of origin	4,400	(32%)	110	(19%)	440	(32%)	$88	(15%)
Confined to floor of origin	1,300	(9%)	70	(12%)	190	(14%)	$66	(11%)
Confined to building of origin	4,300	(32%)	330	(55%)	520	(37%)	$363	(62%)
Extended beyond building of origin	500	(4%)	60	(10%)	110	(8%)	$51	(9%)
Total	13,600	(100%)	610	(100%)	1,390	(100%)	$589	(100%)
Fire spread extended beyond room of origin	6,100	(45%)	470	(78%)	820	(59%)	$480	(81%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 21.
Home Fires Originating in the Kitchen, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	99,600	(64%)	130	(32%)	3,280	(65%)	$413	(41%)
Non-confined	19,400	(13%)	130	(32%)	2,050	(41%)	$395	(39%)
Confined	80,200	(52%)	0	(0%)	1,230	(25%)	$17	(2%)
Household utensils	9,200	(6%)	20	(5%)	190	(4%)	$35	(3%)
Non-confined	1,700	(1%)	20	(5%)	110	(2%)	$34	(3%)
Confined	7,500	(5%)	0	(0%)	80	(2%)	$1	(0%)
Unclassified item first ignited	8,600	(6%)	10	(2%)	180	(4%)	$38	(4%)
Non-confined	1,700	(1%)	10	(2%)	110	(2%)	$36	(4%)
Confined	6,900	(4%)	0	(0%)	60	(1%)	$1	(0%)
Appliance housing or casing	8,000	(5%)	20	(5%)	160	(3%)	$58	(6%)
Non-confined	2,700	(2%)	20	(5%)	120	(2%)	$57	(6%)
Confined	5,300	(3%)	0	(0%)	40	(1%)	$1	(0%)
Flammable or combustible liquids or gases, piping or filter	4,500	(3%)	20	(6%)	290	(6%)	$45	(4%)
Non-confined	1,900	(1%)	20	(6%)	240	(5%)	$44	(4%)
Confined	2,600	(2%)	0	(0%)	50	(1%)	$1	(0%)
Cabinetry	4,100	(3%)	40	(9%)	220	(4%)	$103	(10%)
Non-confined	3,000	(2%)	40	(9%)	200	(4%)	$102	(10%)
Confined	1,000	(1%)	0	(0%)	10	(0%)	$1	(0%)
Electrical wire or cable insulation	2,600	(2%)	10	(2%)	50	(1%)	$38	(4%)
Non-confined	1,600	(1%)	10	(2%)	40	(1%)	$38	(4%)
Confined	1,000	(1%)	0	(0%)	0	(0%)	$0	(0%)
Other known item first ignited	18,300	(12%)	150	(38%)	650	(13%)	$286	(28%)
Non-confined	9,200	(6%)	150	(38%)	550	(11%)	$283	(28%)
Confined	9,100	(6%)	0	(0%)	100	(2%)	$3	(0%)
Total	154,900	(100%)	400	(100%)	5,010	(100%)	$1,016	(100%)
Non-confined	41,200	(27%)	400	(100%)	3,430	(68%)	$991	(97%)
Confined	113,600	(73%)	0	(0%)	1,590	(32%)	$26	(3%)

Table 21. (Continued)
Home Fires Originating in the Kitchen, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

The following items were first ignited in less than 2% of the kitchen fires, but were first ignited in 2% or more of the associated civilian fire deaths.

Item First Ignited	Civilian Deaths	
Clothing	40	(9%)
Interior wall covering, excluding drapes	30	(6%)
Multiple items first ignited	20	(5%)
Rubbish, trash, or waste	10	(3%)
Unclassified structural component or finish	10	(2%)
Unclassified furniture or utensil	10	(2%)
Structural member or framing	10	(2%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 22.
Home Fires Originating in the Bedroom, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Mattress or bedding	7,900	(30%)	280	(44%)	1,190	(45%)	$308	(31%)
Non-confined	7,900	(30%)	280	(44%)	1,190	(45%)	$308	(31%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified furniture or utensil	2,300	(9%)	50	(8%)	220	(8%)	$92	(9%)
Non-confined	2,200	(8%)	50	(8%)	220	(8%)	$92	(9%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Electrical wire or cable insulation	2,000	(8%)	20	(4%)	100	(4%)	$71	(7%)
Non-confined	2,000	(7%)	20	(4%)	100	(4%)	$71	(7%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Clothing	1,700	(7%)	30	(5%)	170	(6%)	$53	(5%)
Non-confined	1,700	(6%)	30	(5%)	160	(6%)	$53	(5%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Floor covering rug, carpet, or mat	1,300	(5%)	30	(5%)	80	(3%)	$43	(4%)
Non-confined	1,300	(5%)	30	(5%)	80	(3%)	$43	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Interior wall covering, excluding drapes	1,000	(4%)	20	(3%)	50	(2%)	$43	(4%)
Non-confined	1,000	(4%)	20	(3%)	50	(2%)	$43	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Upholstered furniture	1,000	(4%)	40	(6%)	80	(3%)	$44	(4%)
Non-confined	1,000	(4%)	40	(6%)	80	(3%)	$44	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified soft goods or wearing apparel	800	(3%)	20	(3%)	90	(3%)	$28	(3%)
Non-confined	800	(3%)	20	(3%)	90	(3%)	$28	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified item first ignited	800	(3%)	20	(3%)	90	(3%)	$29	(3%)
Non-confined	700	(3%)	20	(3%)	90	(3%)	$29	(3%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Multiple items first ignited	800	(3%)	30	(4%)	80	(3%)	$50	(5%)
Non-confined	800	(3%)	30	(4%)	80	(3%)	$50	(5%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Structural member or framing	800	(3%)	10	(2%)	30	(1%)	$39	(4%)
Non-confined	800	(3%)	10	(2%)	30	(1%)	$39	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)

Table 22. (Continued)
Home Fires Originating in the Bedroom, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Curtains, blinds, drapery, or tapestry	700	(3%)	0	(0%)	70	(2%)	$25	(3%)
Non-confined	700	(3%)	0	(0%)	70	(2%)	$25	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Magazine, newspaper, or writing paper	700	(3%)	10	(1%)	50	(2%)	$22	(2%)
Non-confined	600	(2%)	10	(1%)	50	(2%)	$22	(2%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Rubbish, trash, or waste	600	(2%)	10	(1%)	30	(1%)	$14	(1%)
Non-confined	400	(2%)	10	(1%)	30	(1%)	$14	(1%)
Confined	200	(1%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified structural component or finish	500	(2%)	10	(2%)	20	(1%)	$19	(2%)
Non-confined	500	(2%)	10	(2%)	20	(1%)	$19	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Appliance housing or casing	500	(2%)	0	(0%)	30	(1%)	$12	(1%)
Non-confined	500	(2%)	0	(0%)	30	(1%)	$12	(1%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Cabinetry	400	(2%)	10	(1%)	40	(1%)	$16	(2%)
Non-confined	400	(2%)	10	(1%)	40	(1%)	$16	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Flammable or combustible liquids or gases, piping or filter	400	(2%)	30	(5%)	90	(3%)	$18	(2%)
Non-confined	400	(1%)	30	(5%)	90	(3%)	$18	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Other known item first ignited	2,100	(8%)	20	(3%)	130	(5%)	$59	(6%)
Non-confined	1,900	(7%)	20	(3%)	130	(5%)	$59	(6%)
Confined	200	(1%)	0	(0%)	0	(0%)	$0	(0%)
Total	26,400	(100%)	640	(100%)	2,640	(100%)	$985	(100%)
Non-confined	25,500	(97%)	640	(100%)	2,630	(99%)	$985	(100%)
Confined	900	(3%)	0	(0%)	10	(1%)	$0	(0%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 23.
Home Fires Originating in the Living Room, Family Room, or Den
by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Upholstered furniture	2,600	(19%)	270	(45%)	470	(34%)	$142	(24%)
Non-confined	2,500	(19%)	270	(45%)	470	(34%)	$142	(24%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Electrical wire or cable insulation	1,100	(8%)	30	(4%)	70	(5%)	$39	(7%)
Non-confined	1,100	(8%)	30	(4%)	70	(5%)	$39	(7%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Floor covering rug, carpet, or mat	1,100	(8%)	30	(6%)	90	(6%)	$40	(7%)
Non-confined	1,000	(8%)	30	(6%)	90	(6%)	$40	(7%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Structural member or framing	1,000	(7%)	10	(1%)	30	(2%)	$50	(8%)
Non-confined	1,000	(7%)	10	(1%)	30	(2%)	$50	(8%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified furniture or utensil	700	(5%)	30	(4%)	80	(6%)	$30	(5%)
Non-confined	700	(5%)	30	(4%)	80	(6%)	$30	(5%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Interior wall covering, excluding drapes	700	(5%)	20	(3%)	40	(3%)	$29	(5%)
Non-confined	700	(5%)	20	(3%)	40	(3%)	$29	(5%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified item first ignited	700	(5%)	10	(2%)	30	(2%)	$19	(3%)
Non-confined	400	(3%)	10	(2%)	30	(2%)	$19	(3%)
Confined	200	(2%)	0	(0%)	0	(0%)	$0	(0%)
Mattress or bedding	500	(4%)	30	(5%)	80	(6%)	$22	(4%)
Non-confined	500	(4%)	30	(5%)	80	(6%)	$22	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Flammable or combustible liquids or gases, piping or filter	500	(4%)	40	(6%)	100	(7%)	$25	(4%)
Non-confined	400	(3%)	40	(6%)	100	(7%)	$25	(4%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified structural component or finish	400	(3%)	10	(1%)	30	(2%)	$17	(3%)
Non-confined	400	(3%)	10	(1%)	30	(2%)	$17	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)

Table 23. (Continued)
Home Fires Originating in the Living Room, Family Room, or Den, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Multiple items first ignited	400	(3%)	40	(6%)	50	(4%)	$25	(4%)
Non-confined	400	(3%)	40	(6%)	50	(4%)	$25	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Magazine, newspaper, or writing paper	400	(3%)	20	(4%)	40	(3%)	$17	(3%)
Non-confined	300	(3%)	20	(4%)	40	(3%)	$17	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Rubbish, trash, or waste	400	(3%)	10	(2%)	20	(2%)	$8	(1%)
Non-confined	300	(2%)	10	(2%)	20	(1%)	$8	(1%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Curtains, blinds, drapery, or tapestry	300	(2%)	10	(1%)	40	(3%)	$15	(3%)
Non-confined	300	(2%)	10	(1%)	40	(3%)	$15	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Appliance housing or casing	300	(2%)	0	(1%)	10	(1%)	$8	(1%)
Non-confined	300	(2%)	0	(1%)	10	(1%)	$8	(1%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Clothing	300	(2%)	20	(4%)	50	(4%)	$7	(1%)
Non-confined	300	(2%)	20	(4%)	50	(4%)	$7	(1%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Cabinetry	200	(2%)	0	(1%)	20	(1%)	$10	(2%)
Non-confined	200	(2%)	0	(1%)	20	(1%)	$10	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified organic materials	200	(2%)	0	(0%)	10	(0%)	$2	(0%)
Non-confined	100	(1%)	0	(0%)	0	(0%)	$2	(0%)
Confined	100	(1%)	0	(0%)	0	(0%)	$0	(0%)
Other known item first ignited	1,900	(14%)	30	(4%)	130	(10%)	$84	(14%)
Non-confined	1,600	(12%)	30	(4%)	130	(9%)	$84	(14%)
Confined	300	(3%)	0	(0%)	0	(0%)	$0	(0%)
Total	13,600	(100%)	610	(100%)	1,390	(100%)	$589	(100%)
Non-confined	12,600	(93%)	610	(100%)	1,380	(99%)	$589	(100%)
Confined	1,000	(7%)	0	(0%)	10	(1%)	$0	(0%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 24.
Home Fires Originating in the Kitchen that Spread Beyond the Room of Origin
by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	3,600	(37%)	100	(34%)	540	(54%)	$240	(37%)
Cabinetry	900	(9%)	30	(9%)	70	(7%)	$66	(10%)
Interior wall covering, excluding drapes	700	(8%)	20	(7%)	50	(5%)	$47	(7%)
Structural member or framing	500	(5%)	10	(2%)	20	(2%)	$32	(5%)
Appliance housing or casing	500	(5%)	10	(4%)	20	(2%)	$33	(5%)
Flammable or combustible liquids or gases, piping or filter	400	(4%)	20	(6%)	70	(7%)	$32	(5%)
Electrical wire or cable insulation	400	(4%)	10	(3%)	20	(2%)	$28	(4%)
Unclassified item first ignited	300	(3%)	10	(2%)	30	(3%)	$24	(4%)
Unclassified structural component or finish	300	(3%)	10	(2%)	20	(2%)	$20	(3%)
Household utensils	300	(3%)	20	(5%)	20	(2%)	$21	(3%)
Multiple items first ignited	300	(3%)	20	(7%)	20	(2%)	$18	(3%)
Rubbish, trash, or waste	200	(2%)	10	(3%)	20	(2%)	$14	(2%)
Interior ceiling cover or finish	200	(2%)	10	(2%)	20	(2%)	$15	(2%)
Unclassified furniture or utensil	100	(2%)	10	(2%)	0	(0%)	$9	(1%)
Other known item first ignited	900	(10%)	30	(10%)	70	(7%)	$56	(9%)
Total	9,500	(100%)	290	(100%)	990	(100%)	$654	(100%)
The following items were first ignited in less than 2% of these fires but were first ignited in 2% or more of the associated civilian fire deaths.								
Clothing			10	(3%)				

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 25.
Home Fires Originating in the Bedroom that Spread Beyond the Room of Origin
by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Mattress or bedding	3,300	(30%)	180	(38%)	630	(44%)	$234	(30%)
Unclassified furniture or utensil	1,000	(9%)	40	(9%)	150	(10%)	$72	(9%)
Electrical wire or cable insulation	700	(7%)	20	(4%)	50	(4%)	$56	(7%)
Floor covering rug, carpet, or mat	600	(5%)	30	(6%)	40	(3%)	$34	(4%)
Interior wall covering, excluding drapes	600	(5%)	20	(5%)	40	(3%)	$35	(5%)
Clothing	600	(5%)	20	(4%)	80	(5%)	$35	(5%)
Multiple items first ignited	500	(5%)	20	(4%)	50	(4%)	$45	(6%)
Structural member or framing	500	(5%)	10	(3%)	20	(2%)	$36	(5%)
Upholstered furniture	400	(4%)	30	(7%)	40	(3%)	$34	(4%)
Unclassified soft goods or wearing apparel	300	(3%)	10	(2%)	50	(4%)	$21	(3%)
Unclassified structural component or finish	300	(3%)	10	(3%)	20	(1%)	$16	(2%)
Unclassified item first ignited	300	(3%)	10	(2%)	50	(3%)	$21	(3%)
Curtains, blinds, drapery, or tapestry	300	(2%)	0	(0%)	30	(2%)	$20	(3%)
Flammable or combustible liquids or gases, piping or filter	200	(2%)	30	(6%)	50	(4%)	$17	(2%)
Magazine, newspaper, or writing paper	200	(2%)	0	(1%)	20	(1%)	$17	(2%)
Rubbish, trash, or waste	200	(2%)	10	(1%)	20	(1%)	$12	(2%)
Other known item first ignited	1,000	(9%)	20	(5%)	100	(7%)	$63	(8%)
Total	11,000	(100%)	460	(100%)	1,430	(100%)	$767	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 26.
Home Fires Originating in the Living Room, Family Room, or Den that Spread Beyond the Room of Origin, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Upholstered furniture	1,400	(22%)	190	(39%)	280	(35%)	$108	(23%)
Structural member or framing	600	(10%)	10	(2%)	20	(3%)	$44	(9%)
Floor covering rug, carpet, or mat	500	(8%)	30	(7%)	60	(7%)	$33	(7%)
Interior wall covering, excluding drapes	400	(7%)	20	(4%)	30	(4%)	$25	(5%)
Electrical wire or cable insulation	400	(6%)	20	(5%)	30	(4%)	$29	(6%)
Unclassified furniture or utensil	300	(6%)	20	(4%)	50	(7%)	$24	(5%)
Multiple items first ignited	300	(5%)	30	(7%)	50	(6%)	$23	(5%)
Unclassified structural component or finish	300	(5%)	0	(1%)	20	(3%)	$15	(3%)
Flammable or combustible liquids or gases, piping or filter	300	(4%)	40	(8%)	60	(7%)	$22	(5%)
Mattress or bedding	200	(4%)	20	(4%)	40	(5%)	$18	(4%)
Unclassified item first ignited	200	(3%)	10	(2%)	20	(2%)	$16	(3%)
Rubbish, trash, or waste	100	(2%)	10	(2%)	10	(1%)	$7	(1%)
Magazine, newspaper, or writing paper	100	(2%)	20	(4%)	20	(3%)	$15	(3%)
Curtains, blinds, drapery, or tapestry	100	(2%)	10	(2%)	30	(4%)	$13	(3%)
Interior ceiling cover or finish	100	(2%)	0	(0%)	0	(0%)	$7	(1%)
Other known item first ignited	700	(12%)	40	(8%)	90	(11%)	$82	(17%)
Total	6,100	(100%)	470	(100%)	820	(100%)	$480	(100%)
The following items were first ignited in less than 2% of these fires but were first ignited in at least 2% of the associated civilian fire deaths:								
Clothing			10	(3%)				

