HOME STRUCTURE FIRES

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May 2011

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 373,900 reported home structure fires per year during the five-year-period of 2005-2009. These fires caused an estimated average of 2,650 civilian deaths, 12,890 civilian injuries, and $7.1 billion in direct property damage per year. 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. The remainder occurred in apartments or similar properties.

Cooking equipment is the leading cause of home structure fires and home fire injuries, while smoking materials remain the leading causes 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; 24% resulted from fires originating in the living room, family room, or den; and 15% were caused by fires starting in the kitchen. Almost two-thirds of home fire deaths resulted from fires in which no smoke alarms were present or in which smoke alarms were present but failed to operate.

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

Acknowledgements

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

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

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

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NFPA No. USS12G

Executive Summary

During the five-year period of 2005-2009, U.S. fire departments responded to an estimated average of 373,900 home structure fires per year. These fires caused an annual average of 2,650 civilian deaths, 12,890 civilian fire injuries, and $7.1 billion in direct property damage. Home fires accounted for 73% of all reported structure fires, 92% of civilian structure fire deaths, 86% of the civilian structure fire injuries, and 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, even if the damage was to contents only.

The statistics about fires and associated losses 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. These national 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.

During 2005-2009, roughly one of every 310 households had a reported home fire per year.

Substantial progress has been made since 1980, the first year in which national estimates of specific fire problems were available. Reported home fires fell 51% from 734,000 in 1980 to 362,500 in 2009. Home structure fire deaths fell 51% from 5,200 in 1980 to 2,565 in 2009. The declines in deaths alternated with plateaus, with such plateaus seen in the mid to late 1980s's, a second in the mid 1990s, and a third occurring since 1999. In 2009, reported home fires and home fire deaths were both at their lowest point since 1980.

In 2005-2009, almost half (47%) of reported home structure fires and more than half (54%) of home structure fire deaths occurred in the cooler months of November through March. This reflects the influence of heating equipment fires. Reported home fires peaked around the dinner hours of 5:00 to 8:00 p.m. Only one-fifth (20%) of the reported home fires occurred between 11:00 p.m. and 7:00 a.m., but half (50%) 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. The Consumer Product Safety Commission found that in 2004-2005, for every household cooking fire reported to the fire department, U.S. households experienced 50 cooking equipment fires that they did not report.

Smoking materials have historically caused the largest number of fire deaths, and this was the case in 2005-2009. Heating equipment was the second leading cause of home fires and home fire deaths but the leading cause of deaths resulting from fires in one- or two-family homes.

Most reported home fires were small. Flame damage spread beyond the room of origin in only one-quarter (24%) of the reported fires. Reported fires originating in the kitchen spread beyond the room of origin only 6% of the time.

Two of every five (41%) reported home fires started in the kitchen or cooking area. These fires caused 15% of the home fire deaths and more than one-third (37%) of the reported fire injuries. Apartment fires were more likely to start in the kitchen than were fires in one- or two-family homes. The 8% of home structure fires originating in the bedroom caused one-quarter (25%) of the civilian deaths and one-fifth (21%) 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. The 4% of home

structure fires originating in the living room, family room, or den caused one-quarter (24%) of the civilian fire deaths and 11% of the civilian injuries.

Almost two-thirds (64%) of home fire deaths resulted from fires in one of three areas: the bedroom; the living room, family room or den; or the kitchen. These areas were examined in greater detail. Almost three-quarters (73%) of the victims of bedroom fires were in the area or origin at the time of the incident, as were almost half (47%) 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.

While two-thirds to three-quarters of the deaths from fires starting in these three areas resulted from fires with flame damage beyond the room of origin, four out of five (81%) injuries from kitchen fires were caused by fires that were confined to the kitchen.

In fires originating in these three areas and spreading beyond the rooms of origin, two categories of items: 1) structural members or framing, and 2) interior wall coverings, were in the top four items contributing to flame spread for both fires and deaths resulting from these fires.

In almost three-quarters of the fires that started in the bedroom, flame damage spread beyond the room. However, only one-quarter (28%) 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. Not surprisingly, cooking materials, including food, were first ignited in almost two-thirds of the kitchen fires and kitchen fire injuries and in almost one-third of the associated 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 7% of fire deaths resulting from fires starting in the bedroom and 3% of deaths from fires originating in the kitchen. Mattresses or bedding were first ignited in 7% of the deaths from fires starting in the living room.

Properly installed and maintained fire protection can prevent most fire deaths. More than one-third (38%) of fatal home fire injuries resulted from fires in properties with no smoke alarms at all. One-quarter (24%) were caused by fires in which smoke alarms were present but failed to operate. Roughly one-third (37%) of home fire deaths resulted from fires with operating smoke alarms.

John Hall of NFPA reported that fire sprinklers were present in only 6% of reported home fires. 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.

More progress has been made in some areas than in others. Almost all homes today have at least one smoke alarm. However, only a minority have interconnected smoke alarms. When smoke alarms are interconnected, all alarms will sound when one is activated. This means that the warning will sound throughout the home.

Historically, the largest number of fire deaths resulted from fires starting in living rooms, family rooms, or dens. In four of the last five years for which data is available, the number of fire deaths from fires starting in the bedroom was higher than the number of deaths from fires starting in the living room, family room, or den.

Compared to home fire deaths in 1980-1984, the average number of deaths in 2005-2009 resulting from fires starting in the

- living room, family room, or den fell 67%;
- bedroom fell 44%; and
- kitchen fell 38%.

The two leading items in home fire deaths remain 1) upholstered furniture, first ignited in 19% of home fire deaths in 2005-2009, and 2) mattresses and bedding, first ignited in 14% of the deaths. However, the average number of deaths from fires starting with these items decreased 59% and 52%, respectively, from the 1980-1984 averages to the 2005-2009 average.

The annual average death toll from fires started by smoking materials was 61% lower in 2005-2009 than it was in 1980-1984. The average number of deaths from fires started by lighters, candles, or matches was 49% lower in the more recent period than 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. The poor economy has led to an increase in housing units that are vacant for a period of time and those that were vacant year round. While 10% of housing units were vacant year-round in 2005-2009, only 6% of home structure fires occurred in vacant properties. Vacant properties do pose some special concerns. Roughly half (48%) of the fires in vacant homes were intentionally set, compared to only 8% of home structure fires overall.

Flame damage spread beyond the building of origin in 10% of vacant home fires compared to only 3% of home fires overall.

This analysis shows that considerable progress has been made but more is left to be done. Human error is a factor in many fires. However, equipment and other product redesign, such as the "fire-safe" cigarette which stops burning if not actively smoked, or automatic shut-offs on heating equipment, cooking equipment, or irons can improve safety. Such changes may be the most effective and inexpensive approach to fire prevention. The U.S. Consumer Product Safety Commission issues safety standards and recalls of unsafe consumer products.

The vast majority of homes have at least one smoke alarm, but almost two-thirds of the deaths resulted from fires in homes without working smoke alarms. Public education with respect to fire safety is clearly needed to address all types of home fires. More information is available at www.nfpa.org/smokealarms.

People who are in the room of fire origin may be intimately involved with ignition. Traditional means of fire protection may not save them. Even if they are not intimately involved, their proximity to the fire 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. For more information on how sprinklers can help, see http://www.firesprinklerinitiative.org/.

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U.S. Home Structure Fires

U.S. fire departments responded to an estimated average of 373,900 home structure[1] fires per year during 2005-2009. These fires caused an annual average of

- 2,650 civilian fire deaths,
- 12,890 civilian fire injuries, and
- $7.1 billion in direct damage.

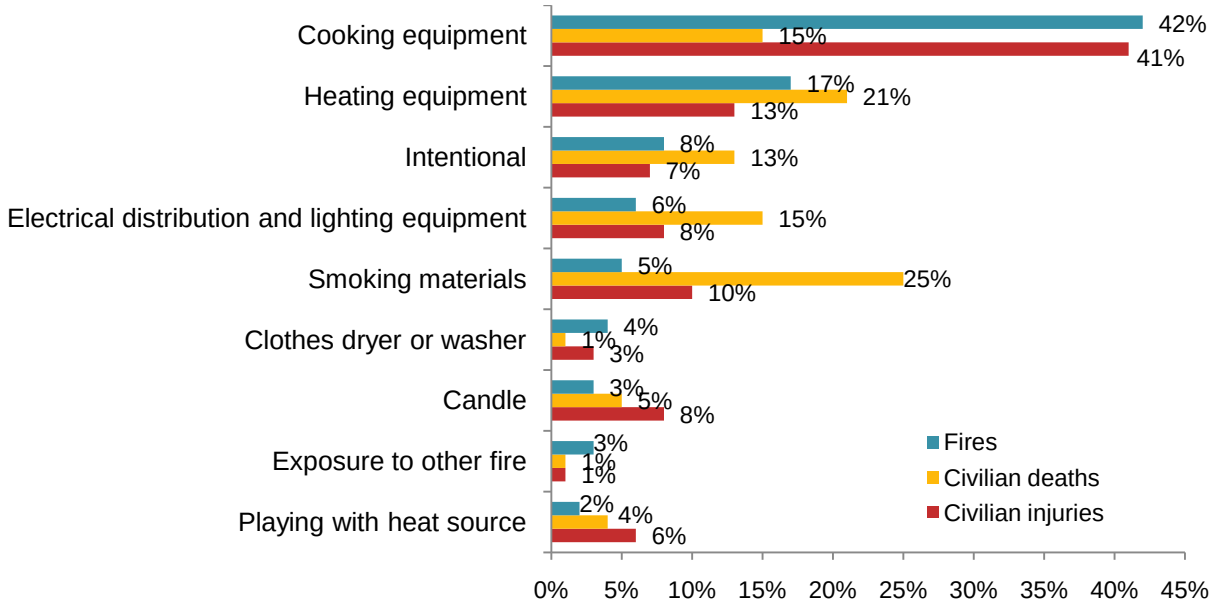
- 92% of all structure fire deaths resulted from home fires.
- On average, seven people died in U.S. home fires every day.

Causes and Circumstances of Home Fires

Details from the U.S. Fire Administration's National Fire Incident Reporting System show that in 2005-2009:

- 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: 2005-2009



Almost all homes have at least one smoke alarm, but almost two-thirds of reported home fire deaths in 2005-2009 resulted from fires in homes with no smoke alarms or no working smoke alarms

[1]Homes include one- or two-family homes, manufactured homes, apartments, townhouses, and rowhouses, regardless of ownership. 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.

Kitchens were the leading area of fire origin.

- Two of every five (41%) reported home structure fires started in the kitchen. These fires caused more than one-third (37%) of civilian home fire injuries.
  - 15% of home fire deaths also resulted from kitchen fires.

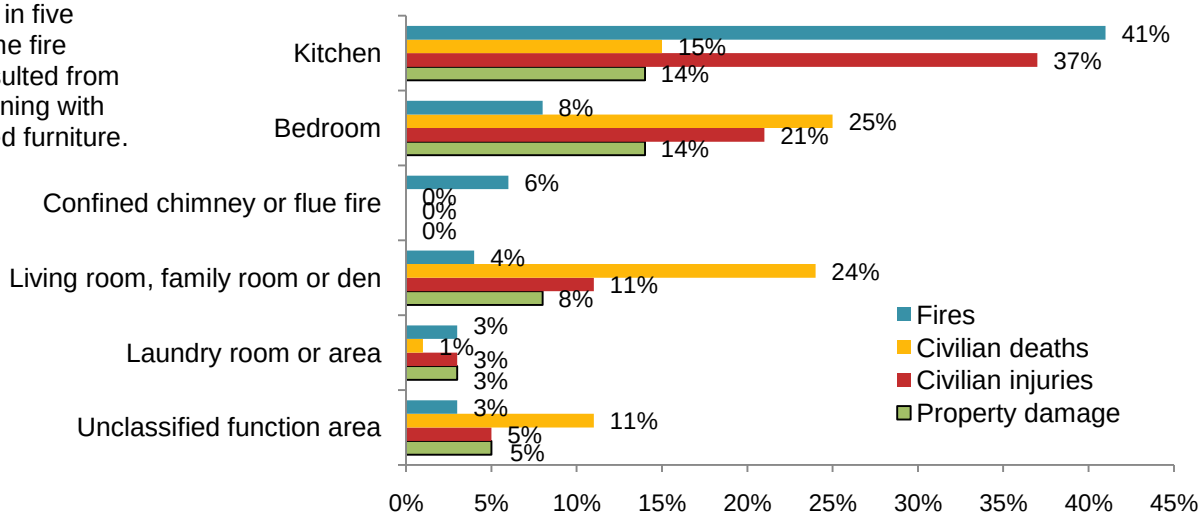
- 8% of reported home fires started in the bedroom. These fires caused one-quarter (25%) of home fire deaths and one in five (21%) of home fire injuries.

- 4% of home fires started in the living room, family room, or den. These fires 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: 2005-2009

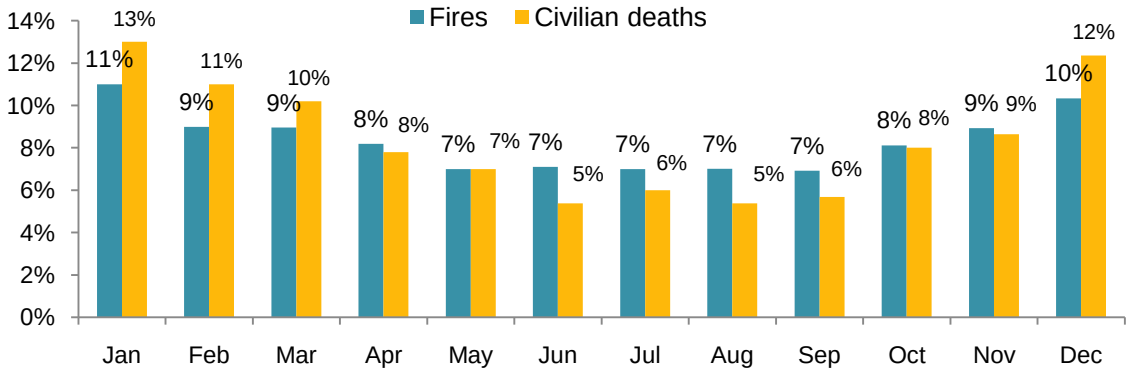
Fact: One in five (19%) home fire deaths resulted from fires beginning with upholstered furniture.



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.

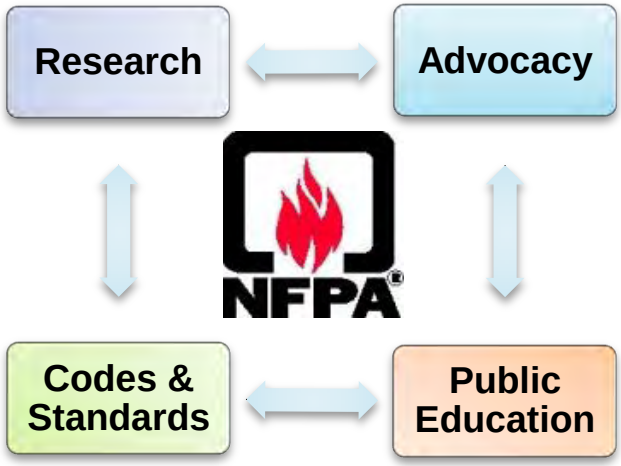
Home Structure Fires by Month: 2005-2009



NFPA's Fire Safety Resources

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

www.nfpa.org/research



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

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

Simply put, smoke alarms and fire sprinklers save lives.

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;

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 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 2005-2009.

Reported home fires by time

More than 1,000 home structure fires were reported on an average day. This translates to 43 fires every hour or one reported home fire every 84 seconds.

Home fires killed an average of seven people every day.

A civilian (non-firefighter) home fire injury is reported every 41 minutes.

Home fires cause roughly $225 in damage every second.

The odds of a reported fire

According to the U.S Census Bureau, the U.S, resident population averaged 301 million people during 2005-2009 and roughly 115 million households. That means that, on average during this period:

- Roughly one of 800 people had a reported home fire each year.
- Roughly one of every 310 households had a reported home fire each year.
- On average, one of every 114,000 U.S. residents died in a home fire per year.

Any home fire, including those 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.

Home Structure Fires: Overview

Almost 374,000 home structure fires were reported per year.
During the five-year period of 2005-2009, U.S. fire departments responded to an estimated average of 373,900 home structure fires per year. These fires caused an annual average of 2,650 civilian deaths, 12,890 civilian fire injuries, and $7.1 billion in direct property damage. On average, seven people died in U.S. home fires every 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
2005-2009 Annual Averages

Property Use	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
One- or two-family home or manufactured home	264,500	71%	2,210	84%	8,860	69%	$5,895	83%
Apartment, tenement or flat	109,400	29%	440	17%	4,030	31%	$1,251	18%
Total	373,900	100%	2,650	100%	12,890	100%	$7,146	100%

Source: NFIRS 5.0 and NFPA survey.

On average, a fire was reported in roughly one of every 310 households per year.
During 2005-2009, an average of 116 million households existed in the United States.[1] Dividing the total number of households by the number of home fires yields a rate of roughly one reported fire per every 310 housing units annually.

92% of civilian structure fire deaths resulted from fires in the home.
Based on annual averages for 2005-2009, the 373,900 reported home structure fires accounted for 73% of the 512,200 structure fires, 92% of the 2,880 civilian structure fire deaths, 86% of the 14,940 civilian structure fire injuries, and 68% of the $10.5 billion in direct property loss.

Reported home structure fires fell to a new low in 2009, 51% lower than in 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, respectively, based on data collected by NFPA's survey.[2]

[1] U.S. Census Bureau, "Families and Living Arrangements" reported as "Households, Families, Subfamilies, and Married Couples" in *Statistical Abstract of the United States*, 2006, 2008 and 2010 editions.
[2] The NFPA survey is separate from NFIRS. Although the definitions are the same, the survey does not include provisions for capturing unknown data. Survey estimates are not restricted by NFIRS version. Because of these differences, 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. These 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.

Homes include:

- detached dwellings, duplexes, and manufactured housing, and
- apartments, tenements, and flats, townhouses, rowhouses, and other multi-family housing, regardless of ownership.. The term "apartment" includes all multi-family housing.

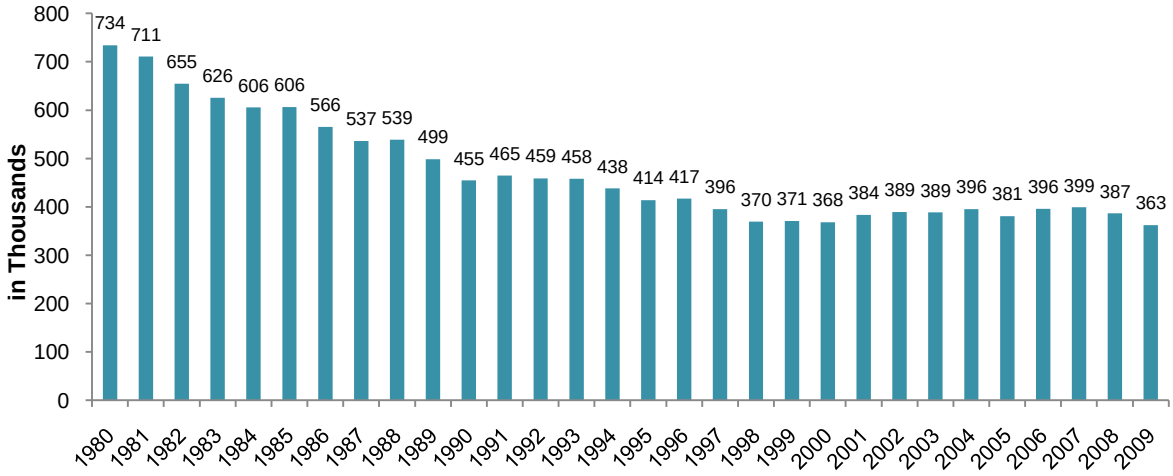
In general, any fire that occurs in or in a structure is considered a structure fire, even if the fire was limited to contents and the building itself was not damaged.

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 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 grouped by incident type.

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 1. Reported Home Structure Fires by Year: 1980-2009



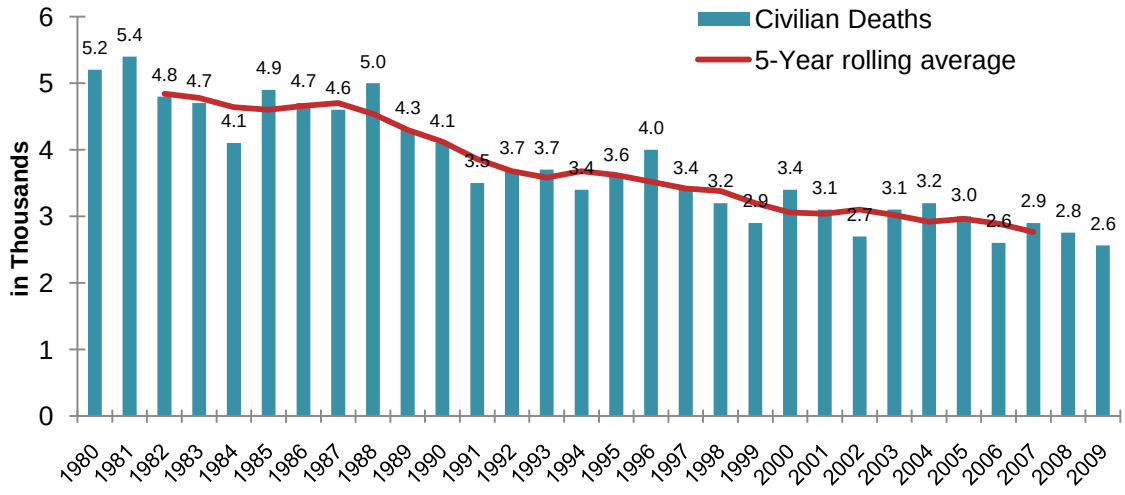
Source: NFPA survey.