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 27.
Home Fires Originating in the Kitchen that Spread Beyond the Room of Origin
by Item Contributing to Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing Most to Flame Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cabinetry	1,800	(19%)	40	(13%)	180	(18%)	$111	(17%)
Structural member or framing	1,600	(17%)	50	(18%)	120	(12%)	$168	(26%)
Cooking materials, including food	1,300	(14%)	30	(11%)	200	(20%)	$71	(11%)
Interior wall covering, excluding drapes	1,200	(12%)	40	(12%)	100	(10%)	$66	(10%)
Unclassified structural component or finish	1,000	(10%)	30	(12%)	110	(11%)	$75	(11%)
Interior ceiling cover or finish	400	(4%)	10	(3%)	30	(3%)	$24	(4%)
Flammable or combustible liquids or gases, piping or filter	300	(4%)	10	(4%)	60	(6%)	$18	(3%)
Unclassified furniture or utensil	300	(3%)	20	(5%)	40	(4%)	$24	(4%)
Multiple items first ignited	200	(3%)	20	(5%)	20	(2%)	$16	(2%)
Unclassified item first ignited	200	(2%)	0	(1%)	10	(1%)	$10	(1%)
Exterior wall covering or finish	100	(2%)	0	(0%)	10	(1%)	$11	(2%)
Other known item first ignited	1,100	(11%)	40	(13%)	110	(11%)	$60	(9%)
Total	9,500	(100%)	290	(100%)	990	(100%)	$654	(100%)
The following items contributed most to flame spread in less than 2% of the kitchen fires but were first ignited in at least 2% of the associated civilian fire deaths.								
Upholstered furniture			10	(2%)				

Note Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 28.
Home Fires Originating in the Bedroom
that Spread Beyond the Room of Origin, by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing Most to Flame Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Mattress or bedding	2,500	(23%)	120	(26%)	450	(32%)	$161	(21%)
Structural member or framing	1,800	(16%)	70	(14%)	140	(10%)	$153	(20%)
Unclassified furniture or utensil	1,100	(10%)	50	(10%)	190	(13%)	$80	(10%)
Unclassified structural component or finish	1,100	(10%)	60	(13%)	120	(9%)	$75	(10%)
Interior wall covering, excluding drapes	1,000	(9%)	30	(7%)	80	(5%)	$52	(7%)
Upholstered furniture	500	(4%)	30	(6%)	80	(6%)	$31	(4%)
Multiple items first ignited	400	(4%)	20	(4%)	50	(3%)	$32	(4%)
Clothing	400	(4%)	10	(2%)	60	(4%)	$20	(3%)
Unclassified soft goods or wearing apparel	300	(3%)	10	(1%)	40	(3%)	$21	(3%)
Floor covering rug, carpet, or mat	300	(2%)	10	(2%)	20	(1%)	$15	(2%)
Interior ceiling cover or finish	300	(2%)	10	(2%)	30	(2%)	$17	(2%)
Flammable or combustible liquids or gases, piping or filter	200	(2%)	20	(4%)	40	(2%)	$12	(2%)
Unclassified item first ignited	200	(2%)	10	(2%)	30	(2%)	$22	(3%)
Exterior wall covering or finish	200	(2%)	0	(0%)	30	(2%)	$13	(2%)
Other known item first ignited	800	(8%)	20	(5%)	70	(5%)	$62	(8%)
Total	11,000	(100%)	460	(100%)	1,430	(100%)	$767	(100%)

Note: Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 29.
Home Fires Originating in the Living Room, Family Room, or Den that Spread Beyond the Room of Origin, by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing Most to Flame Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Upholstered furniture	1,300	(22%)	160	(34%)	250	(31%)	$101	(21%)
Structural member or framing	1,200	(20%)	40	(9%)	100	(12%)	$104	(22%)
Unclassified structural component or finish	600	(10%)	30	(6%)	80	(10%)	$39	(8%)
Interior wall covering, excluding drapes	600	(9%)	70	(15%)	50	(6%)	$34	(7%)
Unclassified furniture or utensil	400	(6%)	20	(5%)	60	(8%)	$35	(7%)
Multiple items first ignited	300	(4%)	20	(4%)	50	(6%)	$20	(4%)
Floor covering rug, carpet, or mat	200	(4%)	20	(3%)	20	(2%)	$10	(2%)
Flammable or combustible liquids or gases, piping or filter	200	(4%)	30	(6%)	50	(6%)	$15	(3%)
Interior ceiling cover or finish	200	(3%)	10	(2%)	20	(3%)	$12	(2%)
Mattress or bedding	100	(2%)	10	(2%)	20	(3%)	$8	(2%)
Unclassified item first ignited	100	(2%)	10	(1%)	20	(2%)	$11	(2%)
Fence or pole	100	(2%)	0	(0%)	0	(0%)	$2	(0%)
Exterior wall covering or finish	100	(2%)	10	(1%)	10	(1%)	$9	(2%)
Other known item first ignited	700	(11%)	50	(12%)	80	(10%)	$81	(17%)
Total	6,100	(100%)	470	(100%)	820	(100%)	$481	(100%)
The following items contributed to flame spread in less than 2% of these fires but contributed most to flame spread in 2% or more of the associated civilian fire deaths.								
Magazine, newspaper or writing paper			10	(2%)				
Rubbish, trash or waste			10	(2%)				

Note Item contributing most to flame spread is an optional field in NFIRS. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. Those incidents were considered unknown and allocated proportionally in the analysis of items contributing to flame spread beyond the room of origin. In addition, some reports listed the same item as the item first ignited and the item contributing to flame spread. Consequently, these estimates are independent of estimates of item first ignited and CANNOT be summed to obtain an estimate of fires with a particular item involved. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 30.
Home Structure Fires, by Structure Status
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Structure Status	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
In normal use	332,400	(91%)	2,510	(97%)	12,880	(98%)	$6,211	(86%)
Non-confined fire	167,700	(46%)	2,510	(97%)	11,110	(84%)	$6,175	(86%)
Confined fire	164,700	(45%)	0	(0%)	1,770	(13%)	$37	(1%)
Vacant and unsecured	11,400	(3%)	20	(1%)	60	(0%)	$219	(3%)
Non-confined fire	10,900	(3%)	20	(1%)	60	(0%)	$219	(3%)
Confined fire	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Vacant and secured	10,900	(3%)	20	(1%)	80	(1%)	$397	(6%)
Non-confined fire	10,100	(3%)	20	(1%)	80	(1%)	$397	(6%)
Confined fire	800	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified structure status	3,300	(1%)	10	(0%)	70	(0%)	$40	(1%)
Non-confined fire	1,600	(0%)	10	(0%)	60	(0%)	$40	(1%)
Confined fire	1,700	(0%)	0	(0%)	0	(0%)	$0	(0%)
Idle or not routinely used	2,800	(1%)	10	(0%)	20	(0%)	$86	(1%)
Non-confined fire	2,600	(1%)	10	(0%)	20	(0%)	$86	(1%)
Confined fire	300	(0%)	0	(0%)	0	(0%)	$0	(0%)
Under construction	2,600	(1%)	10	(0%)	40	(0%)	$140	(2%)
Non-confined fire	1,700	(0%)	10	(0%)	40	(0%)	$140	(2%)
Confined fire	800	(0%)	0	(0%)	0	(0%)	$0	(0%)
Under major renovation	2,100	(1%)	0	(0%)	40	(0%)	$101	(1%)
Non-confined fire	1,900	(1%)	0	(0%)	40	(0%)	$101	(1%)
Confined fire	300	(0%)	0	(0%)	0	(0%)	$0	(0%)
Being demolished	1,000	(0%)	0	(0%)	10	(0%)	$13	(0%)
Non-confined fire	900	(0%)	0	(0%)	10	(0%)	$13	(0%)
Confined fire	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Total	366,600	(100%)	2,570	(100%)	13,210	(100%)	$7,208	(100%)
Non-confined fire	197,400	(54%)	2,570	(100%)	11,430	(87%)	$7,171	(99%)
Confined fire	169,200	(46%)	0	(0%)	1,780	(13%)	$37	(1%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 31.
U.S. Total and Vacant Housing Units
by Year: 1980-2011

Year	All Housing Units (in Thousands)	Vacant Units (in Thousands)	Percent Housing Units Vacant	Year-Round Vacant (in Thousands)	Percent Housing Units Vacant Year Round
1980	87,739	8,101	(9.2%)	5,996	(6.8%)
1981	88,988	7,967	(9.0%)	6,034	(6.8%)
1982	91,876	8,145	(8.9%)	6,369	(6.9%)
1983	93,044	8,479	(9.1%)	6,693	(7.2%)
1984	95,256	8,910	(9.4%)	7,080	(7.4%)
1985	97,333	9,446	(9.7%)	7,400	(7.6%)
1986	99,318	10,173	(10.2%)	7,400	(7.5%)
1987	101,811	11,294	(11.1%)	8,265	(8.1%)
1988	103,653	11,633	(11.2%)	8,533	(8.2%)
1989	105,729	12,240	(11.6%)	9,349	(8.8%)
1990	106,283	12,059	(11.3%)	9,128	(8.6%)
1991	107,276	11,926	(11.1%)	9,137	(8.5%)
1992	108,316	11,988	(11.1%)	8,932	(8.2%)
1993	109,611	11,894	(10.9%)	8,937	(8.2%)
1994	110,952	12,257	(11.0%)	9,229	(8.3%)
1995	112,655	12,669	(11.2%)	9,570	(8.5%)
1996	114,139	13,155	(11.5%)	9,945	(8.7%)
1997	115,621	13,419	(11.6%)	10,114	(8.7%)
1998	117,282	13,748	(11.7%)	10,516	(9.0%)
1999	119,044	14,116	(11.9%)	10,848	(9.1%)
2000	119,628	13,908	(11.6%)	10,439	(8.7%)
2001	121,480	14,470	(11.9%)	10,916	(9.0%)
2002	119,297	14,332	(12.0%)	10,771	(9.0%)
2003	120,834	15,274	(12.6%)	11,631	(9.6%)
2004	122,187	15,599	(12.8%)	11,884	(9.7%)
2005	123,925	15,694	(12.7%)	11,916	(9.6%)
2006	126,012	16,437	(13.0%)	12,459	(9.9%)
2007	127,958	17,652	(13.8%)	13,276	(10.4%)
2008	130,113	18,704	(13.8%)	13,936	(10.7%)
2009	130,159	18,815	(14.5%)	14,143	(10.9%)
2010	130,599	18,739	(14.3%)	14,294	(10.9%)
2011	132,292	18,758	(14.2%)	14,239	(10.8%)

Source: U.S. Census Bureau. Housing Vacancy Survey. "Table 7. Estimates of the Total Housing Inventory for the United States: 1965 to Present," last accessed at http://www.census.gov/hhes/www/housing/hvs/historic/ on July 20, 2012.

Table 32.
Vacant Home Structure Fires, by Cause of Ignition
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Intentional	11,000	(50%)	10	(38%)	40	(29%)	$308	(50%)
Non-confined fire	10,600	(48%)	10	(38%)	40	(29%)	$308	(50%)
Confined fire	400	(2%)	0	(0%)	0	(0%)	$0	(0%)
Unintentional	7,400	(33%)	20	(53%)	90	(62%)	$181	(29%)
Non-confined fire	6,600	(30%)	20	(53%)	80	(61%)	$181	(29%)
Confined fire	800	(3%)	0	(0%)	0	(2%)	$0	(0%)
Unclassified cause of ignition	1,900	(8%)	0	(6%)	0	(2%)	$44	(7%)
Non-confined fire	1,900	(8%)	0	(6%)	0	(2%)	$44	(7%)
Confined fire	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Failure of equipment or heat source	1,400	(6%)	0	(4%)	10	(7%)	$53	(9%)
Non-confined fire	1,300	(6%)	0	(4%)	10	(7%)	$53	(9%)
Confined fire	100	(1%)	0	(0%)	0	(0%)	$0	(0%)
Act of nature	600	(3%)	0	(0%)	0	(0%)	$31	(5%)
Non-confined fire	600	(2%)	0	(0%)	0	(0%)	$31	(5%)
Confined fire	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Total	22,300	(100%)	40	(100%)	140	(100%)	$617	(100%)
Non-confined fire	21,000	(94%)	40	(100%)	140	(98%)	$616	(100%)
Confined fire	1,300	(6%)	0	(0%)	0	(2%)	$0	(0%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 33.
Vacant Home Structure Fires, by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined Fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	1,300	(6%)	0	(0%)	0	(2%)	$0	(0%)
Confined to object of origin	2,500	(11%)	0	(4%)	20	(12%)	$29	(5%)
Confined to room of origin	3,300	(15%)	0	(7%)	30	(21%)	$31	(5%)
Confined to floor of origin	1,700	(8%)	0	(7%)	10	(11%)	$38	(6%)
Confined to building of origin	11,200	(50%)	20	(63%)	60	(41%)	$424	(69%)
Extended beyond building of origin	2,300	(10%)	10	(19%)	20	(14%)	$94	(15%)
Total	22,300	(100%)	40	(100%)	140	(100%)	$617	(100%)
Fire spread extended beyond room of origin	15,100	(68%)	30	(89%)	90	(65%)	$556	(0%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 1A.
Reported One- or Two-Family Home Structure Fires
by Year: 1980-2011

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions)	
				As Reported	In 2011 Dollars
1980	590,500	4,175	16,100	$2,447	$6,681
1981	574,000	4,430	14,875	$2,713	$6,694
1982	538,000	3,960	15,750	$2,794	$6,498
1983	523,500	3,825	16,450	$2,792	$6,293
1984	506,000	3,290	15,100	$2,945	$6,360
1985	501,500	4,020	15,250	$3,217	$6,709
1986	468,000	4,005	14,650	$2,992	$6,139
1987	433,000	3,780	15,200	$3,078	$6,087
1988	432,500	4,125	17,125	$3,349	$6,367
1989	402,500	3,545	15,225	$3,335	$6,048
1990	359,000	3,370	15,250	$3,534	$6,083
1991	363,000	2,905	15,600	$3,354	$5,532
1992	358,000	3,160	15,275	$3,178	$5,092
1993	358,000	3,035	15,700	$4,111	$6,393
1994	341,000	2,785	14,000	$3,537	$5,365
1995	320,000	3,035	13,450	$3,615	$5,329
1996	324,000	3,470	13,700	$4,121	$5,908
1997	302,500	2,700	12,300	$3,735	$5,229
1998	283,000	2,775	11,800	$3,642	$5,025
1999	282,500	2,375	11,550	$4,123	$5,559
2000	283,500	2,920	12,575	$4,639	$6,057
2001	295,500	2,650	11,400	$4,652	$5,906
2002	300,500	2,280	9,950	$5,005	$6,253
2003	297,000	2,735	10,000	$5,052	$6,176
2004	301,500	2,680	10,500	$4,948	$5,893
2005	287,000	2,570	10,300	$5,781	$6,651
2006	304,500	2,155	8,800	$5,936	$6,616
2007	300,500	2,350	9,650	$6,225	$6,743
2008	291,000	2,365	9,185	$6,892	$7,202
2009	272,500	2,100	9,300	$6,391	$6,693
2010	279,000	2,200	9,400	$5,895	$6,080
2011	274,500	2,105	9,485	$5,746	$5,746

Source: *Fire Loss in the United States* series of NFPA annual reports by Michael J. Karter, Jr. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

Table 2A.
Reported One- or Two-Family Home Structure Fires, by Month
2007-2011 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	28,800	(11%)	310	(14%)	1,000	(11%)	$621	(10%)
February	24,200	(9%)	250	(12%)	850	(10%)	$514	(9%)
March	23,600	(9%)	220	(10%)	860	(10%)	$527	(9%)
April	21,200	(8%)	170	(8%)	740	(8%)	$467	(8%)
May	19,400	(7%)	150	(7%)	660	(7%)	$452	(8%)
June	18,600	(7%)	120	(5%)	620	(7%)	$442	(7%)
July	19,300	(7%)	130	(6%)	670	(7%)	$462	(8%)
August	18,300	(7%)	130	(6%)	640	(7%)	$430	(7%)
September	17,400	(7%)	120	(6%)	600	(7%)	$378	(6%)
October	20,200	(8%)	150	(7%)	660	(7%)	$585	(10%)
November	22,600	(9%)	180	(8%)	760	(9%)	$501	(8%)
December	26,500	(10%)	240	(11%)	870	(10%)	$581	(10%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Monthly average	21,700	(8%)	180	(8%)	740	(8%)	$497	(8%)