Figure 1 shows that the 362,500 home structure fires reported in 2009 is 51% less than the 734,000 reported in 1980. Fewer home fires were reported in 2009 than in any of the earlier years studied. The decline was sharpest during the 1980s. The downward trend continued more slowly in the 1990s. From 2008 to 2009, these fires fell 6%. The trend has been relatively flat since the introduction of NFIRS 5.0 in 1999.

Home fire deaths hit a new low in 2009.

Figure 2 shows that the home fire death toll in 2009 was 51% lower than the 5,200 reported in 1980. Home fire deaths fell below 3,000 in only six years since NFPA began collecting data, with 2,895 in 1999; 2,670 in 2002, the previous record low of 2,580 in 2006, 2,865 in 2007, 2,755 in 2008, and 2,565 in 2009.

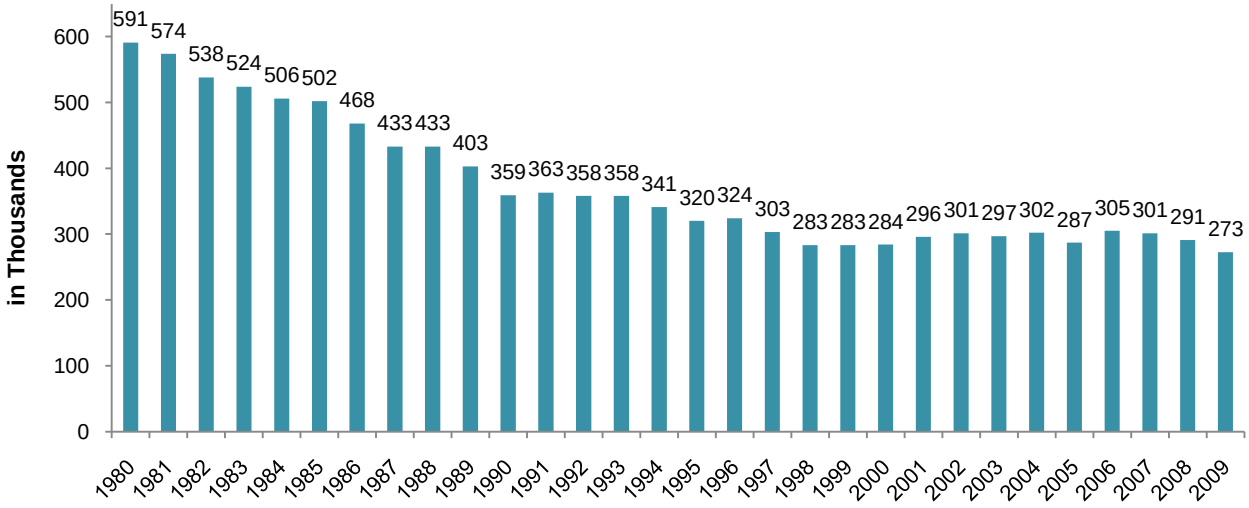
Figure 2. Reported Home Structure Fire Deaths by Year: 1980-2009



Source: NFPA survey.

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.

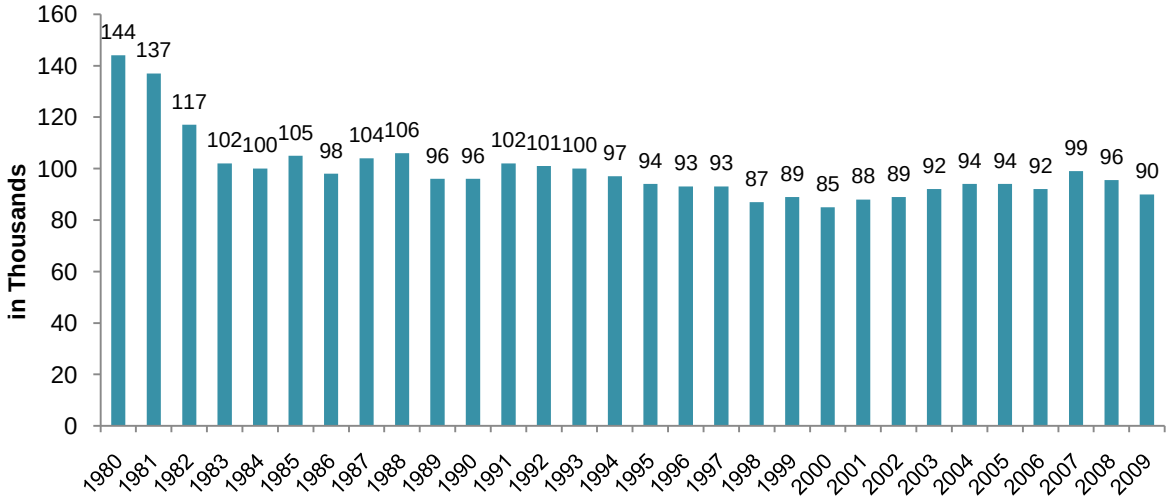
Figure 3. Reported Structure Fires in One- or Two-Family Homes by Year: 1980-2009



Source: NFPA survey.

The trend is rather different in apartments. Figure 4 shows that apartment fires fell sharply in the early 1980s, declined more gradually in the 1990s, but have been relatively stable since then. The smallest number of apartment fires was reported in 2000. Two-thirds (67%) of the apartment fires reported during 2005-2009 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 fires are more likely to be reported than are minor fires in one- or two-family homes.

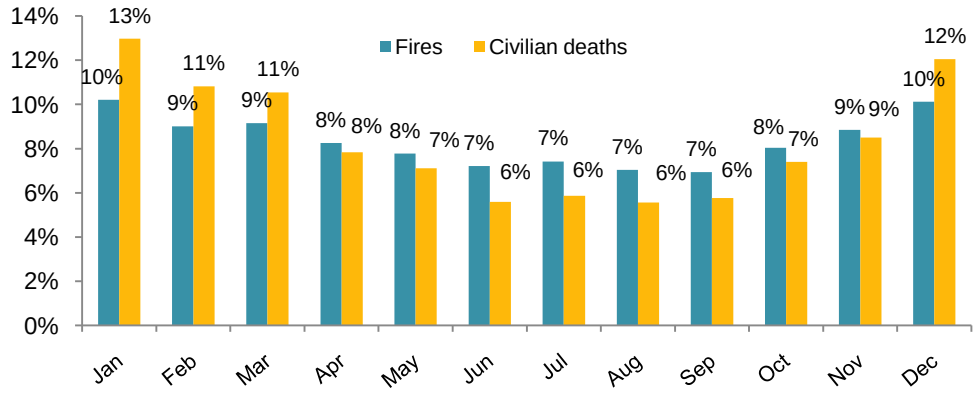
Figure 4. Reported Structure Fires in Apartments by Year: 1980-2009



Source: NFPA survey.

Home fires and fire deaths peak in the cooler months.
Figure 5 and Table 2 show that 47% of reported home structure fires and 54% of home structure fire deaths occurred in the months of November through March. This reflects the influence of heating equipment fires. Almost three-quarters (71%) of home heating equipment fires in 2004-2008 were reported in these five months, as were four out of five (79%) home heating equipment fire deaths.[3] Sunday was the peak day for reported home fires while home fire deaths and injuries peaked on Saturday. Sunday ranked second in deaths and injuries. (See Table 3.)

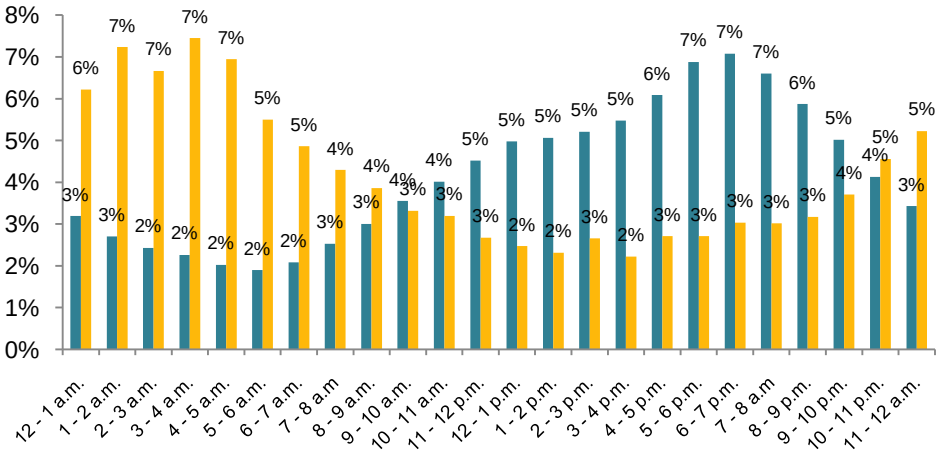
Figure 5. Home Structure Fires and Deaths by Month: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Fires 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-fifth (20%) of the reported home fires occurred between 11:00 p.m. and 7:00 a.m. but half (50%) of the home fire deaths resulted from incidents reported during these hours. The patterns of when fires and fatal fire injuries occur are similar in one- or two-family homes and in apartments.

Figure 6. Home Structure Fires by Alarm Time: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

[3] John R. Hall, Jr. *Home Fires Involving Heating Equipment,* Quincy, MA: National Fire Protection Association, 2010, pp. 15, 29.

Leading Causes of Reported Home Structure Fires

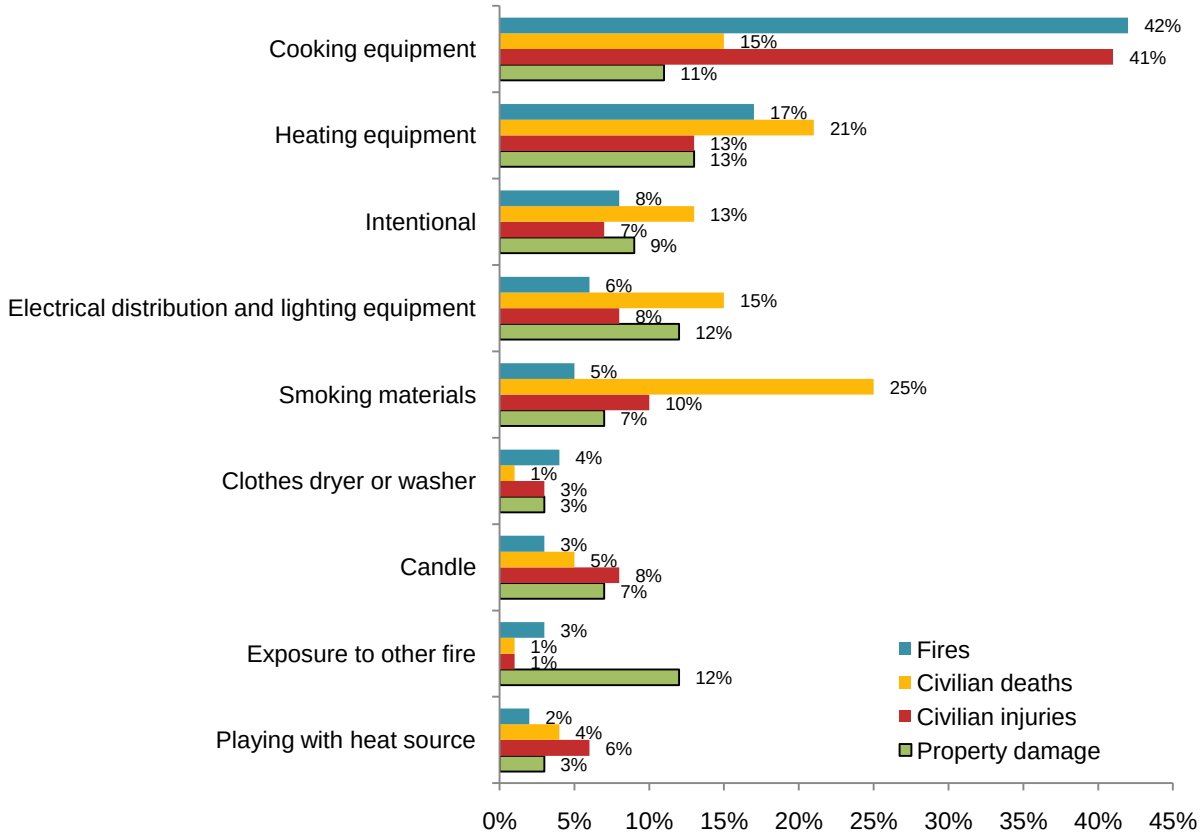
Table 5 and Figure 7 show the leading causes of home structure fires with data summarized from several NFIRS fields. Cooking equipment continues to be the leading cause of home structure fires and civilian fire injuries. Smoking materials have historically caused the largest number of fire deaths. This was still the case in 2005-2009. However, heating equipment was the leading cause of deaths resulting from fires in one- or two-family homes but only the fifth leading cause of deaths from apartment fires. Cooking equipment was the second leading cause of apartment fire deaths after smoking.

Each of the causes shown in the graph will be discussed in more detail on the following pages. When some type of equipment is shown as a cause, it means the equipment was involved in the ignition. It need not mean that the equipment was defective or malfunctioned. In many cases, the equipment was used improperly. 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. 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. In some versions of this report, confined fires were not included in estimates of intentional fires or fires started by smoking, playing with heat source, and candles. They were included here. Also, the methodology used to analyze equipment involved in ignition has been modified, resulting in higher estimates than were shown in some earlier studies.

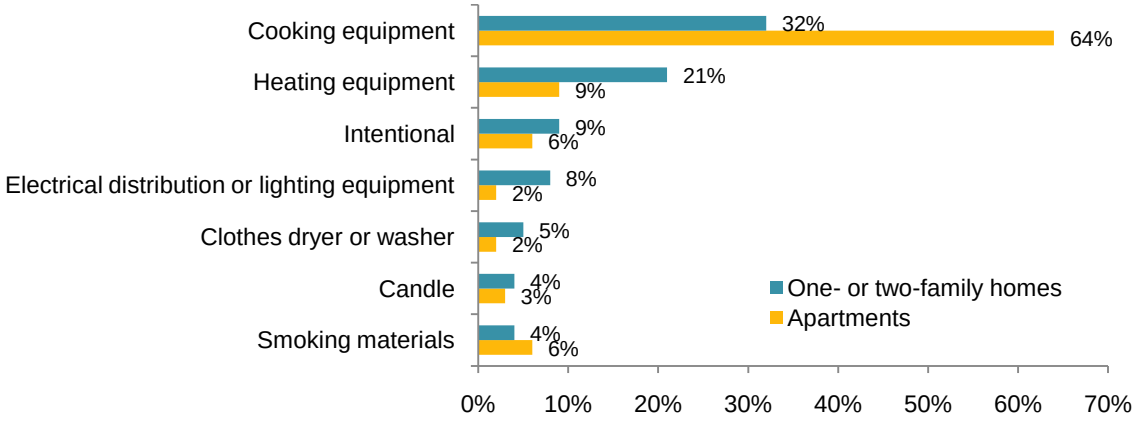
Figure 7. Leading Causes of Home Structure Fires: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Leading fire causes differ for one- and two-family homes vs. apartments.
Figure 8 and Tables 5A and 5B show that the cause profile for apartment fires differs markedly from the profile for one- or two-family home fires. Because reported fires in one-or two-family homes outnumber apartment fires by more than two to one, the fires in one- or two-family homes dominate the cause profile.

Figure 8. Leading Causes of Structure Fires in One- or Two-Family Homes and Apartments: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

The systems that tend to be centrally installed, maintained and supervised in apartment buildings, such as heating and electrical distribution equipment, cause a smaller share of the fires in apartments than in one- or two-family homes. Those causes that reflect more on 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 than in one- or two-family home, resulting in a different cause distribution.

Human Error

Human errors usually play a role in equipment-related fires. When systems pass into the jurisdiction of regulatory authorities and central management by professionals, greater safety typically results.

Although human errors are often involved, equipment and other product redesign, such as the "fire-safe" cigarette which stops burning if not actively smoked, or automatic shut-offs on heating equipment, cooking equipment, or irons 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 after a fire has begun.

Four of every ten reported home fires were cooking fires.
Cooking equipment was the leading cause of home fires and home fire injuries, tied for the third leading cause of home fire deaths, and the fourth leading cause 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). Human error was a factor in many of these fires. For example, unattended equipment was a contributing factor in roughly one-third of the cooking fires reported in 2003-2006.[4] In 2005-2009, cooking equipment was involved in an estimated annual average of 155,400 reported home structure fires, 390 civilian fire deaths, 4,800 civilian injuries, and $771 million in direct property damage.

Cooking equipment was involved in 42% of the reported home structure fires, 15% of the home fire deaths, 41% of the home fire injuries, and 11% of the direct property damage. Cooking equipment was involved in almost two-thirds (64%) of the reported apartment fires but only one-third (32%) 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 (58%) five home fires involving cooking equipment and one-quarter (24%) of all reported home fires.

[4] Marty Ahrens *Home Fires Involving Cooking Equipment,* Quincy, MA: National Fire Protection Association, Fire Analysis and Research Division, November 2009, pp. 8-9.
[5] For purposes of this analysis, cooking equipment was assumed to be involved in all confined cooking fires.

The 2004-2005 CPSC's Residential Fire Survey asked about all fires, including incidents that were not attended by the fire service.[6] They estimate 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. They 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.

Additional information 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 www.nfpa.org/cooking.

Heating equipment caused 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 2005-2009, heating equipment was involved in the ignition of an estimated annual average of 64,100 reported home structure fires that resulted in an average of 560 civilian fire deaths, 1,620 civilian injuries, and $904 million in direct property damage per year.

Heating equipment was involved in 17% of the reported home structure fires, 21% of the home fire deaths, 13% of the home fire injuries, and 13% of the direct property damage. Overall, heating equipment ranked second in home fires, home fire deaths and home fire injuries, and first in direct property damage. Space heaters, including portable heaters and those that are permanently installed, were involved in four of every five home heating fire deaths and in 17% of overall home fire deaths.

Heating equipment was involved in 21% of the fires in one- or two-family homes but only 9% of the apartment fires. One-quarter (25%) of the fatal fire injuries occurring in one- or two-family homes resulted from fires involving heating equipment compared to only 8% of the apartment 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.

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 www.nfpa.org/heating.

[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.

Smoking materials caused one of every four home fire deaths.
Smoking materials have historically been the leading cause of home fire deaths. The pattern held true in this analysis. During 2005-2009, smoking materials were the heat source in an annual average of 18,900 reported home structure fires, 660 civilian fire deaths, 1,270 civilian fire injuries, and $492 million in direct property damage. 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 25% of the home fire deaths. These materials also caused 10% of all reported home fire injuries and 7% of the direct property damage. One-third (32%) of the apartment fire deaths resulted from fires started by smoking materials. Smoking material incidents ranked fifth in number of 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.

Additional information 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 www.nfpa.org/smoking.

Intentionally set fires ranked third in home structure fires.
During 2005-2009, intentional firesetting caused an average of 29,400 reported home structure fires, 340 civilian fire deaths, 920 civilian injuries, and $633 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, fifth in home fire deaths and direct property damage, and sixth in civilian injuries. Intentional fires, defined in the *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.

Additional information may be found in NFPA's report, *Intentional Fires and Arson,* by John R. Hall, Jr. Fire and life-safety educators may be interested in using the PowerPoint presentation, "Preventing Arson Together." This presentation may be downloaded from www.nfpa.org/arson.

On average, electrical distribution and lighting equipment was involved in 23,400 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 2005-2009, electrical distribution and lighting equipment was involved in the ignition of 23,400 reported home structure fires, on average, per year. These fires caused an annual average of 390 civilian fire deaths, 970 civilian fire injuries, and $822 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), 15% of the home fire deaths, 8% of the home fire injuries, and 12% of the direct property damage.

Overall, electrical distribution and lighting equipment ranked fourth in home fires, third in home fire deaths (tied with cooking equipment) and direct property damage, and fifth in home fire injuries.

Electrical factors can play a role in fires involving any type of equipment powered by electricity, including 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, 17% of home fire deaths, 12% of home fire injuries, and 22% of the direct property damage. 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 www.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 www.nfpa.org/electricalsafety.

Clothes dryers and washers were involved in 4% of home structure fires.
During 2005-2009, clothes dryers and washers were involved in the ignition of an average of 15,200 non-confined home structure fires per year.[7] These fires caused an annual average of 30 civilian fire deaths, 440 civilian fire injuries, and $203 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.