Table 3A.
Reported One- or Two-Family Home Structure Fires, by Day of Week
2007-2011 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	39,400	(15%)	320	(15%)	1,300	(15%)	$995	(17%)
Monday	37,500	(14%)	310	(14%)	1,260	(14%)	$862	(14%)
Tuesday	36,100	(14%)	280	(13%)	1,310	(15%)	$779	(13%)
Wednesday	36,000	(14%)	290	(13%)	1,250	(14%)	$791	(13%)
Thursday	36,500	(14%)	290	(13%)	1,210	(14%)	$795	(13%)
Friday	36,100	(14%)	320	(15%)	1,210	(14%)	$823	(14%)
Saturday	38,600	(15%)	360	(17%)	1,390	(16%)	$914	(15%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Average by Day	37,200	(14%)	310	(14%)	1,280	(14%)	$851	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4A.
Reported One- or Two-Family Home Structure Fires, by Alarm Time
2007-2011 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight- 12:59 a.m.	8,400	(3%)	130	(6%)	390	(4%)	$391	(7%)
1:00-1:59 a.m.	7,400	(3%)	160	(8%)	380	(4%)	$279	(5%)
2:00-2:59 a.m.	6,700	(3%)	140	(6%)	370	(4%)	$285	(5%)
3:00-3:59 a.m.	6,300	(2%)	160	(7%)	360	(4%)	$265	(4%)
4:00-4:59 a.m.	5,600	(2%)	180	(8%)	330	(4%)	$242	(4%)
5:00-5:59 a.m.	5,300	(2%)	120	(6%)	270	(3%)	$199	(3%)
6:00-6:59 a.m.	5,700	(2%)	110	(5%)	260	(3%)	$174	(3%)
7:00-7:59 a.m.	6,800	(3%)	80	(4%)	260	(3%)	$144	(2%)
8:00-8:59 a.m.	8,000	(3%)	70	(3%)	290	(3%)	$176	(3%)
9:00-9:59 a.m.	9,300	(4%)	80	(4%)	330	(4%)	$250	(4%)
10:00-10:59 a.m.	10,400	(4%)	60	(3%)	340	(4%)	$200	(3%)
11:00-11:59 a.m.	11,700	(4%)	60	(3%)	380	(4%)	$228	(4%)
12:00-12:59 p.m.	12,900	(5%)	60	(3%)	390	(4%)	$245	(4%)
1:00-1:59 p.m.	13,100	(5%)	50	(2%)	400	(4%)	$264	(4%)
2:00-2:59 p.m.	13,500	(5%)	50	(3%)	380	(4%)	$272	(5%)
3:00-3:59 p.m.	14,300	(5%)	50	(2%)	420	(5%)	$266	(4%)
4:00-4:59 p.m.	15,600	(6%)	60	(3%)	450	(5%)	$263	(4%)
5:00-5:59 p.m.	17,700	(7%)	60	(3%)	470	(5%)	$308	(5%)
6:00-6:59 p.m.	18,000	(7%)	60	(3%)	490	(6%)	$259	(4%)
7:00-7:59 p.m.	16,700	(6%)	70	(3%)	470	(5%)	$259	(4%)
8:00-8:59 p.m.	14,800	(6%)	70	(3%)	420	(5%)	$269	(5%)
9:00-9:59 p.m.	12,500	(5%)	80	(4%)	390	(4%)	$241	(4%)
10:00-10:59 p.m.	10,600	(4%)	100	(4%)	350	(4%)	$236	(4%)
11:00-11:59 p.m.	8,900	(3%)	110	(5%)	350	(4%)	$244	(4%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Hourly average	10,800	(4%)	90	(4%)	370	(4%)	$248	(4%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5A.
Leading Causes of Reported One- or Two-Family Home Structure Fires
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	84,800	(33%)	320	(15%)	3,040	(34%)	$607	(10%)
Heating equipment	52,200	(20%)	480	(22%)	1,270	(14%)	$796	(13%)
Intentional	22,500	(9%)	290	(13%)	590	(7%)	$490	(8%)
Electrical distribution and lighting equipment	20,300	(8%)	270	(12%)	720	(8%)	$685	(11%)
Clothes dryer or washer	12,400	(5%)	30	(1%)	370	(4%)	$181	(3%)
Smoking materials	11,200	(4%)	450	(21%)	800	(9%)	$307	(5%)
Exposure	10,200	(4%)	10	(1%)	60	(1%)	$789	(13%)
Candles	8,400	(3%)	100	(4%)	620	(7%)	$354	(6%)
Playing with heat source	5,400	(2%)	70	(3%)	550	(6%)	$128	(2%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. Estimates of fires involving electrical distribution or lighting equipment or clothes dryers or washers exclude confined fires. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6A.
Reported One- or Two-Family Home Structure Fires
by Cause of Ignition (from NFIRS Cause Field)
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	176,200	(68%)	1,550	(72%)	7,130	(80%)	$3,597	(60%)
Non-confined	101,600	(39%)	1,550	(72%)	6,290	(70%)	$3,578	(60%)
Confined	74,600	(29%)	0	(0%)	850	(9%)	$18	(0%)
Failure of equipment or heat source	42,500	(16%)	280	(13%)	1,020	(11%)	$917	(15%)
Non-confined	31,500	(12%)	280	(13%)	970	(11%)	$914	(15%)
Confined	11,000	(4%)	0	(0%)	50	(1%)	$4	(0%)
Intentional	22,500	(9%)	290	(13%)	590	(7%)	$490	(8%)
Non-confined	15,100	(6%)	290	(13%)	570	(6%)	$489	(8%)
Confined	7,400	(3%)	0	(0%)	20	(0%)	$1	(0%)
Unclassified cause	13,600	(5%)	40	(2%)	140	(2%)	$674	(11%)
Non-confined	10,100	(4%)	40	(2%)	130	(2%)	$674	(11%)
Confined	3,400	(1%)	0	(0%)	10	(0%)	$0	(0%)
Act of nature	5,400	(2%)	10	(0%)	40	(0%)	$281	(5%)
Non-confined	5,000	(2%)	10	(0%)	40	(0%)	$281	(5%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Non-confined	163,300	(63%)	2,160	(100%)	8,000	(90%)	$5,936	(100%)
Confined	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 7A.
Reported One- or Two-Family Home Structure Fires
by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns in non-confined fires and confined cooking fires were allocated proportionally)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	**84,800**	**(33%)**	**320**	**(15%)**	**3,040**	**(34%)**	**$607**	**(10%)**
Range or cooktop	47,800	(18%)	280	(13%)	2,330	(26%)	$409	(7%)
Non-confined fire	20,700	(8%)	280	(13%)	1,850	(21%)	$401	(7%)
Confined fire	27,100	(10%)	0	(0%)	480	(5%)	$8	(0%)
Oven or rotisserie	14,800	(6%)	10	(1%)	170	(2%)	$27	(0%)
Non-confined fire	2,200	(1%)	10	(1%)	80	(1%)	$25	(0%)
Confined fire	12,700	(5%)	0	(0%)	90	(1%)	$2	(0%)
Microwave oven	4,100	(2%)	0	(0%)	100	(1%)	$23	(0%)
Non-confined fire	1,200	(0%)	0	(0%)	80	(1%)	$23	(0%)
Confined fire	2,900	(1%)	0	(0%)	20	(0%)	$1	(0%)
Portable cooking or warming equipment	3,600	(1%)	20	(1%)	140	(2%)	$54	(1%)
Non-confined fire	1,500	(1%)	20	(1%)	100	(1%)	$53	(1%)
Confined fire	2,100	(1%)	0	(0%)	30	(0%)	$0	(0%)
Grill, hibachi or barbecue	2,900	(1%)	10	(0%)	80	(1%)	$71	(1%)
Non-confined fire	1,400	(1%)	10	(0%)	70	(1%)	$71	(1%)
Confined fire	1,500	(1%)	0	(0%)	10	(0%)	$0	(0%)
Other known cooking equipment or confined cooking fire	11,300	(4%)	0	(0%)	200	(2%)	$23	(0%)
Other known equipment in non-confined cooking fire	600	(0%)	0	(0%)	20	(0%)	$19	(0%)
Confined cooking fire with other or no equipment	10,600	(4%)	0	(0%)	200	(2%)	$3	(0%)
No equipment involved in ignition	62,800	(24%)	860	(40%)	2,600	(29%)	$3,122	(52%)
Heating equipment	52,200	(20%)	480	(22%)	1,270	(14%)	$796	(13%)
Fireplace or chimney fire*	25,800	(10%)	30	(2%)	110	(1%)	$208	(3%)
Fireplace or chimney with non-confined incident type	4,000	(2%)	30	(2%)	80	(1%)	$202	(3%)
Confined chimney or flue fire*	21,800	(8%)	0	(0%)	30	(0%)	$6	(0%)
Furnace, central heat or boiler*	9,900	(4%)	20	(1%)	110	(1%)	$62	(1%)
Furnace or boiler with non-confined incident type	2,000	(1%)	20	(1%)	70	(1%)	$60	(1%)
Confined fuel burner or boiler fire*	7,900	(3%)	0	(0%)	40	(0%)	$2	(0%)
Fixed or portable space heater	11,800	(5%)	380	(18%)	830	(9%)	$396	(7%)
Water heater	3,900	(2%)	30	(1%)	190	(2%)	$97	(2%)
Other known heating equipment	700	(0%)	10	(0%)	20	(0%)	$32	(1%)

* The estimates of fires involving fireplaces or chimneys include all fires with the confined chimney or flue incident type regardless of what may have been coded as equipment involved. Likewise, the estimates of fires involving furnaces, central heat or boilers include all fires with confined fuel burner or boiler incident type. The estimates shown should be considered upper bounds. Except for confined cooking fires, the estimates for equipment involved in ignition did not break out the confined fires further. John Hall's report, *Home Fires Involving Heating Equipment,* shows a detailed breakdown of the equipment involved in the confined heating fires.

Table 7A. (Continued)
Reported One- or Two-Family Home Structure Fires
by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns in non-confined fires and confined cooking fires were allocated proportionally)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Electrical distribution and lighting equipment	20,300	(8%)	270	(12%)	720	(8%)	$685	(11%)
Wiring and related equipment	12,900	(5%)	140	(6%)	300	(3%)	$390	(7%)
Lamp, bulb or lighting	3,800	(1%)	30	(1%)	180	(2%)	$154	(3%)
Cord or plug	2,300	(1%)	90	(4%)	170	(2%)	$85	(1%)
Other known electrical distribution or lighting equipment	1,200	(0%)	10	(1%)	70	(1%)	$55	(1%)
Clothes dryer or washer	12,400	(5%)	30	(1%)	370	(4%)	$181	(3%)
Contained trash or rubbish fire	9,400	(4%)	0	(0%)	30	(0%)	$1	(0%)
Fan	2,800	(1%)	10	(1%)	90	(1%)	$55	(1%)
Air conditioner	2,000	(1%)	10	(0%)	80	(1%)	$49	(1%)
Unclassified equipment involved in ignition	1,400	(1%)	20	(1%)	50	(1%)	$56	(1%)
Refrigerator or refrigerator/freezer	1,400	(1%)	0	(0%)	50	(1%)	$37	(1%)
Other known equipment involved in ignition	10,100	(4%)	160	(7%)	640	(7%)	$366	(6%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
The following types of equipment were involved in less than 1% of the fires, but in at least 2% of the deaths.								
Oxygen administration equipment			60	(3%)				

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. The same approach was used with confined cooking fires. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires in that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). The same approach was used with confined cooking fires. The estimates of fires involving fireplace or chimney include all fires with the confined chimney or flue incident type regardless of what may have been coded as equipment involved. Similarly, the estimates of fires involving furnaces, central heat or boilers include all fires with confined fuel burner or boiler incident type. The estimates shown should be considered upper bounds. Non-cooking confined fires were not analyzed separately. Estimates of other types of equipment exclude confined fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 8A.
Reported One- or Two-Family Home Structure Fires by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Radiated or conducted heat from operating equipment	44,400	(17%)	300	(14%)	1,940	(22%)	$680	(11%)
Non-confined	22,300	(9%)	300	(14%)	1,590	(18%)	$675	(11%)
Confined	22,100	(8%)	0	(0%)	350	(4%)	$5	(0%)
Unclassified heat from powered equipment	39,300	(15%)	170	(8%)	1,330	(15%)	$592	(10%)
Non-confined	20,800	(8%)	170	(8%)	1,110	(12%)	$587	(10%)
Confined	18,400	(7%)	0	(0%)	220	(3%)	$5	(0%)
Arcing	30,000	(12%)	290	(14%)	890	(10%)	$911	(15%)
Non-confined	27,900	(11%)	290	(14%)	880	(10%)	$910	(15%)
Confined	2,200	(1%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified heat source	21,200	(8%)	160	(8%)	460	(5%)	$402	(7%)
Non-confined	10,800	(4%)	160	(8%)	370	(4%)	$400	(7%)
Confined	10,500	(4%)	0	(0%)	90	(1%)	$2	(0%)
Hot ember or ash	20,500	(8%)	100	(5%)	350	(4%)	$364	(6%)
Non-confined	10,600	(4%)	100	(5%)	330	(4%)	$363	(6%)
Confined	9,900	(4%)	0	(0%)	20	(0%)	$2	(0%)
Unclassified hot or smoldering object	18,000	(7%)	100	(5%)	420	(5%)	$339	(6%)
Non-confined	11,500	(4%)	100	(5%)	360	(4%)	$337	(6%)
Confined	6,600	(3%)	0	(0%)	60	(1%)	$2	(0%)
Spark, ember or flame from operating equipment	16,500	(6%)	130	(6%)	560	(6%)	$299	(5%)
Non-confined	8,200	(3%)	130	(6%)	510	(6%)	$297	(5%)
Confined	8,300	(3%)	0	(0%)	50	(1%)	$1	(0%)
Smoking materials	11,200	(4%)	450	(21%)	800	(9%)	$307	(5%)
Non-confined	9,100	(4%)	450	(21%)	790	(9%)	$306	(5%)
Confined	2,100	(1%)	0	(0%)	10	(0%)	$1	(0%)
Heat from direct flame or convection currents	8,700	(3%)	20	(1%)	190	(2%)	$161	(3%)
Non-confined	4,300	(2%)	20	(1%)	170	(2%)	$160	(3%)
Confined	4,400	(2%)	0	(0%)	20	(0%)	$1	(0%)
Candle	8,400	(3%)	100	(4%)	620	(7%)	$354	(6%)
Non-confined	7,800	(3%)	100	(4%)	610	(7%)	$354	(6%)
Confined	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Match	7,800	(3%)	70	(3%)	210	(2%)	$83	(1%)
Non-confined	2,900	(1%)	70	(3%)	190	(2%)	$82	(1%)
Confined	4,800	(2%)	0	(0%)	20	(0%)	$0	(0%)

Table 8A. (Continued)
Reported One- or Two-Family Home Structure Fires by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Lighter	7,200	(3%)	120	(6%)	640	(7%)	$164	(3%)
Non-confined	5,400	(2%)	120	(6%)	620	(7%)	$163	(3%)
Confined	1,800	(1%)	0	(0%)	20	(0%)	$0	(0%)
Radiated heat from another fire	4,400	(2%)	10	(0%)	40	(0%)	$80	(1%)
Non-confined	3,800	(1%)	10	(0%)	30	(0%)	$80	(1%)
Confined	600	(0%)	0	(0%)	0	(0%)	$0	(0%)
Lightning	4,100	(2%)	10	(0%)	30	(0%)	$273	(5%)
Non-confined	4,100	(2%)	10	(0%)	30	(0%)	$273	(5%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Other known heat source	18,400	(7%)	140	(6%)	470	(5%)	$952	(16%)
Non-confined	13,700	(5%)	140	(6%)	420	(5%)	$950	(16%)
Confined	4,700	(2%)	0	(0%)	50	(1%)	$2	(0%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Non-confined	163,300	(63%)	2,160	(100%)	8,000	(90%)	$5,936	(100%)
Confined	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)
The following heat sources started fewer than 2% of the fire fires but were the heat source in at least 2% of the fire deaths								
Multiple heat sources			40	(2%)				

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 9A.
Reported One- or Two-Family Home Structure Fires
by Factor Contributing to Ignition
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Electrical failure or malfunction	43,000	(17%)	430	(20%)	1,220	(14%)	$1,355	(23%)
Non-confined	39,400	(15%)	430	(20%)	1,220	(14%)	$1,354	(23%)
Confined	3,600	(1%)	0	(0%)	10	(0%)	$1	(0%)
Heat source too close to combustibles	28,500	(11%)	450	(21%)	1,570	(18%)	$799	(13%)
Non-confined	21,300	(8%)	450	(21%)	1,500	(17%)	$797	(13%)
Confined	7,100	(3%)	0	(0%)	70	(1%)	$2	(0%)
Equipment unattended	27,600	(11%)	150	(7%)	1,330	(15%)	$312	(5%)
Non-confined	11,100	(4%)	150	(7%)	1,050	(12%)	$308	(5%)
Confined	16,500	(6%)	0	(0%)	280	(3%)	$4	(0%)
Failure to clean	24,000	(9%)	20	(1%)	120	(1%)	$70	(1%)
Non-confined	3,800	(1%)	20	(1%)	100	(1%)	$67	(1%)
Confined	20,200	(8%)	0	(0%)	30	(0%)	$2	(0%)
Abandoned or discarded material or product	23,500	(9%)	310	(14%)	1,000	(11%)	$490	(8%)
Non-confined	14,500	(6%)	310	(14%)	910	(10%)	$488	(8%)
Confined	8,900	(3%)	0	(0%)	100	(1%)	$2	(0%)
Mechanical failure or malfunction	20,600	(8%)	110	(5%)	490	(5%)	$410	(7%)
Non-confined	12,500	(5%)	110	(5%)	430	(5%)	$407	(7%)
Confined	8,100	(3%)	0	(0%)	60	(1%)	$2	(0%)
Unclassified factor contributed to ignition	19,100	(7%)	250	(12%)	660	(7%)	$424	(7%)
Non-confined	10,800	(4%)	250	(12%)	560	(6%)	$422	(7%)
Confined	8,200	(3%)	0	(0%)	100	(1%)	$2	(0%)
Unclassified misuse of material or product	17,200	(7%)	240	(11%)	910	(10%)	$278	(5%)
Non-confined	9,900	(4%)	240	(11%)	800	(9%)	$275	(5%)
Confined	7,300	(3%)	0	(0%)	120	(1%)	$2	(0%)
Exposure fire	10,200	(4%)	10	(1%)	60	(1%)	$789	(13%)
Non-confined	10,100	(4%)	10	(1%)	60	(1%)	$789	(13%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unintentionally turned on, not turned off	7,400	(3%)	20	(1%)	260	(3%)	$99	(2%)
Non-confined	3,100	(1%)	20	(1%)	190	(2%)	$98	(2%)
Confined	4,300	(2%)	0	(0%)	70	(1%)	$1	(0%)