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.

[7] These estimates exclude any dryer or washer fires with confined fire incident types..

Candles were the fourth leading cause of reported home fire injuries.
During 2005-2009, candles caused estimated annual averages of 12,900 reported home structure fires, 140 home fire deaths, 1,040 home fire injuries, and $471 million in direct property damage. A proportional share of fires with heat sources from unclassified open flame or smoking materials are included in the candle and smoking material estimates.

Candles caused 3% of the home fires, 5% of the home fire deaths, 8% of the home fire injuries, and 7% of the direct property damage. Candles ranked seventh among the leading cause categories in number of fires and in direct property damage, sixth in home fire deaths, and fourth in home fire injuries.

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

Exposure to other fires was the second 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 2005-2009, exposures caused an average of 12,400 reported home structure fires, 20 civilian fire deaths, 70 civilian fire injuries, and $853 million in direct property damage per year. Exposures caused 3% of the home structure fires, 1% of the home fire deaths and injuries, and 12% of the direct property damage. Exposure fires ranked eighth among the leading causes in number of reported home fires, ninth in home fire deaths and injuries and second in direct property damage.

Playing with heat source caused 2% of home fires but 4% of home fire deaths.
During 2005-2009, people, typically children, playing with fire or other heat sources started an estimated annual average of 7,700 home structure fires. These fires caused an average of 100 civilian fire deaths, 750 civilian fire injuries, and $192 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 4% of the home fire deaths, 6% of the home fire injuries, and 3% of the direct property damage.

Additional information on this topic may be found in NFPA's report, *Children Playing with Fire,* by John R. Hall, Jr. 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 www.nfpa.org/1035 for more information.

More Detailed Information about Fire Circumstances

Fires can be prevented or mitigated in a variety of ways. The likelihood of fire may be reduced by changes to heat sources, in behavior, or to the potential fuel source. Should a fire start, casualties and property damage can be minimized by fire protection such as smoke alarms that provide an early warning, home fire sprinklers that can control or extinguish a fire, and by compartmentation that prevents a fire from spreading from one area to another. The previous section focused on major cause scenarios. As mentioned earlier, this analysis also includes information on the equipment involved in ignition, heat source, factor contributing to ignition, area of fire origin, item first ignited, extent of flame damage, smoke alarms and automatic suppression systems. The more detailed information in this section may be used in a variety of fire prevention strategies. The highlights of the details on equipment involved in ignition and heat sources were provided on the previous pages. Tables 7 and 8 provide more specific information on these two factors.

Home fires started by some type of operating equipment caused 38% of home fire deaths.
Table 8 shows that some type of operating equipment was the heat source in an average of 1,010, or 38%, of the home structure fire deaths per year. Heat from operating equipment started an average of 198,100, or 53% of all reported home fires annually. The specific type of equipment involved does not matter when heat source is discussed.

Operating equipment heat sources include:

- Radiated or conducted heat from operating equipment (76,000 fires and 360 deaths per year),
- Electrical arcing (34,500 fires and 300 deaths per year);
- Sparks, embers or flames from operating equipment (22,800 fires and 150 deaths annually); and
- Unclassified heat from powered equipment (64,800 fires and 200 deaths per year).

Table 8 also shows that small open flames from candles, lighters and matches, were the heat sources in an average of 400, or 15%, of the deaths per year and 33,600, or 9%, 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%.

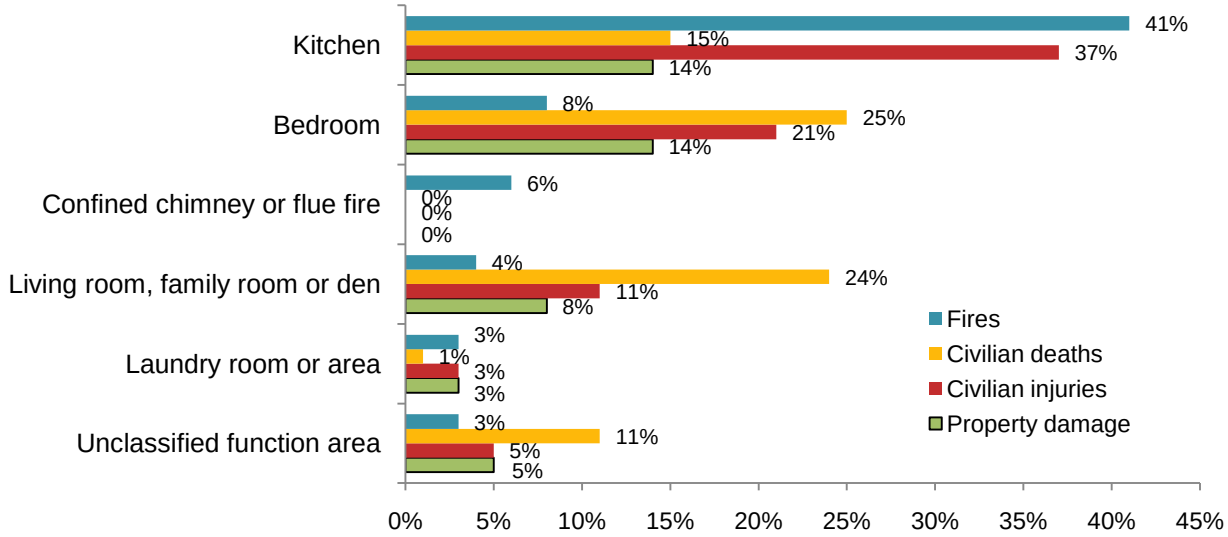
Table 9 shows that 550, or one-fifth (21%), of the home fire deaths resulted from fires in which a heat source was too close to a combustible. Heat sources in this scenario include cooking and heating equipment, candles, lamps and bulbs, and a variety of other products that produce heat. An open flame 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 17% 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.

An abandoned or discarded material was a factor in 16% of the deaths, and unattended equipment contributed to fires causing 6% of the deaths.

Kitchens were the leading area of origin for home structure fires.
Figure 9 and Table 10 show that two of every five (41%) home structure fires started in the kitchen or cooking area. Fifteen percent of the civilian deaths, 37% of the civilian injuries, and 14% of the direct property damage resulted from these fires. Almost two-thirds (63%) of the reported apartment fires and one-third (32%) of the fires in one- or two-family homes originated in the kitchen.

Figure 9. Leading Areas of Origin in Home Structure Fires: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

The eight percent of home structure fires originating in the bedroom caused one-quarter (25%) of the civilian deaths, one of every five (21%) of the civilian injuries, and 14% of the direct property damage. The four percent 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.

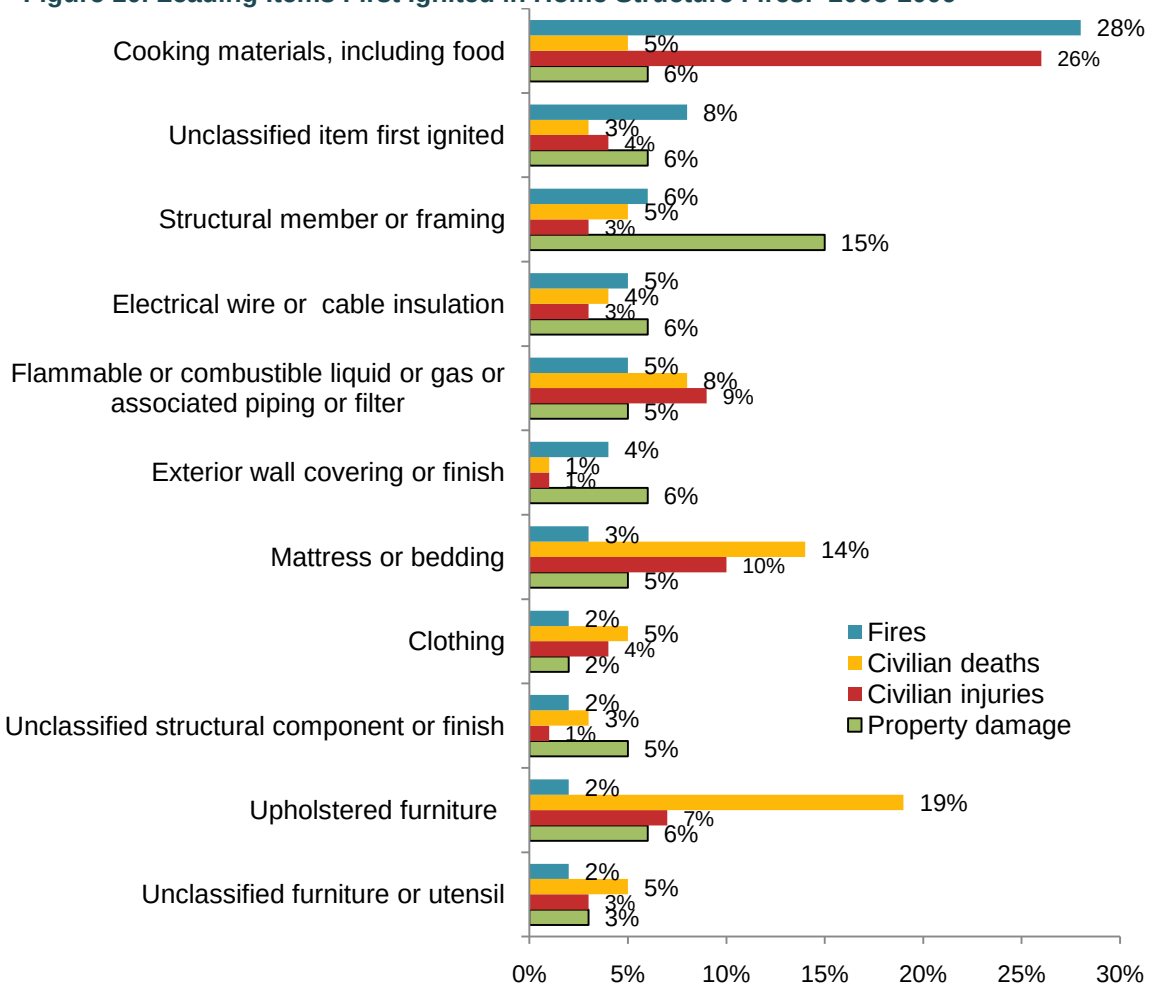
Six percent of home fires (8% in one- or two-family homes and 1% in apartments) were reported as confined chimney or flue fires.

One of every five home fire deaths resulted from fires starting with upholstered furniture.
Cooking materials, including food, were the items first ignited in more than one-quarter (28%) 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, 5% started

when electrical wire or cable insulation ignited; and another 5% started when flammable or combustible liquids or gases or associated piping or filters caught fire.

Although mattresses or bedding were first ignited in only 3% of the fires, 14% 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 19% of the home fire deaths and 7% of the home fire injuries. See Figure 10 and Table 11 for more details. Only items first ignited associated with at least 5% of the fires or associated losses are shown in Figure 10. NFPA also has detailed reports on fires that began specifically with upholstered furniture and with mattresses and bedding.

Figure 10. Leading Items First Ignited in Home Structure Fires: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Flame damage spread beyond 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 [67%] in apartments) were confined or contained fires identified by NFIRS incident type. As discussed earlier, Version 5.0 of NFIRS requires less detail about

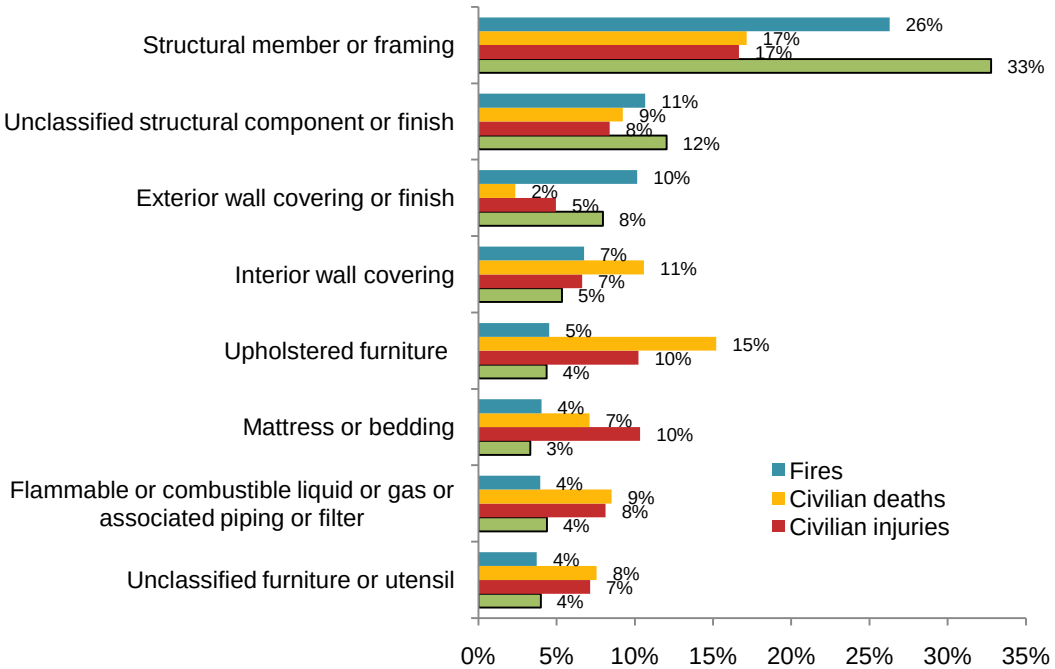
cooking fires confined to the vessel, fires confined to chimney or flues, to incinerators, to fuel burners or boilers, and contained trash or rubbish fires with no flame damage to the structure.

In addition to the 46% of home fires with incident types indicating contained or confined fires, Table 12 shows that flame damage was confined to the object of origin in another 14% of reported home structure fires. Only 24% spread beyond the room of origin. Seventy-nine percent of home fire deaths resulted from fires that extended beyond the room of origin. This scenario was more common in one one-and two-family homes where 82% 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 and item contributing most to flame spread.
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 10%, and an electrical cable or wire insulation was first ignited in 6%. For fire deaths resulting from these fires, the leading items were the same as for overall fire deaths: upholstered furniture (18%), mattresses or bedding (12%), and flammable or combustible liquids, gases or associated piping or filters (9%).

The item contributing most to flame spread in fires beyond the room or origin is shown in Table 14 and Figure 11. 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.

Figure 11. Leading Items Contributing to Flame Spread in Home Structure Fires: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Structural members or framing were 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 to spread in 11% of the fires and 9% of the deaths. Exterior wall covering or finish contributed to fire spread in 10% of the fires and 2% of the deaths. Interior wall covering contributed in 7% of the fires and 11% of the deaths; upholstered furniture in 5% of the fires and 15% of the deaths; and mattresses or bedding were the main contributors to flame spread in 4% of the fires and 7% of the deaths.

Flammable or combustible liquids, gases or associated piping or filters were the main contributors in 4% of these fires and 9% of the deaths while unclassified furniture or utensils contributed most to flame spread in 4% of the fires and 8% of the deaths.

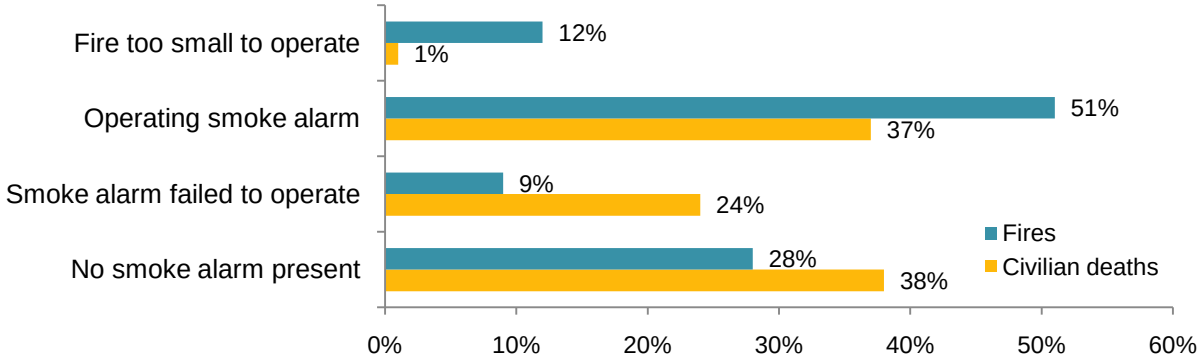
Fire Protection

The vast majority of all households have smoke alarms, but households with fires tend to have less smoke alarm protection.
Based on a telephone survey done in 2008, 96% of all homes have at least one smoke alarm.[8] 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 and that were handled without having the fire department come (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.[9]

62% of home fire deaths resulted from fires in properties without working smoke alarms.
Smoke alarms were present in almost three-quarters (72%) of reported home fires, still a solid majority, but a considerably smaller percentage than that found in CPSC's study of unreported fires. Figure 12 shows that smoke alarms operated in half (51%) of the reported home fires. The fire was too small to operate the smoke alarm in 12% of the fires. Almost two-thirds of the home fire deaths resulted from fires with no working smoke alarms, including more than one-third (38%) of the deaths that resulted from fires with no smoke alarms at all and one-quarter (24%) from fires in which smoke alarms were present but failed to operate. For more information, see *Smoke Alarms in U.S. Home Fires*, by Marty Ahrens. NFPA 72®, *National Fire Alarm and Signaling Code*, contains detailed information about smoke alarm and smoke detector installation, testing and maintenance. See www.nfpa.org/72. Consumer information is available at www.nfpa.org/smokealarms.

[8] Harris Interactive Smoke Alarm Omnibus Question Report, done for the National Fire Protection Association, November 2008.
[9] 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.

Figure 12. Home Structure Fires and Deaths by Smoke Alarm Performance 2005-2009



Source: NFIRS 5.0 and NFPA survey.

The fire death rate per 1,000 reported home fires was 7.4 when no automatic extinguishing equipment was present, six times the rate of 1.3 in home fires with wet-pipe sprinklers. Table B shows that in 2005-2009, sprinklers were present in 6% of the reported home fires, excluding fires in properties under construction and fires in which no automatic extinguishing equipment was present in the fire area. [10]

Table B.
Sprinkler Systems in Reported Home Structure Fires
Excluding Fires in Properties in Construction
and Fires in Which Automatic Extinguishing Equipment was Not Present in Fire Area
2005-2009 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	7.4
When wet-pipe sprinkler were present regardless of operation	1.3
Percent reduction	83%
Average loss per fire	
Without automatic extinguishing equipment	$19,000
When wet-pipe sprinklers were present regardless of operation	$6,000
Percent reduction	71%

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

[10] John R. Hall, Jr., *U.S. Experience with Sprinklers*, Quincy, MA: National Fire Protection Association, Fire Analysis and Research Division, 2011.

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. Combined, 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 May 2011 report, *U.S. Experience with Sprinklers.*

Ninety 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 1.3 death rate per 1,000 reported home fires in properties with wet pipe sprinklers was 83% lower than the 7.4 deaths per 1,000 reported fires with no automatic extinguishing equipment. The average loss per fire was 71% lower in reported fires in which wet pipe sprinklers were present, compared to fires in properties without automatic extinguishing equipment.

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.[11]

Fire Sprinkler Initiative is working to get sprinklers in more homes
Fire sprinklers have been proven to save lives yet they are found in a minority of homes. 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. See www.nfpa.org/13, www.nfpa.org/13D and www.nfpa.org/13R for more information.

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. 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.

[11] *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)."

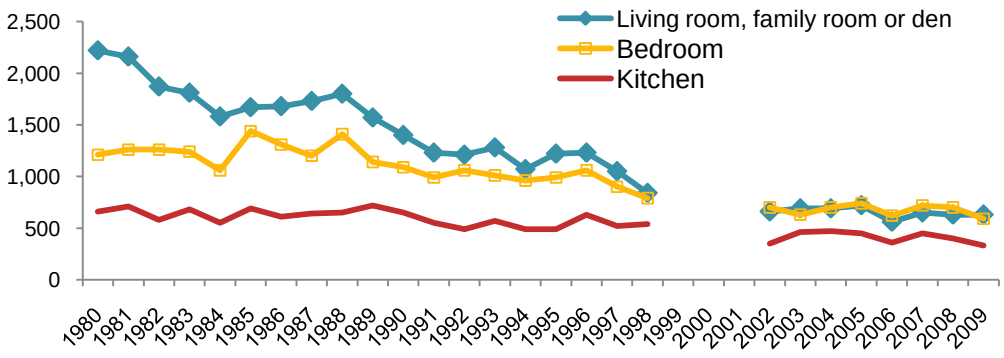
This section compares trends in selected fire death scenarios. Averages are shown for two five-year periods: 1980-1984, the earliest years of national data available, and 2005-2009, the latest data available. Due to the instability of estimates for 1999-2001, the transition years to NFIRS 5.0, estimates for these years are not shown in the graphs but are included in the tables.[12]

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 13 show that in four of the last five years for which data is available, the number of fire deaths from fires starting in the bedroom was slightly higher than the number of deaths from fires starting in the living room, family room, or den. (In 2009, the reverse was true.) In the early 1980s, living rooms, family rooms, or dens were by far the leading area or origin for fire deaths, but the differences shrank over time.