Table 9A. (Continued)
Reported One- or Two-Family Home Structure Fires
by Factor Contributing to Ignition
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Playing with heat source	5,400	(2%)	70	(3%)	550	(6%)	$128	(2%)
Non-confined	4,700	(2%)	70	(3%)	540	(6%)	$128	(2%)
Confined	700	(0%)	0	(0%)	10	(0%)	$0	(0%)
Rekindle	5,000	(2%)	0	(0%)	10	(0%)	$89	(1%)
Non-confined	4,700	(2%)	0	(0%)	10	(0%)	$89	(1%)
Confined	300	(0%)	0	(0%)	0	(0%)	$0	(0%)
Storm	4,100	(2%)	10	(1%)	30	(0%)	$262	(4%)
Non-confined	4,100	(2%)	10	(1%)	30	(0%)	$262	(4%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Other known factor contributing to ignition	35,900	(14%)	310	(14%)	1,330	(15%)	$926	(16%)
Non-confined	21,900	(8%)	310	(14%)	1,200	(13%)	$921	(15%)
Confined	14,000	(5%)	0	(0%)	130	(1%)	$4	(0%)
Total Fires	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Non-confined	163,300	(63%)	2,160	(100%)	8,000	(90%)	$5,936	(100%)
Confined	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)
Total Factors*	271,500	(104%)	2,390	(110%)	9,550	(107%)	$6,429	(108%)
Non-confined	172,000	(66%)	2,390	(110%)	8,580	(96%)	$6,405	(107%)
Confined	99,500	(38%)	0	(0%)	970	(11%)	$24	(0%)
The following factors were involved in less than 2% of the fires, but in at least 2% of the deaths.								
Flammable liquid or gas spilled			70	(3%)				
Flammable liquid used to kindle fire			40	(2%)				
Unclassified fire spread or control			30	(2%)				

* Multiple entries are allowed which can result in sums higher than totals.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 10A.
Reported One- or Two-Family Home Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen or cooking area	85,000	(33%)	320	(15%)	2,970	(33%)	$776	(13%)
Non-confined	29,800	(11%)	320	(15%)	2,170	(24%)	$762	(13%)
Confined	55,200	(21%)	0	(0%)	800	(9%)	$14	(0%)
Confined chimney or flue fire*	21,800	(8%)	0	(0%)	30	(0%)	$6	(0%)
Non-confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Confined	21,800	(8%)	0	(0%)	30	(0%)	$6	(0%)
Bedroom	21,200	(8%)	520	(24%)	1,780	(20%)	$775	(13%)
Non-confined	20,800	(8%)	520	(24%)	1,770	(20%)	$775	(13%)
Confined	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Living room, family room or den	10,900	(4%)	520	(24%)	960	(11%)	$484	(8%)
Non-confined	10,400	(4%)	520	(24%)	950	(11%)	$484	(8%)
Confined	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Attic or ceiling/roof assembly or concealed space	9,100	(3%)	20	(1%)	110	(1%)	$446	(7%)
Non-confined	9,000	(3%)	20	(1%)	110	(1%)	$446	(7%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Laundry room or area	8,900	(3%)	30	(2%)	270	(3%)	$188	(3%)
Non-confined	8,200	(3%)	30	(2%)	270	(3%)	$188	(3%)
Confined	700	(0%)	0	(0%)	0	(0%)	$0	(0%)
Garage or vehicle storage area**	8,600	(3%)	40	(2%)	430	(5%)	$550	(9%)
Non-confined	7,800	(3%)	40	(2%)	430	(5%)	$550	(9%)
Confined	800	(0%)	0	(0%)	0	(0%)	$1	(0%)
Exterior wall surface	8,300	(3%)	10	(0%)	110	(1%)	$172	(3%)
Non-confined	8,200	(3%)	10	(0%)	110	(1%)	$172	(3%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified function area	7,500	(3%)	220	(10%)	470	(5%)	$302	(5%)
Non-confined	6,900	(3%)	220	(10%)	460	(5%)	$302	(5%)
Confined	600	(0%)	0	(0%)	10	(0%)	$0	(0%)
Unclassified outside area	6,900	(3%)	10	(0%)	50	(1%)	$83	(1%)
Non-confined	3,200	(1%)	10	(0%)	50	(1%)	$82	(1%)
Confined	3,800	(1%)	0	(0%)	0	(0%)	$1	(0%)

* NFIRS 5.0 does not have a separate area of origin code for fires starting in chimneys. Any home fire with NFIRS incident type 114 - "Chimney of fire originating in and confined to a chimney or flue" is captured here.
** Does not include fires with property use coded as residential garage.

Table 10A. (Continued)
Reported One- or Two-Family Home Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Wall assembly or concealed space	6,300	(2%)	30	(1%)	110	(1%)	$196	(3%)
Non-confined	6,200	(2%)	30	(1%)	110	(1%)	$196	(3%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified area of origin	6,100	(2%)	40	(2%)	70	(1%)	$127	(2%)
Non-confined	4,100	(2%)	40	(2%)	70	(1%)	$127	(2%)
Confined	2,000	(1%)	0	(0%)	0	(0%)	$0	(0%)
Heating equipment room	5,300	(2%)	20	(1%)	130	(1%)	$102	(2%)
Non-confined	2,800	(1%)	20	(1%)	110	(1%)	$101	(2%)
Confined	2,500	(1%)	0	(0%)	20	(0%)	$1	(0%)
Bathroom or lavatory	5,200	(2%)	30	(1%)	190	(2%)	$97	(2%)
Non-confined	4,800	(2%)	30	(1%)	180	(2%)	$96	(2%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified structural area	5,000	(2%)	70	(3%)	140	(2%)	$247	(4%)
Non-confined	4,700	(2%)	70	(3%)	130	(1%)	$247	(4%)
Confined	400	(0%)	0	(0%)	10	(0%)	$0	(0%)
Exterior balcony or unenclosed porch	4,900	(2%)	40	(2%)	150	(2%)	$183	(3%)
Non-confined	4,400	(2%)	40	(2%)	150	(2%)	$182	(3%)
Confined	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Crawl space or substructure space	4,900	(2%)	50	(2%)	180	(2%)	$168	(3%)
Non-confined	4,500	(2%)	50	(2%)	170	(2%)	$168	(3%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Other known area of origin	34,400	(13%)	220	(10%)	800	(9%)	$1,058	(18%)
Non-confined	27,800	(11%)	220	(10%)	770	(9%)	$1,057	(18%)
Confined	6,500	(3%)	0	(0%)	30	(0%)	$1	(0%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Non-confined	163,300	(63%)	2,160	(100%)	8,000	(90%)	$5,936	(100%)
Confined	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 11A.
Reported One- or Two-Family Home Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	54,700	(21%)	100	(5%)	2,080	(23%)	$326	(5%)
Non-confined	14,600	(6%)	100	(5%)	1,460	(16%)	$317	(5%)
Confined	40,100	(15%)	0	(0%)	620	(7%)	$9	(0%)
Unclassified item first ignited	21,800	(8%)	90	(4%)	350	(4%)	$295	(5%)
Non-confined	8,400	(3%)	90	(4%)	300	(3%)	$292	(5%)
Confined	13,400	(5%)	0	(0%)	60	(1%)	$3	(0%)
Structural member or framing	18,400	(7%)	130	(6%)	340	(4%)	$941	(16%)
Non-confined	18,000	(7%)	130	(6%)	340	(4%)	$940	(16%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Electrical wire or cable insulation	15,200	(6%)	100	(5%)	350	(4%)	$387	(6%)
Non-confined	13,700	(5%)	100	(5%)	340	(4%)	$386	(6%)
Confined	1,500	(1%)	0	(0%)	0	(0%)	$1	(0%)
Flammable or combustible liquids or gases, piping or filter	12,300	(5%)	190	(9%)	830	(9%)	$271	(5%)
Non-confined	6,400	(2%)	190	(9%)	760	(9%)	$270	(5%)
Confined	5,800	(2%)	0	(0%)	70	(1%)	$2	(0%)
Exterior wall covering or finish	12,300	(5%)	30	(1%)	170	(2%)	$401	(7%)
Non-confined	12,100	(5%)	30	(1%)	170	(2%)	$401	(7%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Appliance housing or casing	9,100	(3%)	30	(1%)	200	(2%)	$117	(2%)
Non-confined	4,800	(2%)	30	(1%)	170	(2%)	$115	(2%)
Confined	4,300	(2%)	0	(0%)	30	(0%)	$2	(0%)
Rubbish, trash, or waste	8,700	(3%)	40	(2%)	180	(2%)	$126	(2%)
Non-confined	4,100	(2%)	40	(2%)	170	(2%)	$125	(2%)
Confined	4,600	(2%)	0	(0%)	10	(0%)	$1	(0%)
Mattress or bedding	7,400	(3%)	250	(11%)	910	(10%)	$269	(5%)
Non-confined	7,200	(3%)	250	(11%)	910	(10%)	$269	(5%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Interior wall covering, excluding drapes	6,800	(3%)	90	(4%)	220	(3%)	$288	(5%)
Non-confined	6,600	(3%)	90	(4%)	220	(2%)	$288	(5%)
Confined	200	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified organic materials	6,800	(3%)	10	(0%)	50	(1%)	$44	(1%)
Non-confined	1,600	(1%)	10	(0%)	40	(0%)	$43	(1%)
Confined	5,200	(2%)	0	(0%)	10	(0%)	$1	(0%)

Table 11A. (Continued)
Reported One- or Two-Family Home Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified structural component or finish	6,700	(3%)	60	(3%)	150	(2%)	$305	(5%)
Non-confined	6,300	(2%)	60	(3%)	150	(2%)	$305	(5%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Clothing	5,900	(2%)	100	(5%)	370	(4%)	$144	(2%)
Non-confined	5,400	(2%)	100	(5%)	360	(4%)	$144	(2%)
Confined	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Household utensils	5,800	(2%)	20	(1%)	130	(1%)	$35	(1%)
Non-confined	1,600	(1%)	20	(1%)	80	(1%)	$34	(1%)
Confined	4,200	(2%)	0	(0%)	50	(1%)	$1	(0%)
Insulation within structural area	5,500	(2%)	10	(0%)	80	(1%)	$134	(2%)
Non-confined	5,400	(2%)	10	(0%)	80	(1%)	$134	(2%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Multiple items first ignited	5,200	(2%)	110	(5%)	250	(3%)	$276	(5%)
Non-confined	4,200	(2%)	110	(5%)	240	(3%)	$276	(5%)
Confined	1,000	(0%)	0	(0%)	0	(0%)	$0	(0%)
Upholstered furniture	4,900	(2%)	370	(17%)	520	(6%)	$251	(4%)
Non-confined	4,800	(2%)	370	(17%)	520	(6%)	$251	(4%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified furniture or utensils	4,800	(2%)	100	(5%)	290	(3%)	$169	(3%)
Non-confined	4,000	(2%)	100	(5%)	280	(3%)	$169	(3%)
Confined	800	(0%)	0	(0%)	10	(0%)	$0	(0%)
Cabinetry	4,400	(2%)	40	(2%)	200	(2%)	$142	(2%)
Non-confined	3,700	(1%)	40	(2%)	190	(2%)	$141	(2%)
Confined	800	(0%)	0	(0%)	10	(0%)	$1	(0%)
Floor covering rug, carpet, or mat	4,300	(2%)	100	(4%)	210	(2%)	$149	(2%)
Non-confined	4,200	(2%)	100	(4%)	210	(2%)	$149	(2%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)

Table 11A. (Continued)
Reported One- or Two-Family Home Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known item first ignited	39,200	(15%)	210	(9%)	1,050	(12%)	$891	(15%)
Non-confined	26,100	(10%)	210	(9%)	1,010	(11%)	$889	(15%)
Confined	13,100	(5%)	0	(0%)	30	(0%)	$2	(0%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Non-confined	163,300	(63%)	2,160	(100%)	8,000	(90%)	$5,936	(100%)
Confined	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)
The following items were first ignited in less than 2% of the fires but at least 2% of the deaths.								
Magazine, newspaper, writing paper			50	(2%)				
Interior ceiling cover or finish			30	(2%)				

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 12A.
Reported One- or Two-Family Home Structure Fires
by Extent of Fire Spread
2007-2011Annual Averages
(Unknowns Non-confined Fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	96,900	(37%)	0	(0%)	930	(10%)	$23	(0%)
Confined to object of origin	33,600	(13%)	100	(4%)	750	(8%)	$274	(5%)
Confined to room of origin	48,900	(19%)	260	(12%)	2,800	(31%)	$645	(11%)
Confined to floor of origin	14,000	(5%)	200	(9%)	910	(10%)	$522	(9%)
Confined to building of origin	56,600	(22%)	1,290	(60%)	2,880	(32%)	$3,587	(60%)
Extended beyond building of origin	10,300	(4%)	320	(15%)	670	(8%)	$909	(15%)
Total	260,200	(100%)	2,160	(100%)	8,930	(100%)	$5,959	(100%)
Fire spread extended beyond room of origin	80,800	(31%)	1,810	(84%)	4,460	(50%)	$5,017	(84%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 13A.
One- or Two-Family Home Fires that Spread beyond the Room of Origin
by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	12,500	(15%)	130	(7%)	310	(7%)	$871	(17%)
Exterior wall covering or finish	9,000	(11%)	40	(2%)	170	(4%)	$383	(8%)
Electrical wire or cable insulation	4,900	(6%)	90	(5%)	210	(5%)	$312	(6%)
Unclassified structural component or finish	4,300	(5%)	60	(3%)	130	(3%)	$284	(6%)
Interior wall covering, excluding drapes	3,900	(5%)	90	(5%)	160	(4%)	$243	(5%)
Unclassified item first ignited	3,600	(4%)	80	(4%)	150	(3%)	$241	(5%)
Mattress or bedding	3,400	(4%)	170	(10%)	530	(12%)	$213	(4%)
Flammable or combustible liquids or gases, piping or filter	3,300	(4%)	160	(9%)	460	(10%)	$243	(5%)
Cooking materials, including food	3,300	(4%)	80	(4%)	400	(9%)	$199	(4%)
Multiple items first ignited	3,300	(4%)	110	(6%)	190	(4%)	$250	(5%)
Upholstered furniture	2,900	(4%)	280	(16%)	380	(8%)	$204	(4%)
Insulation within structural area	2,500	(3%)	10	(0%)	50	(1%)	$111	(2%)
Floor covering rug, carpet, or mat	2,300	(3%)	90	(5%)	140	(3%)	$128	(3%)
Rubbish, trash, or waste	2,200	(3%)	40	(2%)	120	(3%)	$110	(2%)
Unclassified furniture or utensil	2,000	(3%)	80	(4%)	180	(4%)	$134	(3%)
Exterior roof covering or finish	1,900	(2%)	0	(0%)	20	(0%)	$151	(3%)
Clothing	1,700	(2%)	50	(3%)	160	(3%)	$97	(2%)
Light vegetation including grass	1,500	(2%)	10	(0%)	30	(1%)	$65	(1%)
Interior ceiling cover or finish	1,400	(2%)	30	(2%)	40	(1%)	$92	(2%)
Cabinetry	1,300	(2%)	40	(2%)	80	(2%)	$96	(2%)
Other known item first ignited	9,300	(12%)	180	(10%)	570	(13%)	$590	(12%)
Total	80,800	(100%)	1,810	(100%)	4,460	(100%)	$5,017	(100%)
The following items were first ignited in less than 2% of the one- or two-family home fires but were first ignited in 2% of the associated civilian fire deaths.								
Magazine, newspaper or writing paper			40	(2%)				