Deaths from fires in living rooms, family rooms, or dens (combined) fell 67% from the 1980-1984 average of 1,930 per year to the 2005-2009 average of 640 per year. Over the same periods, deaths from bedroom fires fell 44% from 1,210 per year to 670 per year. While kitchens ranked third in fire deaths, the decline in kitchen deaths was the smallest seen in the three areas. These deaths fell 38% from an average of 640 per year in 1980-1984 to 400 per year in 2005-2009.

Figure 13. Home Fire Deaths by Area of Origin and Year: 1980-2009



Source: NFIRS and NFPA survey.

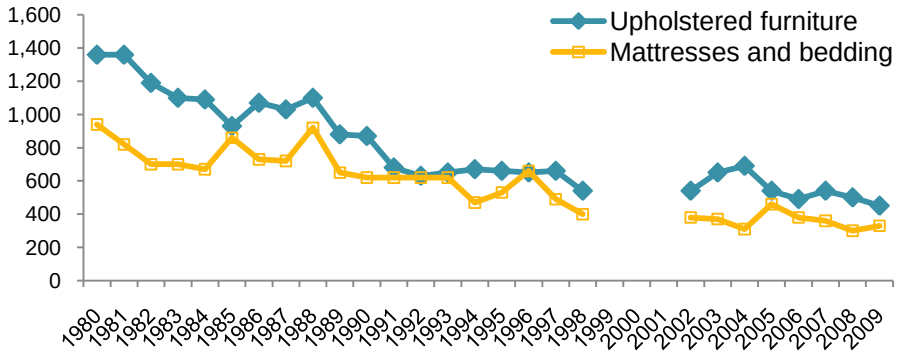
Because these three areas of origin have together accounted for almost two-thirds of home fire deaths, they will be examined in more detail in the next section.

Fire deaths from upholstered furniture and mattress and bedding fires fell by 59% and 52%, respectively, since the early 1980s.

Figure 14 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 59% from an average of 1,220 per year in 1980-1984 to 500 per year in 2005-2009. Deaths from fires beginning with mattresses and bedding fell 52% from an average of 770 per year in 1980-1984 to 370 per year in 2005-2009.

[12] 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 14. Home Fire Deaths from Fires Starting with Upholstered Furniture and Mattresses and Bedding by Year: 1980-2009

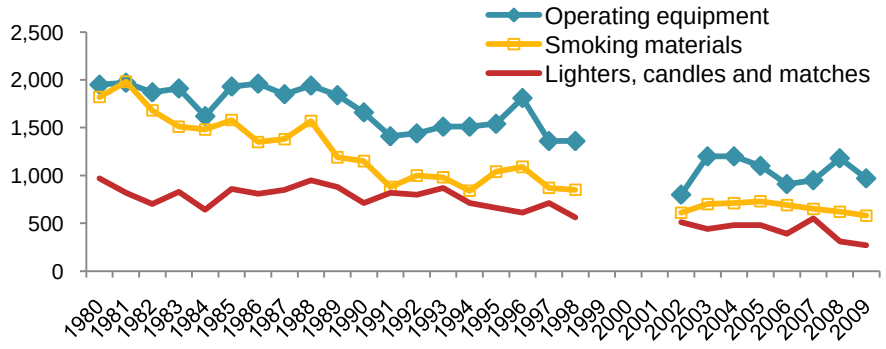


Source: NFIRS and NFPA survey.

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 with a wide variety of types of equipment. In 1980 and 1981, the number of deaths resulting from fires started by smoking materials was close to the number from fires started by operating equipment. [13]

Table 17 and Figure 15 show that the average of deaths from home fires started by operating equipment fell 45% from 1,860 per year in 1980-1984 to 1,010 per year in 2005-2009. 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, something that can catch fire left too close to a heat source such as a space heater or stove, etc.

Figure 15. Home Fire Deaths by Selected Heat Sources and Year



Source: NFIRS and NFPA survey.

[13] 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 started by small open flames (lighters, candles and matches) fell 49%, dropping from an average of 790 such deaths per year in 1980-1984 to 400 deaths per year in 2005-2009. The decline in deaths from smoking materials was steeper, dropping 61% from an average of 1,690 per year in 1980-1984 to 660 per year in 2005-2009.

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 these fires are less than 1% on all three measures, they are not discussed further here.

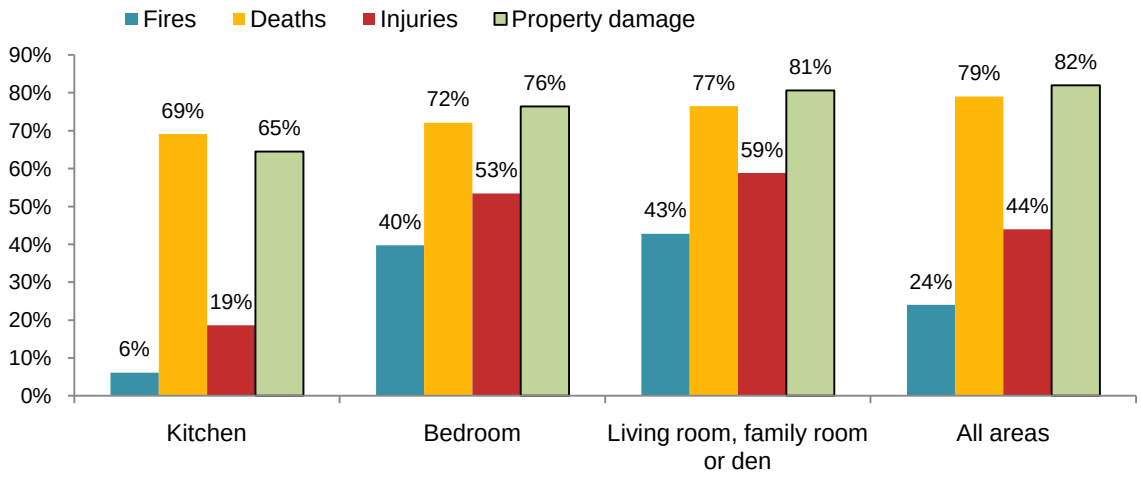
U.S. fire departments responded to an estimated average of 154,500 (41%) fires originating in the kitchen per year. These fires caused an average of 400 (15%) civilian deaths, 4,750 reported civilian injuries (37%), and $973 million (14%) in direct property damage annually. On average, one of every 108 reported kitchen fires resulted in a death, while one in every 13 resulted in an injury.

Fire departments also responded to an annual average of 28,300 (8%) fires that started in a bedroom. These fires caused an average of 670 (25%) civilian deaths, 2,640 reported civilian injuries (21%), and $1 billion (14%) in direct property damage annually. On average, one of every 42 reported bedroom fires resulted in death, while one of every 11 resulted in injury.

Only 14,200 reported home fires (4%) per year started in the living room, family room or den, but these incidents caused an average of 640 (24%) civilian deaths, 1,420 (11%) civilian fire injuries, and $604 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 ten resulted in injury.

Figure 16 and Tables 18-20 show that two-thirds to three-quarters of the deaths from fires beginning in these three areas resulted from fires that spread beyond the room of origin. The vast majority (94%) of kitchen fires were small. Only 6% spread beyond the room of origin. Interestingly, four out of five non-fatal fire injuries from kitchen fires resulted from fires that were confined to the room of origin. Only 19% 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.

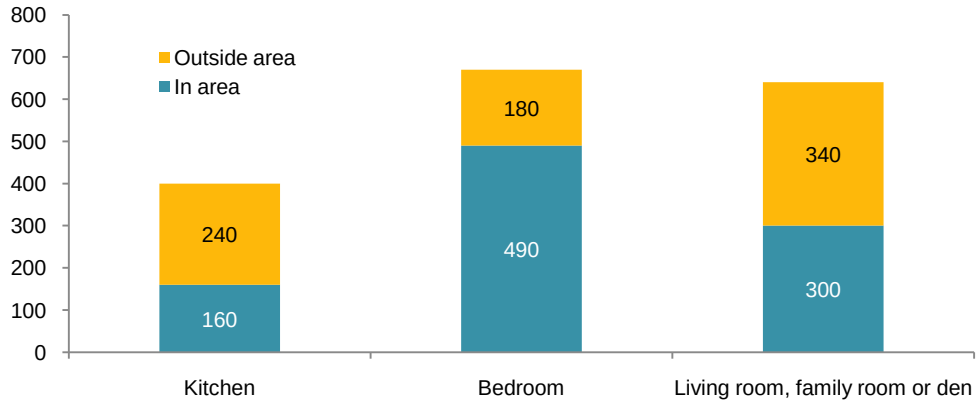
Figure 16. Fire Damage Beyond Room of Origin by Area of Origin: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Figure 17 shows that three-quarters (490, or 73%) of the people who died as a result of fires originating in the bedroom were in the bedroom at the time of the incident. This was true for almost half (300, or 47%) of the victims of fires originating in the living room, family room or den, and two out of five (160, or 41%) of the victims of fatal kitchen fires.

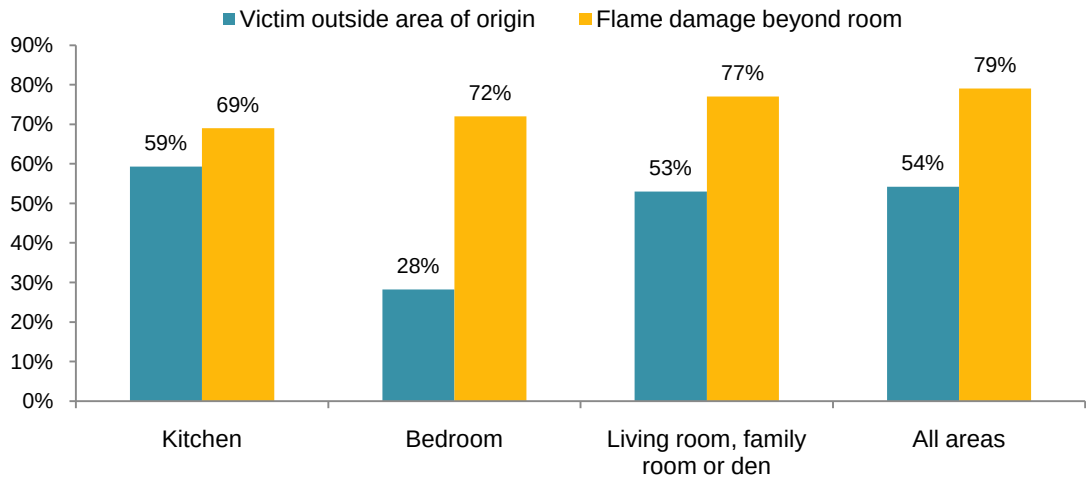
Figure 17. Home Fatal Fire Victims by Area of Origin and Location at Time of Incident: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Figure 18 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 with flame damage extending beyond the room of origin. The greatest difference was seen in fires originating in the bedroom. While almost three-quarters of these deaths resulted from fires that spread beyond the bedroom, roughly one-quarter (28%) 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.

Figure 18. Victim Outside of Area and Flame Damage Beyond Room of Origin By Area of Origin: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

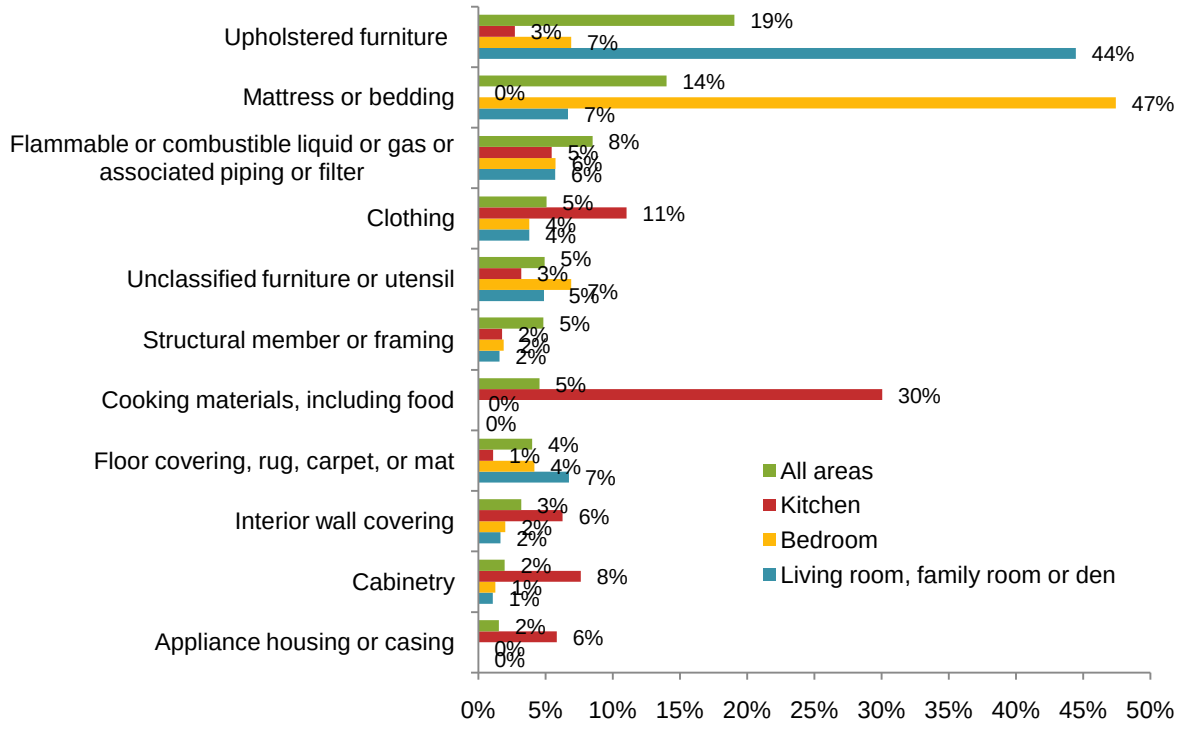
Leading items first ignited vary predictably by area of origin.
Tables 21-23 show the leading items first ignited and associated losses in fires originating in these three areas. Not surprisingly, cooking materials, including food, were first ignited in almost two-thirds (63%) of the kitchen fires and kitchen fire injuries (65%) and in almost one-third of the associated deaths (30%).

Mattresses or bedding were first ignited in almost one-third (31%) of the fires originating in the bedroom and almost half of the associated deaths (47%) and injuries (44%). Upholstered furniture was the item first ignited in one- of every five (20%) fires starting in a living room, family room or den, in almost half (44%) of the associated deaths, and one-third (35%) of the injuries. Some overlap does occur.

Figure 19 shows that upholstered furniture was first ignited in 7% of fire deaths resulting from fires starting in the bedroom and 3% from fires originating in the kitchen. Mattresses or bedding were first ignited in 7% of the deaths from fires starting in the living room.

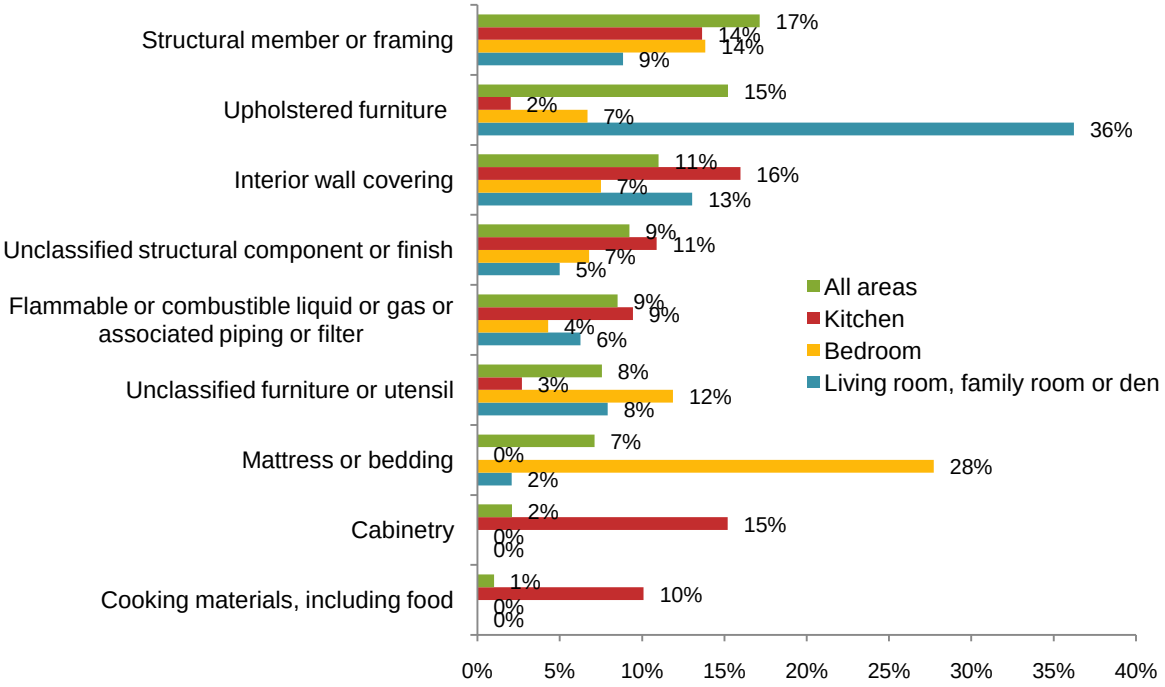
Tables 24-26 show the items first ignited in fires originating in these three areas that spread beyond the room of origin. Tables 27-29 show the item contributing most to flame spread in fires originating in these three areas. Structural members or framing, and interior wall coverings were in the top four items contributing to flame spread beyond the room of origin overall and in all three rooms. Figure 20 shows that this was also true for deaths resulting from these fires.

Figure 19. Item First Ignited in Home Fires Deaths by Area of Origin: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

Figure 20. Items Contributing Most to Flame Spread in Fire Deaths when Flame Damage Spread Beyond Room of Origin, by Area of Origin: 2005-2009



Source: NFIRS 5.0 and NFPA survey.

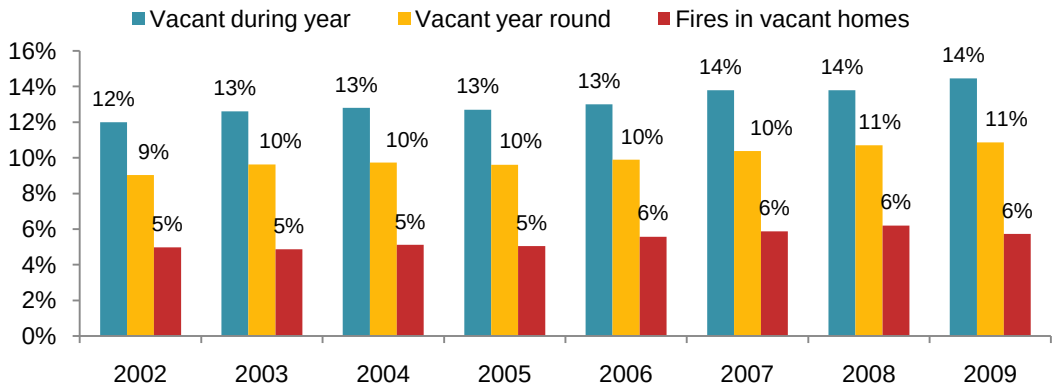
Fires in Occupied and Vacant Homes

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, 98% of home fire deaths and 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 measures the number of structures involved.

Table 31 and Figure 21 show that the percentage of housing units that were vacant (including properties used seasonally) and that were vacant year-round has been increasing. 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.

Figure 21. Vacant Housing Units and Fires in Vacant Homes, by Year



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

Because so many fires are associated with human activity, the risk of fire is lower in vacant properties than occupied ones. However, these buildings do pose special problems. Table 32 shows that half (48%) of vacant home fires were intentionally set. Table 6 showed that only 8% of home fires overall were started intentionally. Therefore, vacant housing units have a higher risk of having an intentional fire even though they have a lower risk of fire overall.

Fires in vacant homes were also more likely to spread beyond the structure of origin than are fires in homes overall. Table 33 shows that flame damage 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 ratios of civilian deaths or civilian injuries per hundred reported fires, but they have a higher average rate of direct property damage per fire.

Unreported Home Fires

U.S. households handle more than 7 million fires a year without calling the fire department. 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.[14]

Results showed 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.
- 18% of the fires self-extinguished; 78% of fires were put out by a household member using a variety of methods, including: water, shutting off power, smothering, removing the fuel from the heat source, and fire extinguishers.
- Including both 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 a fire extinguisher was used, half of the time it put out the fire completely. It 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.

Outside and Other Fires on Home Properties

139,500 outside and other fires per year, on average, were reported at homes. During 2005-2009, an estimated annual average of 139,500 outside and other fires on home properties caused an average of 10 deaths, 310 civilian injuries, and $33 million in direct property damage per year. An average of 14,300 vehicle fires reported on these properties (without structural involvement) caused an average of ten civilian deaths, 130 civilian injuries, and $60 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-

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

family homes. An additional 3,200 occurred at apartments or multi-family dwellings.[15] NFPA's Firewise program provides information about how people can protect their homes and communities from these types of fires. See http://www.firewise.org/.

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 home safety and statistical information at http://www.nfpa.org. 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.

CPSC provides information about product recalls.
The CPSC is the regulatory body that with primary authority for the safety of most household products. In some cases, they issue mandatory standards products must meet. They can also order the recall of products that have been determined to be unsafe. Reports of unsafe products may be made and information about recalled products found at http://www.cpsc.gov/.

[15] Marty Ahrens. *Brush, Grass and Forest Fires*, Quincy, MA: National Fire Protection Association, 2010, p. 22. Online at www.nfpa.org/brushgrassforest.

Table 1.
Reported Home Structure Fires by Year: 1980-2009

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions) As Reported	Direct Property Damage (in Millions) In 2009 Dollars
1980	734,000	5,200	19,700	$2,848	$7,426
1981	711,000	5,400	19,125	$3,128	$7,370
1982	654,500	4,820	20,450	$3,147	$6,990
1983	625,500	4,670	20,750	$3,205	$6,898
1984	605,500	4,075	18,750	$3,362	$6,933
1985	606,000	4,885	19,175	$3,693	$7,354
1986	565,500	4,655	18,575	$3,464	$6,787
1987	536,500	4,570	19,965	$3,599	$6,796
1988	538,500	4,955	22,075	$3,897	$7,075
1989	498,500	4,335	20,275	$3,876	$6,712
1990	454,500	4,050	20,225	$4,157	$6,833
1991	464,500	3,500	21,275	$5,463[1]	$8,605[1]
1992	459,000	3,705	21,100	$3,775	$5,776
1993	458,000	3,720	22,000	$4,764[2]	$7,074[2]
1994	438,000	3,425	19,475	$4,215	$6,105
1995	414,000	3,640	18,650	$4,264	$6,003
1996	417,000	4,035	18,875	$4,869	$6,666
1997	395,500	3,360	17,300	$4,453	$5,953
1998	369,500	3,220	16,800	$4,273	$5,630
1999	371,000	2,895	16,050	$4,965	$6,393
2000	368,000	3,420	16,975	$5,525	$6,888
2001	383,500	3,110	15,200	$5,516	$6,688
2002	389,000	2,670	13,650	$5,931	$7,076
2003	388,500	3,145	13,650	$5,949[3]	$6,945[3]
2004	395,500	3,190	13,700	$5,833	$6,634
2005	381,000	3,030	13,300	$6,729	$7,393
2006	396,000	2,580	12,500	$6,832	$7,272
2007	399,000	2,865	13,600	$7,389[4]	$7,643[4]
2008	386,500	2,755	13,560	$8,243[5]	$8,225[5]
2009	362,500	2,565	12,650	$7,616	$7,616

[1]Includes $1.5 billion in damage caused by the Oakland Fire Storm, most of which was lost 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 with an estimated property damage of $2 billion.
[4]This does not include the California Fire Storm 2007 with 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 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 2.
Reported Home Structure Fires by Month
2005-2009 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	38,200	(10%)	340	(13%)	1,290	(10%)	$685	(10%)
February	33,700	(9%)	290	(11%)	1,220	(9%)	$603	(8%)
March	34,200	(9%)	280	(11%)	1,230	(10%)	$621	(9%)
April	30,900	(8%)	210	(8%)	1,070	(8%)	$575	(8%)
May	29,100	(8%)	190	(7%)	1,020	(8%)	$550	(8%)
June	26,900	(7%)	150	(6%)	950	(7%)	$546	(8%)
July	27,700	(7%)	160	(6%)	970	(8%)	$558	(8%)
August	26,300	(7%)	150	(6%)	920	(7%)	$519	(7%)
September	25,900	(7%)	150	(6%)	850	(7%)	$460	(6%)
October	30,000	(8%)	200	(7%)	980	(8%)	$689	(10%)
November	33,100	(9%)	230	(9%)	1,080	(8%)	$585	(8%)
December	37,900	(10%)	320	(12%)	1,300	(10%)	$755	(11%)
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
Monthly average	31,200	(8%)	220	(8%)	1,070	(8%)	$595	(8%)

Table 3.
Reported Home Structure Fires by Day of Week
2005-2009 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	57,500	(15%)	390	(15%)	1,940	(15%)	$1,168	(16%)
Monday	53,300	(14%)	360	(13%)	1,780	(14%)	$1,036	(14%)
Tuesday	51,600	(14%)	350	(13%)	1,830	(14%)	$1,015	(14%)
Wednesday	51,600	(14%)	370	(14%)	1,800	(14%)	$941	(13%)
Thursday	52,100	(14%)	350	(13%)	1,860	(14%)	$937	(13%)
Friday	51,500	(14%)	390	(15%)	1,700	(13%)	$982	(14%)
Saturday	56,200	(15%)	440	(17%)	1,970	(15%)	$1,067	(15%)
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
Daily average	53,400	(14%)	380	(14%)	1,840	(14%)	$1,021	(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
2005-2009 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 12:59 a.m.	11,900	(3%)	160	(6%)	560	(4%)	$436	(6%)
1:00 - 1:59 a.m.	10,100	(3%)	190	(7%)	540	(4%)	$337	(5%)
2:00 - 2:59 a.m.	9,100	(2%)	180	(7%)	540	(4%)	$326	(5%)
3:00 - 3:59 a.m.	8,500	(2%)	200	(7%)	540	(4%)	$316	(4%)
4:00 - 4:59 a.m.	7,600	(2%)	180	(7%)	470	(4%)	$283	(4%)
5:00 - 5:59 a.m.	7,100	(2%)	150	(5%)	390	(3%)	$234	(3%)
6:00 - 6:59 a.m.	7,800	(2%)	130	(5%)	350	(3%)	$208	(3%)
7:00 - 7:59 a.m.	9,500	(3%)	110	(4%)	380	(3%)	$176	(2%)
8:00 - 8:59 a.m.	11,200	(3%)	100	(4%)	410	(3%)	$209	(3%)
9:00 - 9:59 a.m.	13,300	(4%)	90	(3%)	470	(4%)	$289	(4%)
10:00 - 10:59 a.m.	15,000	(4%)	80	(3%)	480	(4%)	$249	(3%)
11:00 - 11:59 a.m.	16,900	(5%)	70	(3%)	520	(4%)	$266	(4%)
Noon - 12:59 p.m.	18,600	(5%)	70	(2%)	570	(4%)	$285	(4%)
1:00 - 1:59 p.m.	18,900	(5%)	60	(2%)	560	(4%)	$315	(4%)
2:00 - 2:59 p.m.	19,500	(5%)	70	(3%)	550	(4%)	$324	(5%)
3:00 - 3:59 p.m.	20,500	(5%)	60	(2%)	590	(5%)	$378	(5%)
4:00 - 4:59 p.m.	22,800	(6%)	70	(3%)	670	(5%)	$327	(5%)
5:00 - 5:59 p.m.	25,700	(7%)	70	(3%)	680	(5%)	$356	(5%)
6:00 - 6:59 p.m.	26,500	(7%)	80	(3%)	700	(5%)	$327	(5%)
7:00 - 7:59 p.m.	24,700	(7%)	80	(3%)	720	(6%)	$324	(5%)
8:00 - 8:59 p.m.	22,000	(6%)	80	(3%)	630	(5%)	$318	(4%)
9:00 - 9:59 p.m.	18,800	(5%)	100	(4%)	590	(5%)	$289	(4%)
10:00 - 10:59 p.m.	15,400	(4%)	120	(5%)	500	(4%)	$284	(4%)
11:00 - 11:59 p.m.	12,800	(3%)	140	(5%)	480	(4%)	$289	(4%)
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
Average	15,600	(4%)	110	(4%)	540	(4%)	$298	(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	155,400	(42%)	390	(15%)	4,800	(41%)	$771	(11%)
Cooking equipment in non-confined fire	*38,700*	*(10%)*	*390*	*(15%)*	*3,250*	*(29%)*	*$745*	*(10%)*
Confined cooking fire	*116,700*	*(31%)*	*0*	*(0%)*	*1,560*	*(12%)*	*$27*	*(0%)*
Heating equipment	64,100	(17%)	560	(21%)	1,620	(13%)	$904	(13%)
Heating equipment in non-confined fire	*27,100*	*(7%)*	*560*	*(21%)*	*1,510*	*(14%)*	*$893*	*(13%)*
Confined chimney or flue fire	*23,100*	*(6%)*	*0*	*(0%)*	*40*	*(0%)*	*$8*	*(0%)*
Confined fuel burner or boiler fire	*13,900*	*(4%)*	*0*	*(0%)*	*70*	*(1%)*	*$3*	*(0%)*
Intentional	29,400	(8%)	340	(13%)	920	(7%)	$633	(9%)
Electrical distribution or lighting equipment*	23,400	(6%)	390	(15%)	970	(8%)	$822	(12%)
Smoking materials	18,900	(5%)	660	(25%)	1,270	(10%)	$492	(7%)
Clothes dryer or washer*	15,200	(4%)	30	(1%)	440	(3%)	$203	(3%)
Candle	12,900	(3%)	140	(5%)	1,040	(8%)	$471	(7%)
Exposure fire	12,400	(3%)	20	(1%)	70	(1%)	$853	(12%)
Playing with heat source	7,700	(2%)	100	(4%)	750	(6%)	$192	(3%)

* Estimates of fires involving clothes dryers or washers exclude confined fires. See NFPA's detailed analysis of 2005-2009 home fires "Home Structure Fires by Equipment Involved in Ignition," John R. Hall. Jr. for estimates that include confined fires.

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

Source: NFIRS 5.0 and NFPA survey.

Table 6.
Reported Home Structure Fires by Cause of Ignition (from NFIRS Cause Field)
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	264,200	(71%)	1,920	(73%)	10,410	(81%)	$4,358	(61%)
In non-confined fire	*126,200*	*(34%)*	*1,920*	*(73%)*	*8,820*	*(68%)*	*$4,325*	*(61%)*
In confined fire	*138,000*	*(37%)*	*0*	*(0%)*	*1,590*	*(12%)*	*$33*	*(0%)*
Failure of equipment or heat source	55,200	(15%)	310	(12%)	1,270	(10%)	$1,067	(15%)
In non-confined fire	*38,800*	*(10%)*	*310*	*(12%)*	*1,200*	*(9%)*	*$1,062*	*(15%)*
In confined fire	*16,400*	*(4%)*	*0*	*(0%)*	*80*	*(1%)*	*$5*	*(0%)*
Intentional	29,400	(8%)	340	(13%)	920	(7%)	$633	(9%)
In non-confined fire	*18,600*	*(5%)*	*340*	*(13%)*	*890*	*(7%)*	*$632*	*(9%)*
In confined fire	*10,800*	*(3%)*	*0*	*(0%)*	*30*	*(0%)*	*$1*	*(0%)*
Unclassified	19,100	(5%)	60	(2%)	230	(2%)	$798	(11%)
In non-confined fire	*14,000*	*(4%)*	*60*	*(2%)*	*210*	*(2%)*	*$798*	*(11%)*
In confined fire	*5,100*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Act of nature	5,900	(2%)	10	(0%)	50	(0%)	$289	(4%)
In non-confined fire	*5,300*	*(1%)*	*10*	*(0%)*	*50*	*(0%)*	*$289*	*(4%)*
In confined fire	*600*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(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
2005-2009 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	**155,400**	**(42%)**	**390**	**(15%)**	**4,800**	**(37%)**	**$771**	**(11%)**
Range or cooktop	90,100	(24%)	330	(12%)	3,700	(29%)	$548	(8%)
Range or cooktop with non-confined fire incident type	*30,000*	*(8%)*	*330*	*(12%)*	*2,760*	*(21%)*	*$532*	*(7%)*
Confined range fire	*60,200*	*(16%)*	*0*	*(0%)*	*940*	*(7%)*	*$16*	*(0%)*
Oven or rotisserie	24,500	(7%)	20	(1%)	270	(2%)	$33	(0%)
Oven or rotisserie with non-confined fire incident type	*3,000*	*(1%)*	*20*	*(1%)*	*120*	*(1%)*	*$30*	*(0%)*
Confined oven or rotisserie fire	*21,500*	*(6%)*	*0*	*(0%)*	*140*	*(1%)*	*$3*	*(0%)*
Portable cooking or warming device	6,600	(2%)	20	(1%)	220	(2%)	$63	(1%)
Portable cooking or warming device with non-confined fire incident type	*2,100*	*(1%)*	*20*	*(1%)*	*160*	*(1%)*	*$62*	*(1%)*
Portable cooking or warming device in confined fire	*4,600*	*(1%)*	*0*	*(0%)*	*60*	*(0%)*	*$1*	*(0%)*
Microwave oven	7,200	(2%)	0	(0%)	140	(1%)	$30	(0%)
Microwave oven with non-confined fire incident type	*1,500*	*(0%)*	*0*	*(0%)*	*100*	*(1%)*	*$27*	*(0%)*
Confined microwave oven fire	*5,700*	*(2%)*	*0*	*(0%)*	*40*	*(0%)*	*$3*	*(0%)*
Grill, barbecue or hibachi	3,400	(1%)	10	(1%)	90	(1%)	$73	(1%)
Grill, hibachi or barbecue with non-confined fire incident type	*1,400*	*(0%)*	*10*	*(1%)*	*70*	*(1%)*	*$73*	*(1%)*
Confined grill, hibachi or barbecue fire	*2,000*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Other known cooking equipment or confined cooking fire	23,600	(6%)	0	(0%)	390	(3%)	$24	(0%)
Other known cooking equipment in non-confined fire	*800*	*(0%)*	*0*	*(0%)*	*30*	*(0%)*	*$21*	*(0%)*
Confined cooking fire with other or unknown equipment	*22,800*	*(6%)*	*0*	*(0%)*	*360*	*(3%)*	*$4*	*(0%)*
No equipment involved	**76,700**	**(21%)**	**1,060**	**(40%)**	**3,780**	**(29%)**	**$3,726**	**(52%)**
Heating equipment	**64,100**	**(17%)**	**560**	**(21%)**	**1,620**	**(13%)**	**$904**	**(13%)**
Fireplace or chimney fire*	27,100	(7%)	30	(1%)	120	(1%)	$220	(3%)
Fireplace or chimney with non-confined incident type	*4,000*	*(1%)*	*30*	*(1%)*	*90*	*(1%)*	*$212*	*(3%)*
*Confined chimney or flue fire**	*23,100*	*(6%)*	*0*	*(0%)*	*40*	*(0%)*	*$8*	*(0%)*
Furnace, central heat or boiler*	16,300	(4%)	40	(2%)	160	(1%)	$66	(1%)
Furnace or boiler with non-confined incident type	*2,400*	*(1%)*	*40*	*(2%)*	*100*	*(1%)*	*$63*	*(1%)*
*Confined fuel burner or boiler fire**	*13,900*	*(4%)*	*0*	*(0%)*	*70*	*(1%)*	*$3*	*(0%)*
Fixed or portable space heater	14,600	(4%)	450	(17%)	1,020	(8%)	$466	(7%)
Water heater	5,400	(1%)	40	(1%)	280	(2%)	$127	(2%)
Other known heating equipment in non-confined fire	800	(0%)	10	(0%)	20	(0%)	$26	(0%)

Table 7.
Reported Home Structure Fires by Equipment Involved in Ignition
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires and Confined Cooking Fires Were Allocated Proportionally)
(Continued)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Electrical distribution or lighting equipment	**23,400**	**(6%)**	**390**	**(15%)**	**970**	**(8%)**	**$822**	**(12%)**
Fixed wiring or related equipment	14,300	(4%)	190	(7%)	390	(3%)	$463	(6%)
Lamp, light fixture or light bulb	5,000	(1%)	60	(2%)	250	(2%)	$199	(3%)
Cord or plug	2,700	(1%)	130	(5%)	230	(2%)	$100	(1%)
Other known electrical distribution or lighting equipment	1,400	(0%)	10	(0%)	100	(1%)	$60	(1%)
Clothes dryer or washer**	**15,200**	**(4%)**	**30**	**(1%)**	**440**	**(3%)**	**$203**	**(3%)**
Fan	**3,800**	**(1%)**	**10**	**(1%)**	**120**	**(1%)**	**$79**	**(1%)**
Kitchen equipment not used to heat food	**2,900**	**(1%)**	**10**	**(0%)**	**90**	**(1%)**	**$73**	**(1%)**
Electronic, office or entertainment equipment	**2,500**	**(1%)**	**10**	**(0%)**	**150**	**(1%)**	**$84**	**(1%)**
Air conditioner	**2,300**	**(1%)**	**0**	**(0%)**	**100**	**(1%)**	**$53**	**(1%)**
Torch, burner or soldering iron	**1,900**	**(1%)**	**0**	**(0%)**	**90**	**(1%)**	**$113**	**(2%)**
Unclassified equipment involved in ignition	**1,900**	**(1%)**	**20**	**(1%)**	**90**	**(1%)**	**$80**	**(1%)**
Contained trash or rubbish fire	**15,300**	**(4%)**	**0**	**(0%)**	**60**	**(0%)**	**$2**	**(0%)**
Other known equipment	**8,200**	**(2%)**	**160**	**(6%)**	**570**	**(4%)**	**$234**	**(3%)**
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)

* 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.

** Estimates of fires involving clothes dryers or washers exclude confined fires. See NFPA's detailed analysis of 2005-2009 home fires "Home Structure Fires by Equipment Involved in Ignition," John R. Hall. Jr. for estimates that include confined fires.

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. 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 that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking 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
2005-2009 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	76,000	(20%)	360	(13%)	2,960	(23%)	$832	(12%)
In non-confined fire	*30,200*	*(8%)*	*350*	*(13%)*	*2,280*	*(18%)*	*$823*	*(0%)*
In confined fire	*45,800*	*(12%)*	*0*	*(0%)*	*670*	*(5%)*	*$9*	*(10%)*
Unclassified heat from powered equipment	64,800	(17%)	200	(8%)	1,970	(15%)	$688	(9%)
In non-confined fire	*26,900*	*(7%)*	*200*	*(8%)*	*1,520*	*(12%)*	*$674*	*(0%)*
In confined fire	*37,800*	*(10%)*	*0*	*(0%)*	*450*	*(4%)*	*$14*	*(7%)*
Unclassified heat source	33,400	(9%)	180	(7%)	740	(6%)	$491	(7%)
In non-confined fire	*14,000*	*(4%)*	*180*	*(7%)*	*570*	*(4%)*	*$488*	*(0%)*
In confined fire	*19,400*	*(5%)*	*0*	*(0%)*	*170*	*(1%)*	*$4*	*(7%)*
Unclassified hot or smoldering object	26,100	(7%)	130	(5%)	660	(5%)	$473	(7%)
In non-confined fire	*14,400*	*(4%)*	*130*	*(5%)*	*560*	*(4%)*	*$469*	*(0%)*
In confined fire	*11,700*	*(3%)*	*0*	*(0%)*	*100*	*(1%)*	*$4*	*(6%)*
Hot ember or ash	25,300	(7%)	110	(4%)	440	(3%)	$426	(6%)
In non-confined fire	*12,200*	*(3%)*	*110*	*(4%)*	*420*	*(3%)*	*$424*	*(0%)*
In confined fire	*13,100*	*(3%)*	*0*	*(0%)*	*20*	*(0%)*	*$3*	*(14%)*
Arcing	34,500	(9%)	300	(11%)	1,070	(8%)	$1,020	(14%)
In non-confined fire	*31,100*	*(8%)*	*300*	*(11%)*	*1,060*	*(8%)*	*$1,020*	*(0%)*
In confined fire	*3,300*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(5%)*
Spark, ember or flame from operating equipment	22,800	(6%)	150	(6%)	830	(6%)	$381	(5%)
In non-confined fire	*11,000*	*(3%)*	*150*	*(6%)*	*720*	*(6%)*	*$379*	*(0%)*
In confined fire	*11,800*	*(3%)*	*0*	*(0%)*	*110*	*(1%)*	*$2*	*(7%)*
Smoking materials	18,900	(5%)	660	(25%)	1,270	(10%)	$492	(7%)
In non-confined fire	*13,300*	*(4%)*	*660*	*(25%)*	*1,220*	*(9%)*	*$491*	*(0%)*
In confined fire	*5,600*	*(1%)*	*0*	*(0%)*	*50*	*(0%)*	*$1*	*(7%)*
Candle	12,900	(3%)	140	(5%)	1,040	(8%)	$471	(7%)
In non-confined fire	*12,000*	*(3%)*	*140*	*(5%)*	*1,030*	*(8%)*	*$471*	*(0%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(2%)*
Match	11,200	(3%)	90	(3%)	310	(2%)	$131	(2%)
In non-confined fire	*4,200*	*(1%)*	*90*	*(3%)*	*290*	*(2%)*	*$130*	*(0%)*
In confined fire	*7,000*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(3%)*
Lighter	9,500	(3%)	180	(7%)	850	(7%)	$226	(3%)
In non-confined fire	*7,100*	*(2%)*	*180*	*(7%)*	*830*	*(6%)*	*$226*	*(0%)*
In confined fire	*2,400*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(2%)*