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 14A.
One- or Two Family Home Fires that Spread beyond the Room of Origin
by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	21,500	(27%)	300	(17%)	770	(17%)	$1,615	(32%)
Unclassified structural component or finish	9,600	(12%)	230	(13%)	450	(10%)	$639	(13%)
Exterior wall covering or finish	8,600	(11%)	40	(2%)	230	(5%)	$374	(7%)
Interior wall covering, excluding drapes	5,100	(6%)	170	(10%)	310	(7%)	$280	(6%)
Flammable or combustible liquids or gases, piping or filter	3,200	(4%)	160	(9%)	410	(9%)	$227	(5%)
Upholstered furniture	3,200	(4%)	270	(15%)	380	(9%)	$202	(4%)
Mattress or bedding	2,800	(3%)	110	(6%)	360	(8%)	$145	(3%)
Unclassified furniture or utensil	2,800	(3%)	100	(6%)	290	(7%)	$206	(4%)
Multiple items first ignited	2,600	(3%)	80	(5%)	160	(4%)	$186	(4%)
Unclassified item first ignited	2,100	(3%)	40	(2%)	80	(2%)	$128	(3%)
Insulation within structural area	2,100	(3%)	0	(0%)	50	(1%)	$96	(2%)
Interior ceiling cover or finish	2,000	(3%)	50	(3%)	100	(2%)	$120	(2%)
Cabinetry	1,900	(2%)	30	(2%)	120	(3%)	$109	(2%)
Exterior roof covering or finish	1,800	(2%)	20	(1%)	40	(1%)	$140	(3%)
Clothing	1,300	(2%)	30	(2%)	130	(3%)	$54	(1%)
Other known item first ignited	10,200	(13%)	170	(9%)	580	(13%)	$494	(10%)
Total	80,800	(100%)	1,810	(100%)	4,460	(100%)	$5,017	(100%)

Note: Item contributing most to flame spread is an optional field. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. For this analysis, those incidents were considered unknown and allocated proportionally. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 1B.
Reported Apartment or Multi-Family Housing Structure Fires
by Year: 1980-2011

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions) As Reported	Direct Property Damage (in Millions) In 2011 Dollars
1980	143,500	1,025	3,600	$401	$1,095
1981	137,000	970	4,250	$415	$1,024
1982	116,500	860	4,700	$353	$821
1983	102,000	845	4,300	$413	$931
1984	99,500	785	3,650	$417	$901
1985	104,500	865	3,925	$476	$993
1986	97,500	650	3,925	$472	$968
1987	103,500	790	4,765	$521	$1,030
1988	106,000	830	4,950	$548	$1,042
1989	96,000	790	5,050	$541	$981
1990	95,500	680	4,975	$623	$1,072
1991	101,500	595	5,675	$609	$1,005
1992	101,000	545	5,825	$597	$957
1993	100,000	685	6,300	$653	$1,015
1994	97,000	640	5,475	$678	$1,028
1995	94,000	605	5,200	$649	$957
1996	93,000	565	5,175	$748	$1,072
1997	93,000	660	5,000	$718	$1,005
1998	86,500	445	5,000	$631	$871
1999	88,500	520	4,500	$842	$1,135
2000	84,500	500	4,400	$886	$1,157
2001	88,000	460	3,800	$864	$1,097
2002	88,500	390	3,700	$926	$1,157
2003	91,500	410	3,650	$897	$1,097
2004	94,000	510	3,200	$885	$1,054
2005	94,000	460	3,000	$948	$1,091
2006	91,500	425	3,700	$896	$999
2007	98,500	515	3,950	$1,164	$1,261
2008	95,500	390	3,975	$1,351	$1,412
2009	90,000	465	3,350	$1,225	$1,283
2010	90,500	440	3,950	$1,033	$1,065
2011	95,500	415	4,425	$1,168	$1,168

Source: *Fire Loss in the United Sates* series of NFPA annual reports by Michael J. Karter, Jr. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

Table 2B.
Reported Apartment or Multi-Family Housing Structure Fires, by Month
2007-2011 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	9,900	(9%)	60	(14%)	410	(10%)	$121	(10%)
February	8,900	(8%)	50	(12%)	430	(10%)	$115	(9%)
March	9,500	(9%)	40	(9%)	400	(9%)	$113	(9%)
April	8,900	(8%)	30	(8%)	360	(8%)	$114	(9%)
May	8,900	(8%)	30	(8%)	340	(8%)	$108	(9%)
June	7,900	(7%)	30	(7%)	330	(8%)	$105	(8%)
July	8,100	(8%)	30	(6%)	360	(8%)	$107	(9%)
August	8,000	(8%)	20	(5%)	300	(7%)	$98	(8%)
September	8,200	(8%)	20	(6%)	310	(7%)	$71	(6%)
October	8,900	(8%)	30	(6%)	330	(8%)	$100	(8%)
November	9,400	(9%)	30	(7%)	320	(7%)	$88	(7%)
December	9,800	(9%)	50	(12%)	400	(9%)	$109	(9%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Monthly average	8,900	(8%)	30	(8%)	360	(8%)	$104	(8%)

Table 3B.
Reported Apartment or Multi-Family Housing Structure Fires, by Day of Week
2007-2011 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	17,100	(16%)	60	(15%)	670	(16%)	$171	(14%)
Monday	14,800	(14%)	50	(12%)	580	(14%)	$190	(15%)
Tuesday	14,300	(13%)	60	(15%)	580	(14%)	$191	(15%)
Wednesday	14,500	(14%)	50	(11%)	580	(14%)	$154	(12%)
Thursday	14,700	(14%)	50	(12%)	630	(15%)	$180	(14%)
Friday	14,400	(14%)	60	(15%)	570	(13%)	$170	(14%)
Saturday	16,600	(16%)	90	(21%)	660	(15%)	$193	(15%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Daily average	15,200	(14%)	60	(14%)	610	(14%)	$178	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4B.
Reported Apartment or Multi-Family Housing Structure Fires, by Alarm Time
2007-2011 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight- 12:59 a.m.	3,400	(3%)	20	(6%)	190	(4%)	$56	(4%)
1:00-1:59 a.m.	2,800	(3%)	30	(7%)	190	(5%)	$60	(5%)
2:00-2:59 a.m.	2,400	(2%)	20	(6%)	160	(4%)	$47	(4%)
3:00-3:59 a.m.	2,200	(2%)	30	(6%)	170	(4%)	$54	(4%)
4:00-4:59 a.m.	1,900	(2%)	30	(7%)	150	(4%)	$48	(4%)
5:00-5:59 a.m.	1,700	(2%)	20	(6%)	150	(4%)	$51	(4%)
6:00-6:59 a.m.	1,800	(2%)	20	(6%)	130	(3%)	$41	(3%)
7:00-7:59 a.m.	2,300	(2%)	20	(5%)	120	(3%)	$31	(2%)
8:00-8:59 a.m.	2,900	(3%)	10	(3%)	130	(3%)	$39	(3%)
9:00-9:59 a.m.	3,500	(3%)	20	(4%)	140	(3%)	$38	(3%)
10:00-10:59 a.m.	4,000	(4%)	10	(3%)	140	(3%)	$44	(3%)
11:00-11:59 a.m.	4,700	(4%)	10	(2%)	170	(4%)	$45	(4%)
12:00-12:59 p.m.	5,200	(5%)	10	(3%)	190	(4%)	$50	(4%)
1:00-1:59 p.m.	5,400	(5%)	10	(3%)	190	(4%)	$63	(5%)
2:00-2:59 p.m.	5,500	(5%)	10	(3%)	190	(4%)	$58	(5%)
3:00-3:59 p.m.	5,800	(5%)	10	(3%)	180	(4%)	$70	(6%)
4:00-4:59 p.m.	6,500	(6%)	10	(2%)	220	(5%)	$69	(6%)
5:00-5:59 p.m.	7,500	(7%)	10	(3%)	240	(6%)	$64	(5%)
6:00-6:59 p.m.	8,000	(8%)	10	(3%)	220	(5%)	$64	(5%)
7:00-7:59 p.m.	7,600	(7%)	10	(3%)	240	(5%)	$59	(5%)
8:00-8:59 p.m.	6,900	(6%)	10	(3%)	220	(5%)	$53	(4%)
9:00-9:59 p.m.	5,800	(5%)	10	(3%)	210	(5%)	$51	(4%)
10:00-10:59 p.m.	4,600	(4%)	20	(5%)	190	(4%)	$49	(4%)
11:00-11:59 p.m.	3,800	(4%)	20	(5%)	160	(4%)	$47	(4%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Hourly average	4,400	(4%)	20	(4%)	180	(4%)	$52	(4%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5B.
Leading Causes of Reported Apartment or Multi-Family Housing Structure Fires
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	70,900	(67%)	80	(19%)	2,040	(48%)	$249	(20%)
Heating equipment	8,500	(8%)	30	(7%)	350	(8%)	$116	(9%)
Smoking materials	6,400	(6%)	130	(31%)	480	(11%)	$189	(15%)
Intentional	5,900	(6%)	50	(11%)	350	(8%)	$132	(11%)
Electrical distribution and lighting equipment	2,500	(2%)	60	(14%)	230	(5%)	$131	(11%)
Candles	2,200	(2%)	20	(5%)	290	(7%)	$69	(6%)
Clothes dryer or washer	2,100	(2%)	0	(0%)	10	(0%)	$136	(11%)
Exposure	2,100	(2%)	0	(0%)	70	(2%)	$25	(2%)
Playing with heat source	1,700	(2%)	10	(2%)	200	(5%)	$42	(3%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. Estimates of fires involving electrical distribution or lighting equipment or clothes dryers or washers exclude confined fires. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6B.
Cause of Ignition in Reported Apartment or Multi-Family Housing Structure Fires
2007-2011Annual Averages
(Unknowns were allocated proportionally)

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	87,900	(83%)	320	(79%)	3,620	(85%)	$841	(67%)
Non-confined	23,700	(22%)	320	(79%)	2,810	(66%)	$828	(66%)
Confined	64,200	(60%)	0	(0%)	810	(19%)	$12	(1%)
Failure of equipment or heat source	7,800	(7%)	30	(8%)	250	(6%)	$121	(10%)
Non-confined	4,800	(4%)	30	(8%)	240	(6%)	$120	(10%)
Confined	3,000	(3%)	0	(0%)	10	(0%)	$1	(0%)
Intentional	6,000	(6%)	50	(11%)	350	(8%)	$132	(11%)
Non-confined	3,200	(3%)	50	(11%)	330	(8%)	$132	(11%)
Confined	2,700	(3%)	0	(0%)	20	(0%)	$0	(0%)
Unclassified cause	4,300	(4%)	10	(2%)	50	(1%)	$128	(10%)
Non-confined	2,100	(2%)	10	(2%)	30	(1%)	$128	(10%)
Confined	2,300	(2%)	0	(0%)	20	(0%)	$0	(0%)
Act of nature	400	(0%)	0	(0%)	10	(0%)	$26	(2%)
Non-confined	300	(0%)	0	(0%)	10	(0%)	$26	(2%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Non-confined	34,100	(32%)	410	(100%)	3,420	(80%)	$1,235	(99%)
Confined	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)

Source: NFIRS 5.0 and NFPA survey.

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Table 7B.
Reported Apartment or Multi-Family Housing Structure Fires
by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns Non-confined Fires and Confined Cooking Fires Were Allocated Proportionally)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	70,900	(67%)	80	(19%)	2,040	(48%)	$249	(20%)
Range or cooktop	41,700	(39%)	60	(16%)	1,580	(37%)	$198	(16%)
Non-confined fire	8,200	(8%)	60	(16%)	1,080	(25%)	$190	(15%)
Confined fire	33,400	(31%)	0	(0%)	500	(12%)	$9	(1%)
Oven or rotisserie	9,100	(9%)	0	(0%)	50	(1%)	$7	(1%)
Non-confined fire	700	(1%)	0	(1%)	60	(1%)	$9	(1%)
Confined fire	8,400	(8%)	0	(0%)	60	(1%)	$0	(0%)
Portable cooking or warming equipment	2,900	(3%)	0	(1%)	70	(2%)	$9	(1%)
Non-confined fire	400	(0%)	0	(1%)	50	(1%)	$9	(1%)
Confined fire	2,600	(2%)	0	(0%)	10	(0%)	$0	(0%)
Microwave oven	2,900	(3%)	0	(0%)	50	(1%)	$7	(1%)
Non-confined fire	300	(0%)	0	(0%)	30	(1%)	$5	(0%)
Confined fire	2,600	(2%)	0	(0%)	19	(0%)	$2	(0%)
Grill, hibachi or barbecue	600	(1%)	0	(1%)	20	(0%)	$22	(2%)
Non-confined fire	200	(0%)	0	(1%)	10	(0%)	$22	(2%)
Confined fire	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Other known cooking equipment or confined cooking fire	13,700	(13%)	0	(0%)	220	(5%)	$3	(0%)
Other known equipment in non-confined cooking fire	200	(0%)	0	(0%)	10	(0%)	$2	(0%)
Confined cooking fire with other or no equipment	13,500	(13%)	0	(0%)	210	(5%)	$1	(0%)
No equipment involved in ignition	12,300	(12%)	210	(51%)	1,240	(29%)	$573	(46%)
Heating equipment	8,500	(8%)	30	(7%)	350	(8%)	$116	(9%)
Furnace, central heat or boiler	4,600	(4%)	0	(0%)	10	(0%)	$11	(1%)
Furnace, central heat or boiler in non-confined fire	300	(0%)	0	(0%)	10	(0%)	$10	(1%)
Confined fuel burner or boiler fire	4,300	(4%)	0	(0%)	10	(0%)	$1	(0%)
Fixed or portable space heater	2,400	(2%)	30	(7%)	280	(7%)	$68	(5%)
Water heater	800	(1%)	0	(0%)	40	(1%)	$16	(1%)
Fireplace or chimney	600	(1%)	0	(0%)	10	(0%)	$19	(1%)
Fireplace or chimney in non-confined fire	100	(0%)	0	(0%)	10	(0%)	$18	(1%)
Confined chimney or flue fire	500	(1%)	0	(0%)	0	(0%)	$0	(0%)
Other known heating equipment in non-confined fire	100	(0%)	0	(0%)	10	(0%)	$2	(0%)
Contained trash or rubbish fire	5,300	(5%)	0	(0%)	30	(1%)	$1	(0%)
Electrical distribution and lighting equipment	2,500	(2%)	60	(14%)	230	(5%)	$131	(11%)
Wiring and related equipment	1,400	(1%)	30	(6%)	110	(3%)	$84	(7%)
Lamp, bulb or lighting	700	(1%)	20	(5%)	80	(2%)	$25	(2%)

Table 7B.
Reported Apartment or Multi-Family Housing Structure Fires
by Equipment Involved in Ignition
2007-2011 Annual Averages
(Unknowns Non-confined Fires and Confined Cooking Fires Were Allocated Proportionally)
(Continued)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Clothes dryer or washer	2,300	(2%)	0	(0%)	80	(2%)	$30	(2%)
Confined commercial compactor fire	1,000	(1%)	0	(0%)	0	(0%)	$0	(0%)
Fan	900	(1%)	0	(0%)	30	(1%)	$18	(1%)
Other known equipment involved in ignition	2,900	(3%)	40	(10%)	270	(16%)	$135	(11%)
Total	106,400	(100%)	410	(100%)	4,280	(110%)	$1,248	(100%)
The following equipment was involved in less than 1% of the fires, but in at least 2% of the deaths.								
Oxygen administration equipment			20	(4%)				
Cord or plug			10	(2%)				

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. The same approach was used with confined cooking fires. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires in that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). The estimates of fires involving fireplace or chimney include all fires with the confined chimney or flue incident type regardless of what may have been coded as equipment involved. Similarly, the estimates of fires involving furnaces, central heat or boilers include all fires with confined fuel burner or boiler incident type. The estimates shown should be considered upper bounds. Non-cooking confined fires were not analyzed separately. Estimates of other types of equipment exclude confined fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 8B.
Reported Apartment or Multi-Family Housing Structure Fires, by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Radiated or conducted heat from operating equipment	29,800	(28%)	50	(11%)	1,120	(26%)	$154	(12%)
Non-confined	6,400	(6%)	50	(11%)	770	(18%)	$152	(12%)
Confined	23,400	(22%)	0	(0%)	350	(8%)	$3	(0%)
Unclassified heat from powered equipment	24,500	(23%)	50	(12%)	740	(17%)	$142	(11%)
Non-confined	5,600	(5%)	50	(12%)	530	(12%)	$136	(11%)
Confined	18,900	(18%)	0	(0%)	210	(5%)	$7	(1%)
Unclassified heat source	9,700	(9%)	20	(6%)	270	(6%)	$78	(6%)
Non-confined	2,000	(2%)	20	(6%)	190	(4%)	$77	(6%)
Confined	7,700	(7%)	0	(0%)	80	(2%)	$1	(0%)
Unclassified hot or smoldering object	7,200	(7%)	20	(5%)	230	(5%)	$73	(6%)
Non-confined	2,400	(2%)	20	(5%)	180	(4%)	$71	(6%)
Confined	4,900	(5%)	0	(0%)	50	(1%)	$2	(0%)
Spark, ember or flame from operating equipment	6,600	(6%)	10	(1%)	210	(5%)	$61	(5%)
Non-confined	1,700	(2%)	10	(1%)	160	(4%)	$61	(5%)
Confined	4,900	(5%)	0	(0%)	50	(1%)	$0	(0%)
Smoking materials	6,400	(6%)	130	(31%)	480	(11%)	$189	(15%)
Non-confined	3,700	(3%)	130	(31%)	460	(11%)	$189	(15%)
Confined	2,700	(3%)	0	(0%)	20	(0%)	$0	(0%)
Heat from direct flame or convection currents	5,000	(5%)	10	(2%)	90	(2%)	$36	(3%)
Non-confined	900	(1%)	10	(2%)	50	(1%)	$36	(3%)
Confined	4,100	(4%)	0	(0%)	40	(1%)	$0	(0%)
Arcing	4,400	(4%)	30	(8%)	260	(6%)	$135	(11%)
Non-confined	3,700	(3%)	30	(8%)	260	(6%)	$135	(11%)
Confined	700	(1%)	0	(0%)	10	(0%)	$0	(0%)
Hot ember or ash	2,700	(3%)	20	(5%)	100	(2%)	$54	(4%)
Non-confined	1,500	(1%)	20	(5%)	100	(2%)	$54	(4%)
Confined	1,200	(1%)	0	(0%)	10	(0%)	$0	(0%)
Candle	2,200	(2%)	20	(5%)	290	(7%)	$69	(6%)
Non-confined	1,900	(2%)	20	(5%)	280	(7%)	$69	(6%)
Confined	300	(0%)	0	(0%)	10	(0%)	$0	(0%)