Table 8.
Reported Home Structure Fires by Heat Source
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Heat from direct flame or convection current	9,100	(2%)	20	(1%)	130	(1%)	$139	(2%)
In non-confined fire	*3,700*	*(1%)*	*20*	*(1%)*	*110*	*(1%)*	*$138*	*(0%)*
In confined fire	*5,300*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(19%)*
Other known heat source	29,500	(8%)	140	(5%)	620	(5%)	$1,376	(19%)
In non-confined fire	*22,700*	*(6%)*	*140*	*(5%)*	*540*	*(4%)*	*$1,375*	*(0%)*
In confined fire	*6,800*	*(2%)*	*0*	*(0%)*	*70*	*(1%)*	*$2*	*(100%)*
Total fires	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment unattended	54,200	(14%)	160	(6%)	2,140	(17%)	$390	(5%)
In non-confined fire	*16,000*	*(4%)*	*160*	*(6%)*	*1,540*	*(12%)*	*$383*	*(5%)*
In confined fire	*38,100*	*(10%)*	*0*	*(0%)*	*600*	*(5%)*	*$7*	*(0%)*
Electrical failure or malfunction	50,300	(13%)	450	(17%)	1,490	(12%)	$1,541	(22%)
In non-confined fire	*45,000*	*(12%)*	*450*	*(17%)*	*1,470*	*(11%)*	*$1,539*	*(22%)*
In confined fire	*5,300*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$2*	*(0%)*
Heat source too close to combustibles	41,000	(11%)	550	(21%)	2,270	(18%)	$987	(14%)
In non-confined fire	*27,800*	*(7%)*	*550*	*(21%)*	*2,140*	*(17%)*	*$981*	*(14%)*
In confined fire	*13,200*	*(4%)*	*0*	*(0%)*	*130*	*(1%)*	*$6*	*(0%)*
Abandoned or discarded material	40,200	(11%)	420	(16%)	1,560	(12%)	$719	(10%)
In non-confined fire	*20,600*	*(6%)*	*420*	*(16%)*	*1,350*	*(10%)*	*$716*	*(10%)*
In confined fire	*19,600*	*(5%)*	*0*	*(0%)*	*200*	*(2%)*	*$3*	*(0%)*
Failure to clean	31,300	(8%)	20	(1%)	140	(1%)	$73	(1%)
In non-confined fire	*4,600*	*(1%)*	*20*	*(1%)*	*120*	*(1%)*	*$70*	*(1%)*
In confined fire	*26,700*	*(7%)*	*0*	*(0%)*	*20*	*(0%)*	*$3*	*(0%)*
Unclassified misuse of material	29,200	(8%)	310	(12%)	1,490	(12%)	$389	(5%)
In non-confined fire	*13,900*	*(4%)*	*310*	*(12%)*	*1,270*	*(10%)*	*$384*	*(5%)*
In confined fire	*15,400*	*(4%)*	*0*	*(0%)*	*220*	*(2%)*	*$6*	*(0%)*
Unclassified factor contributed to ignition	29,000	(8%)	310	(12%)	990	(8%)	$615	(9%)
In non-confined fire	*13,800*	*(4%)*	*310*	*(12%)*	*810*	*(6%)*	*$610*	*(9%)*
In confined fire	*15,200*	*(4%)*	*0*	*(0%)*	*170*	*(1%)*	*$5*	*(0%)*
Unclassified mechanical failure or malfunction	15,300	(4%)	50	(2%)	290	(2%)	$271	(4%)
In non-confined fire	*9,500*	*(3%)*	*50*	*(2%)*	*240*	*(2%)*	*$270*	*(4%)*
In confined fire	*5,800*	*(2%)*	*0*	*(0%)*	*50*	*(0%)*	*$1*	*(0%)*
Unintentionally turned on or not turned off	12,800	(3%)	30	(1%)	410	(3%)	$113	(2%)
In non-confined fire	*4,200*	*(1%)*	*30*	*(1%)*	*290*	*(2%)*	*$111*	*(2%)*
In confined fire	*8,600*	*(2%)*	*0*	*(0%)*	*120*	*(1%)*	*$2*	*(0%)*
Exposure fire	12,400	(3%)	20	(1%)	70	(1%)	$853	(12%)
In non-confined fire	*12,100*	*(3%)*	*20*	*(1%)*	*70*	*(1%)*	*$853*	*(12%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Playing with heat source	7,700	(2%)	100	(4%)	750	(6%)	$192	(3%)
In non-confined fire	*6,300*	*(2%)*	*100*	*(4%)*	*740*	*(6%)*	*$192*	*(3%)*
In confined fire	*1,300*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*

Table 9.
Reported Home Structure Fires by Factors Contributing to Ignition
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified operational deficiency	5,700	(2%)	30	(1%)	160	(1%)	$70	(1%)
In non-confined fire	*2,300*	*(1%)*	*30*	*(1%)*	*140*	*(1%)*	*$69*	*(1%)*
In confined fire	*3,400*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Other known factor	60,900	(16%)	420	(16%)	1,910	(15%)	$1,476	(21%)
In non-confined fire	*37,400*	*(10%)*	*420*	*(16%)*	*1,710*	*(13%)*	*$1,469*	*(21%)*
In confined fire	*23,400*	*(6%)*	*0*	*(0%)*	*200*	*(2%)*	*$7*	*(0%)*
Total fires	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(1%)*
Total factors*	389,900	(104%)	2,890	(109%)	13,670	(106%)	$7,690	(108%)
In non-confined fire	*213,500*	*(57%)*	*2,890*	*(109%)*	*11,890*	*(92%)*	*$7,647*	*(107%)*
In confined fire	*176,400*	*(47%)*	*0*	*(0%)*	*1,780*	*(14%)*	*$42*	*(1%)*

* 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 10.
Reported Home Structure Fires by Area of Origin
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen	154,500	(41%)	400	(15%)	4,750	(37%)	$973	(14%)
In non-confined fire	*42,400*	*(11%)*	*390*	*(15%)*	*3,240*	*(25%)*	*$946*	*(13%)*
In confined fire	*112,100*	*(30%)*	*0*	*(0%)*	*1,510*	*(12%)*	*$27*	*(0%)*
Bedroom	28,300	(8%)	670	(25%)	2,640	(21%)	$1,009	(14%)
In non-confined fire	*27,400*	*(7%)*	*670*	*(25%)*	*2,630*	*(20%)*	*$1,008*	*(14%)*
In confined fire	*1,000*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Confined chimney or flue fire*	23,100	(6%)	0	(0%)	40	(0%)	$8	(0%)
Living room, family room or den	14,200	(4%)	640	(24%)	1,420	(11%)	$604	(8%)
In non-confined fire	*13,300*	*(4%)*	*640*	*(24%)*	*1,400*	*(11%)*	*$604*	*(8%)*
In confined fire	*1,000*	*(0%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Laundry room or area	11,000	(3%)	40	(1%)	340	(3%)	$205	(3%)
In non-confined fire	*9,700*	*(3%)*	*40*	*(1%)*	*330*	*(3%)*	*$205*	*(3%)*
In confined fire	*1,300*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified function area	9,500	(3%)	280	(11%)	650	(5%)	$386	(5%)
In non-confined fire	*8,600*	*(2%)*	*280*	*(11%)*	*640*	*(5%)*	*$386*	*(5%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Attic or ceiling/roof assembly or concealed space	9,500	(3%)	30	(1%)	110	(1%)	$477	(7%)
In non-confined fire	*9,400*	*(3%)*	*30*	*(1%)*	*110*	*(1%)*	*$477*	*(7%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Exterior wall surface	9,300	(2%)	10	(0%)	110	(1%)	$196	(3%)
In non-confined fire	*9,100*	*(2%)*	*10*	*(0%)*	*100*	*(1%)*	*$196*	*(3%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Garage or vehicle storage area**	9,000	(2%)	30	(1%)	430	(3%)	$528	(7%)
In non-confined fire	*7,800*	*(2%)*	*30*	*(1%)*	*430*	*(3%)*	*$528*	*(7%)*
In confined fire	*1,200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$1*	*(0%)*
Unclassified area of origin	8,500	(2%)	50	(2%)	110	(1%)	$152	(2%)
In non-confined fire	*5,200*	*(1%)*	*50*	*(2%)*	*100*	*(1%)*	*$151*	*(2%)*
In confined fire	*3,300*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Bathroom	7,500	(2%)	40	(1%)	290	(2%)	$128	(2%)
In non-confined fire	*6,700*	*(2%)*	*40*	*(1%)*	*290*	*(2%)*	*$128*	*(2%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified outside area	8,000	(2%)	10	(0%)	70	(1%)	$90	(1%)
In non-confined fire	*3,300*	*(1%)*	*10*	*(0%)*	*60*	*(0%)*	*$89*	*(1%)*
In confined fire	*4,700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Heating equipment room	7,700	(2%)	20	(1%)	170	(1%)	$112	(2%)
In non-confined fire	*3,600*	*(1%)*	*20*	*(1%)*	*150*	*(1%)*	*$111*	*(2%)*
In confined fire	*4,100*	*(1%)*	*0*	*(0%)*	*30*	*(0%)*	*$1*	*(0%)*
Wall assembly or concealed space	7,300	(2%)	30	(1%)	140	(1%)	$237	(3%)
In non-confined fire	*7,100*	*(2%)*	*30*	*(1%)*	*140*	*(1%)*	*$237*	*(3%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*

Table 10.
Reported Home Structure Fires by Area of Origin
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Exterior balcony or unenclosed porch	6,500	(2%)	30	(1%)	200	(2%)	$275	(4%)
In non-confined fire	*5,700*	*(2%)*	*30*	*(1%)*	*190*	*(1%)*	*$275*	*(4%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified structural area	6,000	(2%)	90	(3%)	180	(1%)	$276	(4%)
In non-confined fire	*5,300*	*(1%)*	*90*	*(3%)*	*170*	*(1%)*	*$276*	*(4%)*
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Other known area	53,800	(14%)	290	(11%)	1,260	(10%)	$1,492	(21%)
In non-confined fire	*38,400*	*(10%)*	*290*	*(11%)*	*1,210*	*(9%)*	*$1,490*	*(21%)*
In confined fire	*15,400*	*(4%)*	*0*	*(0%)*	*50*	*(0%)*	*$2*	*(0%)*
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(1%)*

* 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.

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	104,300	(28%)	120	(5%)	3,370	(26%)	$424	(6%)
In non-confined fire	*21,600*	*(6%)*	*120*	*(4%)*	*2,190*	*(17%)*	*$404*	*(6%)*
In confined fire	*82,700*	*(22%)*	*0*	*(0%)*	*1,180*	*(9%)*	*$20*	*(0%)*
Unclassified item first ignited	30,900	(8%)	90	(3%)	490	(4%)	$338	(5%)
In non-confined fire	*10,800*	*(3%)*	*90*	*(3%)*	*400*	*(3%)*	*$333*	*(5%)*
In confined fire	*20,100*	*(5%)*	*0*	*(0%)*	*90*	*(1%)*	*$5*	*(0%)*
Structural member or framing	20,700	(6%)	130	(5%)	390	(3%)	$1,082	(15%)
In non-confined fire	*20,200*	*(5%)*	*130*	*(5%)*	*390*	*(3%)*	*$1,082*	*(15%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$1*	*(0%)*
Electrical wire or cable insulation	17,900	(5%)	100	(4%)	450	(3%)	$404	(6%)
In non-confined fire	*15,700*	*(4%)*	*100*	*(4%)*	*430*	*(3%)*	*$403*	*(6%)*
In confined fire	*2,200*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Flammable or combustible liquid or gas, filter or piping	16,900	(5%)	230	(8%)	1,100	(9%)	$325	(5%)
In non-confined fire	*8,100*	*(2%)*	*230*	*(8%)*	*990*	*(8%)*	*$323*	*(5%)*
In confined fire	*8,800*	*(2%)*	*0*	*(0%)*	*120*	*(1%)*	*$3*	*(0%)*
Rubbish, trash, or waste	15,500	(4%)	60	(2%)	270	(2%)	$152	(2%)
In non-confined fire	*5,400*	*(1%)*	*60*	*(2%)*	*220*	*(2%)*	*$151*	*(2%)*
In confined fire	*10,100*	*(3%)*	*0*	*(0%)*	*50*	*(0%)*	*$1*	*(0%)*
Exterior wall covering or finish	13,200	(4%)	30	(1%)	170	(1%)	$439	(6%)
In non-confined fire	*13,000*	*(3%)*	*30*	*(1%)*	*170*	*(1%)*	*$439*	*(6%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Appliance housing or casing	11,900	(3%)	40	(2%)	290	(2%)	$118	(2%)
In non-confined fire	*5,800*	*(2%)*	*40*	*(2%)*	*250*	*(2%)*	*$117*	*(2%)*
In confined fire	*6,100*	*(2%)*	*0*	*(0%)*	*40*	*(0%)*	*$2*	*(0%)*
Mattress or bedding	10,800	(3%)	370	(14%)	1,340	(10%)	$382	(5%)
In non-confined fire	*10,300*	*(3%)*	*370*	*(14%)*	*1,340*	*(10%)*	*$382*	*(5%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Household utensil	10,000	(3%)	20	(1%)	220	(2%)	$49	(1%)
In non-confined fire	*2,400*	*(1%)*	*20*	*(1%)*	*130*	*(1%)*	*$47*	*(1%)*
In confined fire	*7,600*	*(2%)*	*0*	*(0%)*	*80*	*(1%)*	*$1*	*(0%)*
Clothing	8,000	(2%)	130	(5%)	520	(4%)	$178	(2%)
In non-confined fire	*7,100*	*(2%)*	*130*	*(5%)*	*510*	*(4%)*	*$178*	*(2%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Interior wall covering	7,900	(2%)	80	(3%)	290	(2%)	$296	(4%)
In non-confined fire	*7,600*	*(2%)*	*80*	*(3%)*	*290*	*(2%)*	*$296*	*(4%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified organic material	7,900	(2%)	10	(0%)	50	(0%)	$64	(1%)
In non-confined fire	*1,900*	*(1%)*	*10*	*(0%)*	*40*	*(0%)*	*$63*	*(1%)*
In confined fire	*5,900*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*

Table 11.
Reported Home Structure Fires by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified structural component or finish	7,700	(2%)	80	(3%)	180	(1%)	$349	(5%)
In non-confined fire	*7,200*	*(2%)*	*80*	*(3%)*	*180*	*(1%)*	*$348*	*(5%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Upholstered furniture	7,000	(2%)	500	(19%)	890	(7%)	$442	(6%)
In non-confined fire	*6,800*	*(2%)*	*500*	*(19%)*	*890*	*(7%)*	*$442*	*(6%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified furniture or utensil	6,900	(2%)	130	(5%)	440	(3%)	$233	(3%)
In non-confined fire	*5,500*	*(1%)*	*130*	*(5%)*	*420*	*(3%)*	*$233*	*(3%)*
In confined fire	*1,400*	*(0%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Multiple items first ignited	6,200	(2%)	100	(4%)	290	(2%)	$274	(4%)
In non-confined fire	*4,700*	*(1%)*	*100*	*(4%)*	*290*	*(2%)*	*$274*	*(4%)*
In confined fire	*1,500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Magazine, newspaper or writing paper	6,100	(2%)	60	(2%)	210	(2%)	$94	(1%)
In non-confined fire	*3,200*	*(1%)*	*60*	*(2%)*	*190*	*(2%)*	*$94*	*(1%)*
In confined fire	*2,900*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Cabinetry	6,100	(2%)	50	(2%)	320	(3%)	$169	(2%)
In non-confined fire	*4,900*	*(1%)*	*50*	*(2%)*	*310*	*(2%)*	*$168*	*(2%)*
In confined fire	*1,200*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Insulation within structural area	6,000	(2%)	10	(0%)	90	(1%)	$173	(2%)
In non-confined fire	*5,900*	*(2%)*	*10*	*(0%)*	*90*	*(1%)*	*$173*	*(2%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known item	52,000	(14%)	310	(12%)	1,510	(12%)	$1,160	(16%)
In non-confined fire	*35,000*	*(9%)*	*310*	*(12%)*	*1,460*	*(11%)*	*$1,156*	*(16%)*
In confined fire	*17,000*	*(5%)*	*0*	*(0%)*	*60*	*(0%)*	*$3*	*(0%)*
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(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 12.
Reported Home Structure Fires by Extent of Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	171,000	(46%)	0	(0%)	1,720	(13%)	$41	(1%)
Confined to object of origin	51,600	(14%)	160	(6%)	1,370	(11%)	$389	(5%)
Confined to room of origin	62,700	(17%)	400	(15%)	4,110	(32%)	$828	(12%)
Confined to floor of origin	17,200	(5%)	270	(10%)	1,370	(11%)	$670	(9%)
Confined to building of origin	60,700	(16%)	1,460	(55%)	3,570	(28%)	$4,168	(58%)
Extended beyond building of origin	10,800	(3%)	350	(13%)	740	(6%)	$1,050	(15%)
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
Flame damage extended beyond room of origin	88,600	(24%)	2,080	(79%)	5,680	(44%)	$5,888	(82%)

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	13,500	(15%)	130	(6%)	340	(6%)	$1,007	(17%)
Exterior wall covering or finish	8,900	(10%)	40	(2%)	160	(3%)	$416	(7%)
Electrical wire or cable insulation	5,000	(6%)	90	(4%)	260	(5%)	$324	(5%)
Unclassified structural component or finish	4,600	(5%)	70	(3%)	160	(3%)	$320	(5%)
Mattress or bedding	4,400	(5%)	250	(12%)	770	(14%)	$298	(5%)
Interior wall covering	4,200	(5%)	80	(4%)	190	(3%)	$246	(4%)
Cooking materials, including food	4,000	(5%)	90	(4%)	550	(10%)	$245	(4%)
Unclassified item first ignited	4,000	(5%)	70	(3%)	180	(3%)	$271	(5%)
Flammable or combustible liquid or gas, piping or filter	3,800	(4%)	180	(9%)	550	(10%)	$286	(5%)
Upholstered furniture	3,700	(4%)	380	(18%)	560	(10%)	$300	(5%)
Multiple items first ignited	3,200	(4%)	90	(4%)	210	(4%)	$236	(4%)
Floor covering, rug, carpet, or mat	2,700	(3%)	110	(5%)	170	(3%)	$151	(3%)
Insulation within structural area	2,700	(3%)	10	(0%)	60	(1%)	$151	(3%)
Unclassified furniture or utensil	2,500	(3%)	90	(5%)	240	(4%)	$185	(3%)
Rubbish, trash, or waste	2,400	(3%)	50	(2%)	130	(2%)	$130	(2%)
Clothing	2,100	(2%)	70	(3%)	220	(4%)	$130	(2%)
Exterior roof covering or finish	1,900	(2%)	0	(0%)	20	(0%)	$183	(3%)
Cabinetry	1,600	(2%)	40	(2%)	100	(2%)	$110	(2%)
Interior ceiling cover or finish	1,500	(2%)	20	(1%)	40	(1%)	$98	(2%)
Light vegetation, including grass	1,500	(2%)	10	(0%)	30	(1%)	$69	(1%)
Other known item	10,500	(12%)	230	(11%)	760	(13%)	$733	(12%)
Total	88,600	(100%)	2,080	(100%)	5,680	(100%)	$5,888	(100%)

The following items were first ignited in less than 2% of the home fires but were first ignited in 2% of the Civilian Fires Deaths:

Item First Ignited	Civilian Deaths	
Magazine, newspaper or writing paper	50	(3%)
Appliance housing or casing	50	(2%)

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

Source: NFIRS 5.0 and NFPA survey.

Table14.
Home Fires that Spread Beyond the Room of Origin
by Item Contributing Most to Flame Spread
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	23,300	(26%)	360	(17%)	950	(17%)	$1,930	(33%)
Unclassified structural component or finish	9,400	(11%)	190	(9%)	480	(8%)	$709	(12%)
Exterior wall covering or finish	9,000	(10%)	50	(2%)	280	(5%)	$469	(8%)
Interior wall covering	6,000	(7%)	220	(11%)	380	(7%)	$315	(5%)
Upholstered furniture	4,000	(5%)	320	(15%)	580	(10%)	$257	(4%)
Mattress or bedding	3,600	(4%)	150	(7%)	590	(10%)	$196	(3%)
Flammable or combustible liquid or gas, piping or filter	3,500	(4%)	180	(9%)	460	(8%)	$258	(4%)
Unclassified furniture or utensil	3,300	(4%)	160	(8%)	410	(7%)	$235	(4%)
Multiple items first ignited	2,700	(3%)	80	(4%)	190	(3%)	$199	(3%)
Unclassified item contributed most to flame spread	2,500	(3%)	50	(3%)	110	(2%)	$149	(3%)
Cabinetry	2,400	(3%)	40	(2%)	190	(3%)	$134	(2%)
Interior ceiling cover or finish	2,200	(2%)	40	(2%)	120	(2%)	$127	(2%)
Insulation within structural area	2,200	(2%)	0	(0%)	40	(1%)	$112	(2%)
Exterior roof covering or finish	1,900	(2%)	10	(1%)	40	(1%)	$188	(3%)
Clothing	1,600	(2%)	30	(1%)	140	(2%)	$71	(1%)
Other known item	11,200	(13%)	200	(10%)	730	(13%)	$540	(9%)
Total	88,600	(100%)	2,080	(100%)	5,680	(100%)	$5,888	(100%)

The following items contributed most to flame spread in less than 2% of the home fires but contributed most to flame spread in 2% or more of the civilian fire deaths:

Item Contributing	Civilian Deaths	
Floor covering, rug, carpet or mat	40	(2%)

Note: 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 1980-2009
(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%)

Table 15.
Reported Home Fire Deaths in Selected Areas of Origin
by Year 1980-2009
(Unknowns Were Allocated Proportionally)
(Continued)

Year	Living Room, Family Room or Den		Bedroom		Kitchen		Other Area of Origin		Total Deaths	
2008	630	(24%)	700	(26%)	400	(15%)	950	(35%)	2,670	(100%)
2009	630	(26%)	590	(24%)	330	(14%)	880	(36%)	2,440	(100%)
1980-1984 average	1,930	(40%)	1,210	(25%)	640	(13%)	1,070	(22%)	4,830	(100%)
2005-2009 average	640	(24%)	670	(25%)	400	(15%)	950	(36%)	2,650	(100%)
Change 1980-84 to 2005-09	-1,290	(-67%)	-540	(-44%)	-240	(-38%)	-120	(-12%)	-2,180	(-45%)

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: 1980-2009
(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%)
1980-1984 average	1,220	(25%)	770	(16%)	2,850	(59%)	4,830	(100%)
2005-2009 average	500	(19%)	370	(14%)	1,780	(67%)	2,650	(100%)
Change 1980-84 to 2005-09	-710	(-59%)	-400	(-52%)	-1,070	(-38%)	-2,180	(-45%)

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
1980-2009
(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%)
1980-1984 average	1,860	(39%)	1,690	(35%)	790	(16%)	490	(10%)	4,830	(100%)
2005-2009 average	1,010	(38%)	660	(25%)	400	(15%)	570	(22%)	2,650	(100%)
Change 1980-84 to 2005-09	-850	(-45%)	-1,030	(-61%)	-390	(-49%)	80	(17%)	-2,180	(-45%)

Table 17.
Reported Home Fire Deaths by Selected Types of Heat Sources and Year
1980-2009
(Continued)

In 2005-2009, notable other heat sources associated with home fire deaths were:

- Unclassified heat source with 180 (7%) deaths;
- Unclassified hot or smoldering object with 130 (5%); and
- Hot ember or ash with 110 (4%) civilian fire deaths.

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. 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). 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. From 1999 on, estimates for open flame and smoking material 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 Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	112,100	(73%)	0	(1%)	1,510	(32%)	$27	(3%)
Confined to object of origin	10,500	(7%)	30	(8%)	460	(10%)	$58	(6%)
Confined to room of origin	22,400	(15%)	90	(22%)	1,890	(40%)	$260	(27%)
Confined to floor of origin	2,400	(2%)	40	(10%)	290	(6%)	$111	(11%)
Confined to building of origin	6,400	(4%)	190	(48%)	520	(11%)	$459	(47%)
Extended beyond building of origin	600	(0%)	40	(11%)	80	(2%)	$57	(6%)
Total	154,500	(100%)	400	(100%)	4,750	(100%)	$973	(100%)
Flame damage extended beyond kitchen	9,400	(6%)	270	(69%)	880	(19%)	$627	(65%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 19.
Home Structure Fires that Originating in the Bedroom, by Extent of Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	1,000	(3%)	0	(0%)	10	(1%)	$0	(0%)
Confined to object of origin	5,200	(18%)	40	(6%)	290	(11%)	$57	(6%)
Confined to room of origin	10,900	(39%)	150	(22%)	930	(35%)	$181	(18%)
Confined to floor of origin	3,400	(12%)	110	(17%)	450	(17%)	$177	(18%)
Confined to building of origin	7,100	(25%)	320	(48%)	830	(31%)	$521	(52%)
Extended beyond building of origin	800	(3%)	50	(8%)	130	(5%)	$72	(7%)
Total	28,300	(100%)	670	(100%)	2,640	(100%)	$1,009	(100%)
Flame damage extended beyond bedroom	11,300	(40%)	480	(72%)	1,410	(53%)	$771	(76%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 20.
Home Structure Fires that Originating in the Living Room, Family Room or Den by Extent of Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	1,000	(7%)	0	(0%)	20	(1%)	$0	(0%)
Confined to object of origin	2,800	(20%)	40	(6%)	150	(11%)	$31	(5%)
Confined to room of origin	4,400	(31%)	110	(18%)	420	(29%)	$86	(14%)
Confined to floor of origin	1,300	(9%)	80	(12%)	180	(13%)	$68	(11%)
Confined to building of origin	4,300	(30%)	350	(55%)	540	(38%)	$366	(61%)
Extended beyond building of origin	500	(4%)	60	(10%)	110	(8%)	$53	(9%)
Total	14,200	(100%)	640	(100%)	1,420	(100%)	$604	(100%)
Flame damage extended beyond living room, family room, or den	6,100	(43%)	490	(77%)	840	(59%)	$487	(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	97,600	(63%)	120	(30%)	3,090	(65%)	$387	(40%)
In non-confined fire	*19,600*	*(13%)*	*120*	*(29%)*	*1,930*	*(41%)*	*$368*	*(38%)*
In confined fire	*78,000*	*(50%)*	*0*	*(1%)*	*1,160*	*(24%)*	*$18*	*(2%)*
Unclassified item first ignited	9,100	(6%)	10	(3%)	160	(3%)	$39	(4%)
In non-confined fire	*1,900*	*(1%)*	*10*	*(3%)*	*100*	*(2%)*	*$37*	*(4%)*
In confined fire	*7,200*	*(5%)*	*0*	*(0%)*	*50*	*(1%)*	*$1*	*(0%)*
Household utensil	9,000	(6%)	20	(4%)	190	(4%)	$36	(4%)
In non-confined fire	*1,800*	*(1%)*	*20*	*(4%)*	*110*	*(2%)*	*$35*	*(4%)*
In confined fire	*7,200*	*(5%)*	*0*	*(0%)*	*80*	*(2%)*	*$1*	*(0%)*
Appliance housing or casing	7,700	(5%)	20	(6%)	150	(3%)	$51	(5%)
In non-confined fire	*2,600*	*(2%)*	*20*	*(6%)*	*110*	*(2%)*	*$50*	*(5%)*
In confined fire	*5,100*	*(3%)*	*0*	*(0%)*	*40*	*(1%)*	*$1*	*(0%)*
Flammable or combustible liquid or gas, filter or piping	5,700	(4%)	20	(5%)	310	(6%)	$44	(4%)
In non-confined fire	*2,000*	*(1%)*	*20*	*(5%)*	*240*	*(5%)*	*$43*	*(4%)*
In confined fire	*3,600*	*(2%)*	*0*	*(0%)*	*70*	*(1%)*	*$1*	*(0%)*
Cabinetry	4,000	(3%)	30	(8%)	200	(4%)	$95	(10%)
In non-confined fire	*3,000*	*(2%)*	*30*	*(8%)*	*180*	*(4%)*	*$94*	*(10%)*
In confined fire	*1,000*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Electrical wire or cable insulation	2,800	(2%)	10	(2%)	50	(1%)	$35	(4%)
In non-confined fire	*1,700*	*(1%)*	*10*	*(2%)*	*50*	*(1%)*	*$35*	*(4%)*
In confined fire	*1,100*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known item	18,600	(12%)	170	(42%)	610	(13%)	$286	(29%)
In non-confined fire	*9,600*	*(6%)*	*170*	*(42%)*	*510*	*(11%)*	*$283*	*(29%)*
In confined fire	*9,000*	*(6%)*	*0*	*(0%)*	*100*	*(2%)*	*$2*	*(0%)*
Total	154,500	(100%)	400	(100%)	4,750	(100%)	$973	(100%)
In non-confined fire	*42,400*	*(27%)*	*390*	*(99%)*	*3,240*	*(68%)*	*$946*	*(97%)*
In confined fire	*112,100*	*(73%)*	*0*	*(1%)*	*1,510*	*(32%)*	*$27*	*(3%)*

Table 21.
Home Fires Originating in the Kitchen, by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

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	(11%)
Interior wall covering	20	(6%)
Multiple items first ignited	10	(4%)
Unclassified furniture or utensil	10	(3%)
Rubbish, trash, or waste	10	(3%)
Upholstered furniture	10	(3%)
Unclassified structural component or finish	10	(2%)
Magazine, newspaper or writing paper	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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Deaths		Direct Property Damage (in Millions)	
Mattress or bedding	8,800	(31%)	320	(47%)	1,170	(44%)	$326	(32%)
In non-confined fire	*8,600*	*(30%)*	*320*	*(48%)*	*1,170*	*(44%)*	*$326*	*(32%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(11%)*
Unclassified furniture or utensil	2,500	(9%)	50	(7%)	210	(8%)	$107	(11%)
In non-confined fire	*2,400*	*(9%)*	*50*	*(7%)*	*210*	*(8%)*	*$107*	*(11%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(12%)*	*$0*	*(1%)*
Electrical wire or cable insulation	2,000	(7%)	20	(4%)	110	(4%)	$68	(7%)
In non-confined fire	*2,000*	*(7%)*	*20*	*(4%)*	*110*	*(4%)*	*$67*	*(7%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(22%)*	*$0*	*(23%)*
Clothing	1,800	(6%)	30	(4%)	180	(7%)	$54	(5%)
In non-confined fire	*1,700*	*(6%)*	*30*	*(4%)*	*180*	*(7%)*	*$54*	*(5%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(2%)*
Floor covering, rug, carpet, or mat	1,400	(5%)	30	(4%)	80	(3%)	$43	(4%)
In non-confined fire	*1,400*	*(5%)*	*30*	*(4%)*	*80*	*(3%)*	*$43*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Upholstered furniture	1,100	(4%)	50	(7%)	110	(4%)	$46	(5%)
In non-confined fire	*1,100*	*(4%)*	*50*	*(7%)*	*110*	*(4%)*	*$46*	*(5%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Interior wall covering, excluding drapes	1,100	(4%)	10	(2%)	50	(2%)	$39	(4%)
In non-confined fire	*1,100*	*(4%)*	*10*	*(2%)*	*50*	*(2%)*	*$39*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified soft goods or wearing apparel	900	(3%)	20	(3%)	90	(3%)	$28	(3%)
In non-confined fire	*800*	*(3%)*	*20*	*(3%)*	*90*	*(3%)*	*$28*	*(3%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(6%)*	*$0*	*(1%)*
Curtain, blind, drapery or tapestry	800	(3%)	0	(1%)	70	(3%)	$29	(3%)
In non-confined fire	*800*	*(3%)*	*0*	*(1%)*	*70*	*(3%)*	*$29*	*(3%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(5%)*
Unclassified item first ignited	900	(3%)	10	(2%)	80	(3%)	$27	(3%)
In non-confined fire	*800*	*(3%)*	*10*	*(2%)*	*80*	*(3%)*	*$27*	*(3%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(12%)*	*$0*	*(7%)*
Structural member or framing	800	(3%)	10	(2%)	30	(1%)	$38	(4%)
In non-confined fire	*800*	*(3%)*	*10*	*(2%)*	*30*	*(1%)*	*$38*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Multiple items first ignited	800	(3%)	20	(3%)	70	(3%)	$37	(4%)
In non-confined fire	*700*	*(3%)*	*20*	*(3%)*	*70*	*(3%)*	*$37*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(1%)*
Magazine, newspaper or writing paper	700	(3%)	10	(2%)	50	(2%)	$24	(2%)
In non-confined fire	*600*	*(2%)*	*10*	*(2%)*	*50*	*(2%)*	*$24*	*(2%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(9%)*

Table 22.
Home Fires Originating in the Bedroom, by Item First Ignited
2005-2009 Annual Averages
(Continued)
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Deaths		Direct Property Damage (in Millions)	
Rubbish, trash, or waste	700	(2%)	10	(1%)	30	(1%)	$13	(1%)
In non-confined fire	*400*	*(2%)*	*10*	*(1%)*	*30*	*(1%)*	*$13*	*(1%)*
In confined fire	*300*	*(1%)*	*0*	*(0%)*	*0*	*(19%)*	*$0*	*(11%)*
Appliance housing or casing	600	(2%)	0	(0%)	40	(2%)	$12	(1%)
In non-confined fire	*500*	*(2%)*	*0*	*(0%)*	*40*	*(2%)*	*$12*	*(1%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(13%)*
Cabinetry	500	(2%)	10	(1%)	40	(2%)	$21	(2%)
In non-confined fire	*500*	*(2%)*	*10*	*(1%)*	*40*	*(2%)*	*$21*	*(2%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified structural component or finish	500	(2%)	10	(1%)	20	(1%)	$18	(2%)
In non-confined fire	*500*	*(2%)*	*10*	*(1%)*	*20*	*(1%)*	*$18*	*(2%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(1%)*
Flammable or combustible liquid or gas, filter or piping	400	(1%)	40	(6%)	80	(3%)	$21	(2%)
In non-confined fire	*400*	*(1%)*	*40*	*(6%)*	*80*	*(3%)*	*$21*	*(2%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(18%)*	*$0*	*(1%)*
Other known item	2,200	(8%)	20	(3%)	130	(5%)	$58	(6%)
In non-confined fire	*2,000*	*(7%)*	*20*	*(3%)*	*130*	*(5%)*	*$58*	*(6%)*
In confined fire	*200*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	28,300	(100%)	670	(100%)	2,640	(100%)	$1,009	(100%)
In non-confined fire	*27,400*	*(97%)*	*670*	*(100%)*	*2,630*	*(99%)*	*$1,008*	*(100%)*
In confined fire	*1,000*	*(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Upholstered furniture	2,800	(20%)	280	(44%)	500	(35%)	$149	(25%)
In non-confined fire	*2,800*	*(19%)*	*280*	*(44%)*	*500*	*(35%)*	*$149*	*(25%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Electrical wire or cable insulation	1,100	(8%)	30	(4%)	80	(5%)	$37	(6%)
In non-confined fire	*1,100*	*(8%)*	*30*	*(4%)*	*80*	*(5%)*	*$37*	*(6%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Floor covering, rug, carpet, or mat	1,100	(8%)	40	(7%)	90	(7%)	$43	(7%)
In non-confined fire	*1,100*	*(8%)*	*40*	*(7%)*	*90*	*(7%)*	*$43*	*(7%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Structural member or framing	1,000	(7%)	10	(2%)	30	(2%)	$54	(9%)
In non-confined fire	*1,000*	*(7%)*	*10*	*(2%)*	*30*	*(2%)*	*$54*	*(9%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified furniture or utensil	800	(5%)	30	(5%)	100	(7%)	$37	(6%)
In non-confined fire	*800*	*(5%)*	*30*	*(5%)*	*100*	*(7%)*	*$37*	*(6%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified item first ignited	700	(5%)	10	(2%)	40	(3%)	$17	(3%)
In non-confined fire	*500*	*(3%)*	*10*	*(2%)*	*40*	*(2%)*	*$17*	*(3%)*
In confined fire	*300*	*(2%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Interior wall covering, excluding drapes	700	(5%)	10	(2%)	40	(3%)	$31	(5%)
In non-confined fire	*700*	*(5%)*	*10*	*(2%)*	*40*	*(3%)*	*$31*	*(5%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Flammable or combustible liquid or gas , filter or piping	500	(4%)	40	(6%)	100	(7%)	$25	(4%)
In non-confined fire	*500*	*(3%)*	*40*	*(6%)*	*100*	*(7%)*	*$25*	*(4%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Mattress or bedding	500	(4%)	40	(7%)	80	(5%)	$21	(4%)
In non-confined fire	*500*	*(3%)*	*40*	*(7%)*	*80*	*(5%)*	*$21*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified structural component or finish	400	(3%)	10	(1%)	20	(2%)	$17	(3%)
In non-confined fire	*400*	*(3%)*	*10*	*(1%)*	*20*	*(2%)*	*$17*	*(3%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Multiple items first ignited	400	(3%)	30	(4%)	40	(3%)	$23	(4%)
In non-confined fire	*400*	*(3%)*	*30*	*(4%)*	*40*	*(3%)*	*$23*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Magazine, newspaper or writing paper	400	(3%)	20	(4%)	40	(3%)	$20	(3%)
In non-confined fire	*400*	*(3%)*	*20*	*(4%)*	*40*	*(3%)*	*$20*	*(3%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*

Table 23.
Home Fires Originating in the Living Room, Family Room, or Den, by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Curtain, blind, drapery or tapestry	400	(3%)	10	(2%)	40	(3%)	$14	(2%)
In non-confined fire	*400*	*(3%)*	*10*	*(2%)*	*40*	*(3%)*	*$14*	*(2%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Rubbish, trash, or waste	300	(2%)	10	(2%)	20	(1%)	$10	(2%)
In non-confined fire	*300*	*(2%)*	*10*	*(2%)*	*20*	*(1%)*	*$10*	*(2%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Appliance housing or casing	300	(2%)	0	(0%)	20	(1%)	$8	(1%)
In non-confined fire	*300*	*(2%)*	*0*	*(0%)*	*20*	*(1%)*	*$8*	*(1%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Clothing	300	(2%)	20	(3%)	0	(0%)	$8	(1%)
In non-confined fire	*300*	*(2%)*	*20*	*(3%)*	*0*	*(0%)*	*$8*	*(1%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Cabinetry	300	(2%)	10	(1%)	20	(2%)	$14	(2%)
In non-confined fire	*200*	*(2%)*	*10*	*(1%)*	*20*	*(2%)*	*$14*	*(2%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Decoration	200	(2%)	0	(0%)	20	(2%)	$6	(1%)
In non-confined fire	*200*	*(2%)*	*0*	*(0%)*	*20*	*(2%)*	*$6*	*(1%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known item	2,000	(14%)	30	(4%)	130	(9%)	$70	(12%)
In non-confined fire	*1,500*	*(11%)*	*30*	*(4%)*	*120*	*(9%)*	*$70*	*(12%)*
In confined fire	*500*	*(3%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	14,200	(100%)	640	(100%)	1,420	(100%)	$604	(100%)
In non-confined fire	*13,300*	*(93%)*	*640*	*(100%)*	*1,400*	*(99%)*	*$604*	*(100%)*
In confined fire	*1,000*	*(7%)*	*0*	*(0%)*	*20*	*(1%)*	*$0*	*(0%)*

The following items were first ignited in less than 2% of the living room, family room or den fires but were first ignited in 2% or more of the associated civilian fire deaths:

Item First Ignited	Civilian Deaths	
Christmas tree	10	(2%)

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Deaths		Direct Property Damage (in Millions)	
Cooking materials, including food	3,400	(36%)	80	(31%)	480	(55%)	$224	(36%)
Cabinetry	900	(9%)	20	(8%)	50	(6%)	$60	(10%)
Interior wall covering, excluding drapes	700	(7%)	20	(7%)	40	(4%)	$45	(7%)
Structural member or framing	500	(5%)	10	(3%)	10	(1%)	$35	(6%)
Appliance housing or casing	500	(5%)	20	(6%)	20	(3%)	$30	(5%)
Flammable or combustible liquid or gas filter or piping	400	(4%)	20	(6%)	50	(6%)	$27	(4%)
Electrical wire or cable insulation	400	(4%)	10	(2%)	20	(3%)	$26	(4%)
Unclassified item first ignited	400	(4%)	10	(3%)	20	(2%)	$25	(4%)
Unclassified structural component or finish	300	(3%)	10	(3%)	20	(2%)	$18	(3%)
Household utensil	300	(3%)	10	(5%)	20	(3%)	$22	(3%)
Multiple items first ignited	300	(3%)	10	(5%)	20	(2%)	$16	(3%)
Rubbish, trash, or waste	200	(2%)	10	(3%)	20	(2%)	$12	(2%)
Interior ceiling cover or finish	200	(2%)	0	(1%)	10	(1%)	$12	(2%)
Unclassified furniture or utensil	100	(2%)	10	(2%)	0	(0%)	$8	(1%)
Other known item	1,000	(10%)	40	(14%)	90	(10%)	$68	(11%)
Total	9,400	(100%)	270	(100%)	880	(100%)	$627	(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.