Table 8B. (Continued)
Reported Apartment or Multi-Family Housing Structure Fires, by Heat Source
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Lighter	2,100	(2%)	30	(8%)	250	(6%)	$65	(5%)
Non-confined	1,500	(1%)	30	(8%)	240	(6%)	$65	(5%)
Confined	600	(1%)	0	(0%)	10	(0%)	$0	(0%)
Other known heat source	5,700	(5%)	20	(6%)	230	(5%)	$192	(15%)
Non-confined	2,800	(3%)	20	(6%)	200	(5%)	$192	(15%)
Confined	2,800	(3%)	0	(0%)	30	(1%)	$0	(0%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Non-confined	34,100	(32%)	410	(100%)	3,420	(80%)	$1,235	(99%)
Confined	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)
The following heat sources were involved in less than 2% of the fires, but in at least 2% of the deaths								
Hot ember or ash			20	(5%)				

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 9B.
Reported Apartment or Multi-Family Housing Structure Fires, by Factor Contributing to Ignition
2007-2011 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment unattended	27,500	(26%)	30	(8%)	980	(23%)	$104	(8%)
Non-confined	4,500	(4%)	30	(8%)	630	(15%)	$101	(8%)
Confined	23,000	(22%)	0	(0%)	350	(8%)	$3	(0%)
Abandoned or discarded material or product	17,200	(16%)	90	(22%)	610	(14%)	$216	(17%)
Non-confined	5,300	(5%)	90	(22%)	490	(12%)	$215	(17%)
Confined	11,900	(11%)	0	(0%)	120	(3%)	$1	(0%)
Heat source too close to combustibles	12,700	(12%)	100	(24%)	690	(16%)	$179	(14%)
Non-confined	4,800	(4%)	100	(24%)	630	(15%)	$176	(14%)
Confined	7,900	(7%)	0	(0%)	70	(2%)	$3	(0%)
Unclassified misuse of material or product	10,500	(10%)	60	(13%)	570	(13%)	$112	(9%)
Non-confined	3,400	(3%)	60	(13%)	470	(11%)	$109	(9%)
Confined	7,100	(7%)	0	(0%)	100	(2%)	$2	(0%)
Unclassified factor contributed to ignition	7,700	(7%)	60	(14%)	340	(8%)	$97	(8%)
Non-confined	2,200	(2%)	60	(14%)	260	(6%)	$95	(8%)
Confined	5,400	(5%)	0	(0%)	70	(2%)	$2	(0%)
Electrical failure or malfunction	6,300	(6%)	50	(12%)	340	(8%)	$191	(15%)
Non-confined	5,000	(5%)	50	(12%)	330	(8%)	$191	(15%)
Confined	1,200	(1%)	0	(0%)	10	(0%)	$0	(0%)
Unintentionally turned on, not turned off	5,900	(6%)	10	(2%)	180	(4%)	$25	(2%)
Non-confined	1,100	(1%)	10	(2%)	120	(3%)	$24	(2%)
Confined	4,800	(4%)	0	(0%)	50	(1%)	$1	(0%)
Mechanical failure or malfunction	4,300	(4%)	0	(1%)	90	(2%)	$48	(4%)
Non-confined	1,900	(2%)	0	(1%)	80	(2%)	$48	(4%)
Confined	2,300	(2%)	0	(0%)	0	(0%)	$0	(0%)
Failure to clean	3,900	(4%)	0	(0%)	40	(1%)	$6	(0%)
Non-confined	700	(1%)	0	(0%)	20	(1%)	$6	(0%)
Confined	3,300	(3%)	0	(0%)	10	(0%)	$0	(0%)
Exposure fire	2,100	(2%)	0	(0%)	10	(0%)	$136	(11%)
Non-confined	2,000	(2%)	0	(0%)	10	(0%)	$136	(11%)
Confined	100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Equipment not being operated properly	1,700	(2%)	0	(1%)	80	(2%)	$7	(1%)
Non-confined	300	(0%)	0	(1%)	60	(1%)	$7	(1%)
Confined	1,400	(1%)	0	(0%)	20	(0%)	$0	(0%)

Table 9B. (Continued)
Reported Apartment or Multi-Family Housing Structure Fires, by Factor Contributing to Ignition
2007-2011 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified operational deficiency	1,700	(2%)	0	(0%)	50	(1%)	$10	(1%)
Non-confined	400	(0%)	0	(0%)	40	(1%)	$10	(1%)
Confined	1,300	(1%)	0	(0%)	10	(0%)	$0	(0%)
Playing with heat source	1,700	(2%)	10	(2%)	200	(5%)	$42	(3%)
Non-confined	1,100	(1%)	10	(2%)	200	(5%)	$42	(3%)
Confined	600	(1%)	0	(0%)	0	(0%)	$0	(0%)
Other known factor contributing to ignition	6,700	(6%)	30	(8%)	340	(8%)	$168	(13%)
Non-confined	3,000	(3%)	30	(8%)	300	(7%)	$166	(13%)
Confined	3,700	(3%)	0	(0%)	40	(1%)	$2	(0%)
Total Fires	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Non-confined	34,100	(32%)	410	(100%)	3,420	(80%)	$1,235	(99%)
Confined	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)
Total Factors *	109,700	(103%)	440	(107%)	4,520	(106%)	$1,340	(107%)
Non-confined	35,700	(34%)	440	(107%)	3,650	(85%)	$1,326	(106%)
Confined	74,000	(70%)	0	(0%)	870	(20%)	$14	(1%)
The following factors were involved in less than 2% of the fires, but in at least 2% of the deaths.								
Flammable liquid or gas spilled			10	(2%)				
Unclassified fire spread or control			10	(2%)				

* Multiple entries are allowed which can result in sums higher than totals.

Note: Sums may not equal totals due to rounding errors. Non-confined structure fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 10B.
Reported Apartment or Multi-Family Housing Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen or cooking area	70,100	(66%)	90	(21%)	2,050	(48%)	$235	(19%)
Non-confined	11,000	(10%)	90	(21%)	1,260	(29%)	$223	(18%)
Confined	59,100	(56%)	0	(0%)	790	(18%)	$12	(1%)
Bedroom	5,200	(5%)	120	(30%)	870	(20%)	$206	(17%)
Non-confined	4,700	(4%)	120	(30%)	860	(20%)	$206	(17%)
Confined	400	(0%)	0	(0%)	10	(0%)	$0	(0%)
Living room, family room or den	2,700	(3%)	90	(22%)	430	(10%)	$105	(8%)
Non-confined	2,200	(2%)	90	(22%)	420	(10%)	$105	(8%)
Confined	400	(0%)	0	(0%)	10	(0%)	$0	(0%)
Trash or rubbish chute, area or container	2,300	(2%)	0	(0%)	10	(0%)	$1	(0%)
Non-confined	100	(0%)	0	(0%)	0	(0%)	$1	(0%)
Confined	2,200	(2%)	0	(0%)	10	(0%)	$0	(0%)
Exterior balcony or unenclosed porch	2,000	(2%)	10	(3%)	60	(1%)	$122	(10%)
Non-confined	1,600	(2%)	10	(3%)	50	(1%)	$122	(10%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Laundry room or area	2,000	(2%)	0	(0%)	60	(1%)	$22	(2%)
Non-confined	1,500	(1%)	0	(0%)	60	(1%)	$22	(2%)
Confined	500	(1%)	0	(0%)	0	(0%)	$0	(0%)
Bathroom or lavatory	1,800	(2%)	0	(1%)	100	(2%)	$27	(2%)
Non-confined	1,400	(1%)	0	(1%)	90	(2%)	$27	(2%)
Confined	400	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified area of origin	1,800	(2%)	10	(2%)	40	(1%)	$16	(1%)
Non-confined	600	(1%)	10	(2%)	30	(1%)	$16	(1%)
Confined	1,200	(1%)	0	(0%)	10	(0%)	$0	(0%)
Interior stairway or ramp	1,700	(2%)	0	(1%)	50	(1%)	$13	(1%)
Non-confined	400	(0%)	0	(1%)	50	(1%)	$13	(1%)
Confined	1,300	(1%)	0	(0%)	0	(0%)	$0	(0%)

Table 10B. (Continued)
Reported Apartment or Multi-Family Housing Structure Fires, by Area of Origin
2007-2011 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known area of origin	16,800	(16%)	90	(21%)	630	(15%)	$501	(40%)
Non-confined	10,400	(10%)	90	(21%)	600	(14%)	$499	(40%)
Confined	6,400	(6%)	0	(0%)	30	(1%)	$1	(0%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Non-confined	34,100	(32%)	410	(100%)	3,420	(80%)	$1,235	(99%)
Confined	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)
Less than 2% of the fires, but at least 2% of the deaths resulted from fires that originated in the following areas:								
Unclassified function area			40	(9%)				
Exterior balcony or unenclosed porch			10	(3%)				

Note: Sums may not equal totals due to rounding errors. Source: NFIRS 5.0 and NFPA survey.

Table 11B.
Reported Apartment or Multi-Family Housing Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	52,300	(49%)	30	(7%)	1,490	(35%)	$133	(11%)
Non-confined	6,400	(6%)	30	(7%)	870	(20%)	$124	(10%)
Confined	45,800	(43%)	0	(0%)	620	(14%)	$9	(1%)
Rubbish, trash, or waste	6,200	(6%)	10	(2%)	90	(2%)	$35	(3%)
Non-confined	1,200	(1%)	10	(2%)	70	(2%)	$34	(3%)
Confined	5,100	(5%)	0	(0%)	20	(0%)	$0	(0%)
Unclassified item first ignited	6,200	(6%)	10	(4%)	180	(4%)	$56	(4%)
Non-confined	1,600	(2%)	10	(4%)	140	(3%)	$55	(4%)
Confined	4,500	(4%)	0	(0%)	40	(1%)	$1	(0%)
Household utensils	4,400	(4%)	0	(1%)	90	(2%)	$12	(1%)
Non-confined	600	(1%)	0	(1%)	50	(1%)	$11	(1%)
Confined	3,800	(4%)	0	(0%)	40	(1%)	$1	(0%)
Flammable or combustible liquids or gases, piping or filter	3,100	(3%)	20	(5%)	230	(5%)	$47	(4%)
Non-confined	1,100	(1%)	20	(5%)	200	(5%)	$47	(4%)
Confined	2,000	(2%)	0	(0%)	30	(1%)	$0	(0%)
Appliance housing or casing	3,000	(3%)	10	(1%)	90	(2%)	$17	(1%)
Non-confined	1,000	(1%)	10	(1%)	70	(2%)	$16	(1%)
Confined	1,900	(2%)	0	(0%)	20	(0%)	$0	(0%)
Electrical wire or cable insulation	2,500	(2%)	10	(2%)	90	(2%)	$60	(5%)
Non-confined	2,000	(2%)	10	(2%)	90	(2%)	$60	(5%)
Confined	500	(0%)	0	(0%)	0	(0%)	$0	(0%)
Mattress or bedding	2,400	(2%)	80	(19%)	450	(10%)	$87	(7%)
Non-confined	2,100	(2%)	80	(19%)	440	(10%)	$87	(7%)
Confined	300	(0%)	0	(0%)	10	(0%)	$0	(0%)
Structural member or framing	2,300	(2%)	10	(1%)	70	(2%)	$155	(12%)
Non-confined	2,200	(2%)	10	(1%)	70	(2%)	$155	(12%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Magazine, newspaper, or writing paper	1,900	(2%)	10	(2%)	60	(2%)	$21	(2%)
Non-confined	700	(1%)	10	(2%)	60	(1%)	$21	(2%)
Confined	1,200	(1%)	0	(0%)	0	(0%)	$0	(0%)
Clothing	1,800	(2%)	30	(7%)	150	(3%)	$32	(3%)
Non-confined	1,300	(1%)	30	(7%)	140	(3%)	$31	(3%)
Confined	400	(0%)	0	(0%)	10	(0%)	$0	(0%)

Table 11B. (Continued)
Reported Apartment or Multi-Family Housing Structure Fires, by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified furniture or utensils	1,700	(2%)	20	(5%)	150	(3%)	$39	(3%)
Non-confined	1,000	(1%)	20	(5%)	130	(3%)	$39	(3%)
Confined	700	(1%)	0	(0%)	10	(0%)	$0	(0%)
Other known item first ignited	18,800	(18%)	180	(43%)	1,150	(27%)	$555	(44%)
Non-confined	12,700	(12%)	180	(43%)	1,100	(26%)	$554	(44%)
Confined	6,100	(6%)	0	(0%)	50	(1%)	$2	(0%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Non-confined	34,100	(32%)	410	(100%)	3,420	(80%)	$1,235	(99%)
Confined	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)
The following items were first ignited in less than 1% of the fires, but in at least 2% of the fires.								
Upholstered furniture			80	(20%)				
Multiple items first ignited			20	(6%)				
Unclassified sort goods or wearing apparel			20	(4%)				
Cabinetry			10	(2%)				
Unclassified structural component or finish			10	(2%)				
Interior wall covering, excluding drapes			10	(2%)				

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 12B.
Reported Apartment or Multi-Family Housing Structure Fires, by Extent of Fire Spread
2007-2011 Annual Averages
(Unknowns Non-confined Fires Were Allocated Proportionally)

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	72,300	(68%)	0	(0%)	850	(20%)	$14	(1%)
Confined to object of origin	8,600	(8%)	20	(4%)	340	(8%)	$42	(3%)
Confined to room of origin	15,100	(14%)	130	(32%)	1,550	(36%)	$173	(14%)
Confined to floor of origin	3,500	(3%)	60	(15%)	540	(13%)	$147	(12%)
Confined to building of origin	6,100	(6%)	160	(39%)	870	(20%)	$713	(57%)
Extended beyond building of origin	800	(1%)	40	(9%)	130	(3%)	$160	(13%)
Total	106,400	(100%)	410	(100%)	4,280	(100%)	$1,248	(100%)
Fire spread beyond the room of origin	10,400	(10%)	260	(63%)	1,540	(36%)	$1,019	(82%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 13B.
Apartment or Multi-Family Housing Fires that Spread beyond the Room of Origin
by Item First Ignited
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	1,400	(13%)	10	(3%)	70	(4%)	$148	(15%)
Exterior wall covering or finish	800	(8%)	10	(2%)	30	(2%)	$82	(8%)
Cooking materials, including food	800	(8%)	20	(9%)	230	(15%)	$70	(7%)
Mattress or bedding	700	(7%)	40	(16%)	250	(16%)	$68	(7%)
Unclassified structural component or finish	500	(5%)	10	(4%)	40	(3%)	$51	(5%)
Electrical wire or cable insulation	500	(5%)	0	(1%)	50	(3%)	$47	(5%)
Upholstered furniture	500	(4%)	50	(18%)	140	(9%)	$63	(6%)
Unclassified item first ignited	400	(4%)	10	(4%)	60	(4%)	$45	(4%)
Rubbish, trash, or waste	400	(4%)	0	(1%)	30	(2%)	$31	(3%)
Multiple items first ignited	400	(4%)	20	(8%)	90	(6%)	$38	(4%)
Flammable or combustible liquids or gases, piping or filter	300	(3%)	10	(6%)	100	(6%)	$42	(4%)
Unclassified furniture or utensil	300	(3%)	10	(4%)	90	(6%)	$30	(3%)
Floor covering rug, carpet, or mat	300	(3%)	10	(2%)	40	(2%)	$17	(2%)
Insulation within structural area	300	(3%)	0	(0%)	10	(1%)	$40	(4%)
Interior wall covering, excluding drapes	300	(3%)	10	(3%)	40	(3%)	$25	(2%)
Clothing	300	(2%)	10	(4%)	50	(3%)	$20	(2%)
Exterior roof covering or finish	200	(2%)	0	(0%)	10	(1%)	$33	(3%)
Cabinetry	200	(2%)	0	(2%)	40	(2%)	$15	(2%)
Box, carton, bag, basket, or barrel	200	(2%)	0	(0%)	10	(1%)	$17	(2%)
Light vegetation including grass	200	(2%)	0	(0%)	10	(0%)	$12	(1%)
Exterior trim, including doors	200	(2%)	0	(0%)	10	(0%)	$7	(1%)
Unclassified soft goods or wearing apparel	200	(2%)	10	(4%)	40	(3%)	$15	(1%)
Other known item first ignited	1,100	(11%)	20	(8%)	130	(8%)	$101	(10%)
Total	10,400	(100%)	260	(100%)	1,540	(100%)	$1,019	(100%)
The following items were first ignited in less than 2% of the fires, but at least 10, or 2% of deaths.								
Magazine, newspaper or writing paper			10	(3%)				

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 14B.
Apartment or Multi-Family Housing Fires that Spread beyond the Room of Origin
by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	2,400	(23%)	60	(21%)	250	(16%)	$356	(35%)
Non-confined	2,400	(23%)	60	(21%)	250	(16%)	$356	(35%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Exterior wall covering or finish	1,200	(12%)	10	(4%)	110	(7%)	$117	(11%)
Non-confined	1,200	(12%)	10	(4%)	110	(7%)	$117	(11%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified structural component or finish	1,100	(11%)	30	(13%)	150	(10%)	$130	(13%)
Non-confined	1,100	(11%)	30	(13%)	150	(10%)	$130	(13%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Mattress or bedding	600	(5%)	30	(12%)	160	(11%)	$35	(3%)
Non-confined	600	(5%)	30	(12%)	160	(11%)	$35	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Upholstered furniture	500	(5%)	30	(11%)	140	(9%)	$39	(4%)
Non-confined	500	(5%)	30	(11%)	140	(9%)	$39	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Unclassified furniture or utensil	400	(4%)	20	(8%)	120	(8%)	$35	(3%)
Non-confined	400	(4%)	20	(8%)	120	(8%)	$35	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Cabinetry	400	(4%)	0	(1%)	90	(6%)	$27	(3%)
Non-confined	400	(4%)	0	(1%)	90	(6%)	$27	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Interior wall covering, excluding drapes	400	(4%)	30	(12%)	70	(5%)	$33	(3%)
Non-confined	400	(4%)	30	(12%)	70	(5%)	$33	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Cooking materials, including food	300	(3%)	10	(2%)	70	(4%)	$18	(2%)
Non-confined	300	(3%)	10	(2%)	70	(4%)	$18	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)
Flammable or combustible liquids or gases, piping or filter	300	(3%)	10	(3%)	50	(3%)	$33	(3%)
Non-confined	300	(3%)	10	(3%)	50	(3%)	$33	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	$0	(0%)

Table 14B. (Continued)
Apartment or Multi-Family Housing Fires that Spread beyond the Room of Origin
by Item Contributing Most to Flame Spread
2007-2011 Annual Averages
(Unknowns were allocated proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Multiple items first ignited	300	(2%)	10	(4%)	50	(4%)	$22	(2%)
Exterior roof covering or finish	300	(2%)	0	(0%)	20	(1%)	$36	(4%)
Unclassified item first ignited	200	(2%)	0	(1%)	40	(2%)	$22	(2%)
Insulation within structural area	200	(2%)	0	(0%)	10	(1%)	$27	(3%)
Interior ceiling cover or finish	200	(2%)	0	(0%)	30	(2%)	$15	(2%)
Clothing	200	(2%)	0	(1%)	50	(3%)	$8	(1%)
Floor covering rug, carpet, or mat	200	(2%)	10	(2%)	20	(2%)	$5	(1%)
Rubbish, trash, or waste	200	(2%)	0	(0%)	10	(1%)	$4	(0%)
Other known item first ignited	1,000	(9%)	10	(3%)	90	(6%)	$55	(5%)
Total	10,400	(100%)	260	(100%)	1,540	(100%)	$1,019	(100%)

Note: Item contributing most to flame spread is an optional field. Fire departments are instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. For this analysis, those incidents were considered unknown and allocated proportionally. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Appendix A.
How National Estimates Statistics Are Calculated

The statistics in this analysis are estimates derived 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 survey of U.S. fire departments. NFIRS is a voluntary system through which participating fire departments report detailed factors about the fires to which they respond. Roughly two-thirds of U.S. fire departments participate, although not all of these departments provide data every year. Fires reported to federal or state fire departments or industrial fire brigades are not included in these estimates.

NFIRS provides the most detailed incident information of any national database not limited to large fires. NFIRS is the only database capable of addressing national patterns for fires of all sizes by specific property use and specific fire cause. NFIRS also captures information on the extent of flame spread, and automatic detection and suppression equipment. For more information about NFIRS visit www.nfirs.fema.gov/. Copies of the paper forms may be downloaded from www.nfirs.fema.gov/documentation/design/NFIRS_Paper_Forms_2012.pdf.

NFIRS has a wide variety of data elements and codes. Many code choices describe several conditions. These cannot be broken down further. For example, area of origin code 83 captures fires starting in vehicle engine areas, running gear areas or wheel areas. It is not possible to tell the portion of each from the coded data.

Methodology may change slightly from year to year.
NFPA is continually examining its methodology to provide the best possible answers to specific questions. From time to time, changes are made to methodologies or groupings. *Earlier editions of the same report may have used different methodologies to produce the same analysis, meaning that the estimates are not directly comparable from year to year.* Readers should use the latest report available and contact us if clarification is needed.

NFPA's fire department experience survey provides estimates of the big picture.
Each year, NFPA conducts an annual survey of fire departments which enables us to capture a summary of fire department experience on a larger scale. Surveys are sent to all municipal departments protecting populations of 50,000 or more and a random sample, stratified by community size, of the smaller departments. Typically, a total of roughly 3,000 surveys are returned, representing about one of every ten U.S. municipal fire departments serving about one third of the U.S. population.

The survey is stratified by size of population protected to reduce the uncertainty of the final estimate. Small rural communities have fewer people protected per department and are less likely to respond to the survey. A larger number must be surveyed to obtain an adequate sample of those departments. (NFPA also makes follow-up calls to a sample of the smaller fire departments that do not respond, to confirm that those that did respond are truly representative of fire departments their size.) On the other hand, large city departments are so few in number and protect such a large proportion of the total U.S. population that it makes sense to survey all of them. Most respond, resulting in excellent precision for their part of the final estimate.

The survey includes the following information: (1) the total number of fire incidents, civilian deaths, and civilian injuries, and the total estimated property damage (in dollars), for each of the

major property use classes defined in NFIRS; (2) the number of on-duty firefighter injuries, by type of duty and nature of illness; 3) the number and nature of non-fire incidents; and (4) information on the type of community protected (e.g., county versus township versus city) and the size of the population protected, which is used in the statistical formula for projecting national totals from sample results. The results of the survey are published in the annual report *Fire Loss in the United States*. To download a free copy of the report, visit http://www.nfpa.org/assets/files/PDF/OS.fireloss.pdf.

Projecting NFIRS to National Estimates

As noted, NFIRS is a voluntary reporting system. Different states and jurisdictions have different reporting requirements and practices. Participation rates in NFIRS are not necessarily uniform across regions and community sizes, both factors correlated with frequency and severity of fires. This means NFIRS may be susceptible to systematic biases. No one at present can quantify the size of these deviations from the ideal, representative sample. But there is enough reason for concern so that a second database -- the NFPA survey -- is needed to project NFIRS to national estimates and to project different parts of NFIRS separately. This multiple calibration approach makes use of the annual NFPA survey where its statistical design advantages are strongest.

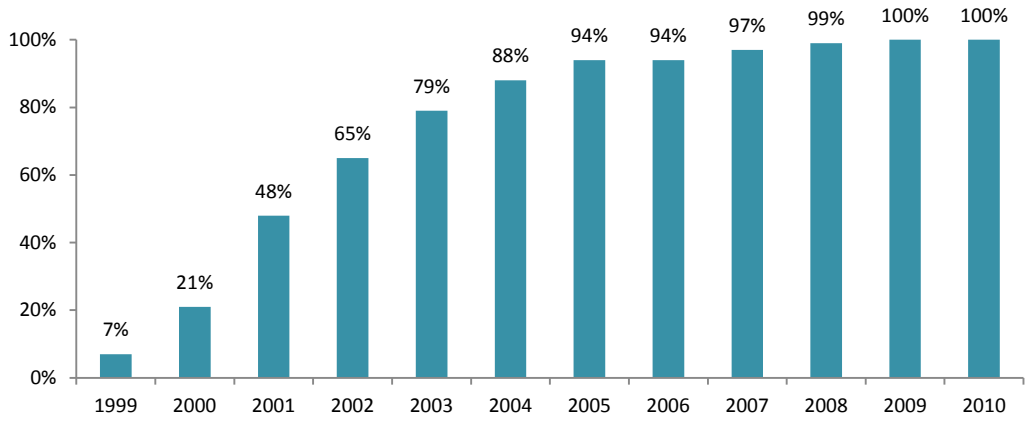
Scaling ratios are obtained by comparing NFPA's projected totals of residential structure fires, non-residential structure fires, vehicle fires, and outside and other fires, and associated civilian deaths, civilian injuries, and direct property damage with comparable totals in NFIRS. Estimates of specific fire problems and circumstances are obtained by multiplying the NFIRS data by the scaling ratios. Reports for incidents in which mutual aid was given are excluded from NFPA's analyses.

Analysts at the NFPA, the USFA and the Consumer Product Safety Commission developed the analytical rules used in analyzing data from the two data sets. "The National Estimates Approach to U.S. Fire Statistics," by John R. Hall, Jr. and Beatrice Harwood, provides a more detailed explanation of national estimates.

Version 5.0 of NFIRS, first introduced in 1999, used a different coding structure for many data elements, added some property use codes, and dropped others. The essentials of the approach described by Hall and Harwood are still used, but some modifications have been necessary to accommodate the changes in NFIRS 5.0.

Figure A.1 shows the percentage of fires originally collected in the NFIRS 5.0 system. Each year's release version of NFIRS data also includes data collected in older versions of NFIRS that were converted to NFIRS 5.0 codes.

Figure A.1. Fires Originally Collected in NFIRS 5.0 by Year



For 2002 data on, analyses are based on scaling ratios using only data originally collected in NFIRS 5.0:

NFPA survey projections
NFIRS totals (Version 5.0)

For 1999 to 2001, the same rules may be applied, but estimates for these years in this form will be less reliable due to the smaller amount of data originally collected in NFIRS 5.0; they should be viewed with extreme caution.

NFIRS 5.0 introduced six categories of confined structure fires, including:

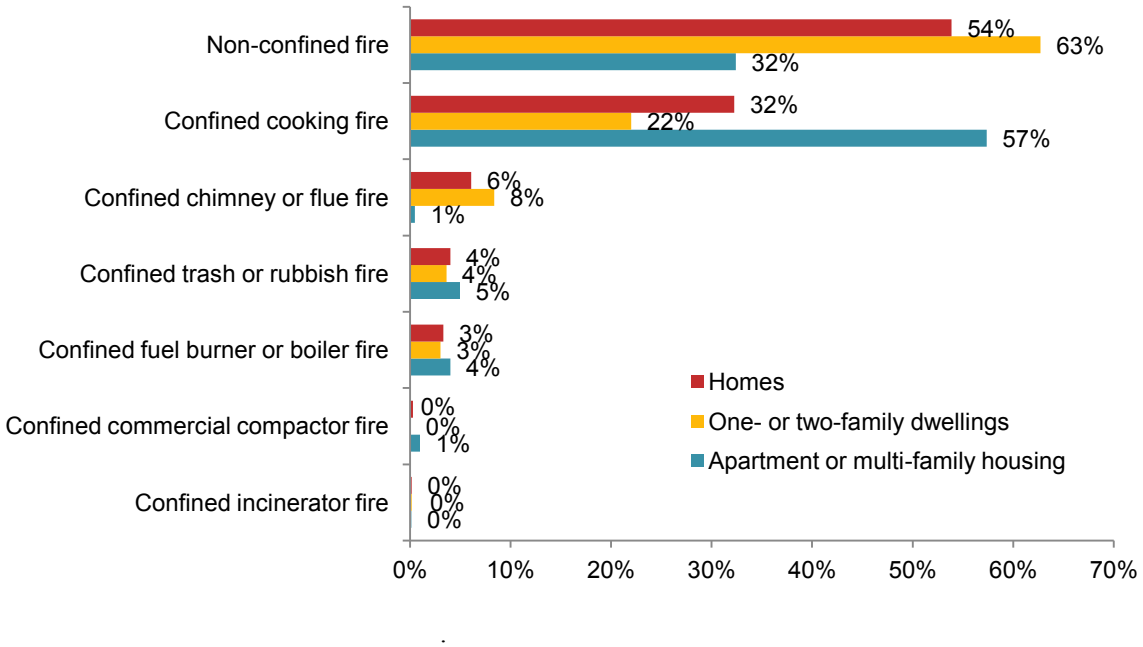
- cooking fires confined to the cooking vessel,
- confined chimney or flue fires,
- confined incinerator fire,
- confined fuel burner or boiler fire or delayed ignition,
- confined commercial compactor fire, and
- trash or rubbish fires in a structure with no flame damage to the structure or its contents.

Although causal and other detailed information is typically not required for these incidents, it is provided in some cases. Some analyses, particularly those that examine cooking equipment, heating equipment, fires caused by smoking materials, and fires started by playing with fire, may examine the confined fires in greater detail. Because the confined fire incident types describe certain scenarios, the distribution of unknown data differs from that of all fires. Consequently, allocation of unknowns must be done separately. Table A1 shows the breakdown of these fires. Figure A.1 shows the percentage of the different confined fires and of non-confined fires for all homes, one-and two-family homes (including manufactured homes), and apartments.

Table A.1. Confined and Non-Confined Reported Home Structure Fires
2007-2011 Annual Averages

Type of Fire	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire	**169,200**	**(46%)**	**0**	**(0%)**	**1,780**	**(13%)**	**$37**	**(1%)**
Confined cooking fire	118,300	(32%)	0	(0%)	1,630	(12%)	$26	(0%)
Confined chimney or flue fire	22,300	(6%)	0	(0%)	30	(0%)	$6	(0%)
Confined or contained trash or rubbish fire	14,700	(4%)	0	(0%)	60	(0%)	$2	(0%)
Confined fuel burner or boiler fire	12,200	(3%)	0	(0%)	50	(0%)	$2	(0%)
Confined commercial compactor fire	1,100	(0%)	0	(0%)	0	(0%)	$0	(0%)
Confined incinerator fire	600	(0%)	0	(0%)	0	(0%)	$0	(0%)
Non-confined fire	**197,400**	**(54%)**	**2,570**	**(100%)**	**11,430**	**(87%)**	**$7,171**	**(99%)**
Total	**366,600**	**(100%)**	**2,570**	**(100%)**	**13,210**	**(100%)**	**$7,208**	**(100%)**

Figure A.2. Home Structure Fires by Incident Type and Occupancy
2007-2011



Some analyses of structure fires show only non-confined fires. In these tables, percentages shown are of non-confined structure fires rather than alls structure fires. This approach has the advantage of showing the frequency of specific factors in fire causes, but the disadvantage of possibly overstating the percentage of factors that are seldom seen in the confined fire incident types and of understating the factors specifically associated with the confined fire incident types. Other analyses include entries for confined fire incident types in the causal tables and show percentages based on total structure fires. In these cases, the confined fire incident type is treated as a general causal factor.

For most fields other than Property Use and Incident Type, NFPA allocates unknown data proportionally among known data. This approach assumes that if the missing data were known, it would be distributed in the same manner as the known data. NFPA makes additional adjustments to several fields. *Casualty and loss projections can be heavily influenced by the inclusion or exclusion of unusually serious fire.*

In the formulas that follow, the term "all fires" refers to all fires in NFIRS on the dimension studied. The percentages of fires with known or unknown data are provided for non-confined fires and associated losses, and for confined fires only.

Cause of Ignition: This field is used chiefly to identify intentional fires. "Unintentional" in this field is a specific entry and does not include other fires that were not intentionally set: failure of equipment or heat source, act of nature, or "other" (unclassified)." The last should be used for exposures but has been used for other situations as well. Fires that were coded as under investigation and those that were coded as undetermined after investigation were treated as unknown. For non-confined home structure fires, the cause was known in 70% of the fires, 43% of the civilian deaths, 68% of the civilian injuries, and 57% of the direct property damage. For confined fires, the cause was known in 17% of the fires.

Factor Contributing to Ignition: In this field, the code "none" is treated as an unknown and allocated proportionally. For Human Factor Contributing to Ignition, NFPA enters a code for "not reported" when no factors are recorded. "Not reported" is treated as an unknown, but the code "none" is treated as a known code and not allocated. Multiple entries are allowed in both of these fields. Percentages are calculated on the total number of fires, not entries, resulting in sums greater than 100%. Although Factor Contributing to Ignition is only required when the cause of ignition was coded as: 2) unintentional, 3) failure of equipment or heat source; or 4) act of nature, data is often present when not required. Consequently, any fire in which no factor contributing to ignition was entered was treated as unknown.

In some analyses, all entries in the category of mechanical failure, malfunction (factor contributing to ignition 20-29) are combined and shown as one entry, "mechanical failure or malfunction." This category includes:

21. Automatic control failure;
22. Manual control failure;
23. Leak or break. Includes leaks or breaks from containers or pipes. Excludes operational deficiencies and spill mishaps;
25. Worn out;
26. Backfire. Excludes fires originating as a result of hot catalytic converters;
27. Improper fuel used; Includes the use of gasoline in a kerosene heater and the like; and
20. Mechanical failure or malfunction, other.

Entries in "electrical failure, malfunction" (factor contributing to ignition 30-39) may also be combined into one entry, "electrical failure or malfunction." This category includes:

31. Water-caused short circuit arc;
32. Short-circuit arc from mechanical damage;
33. Short-circuit arc from defective or worn insulation;
34. Unspecified short circuit arc;
35. Arc from faulty contact or broken connector, including broken power lines and loose connections;
36. Arc or spark from operating equipment, switch, or electric fence;
37. Fluorescent light ballast; and
30. Electrical failure or malfunction, other.

The factor contributing to ignition was coded as none, undetermined or left blank in 47% of the non-confined home structure fires, 66% of the associated deaths, 45% of the associated injuries, 55% of the associated direct property damage and 89% of the confined fires.

Type of Material First Ignited (TMI). This field is required only if the Item First Ignited falls within the code range of 00-69. NFPA has created a new code "not required" for this field that is applied when Item First Ignited is in code 70-99 (organic materials, including cooking materials and vegetation, and general materials, such as electrical wire, cable insulation, transformers, tires, books, newspaper, dust, rubbish, etc..) and TMI is blank. The ratio for allocation of unknown data is:

$$\frac{\text{(All fires – TMI Not required)}}{\text{(All fires – TMI Not Required – Undetermined – Blank)}}$$

Heat Source. In NFIRS 5.0, one grouping of codes encompasses various types of open flames and smoking materials. In the past, these had been two separate groupings. A new code was added to NFIRS 5.0, which is code 60: "Heat from open flame or smoking material, other." NFPA treats this code as a partial unknown and allocates it proportionally across the codes in the 61-69 range, shown below.

61. Cigarette;
62. Pipe or cigar;
63. Heat from undetermined smoking material;
64. Match;
65. Lighter: cigarette lighter, cigar lighter;
66. Candle;
67 Warning or road flare, fuse;
68. Backfire from internal combustion engine. Excludes flames and sparks from an exhaust system, (11); and
69. Flame/torch used for lighting. Includes gas light and gas-/liquid-fueled lantern.

In addition to the conventional allocation of missing and undetermined fires, NFPA multiplies fires with codes in the 61-69 range by

$$\frac{\text{All fires in range 60-69}}{\text{All fires in range 61-69}}$$

The downside of this approach is that heat sources that are truly a different type of open flame or

smoking material are erroneously assigned to other categories. The grouping "smoking materials" includes codes 61-63 (cigarettes, pipes or cigars, and heat from undetermined smoking material, with a proportional share of the code 60s and true unknown data.

In non-confined home structure fires, code 60: "heat from open flame or smoking material, other" was entered for 3% of the fires, as well as civilian deaths and injuries and direct property damage. The heat source was undetermined in 34% of the non-confined home structure fires, 57% of the civilian deaths, 31% of the civilian injuries, and 46% of the direct property damage. The heat source was known in 17% of the confined fires, including 1% with heat source code 60.

Equipment Involved in Ignition (EII). NFIRS 5.0 originally defined EII as the piece of equipment that provided the principal heat source to cause ignition if the equipment malfunctioned or was used improperly. In 2006, the definition was modified to "the piece of equipment that provided the principal heat source to cause ignition." However, much of the data predates the change. Individuals who have already been trained with the older definition may not change their practices. To compensate, NFPA treats fires in which EII = NNN and heat source is not in the range of 40-99 as an additional unknown.

To allocate unknown data for EII, the known data is multiplied by

$$\frac{\text{All fires}}{\text{(All fires – blank – undetermined – [fires in which EII =NNN and heat source <>40-99])}}$$

In addition, the partially unclassified codes for broad equipment groupings (i.e., code 100 - heating, ventilation, and air conditioning, other; code 200 - electrical distribution, lighting and power transfer, other; etc.) were allocated proportionally across the individual code choices in their respective broad groupings (heating, ventilation, and air conditioning; electrical distribution, lighting and power transfer, other; etc.). Equipment that is totally unclassified is not allocated further. This approach has the same downside as the allocation of heat source 60 described above. Equipment that is truly different is erroneously assigned to other categories.

In some analyses, various types of equipment are grouped together.

Code Grouping	EII Code	NFIRS definitions
Central heat	132	Furnace or central heating unit
	133	Boiler (power, process or heating)
Fixed or portable space heater	131	Furnace, local heating unit, built-in
	123	Fireplace with insert or stove
	124	Heating stove
	141	Heater, excluding catalytic and oil-filled
	142	Catalytic heater
	143	Oil-filled heater
Fireplace or chimney	120	Fireplace or chimney
	121	Fireplace, masonry
	122	Fireplace, factory-built
	125	Chimney connector or vent connector
	126	Chimney – brick, stone or masonry
	127	Chimney-metal, including stovepipe or flue
Fixed wiring and related equipment	210	Unclassified electrical wiring
	211	Electrical power or utility line
	212	Electrical service supply wires from utility
	213	Electric meter or meter box
	214	Wiring from meter box to circuit breaker
	215	Panel board, switch board or circuit breaker board
	216	Electrical branch circuit
	217	Outlet or receptacle
	218	Wall switch
	219	Ground fault interrupter
Transformers and power supplies	221	Distribution-type transformer
	222	Overcurrent, disconnect equipment
	223	Low-voltage transformer
	224	Generator
	225	Inverter
	226	Uninterrupted power supply (UPS)
	227	Surge protector
	228	Battery charger or rectifier
	229	Battery (all types)
Lamp, bulb or lighting	230	Unclassified lamp or lighting
	231	Lamp-tabletop, floor or desk
	232	Lantern or flashlight
	233	Incandescent lighting fixture
	234	Fluorescent light fixture or ballast
	235	Halogen light fixture or lamp
	236	Sodium or mercury vapor light fixture or lamp

Code Grouping	EII Code	NFIRS definitions
	237	Work or trouble light
	238	Light bulb
	241	Nightlight
	242	Decorative lights – line voltage
	243	Decorative or landscape lighting – low voltage
	244	Sign
Cord or plug	260	Unclassified cord or plug
	261	Power cord or plug, detachable from appliance
	262	Power cord or plug- permanently attached
	263	Extension cord
Torch, burner or soldering iron	331	Welding torch
	332	Cutting torch
	333	Burner, including Bunsen burners
	334	Soldering equipment
Portable cooking or warming equipment	631	Coffee maker or teapot
	632	Food warmer or hot plate
	633	Kettle
	634	Popcorn popper
	635	Pressure cooker or canner
	636	Slow cooker
	637	Toaster, toaster oven, counter-top broiler
	638	Waffle iron, griddle
	639	Wok, frying pan, skillet
	641	Breadmaking machine

The equipment involved in ignition was undetermined, not reported, or coded as no equipment with a heat source code outside the range of 40-99 (non-equipment related heat sources) in 77% of the non-confined fires, 83% of the associated deaths, 70% of the injuries, 78% of the direct property damage, and in 94% of confined cooking equipment fires.

Area of Origin. Two areas of origin: bedroom for more than five people (code 21) and bedroom for less than five people (code 22) are combined and shown as simply "bedroom." Chimney is no longer a valid area of origin code for non-confined fires. The area of origin was unknown or not reported in 12% of non-confined home structure fires, 20% of associated deaths, 6% of associated injuries, and 19% of the direct property damage. It was also unknown in 85% of confined fires excluding those confined to the chimney or flue which were all assumed to have begun in the chimney or flue.

Item First Ignited. In most analyses, mattress and pillows (item first ignited 31) and bedding, blankets, sheets, and comforters (item first ignited 32) are combined and shown as "mattresses and bedding." In many analyses, wearing apparel not on a person (code 34) and wearing apparel on a person (code 35) are combined and shown as "clothing." In some analyses, flammable and combustible liquids and gases, piping and filters (item first ignited 60-69) are combined and

shown together. The item first ignited was undetermined or unreported in 34% of the non-confined structure fires, 57% of the associated deaths, 31% of the associated injuries, 49% of the direct property damage, and in 84% of the confined home fires.

Extent of Fire Spread. All structure fires with incident types indicating a confined fire were shown separately and are assumed to be confined to the object of origin. Fires that spread beyond the room of origin were calculated by summing fires with damage:
a) confined to the floor of origin (code 3), b) confined to the building of origin (code 4), and c) extending beyond building of origin (code 5).

The extent of fire spread was unknown or not reported in 5% of non-confined home structure fires, 2% of associated deaths, 1% of associated injuries, and 2% of the direct property damage.

Item Contributing Most to Flame Spread. The query was restricted to non-confined fires with fire spread extending beyond the room of origin. Rules for item first ignited apply. This is an optional field. Fire departments are also instructed to use a check box if there was no flame spread, if the item contributing to flame spread was the item first ignited, or if the item contributing most to flame spread could not be identified. The item contributing most to flame spread was undetermined or unreported in 72% of the non-confined structure fires that extended beyond the room of origin, 72% of the associated deaths, 61% of the associated injuries, and 66% of the direct property damage.

Structure Status. Properties should be considered occupied and operating when it is customarily in use even if no one is present at the time the fire occurs. Two codes, vacant and secured (code 5) and vacant and unsecured (code 6) were summed to identify fires in vacant buildings. For non-confined home structure fires, structure status was known in 94% of the fires, 97% of the civilian deaths, 98% of civilian injuries, and 96% of the direct property damage. For confined fires, structure status was known in 6% of the fires.

Rounding and percentages. The data shown are estimates and generally rounded. An entry of zero may be a true zero or it may mean that the value rounds to zero. Percentages are calculated from unrounded values. It is quite possible to have a percentage entry of up to 100% even if the rounded number entry is zero. The same rounded value may account for a slightly different percentage share. Because percentages are expressed in integers and not carried out to several decimal places, percentages that appear identical may be associated with slightly different values.

In this analysis, when estimates were derived solely from the NFPA survey, fires were rounded to the nearest 500, civilian deaths were rounded to the nearest five, civilian injuries were rounded to the nearest 25, and direct property damage was rounded to the nearest million dollars. For estimates derived from NFIRS and the NFPA survey, fires were rounded to the nearest hundred, civilian deaths and injuries were rounded to the nearest ten, and direct property damage was rounded to the nearest million dollars.

Inflation. Property damage estimates are not adjusted for inflation unless so indicated. In this analysis, inflation adjusted damage estimates are provided in Table 1, 1A and 1B.

Appendix B.
Methodology and Definitions Used in "Leading Cause" Tables

The cause table reflects relevant causal factors that accounted for at least 2% of the fires in a given occupancy. Only those causes that seemed to describe a scenario are included. Because the causal factors are taken from different fields, some double counting is possible. Percentages are calculated against the total number of structure fires, including both confined and non-confined fires. Bear in mind that every fire has at least three "causes" in the sense that it could have been prevented by changing behavior, heat source, or ignitability of first fuel, the last an aspect not reflected in any of the major cause categories. For example, several of the cause categories in this system refer to types of equipment (cooking, heating, electrical distribution and lighting, clothes dryers and washers, torches). However, the problem may be not with the equipment but with the way it is used. The details in national estimates are derived from the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS). This methodology is based on the coding system used in Version 5.0 of NFIRS. The *NFIRS 5.0 Reference Guide*, containing all of the codes, can be downloaded from http://www.nfirs.fema.gov/documentation/reference/.

Cooking equipment and heating equipment are calculated by summing fires identified by equipment involved in ignition and relevant confined fires. Confined fires will be shown if they account for at least 2% of the incidents. **Confined cooking fires** (cooking fires involving the contents of a cooking vessel without fire extension beyond the vessel) are identified by NFIRS incident type 113.

Confined heating equipment fires include **confined chimney or flue fires (**incident type 114) and **confined fuel burner or boiler** fires (incident type 116). The latter includes delayed ignitions and incidents where flames caused no damage outside the fire box. The two types of confined heating fires may be combined or listed separately, depending on the numbers involved.

Intentional fires are identified by fires with a "1" (intentional) in the field "cause." The estimate includes a proportional share of fires in which the cause was undetermined after investigation, under investigation, or not reported. All fires with intentional causes are included in this category regardless of the age of the person involved. Earlier versions of NFIRS included ignition factor codes for incendiary and suspicious. Intentional fires were deliberately set; they may or may not be incendiary in a legal sense. No age restriction is applied.

Fires caused by **playing with heat source** (typically matches or lighters) are identified by code 19 in the field "factor contributing to ignition." Fires in which the factor contribution to ignition was undetermined (UU), entered as none (NN) or left blank are considered unknown and allocated proportionally. Because factor contributing to ignition is not required for intentional fires, the unknown share, by these definitions, is somewhat larger than it should be.

The heat source field is used to identify fires started by: **smoking materials** (cigarette, code 61; pipe or cigar, code 62; and heat from undetermined smoking material, code 63); **candles** (code 66), **lightning** (code 73); and **spontaneous combustion or chemical reaction** (code 72). Fires started by heat from unclassified open flame or smoking materials (code 60) are allocated proportionally among the "other open flame or smoking material" codes (codes 61-69) in an allocation of partial unknown data. This includes smoking materials and candles. This approach

results in any true unclassified smoking or open flame heat sources such as incense being inappropriately allocated. However, in many fires, this code was used as an unknown.

The equipment involved in ignition field is used to find several cause categories. This category includes equipment that functioned properly and equipment that malfunctioned.

Cooking equipment Non-confined fire refers to equipment used to cook, heat or warm food (codes 620-649 and 654). Fire in which ranges, ovens or microwave ovens, food warming appliances, fixed or portable cooking appliances, deep fat fryers, open fired charcoal or gas grills, grease hoods or ducts, or other cooking appliances) were involved in the ignition are said to be caused by cooking equipment. Food preparation devices that do not involve heating, such as can openers or food processors, are not included here. As noted in Appendix A, a proportional share of unclassified kitchen and cooking equipment (code 600) is included here.

Heating equipment Non-confined fire (codes 120-199) includes central heat, portable and fixed heaters (including wood stoves), fireplaces, chimneys, hot water heaters, and heat transfer equipment such as hot air ducts or hot water pipes. Heat pumps are not included. As noted in Appendix A, a proportional share of unclassified heating, ventilation and air condition equipment (code 100) is included here.

Electrical distribution and lighting equipment (codes 200-299) include: fixed wiring; transformers; associated overcurrent or disconnect equipment such as fuses or circuit breakers; meters; meter boxes; power switch gear; switches, receptacles and outlets; light fixtures, lamps, bulbs or lighting; signs; cords and plugs; generators, transformers, inverters, batteries and battery charges.

Torch, burner or soldering iron (codes 331-334) includes welding torches, cutting torches, Bunsen burners, plumber furnaces, blowtorches, and soldering equipment. As noted in Appendix A, a proportional share of shop tools and industrial equipment (code 300) is included here.

Clothes dryer or washer (codes 811, 813 and 814) includes clothes dryers alone, washer and dryer combinations within one frame, and washing machines for clothes. As noted in Appendix A, a proportional share of unclassified personal and household equipment (code 800) is included here.

Electronic, office or entertainment equipment (codes 700-799) includes: computers and related equipment; calculators and adding machines; telephones or answering machines; copiers; fax machines; paper shredders; typewriters; postage meters; other office equipment; musical instruments; stereo systems and/or components; televisions and cable TV converter boxes,, cameras, excluding professional television studio cameras, video equipment and other electronic equipment. Older versions of NFIRS had a code for electronic equipment that included radar, X-rays, computers, telephones, and transmitter equipment.

Shop tools and industrial equipment excluding torches, burners or soldering irons (codes 300-330, 335-399) includes power tools; painting equipment; compressors; atomizing equipment; pumps; wet/dry vacuums; hoists, lifts or cranes; powered jacking equipment; water or gas drilling equipment; unclassified hydraulic equipment; heat-treating equipment; incinerators, industrial furnaces, ovens or kilns; pumps; compressors; internal combustion

engines; conveyors; printing presses; casting, molding; or forging equipment; heat treating equipment; tar kettles; working or shaping machines; coating machines; chemical process equipment; waste recovery equipment; power transfer equipment; power takeoff; powered valves; bearings or brakes; picking, carding or weaving machines; testing equipment; gas regulators; separate motors; non-vehicular internal combustion engines; and unclassified shop tools and industrial equipment. As noted in Appendix A, a proportional share of shop tools and industrial equipment (code 300) is included here.

Medical equipment (codes 410-419) includes: dental, medical or other powered bed, chair or wheelchair; dental equipment; dialysis equipment; medical monitoring and imaging equipment; oxygen administration equipment; radiological equipment; medical sterilizers, therapeutic equipment and unclassified medical equipment. As noted in Appendix A, a proportional share of commercial and medical equipment (code 400) is included here.

Mobile property (vehicle) describes fires in which some type of mobile property was involved in ignition, regardless of whether the mobile property itself burned (mobile property involved codes 2 and 3).

Exposures are fires that are caused by the spread of or from another fire. These were identified by factor contributing to ignition code 71. This code is automatically applied when the exposure number is greater than zero.