Item First Ignited	Civilian Deaths	
Upholstered furniture	10	(4%)
Clothing	10	(2%)
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 25.
Home Fires Originating in the Bedroom that Spread Beyond the Room of Origin by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Deaths		Direct Property Damage (in Millions)	
Mattress or bedding	3,400	(30%)	210	(43%)	630	(44%)	$243	(31%)
Unclassified furniture or utensil	1,000	(9%)	40	(8%)	120	(8%)	$83	(11%)
Electrical wire or cable insulation	700	(6%)	20	(4%)	60	(4%)	$54	(7%)
Clothing	600	(5%)	20	(4%)	80	(6%)	$37	(5%)
Floor covering, rug, carpet, or mat	600	(5%)	20	(4%)	30	(2%)	$34	(4%)
Flammable or combustible liquid or gas, filter or piping	600	(5%)	30	(7%)	50	(3%)	$18	(2%)
Interior wall covering, excluding drapes	600	(5%)	10	(3%)	40	(3%)	$32	(4%)
Structural member or framing	500	(5%)	10	(3%)	20	(2%)	$34	(4%)
Multiple items	500	(4%)	10	(3%)	40	(3%)	$31	(4%)
Upholstered furniture	400	(4%)	40	(8%)	60	(4%)	$35	(5%)
Unclassified soft goods or wearing apparel	300	(3%)	10	(2%)	50	(3%)	$20	(3%)
Curtain, blind, drapery or tapestry	300	(3%)	0	(1%)	40	(3%)	$23	(3%)
Unclassified item first ignited	300	(2%)	10	(2%)	50	(3%)	$18	(2%)
Unclassified structural component or finish	300	(2%)	10	(2%)	20	(2%)	$14	(2%)
Magazine, newspaper or writing paper	200	(2%)	10	(2%)	30	(2%)	$19	(2%)
Cabinetry	200	(2%)	10	(2%)	20	(1%)	$13	(2%)
Other known item	900	(8%)	30	(5%)	90	(6%)	$61	(8%)
Total	11,300	(100%)	480	(100%)	1,410	(100%)	$771	(100%)

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

Item First Ignited	Civilian Deaths	
Linen other than bedding	10	(2%)

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Deaths		Direct Property Damage (in Millions)	
Upholstered furniture	1,400	(24%)	200	(41%)	290	(35%)	$113	(23%)
Structural member or framing	600	(10%)	10	(2%)	20	(3%)	$47	(10%)
Floor covering, rug, carpet, or mat	500	(9%)	40	(8%)	60	(7%)	$35	(7%)
Interior wall covering, excluding drapes	400	(7%)	10	(2%)	30	(4%)	$27	(5%)
Electrical wire or cable insulation	400	(6%)	30	(5%)	40	(5%)	$28	(6%)
Unclassified furniture or utensil	300	(6%)	20	(4%)	60	(7%)	$29	(6%)
Flammable or combustible liquid or gas, filter or piping	300	(5%)	30	(6%)	60	(7%)	$22	(5%)
Multiple items first ignited	300	(5%)	20	(5%)	30	(4%)	$20	(4%)
Unclassified structural component or finish	300	(4%)	10	(2%)	20	(2%)	$15	(3%)
Mattress or bedding	200	(3%)	30	(6%)	40	(5%)	$17	(4%)
Unclassified item first ignited	200	(3%)	10	(2%)	10	(1%)	$13	(3%)
Magazine, newspaper or writing paper	100	(2%)	20	(4%)	20	(3%)	$16	(3%)
Rubbish, trash, or waste	100	(2%)	10	(2%)	10	(1%)	$8	(2%)
Curtain, blind, drapery or tapestry	100	(2%)	10	(2%)	20	(3%)	$12	(2%)
Other known item first ignited	800	(14%)	40	(8%)	110	(13%)	$87	(18%)
Total	6,100	(100%)	490	(100%)	840	(100%)	$487	(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:

Item First Ignited	Civilian Deaths	
Clothing	10	(3%)
Christmas tree	10	(2%)

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cabinetry	1,700	(18%)	40	(15%)	140	(16%)	$99	(16%)
Structural member or framing	1,500	(16%)	40	(14%)	100	(11%)	$153	(24%)
Interior wall covering	1,200	(13%)	40	(16%)	90	(10%)	$68	(11%)
Cooking materials, including food	1,100	(12%)	30	(10%)	180	(20%)	$61	(10%)
Unclassified structural component or finish	900	(10%)	30	(11%)	90	(10%)	$70	(11%)
Flammable or combustible liquid or gas, filter or piping	800	(8%)	30	(9%)	80	(9%)	$38	(6%)
Interior ceiling cover or finish	400	(4%)	10	(3%)	40	(4%)	$23	(4%)
Unclassified furniture or utensil	300	(3%)	10	(3%)	40	(4%)	$22	(3%)
Multiple items first ignited	200	(3%)	10	(4%)	20	(2%)	$15	(2%)
Unclassified item first ignited	200	(2%)	10	(3%)	10	(1%)	$9	(1%)
Other known item	1,100	(12%)	30	(11%)	100	(12%)	$69	(11%)
Total	9,400	(100%)	270	(100%)	880	(100%)	$627	(100%)

The following items contributed most to flame spread 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	
Floor covering, rug, carpet or mattress	10	(2%)
Upholstered furniture	10	(2%)

Note: 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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Mattress or bedding	2,700	(24%)	130	(28%)	510	(36%)	$169	(22%)
Structural member or framing	1,700	(16%)	70	(14%)	120	(9%)	$157	(20%)
Unclassified furniture or utensil	1,200	(11%)	60	(12%)	180	(13%)	$84	(11%)
Interior wall covering, excluding drapes	1,100	(9%)	40	(7%)	80	(5%)	$56	(7%)
Unclassified structural component or finish	900	(8%)	30	(7%)	90	(6%)	$58	(8%)
Upholstered furniture	500	(5%)	30	(7%)	90	(6%)	$35	(5%)
Clothing	400	(4%)	10	(1%)	50	(4%)	$20	(3%)
Multiple items	400	(4%)	20	(4%)	30	(2%)	$30	(4%)
Unclassified soft goods or wearing apparel	300	(3%)	10	(3%)	30	(2%)	$17	(2%)
Floor covering, rug, carpet, or mat	300	(3%)	10	(3%)	20	(2%)	$18	(2%)
Interior ceiling cover or finish	200	(2%)	10	(2%)	20	(1%)	$13	(2%)
Unclassified item first ignited	200	(2%)	10	(3%)	40	(3%)	$21	(3%)
Flammable or combustible liquid or gas, filter or piping	200	(2%)	20	(4%)	60	(4%)	$16	(2%)
Other known item	1,000	(9%)	30	(6%)	90	(6%)	$75	(10%)
Total	11,300	(100%)	480	(100%)	1,410	(100%)	$771	(100%)

Note: 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 or Origin, by Item Contributing Most to Flame Spread
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Upholstered furniture	1,400	(23%)	180	(36%)	260	(32%)	$103	(21%)
Structural member or framing	1,200	(19%)	40	(9%)	100	(11%)	$99	(20%)
Interior wall covering, excluding drapes	600	(10%)	60	(13%)	60	(7%)	$36	(7%)
Unclassified structural component or finish	500	(8%)	20	(5%)	60	(7%)	$41	(8%)
Unclassified furniture or utensil	400	(7%)	40	(8%)	90	(11%)	$37	(8%)
Flammable or combustible liquid or gas, filter or piping	300	(4%)	30	(6%)	60	(7%)	$17	(4%)
Multiple items	200	(4%)	20	(4%)	30	(4%)	$19	(4%)
Floor covering, rug, carpet, or mat	200	(4%)	10	(2%)	20	(2%)	$11	(2%)
Interior ceiling cover or finish	200	(3%)	10	(2%)	20	(3%)	$12	(2%)
Unclassified item first ignited	100	(2%)	10	(2%)	20	(2%)	$11	(2%)
Exterior wall covering or finish	100	(2%)	10	(2%)	20	(2%)	$9	(2%)
Mattress or bedding	100	(2%)	10	(2%)	20	(3%)	$7	(1%)
Other known item	600	(10%)	50	(10%)	80	(10%)	$85	(18%)
Total	6,100	(100%)	490	(100%)	840	(100%)	$487	(100%)

The following items contributed to flame spread in less than 2% of these fires but 2% or more of the associated civilian fire deaths.

Item Contributing	Civilian Deaths	
Magazine, newspaper or writing paper	10	(2%)
Christmas tree	10	(2%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 30.
Home Structure Fires by Structure Status
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Structure Status	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Occupied and operating	339,900	(91%)	2,590	(98%)	12,570	(98%)	$6,155	(86%)
In non-confined fire	*173,500*	*(46%)*	*2,590*	*(98%)*	*10,860*	*(84%)*	*$6,115*	*(86%)*
In confined fire	*166,300*	*(44%)*	*0*	*(0%)*	*1,710*	*(13%)*	*$40*	*(1%)*
Vacant and secured	10,800	(3%)	10	(1%)	80	(1%)	$380	(5%)
In non-confined fire	*9,900*	*(3%)*	*10*	*(1%)*	*80*	*(1%)*	*$380*	*(5%)*
In confined fire	*800*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Vacant and unsecured	10,700	(3%)	20	(1%)	50	(0%)	$202	(3%)
In non-confined fire	*10,200*	*(3%)*	*20*	*(1%)*	*50*	*(0%)*	*$202*	*(3%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified structure status	3,800	(1%)	10	(0%)	70	(1%)	$41	(1%)
In non-confined fire	*1,800*	*(0%)*	*10*	*(0%)*	*60*	*(0%)*	*$41*	*(1%)*
In confined fire	*2,000*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Idle or not routinely used	2,800	(1%)	0	(0%)	20	(0%)	$79	(1%)
In non-confined fire	*2,500*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$79*	*(1%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Under construction	2,600	(1%)	10	(0%)	50	(0%)	$176	(2%)
In non-confined fire	*2,000*	*(1%)*	*10*	*(0%)*	*50*	*(0%)*	*$176*	*(2%)*
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Under major renovation	2,300	(1%)	0	(0%)	50	(0%)	$101	(1%)
In non-confined fire	*2,100*	*(1%)*	*0*	*(0%)*	*40*	*(0%)*	*$101*	*(1%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Being demolished	1,000	(0%)	0	(0%)	10	(0%)	$12	(0%)
In non-confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$12*	*(0%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total fires	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)
In non-confined fire	*202,900*	*(54%)*	*2,640*	*(100%)*	*11,160*	*(87%)*	*$7,105*	*(99%)*
In confined fire	*171,000*	*(46%)*	*0*	*(0%)*	*1,720*	*(13%)*	*$41*	*(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

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%)

Source: U.S. Census Bureau. Housing Vacancy Survey. "Table 7. Estimates of the Total Housing Inventory for the United States: 1965 to Present," accessed at http://www.census.gov/hhes/www/housing/hvs/historic/ on April 11, 2011.

Table 32.
Vacant Home Structure Fires, by Cause of Ignition
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Intentional	10,300	(48%)	10	(40%)	40	(28%)	$282	(48%)
In non-confined fire	*9,900*	*(46%)*	*10*	*(40%)*	*40*	*(28%)*	*$282*	*(48%)*
In confined fire	*400*	*(2%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unintentional	6,900	(32%)	20	(48%)	70	(60%)	$176	(30%)
In non-confined fire	*6,100*	*(29%)*	*20*	*(48%)*	*70*	*(60%)*	*$175*	*(30%)*
In confined fire	*800*	*(4%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified	2,200	(10%)	0	(8%)	10	(6%)	$43	(7%)
In non-confined fire	*2,200*	*(10%)*	*0*	*(8%)*	*10*	*(6%)*	*$43*	*(7%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Failure of equipment or heat source	1,500	(7%)	0	(4%)	10	(6%)	$54	(9%)
In non-confined fire	*1,300*	*(6%)*	*0*	*(4%)*	*10*	*(6%)*	*$54*	*(9%)*
In confined fire	*100*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Act of nature	500	(3%)	0	(0%)	0	(0%)	$28	(5%)
In non-confined fire	*500*	*(2%)*	*0*	*(0%)*	*0*	*(0%)*	*$28*	*(5%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	21,500	(100%)	30	(100%)	120	(100%)	$582	(100%)
In non-confined fire	*20,100*	*(94%)*	*30*	*(100%)*	*120*	*(100%)*	*$582*	*(100%)*
In confined fire	*1,400*	*(6%)*	*0*	*(0%)*	*0*	*(0%)*	*$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 Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	1,400	(6%)	0	(0%)	0	(0%)	$0	(0%)
Confined to object of origin	2,900	(14%)	0	(5%)	20	(14%)	$30	(5%)
Confined to room of origin	3,100	(15%)	0	(4%)	30	(21%)	$30	(5%)
Confined to floor of origin	1,600	(7%)	0	(9%)	10	(11%)	$35	(6%)
Confined to building of origin	10,400	(48%)	20	(71%)	50	(41%)	$402	(69%)
Extended beyond building of origin	2,200	(10%)	0	(11%)	20	(13%)	$85	(15%)
Total	21,500	(100%)	30	(100%)	120	(100%)	$582	(100%)

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: 1980-2009

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions)	
				As Reported	In 2009 Dollars
1980	590,500	4,175	16,100	$2,447	$6,380
1981	574,000	4,430	14,875	$2,713	$6,392
1982	538,000	3,960	15,750	$2,794	$6,206
1983	523,500	3,825	16,450	$2,792	$6,009
1984	506,000	3,290	15,100	$2,945	$6,073
1985	501,500	4,020	15,250	$3,217	$6,406
1986	468,000	4,005	14,650	$2,992	$5,862
1987	433,000	3,780	15,200	$3,078	$5,813
1988	432,500	4,125	17,125	$3,349	$6,080
1989	402,500	3,545	15,225	$3,335	$5,775
1990	359,000	3,370	15,250	$3,534	$5,809
1991	363,000	2,905	15,600	$3,354	$5,283
1992	358,000	3,160	15,275	$3,178	$4,862
1993	358,000	3,035	15,700	$4,111	$6,105
1994	341,000	2,785	14,000	$3,537	$5,123
1995	320,000	3,035	13,450	$3,615	$5,089
1996	324,000	3,470	13,700	$4,121	$5,642
1997	302,500	2,700	12,300	$3,735	$4,993
1998	283,000	2,775	11,800	$3,642	$4,799
1999	282,500	2,375	11,550	$4,123	$5,309
2000	283,500	2,920	12,575	$4,639	$5,784
2001	295,500	2,650	11,400	$4,652	$5,640
2002	300,500	2,280	9,950	$5,005	$5,972
2003	297,000	2,735	10,000	$5,052	$5,898
2004	301,500	2,680	10,500	$4,948	$5,628
2005	287,000	2,570	10,300	$5,781	$6,352
2006	304,500	2,155	8,800	$5,936	$6,318
2007	300,500	2,350	9,650	$6,225	$6,439
2008	291,000	2,365	9,185	$6,892	$6,877
2009	272,500	2,100	9,300	$6,391	$6,391

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
2005-2009 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	28,200	(11%)	280	(13%)	930	(10%)	$563	(10%)
February	24,600	(9%)	240	(11%)	830	(9%)	$492	(8%)
March	24,400	(9%)	230	(10%)	870	(10%)	$507	(9%)
April	21,500	(8%)	170	(8%)	720	(8%)	$461	(8%)
May	19,800	(7%)	160	(7%)	690	(8%)	$445	(8%)
June	18,700	(7%)	120	(5%)	640	(7%)	$433	(7%)
July	19,600	(7%)	130	(6%)	640	(7%)	$462	(8%)
August	18,400	(7%)	120	(5%)	640	(7%)	$424	(7%)
September	17,600	(7%)	120	(6%)	560	(6%)	$386	(7%)
October	20,900	(8%)	170	(8%)	660	(7%)	$592	(10%)
November	23,300	(9%)	200	(9%)	780	(9%)	$493	(8%)
December	27,500	(10%)	270	(12%)	900	(10%)	$638	(11%)
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
Monthly average	22,000	(8%)	180	(8%)	740	(8%)	$491	(8%)

Table 3A.
Reported One- or Two-Family Home Structure Fires by Day of Week
2005-2009 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	39,900	(15%)	320	(14%)	1,300	(15%)	$984	(17%)
Monday	38,100	(14%)	300	(14%)	1,240	(14%)	$846	(14%)
Tuesday	36,800	(14%)	280	(13%)	1,270	(14%)	$824	(14%)
Wednesday	36,800	(14%)	310	(14%)	1,260	(14%)	$784	(13%)
Thursday	37,000	(14%)	300	(14%)	1,240	(14%)	$769	(13%)
Friday	36,600	(14%)	330	(15%)	1,180	(13%)	$817	(14%)
Saturday	39,200	(15%)	360	(16%)	1,360	(15%)	$872	(15%)
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
Daily average	37,800	(14%)	320	(14%)	1,270	(14%)	$842	(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
2005-2009 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 12:59 a.m.	8,400	(3%)	140	(6%)	400	(4%)	$388	(7%)
1:00 - 1:59 a.m.	7,300	(3%)	160	(7%)	370	(4%)	$273	(5%)
2:00 - 2:59 a.m.	6,600	(2%)	150	(7%)	370	(4%)	$276	(5%)
3:00 - 3:59 a.m.	6,200	(2%)	160	(7%)	370	(4%)	$260	(4%)
4:00 - 4:59 a.m.	5,600	(2%)	160	(7%)	320	(4%)	$232	(4%)
5:00 - 5:59 a.m.	5,300	(2%)	120	(6%)	280	(3%)	$191	(3%)
6:00 - 6:59 a.m.	5,900	(2%)	110	(5%)	240	(3%)	$169	(3%)
7:00 - 7:59 a.m.	7,000	(3%)	90	(4%)	250	(3%)	$143	(2%)
8:00 - 8:59 a.m.	8,200	(3%)	80	(4%)	280	(3%)	$172	(3%)
9:00 - 9:59 a.m.	9,700	(4%)	70	(3%)	330	(4%)	$255	(4%)
10:00 - 10:59 a.m.	10,800	(4%)	70	(3%)	340	(4%)	$203	(3%)
11:00 - 11:59 a.m.	12,000	(5%)	60	(3%)	360	(4%)	$227	(4%)
Noon - 12:59 p.m.	13,200	(5%)	50	(2%)	410	(5%)	$236	(4%)
1:00 - 1:59 p.m.	13,400	(5%)	50	(2%)	390	(4%)	$257	(4%)
2:00 - 2:59 p.m.	13,800	(5%)	60	(3%)	380	(4%)	$262	(4%)
3:00 - 3:59 p.m.	14,500	(5%)	50	(2%)	410	(5%)	$302	(5%)
4:00 - 4:59 p.m.	16,000	(6%)	60	(3%)	460	(5%)	$257	(4%)
5:00 - 5:59 p.m.	18,000	(7%)	60	(3%)	480	(5%)	$298	(5%)
6:00 - 6:59 p.m.	18,300	(7%)	60	(3%)	490	(6%)	$257	(4%)
7:00 - 7:59 p.m.	16,900	(6%)	60	(3%)	470	(5%)	$264	(4%)
8:00 - 8:59 p.m.	15,000	(6%)	70	(3%)	410	(5%)	$261	(4%)
9:00 - 9:59 p.m.	12,800	(5%)	80	(4%)	400	(4%)	$244	(4%)
10:00 - 10:59 p.m.	10,700	(4%)	100	(5%)	330	(4%)	$233	(4%)
11:00 - 11:59 p.m.	8,900	(3%)	120	(5%)	320	(4%)	$235	(4%)
Total	264,500	(100%)	2,210	(100%)	8,858	(100%)	$5,895	(100%)
Average	11,000	(4%)	90	(4%)	370	(4%)	$246	(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	84,500	(32%)	270	(12%)	2,900	(33%)	$557	(9%)
Cooking equipment in non-confined fire	*27,700*	*(10%)*	*260*	*(12%)*	*2,080*	*(24%)*	*$541*	*(9%)*
Confined cooking fire	*56,800*	*(21%)*	*0*	*(0%)*	*810*	*(9%)*	*$16*	*(0%)*
Heating equipment	54,800	(21%)	550	(25%)	1,260	(14%)	$786	(13%)
Heating equipment in non-confined fire	*23,400*	*(9%)*	*550*	*(25%)*	*1,180*	*(13%)*	*$776*	*(13%)*
Confined chimney or flue fire	*22,500*	*(8%)*	*0*	*(0%)*	*30*	*(0%)*	*$8*	*(0%)*
Confined fuel burner or boiler fire	*9,000*	*(3%)*	*0*	*(0%)*	*50*	*(1%)*	*$2*	*(0%)*
Intentional	22,500	(9%)	130	(6%)	590	(7%)	$491	(8%)
Electrical distribution or lighting equipment*	21,100	(8%)	350	(16%)	770	(9%)	$690	(12%)
Clothes dryer or washer	13,100	(5%)	30	(1%)	370	(4%)	$176	(3%)
Smoking materials	11,600	(4%)	510	(23%)	760	(9%)	$295	(5%)
Candle	10,000	(4%)	110	(5%)	740	(8%)	$385	(7%)
Exposure fire	10,300	(4%)	10	(1%)	50	(1%)	$728	(12%)
Playing with heat source	5,800	(2%)	90	(4%)	540	(6%)	$139	(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 is used is described in the appendix.

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)
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	176,000	(67%)	1,580	(71%)	7,030	(79%)	$3,534	(60%)
In non-confined fire	*101,100*	*(38%)*	*1,580*	*(71%)*	*6,180*	*(70%)*	*$3,513*	*(60%)*
In confined fire	*74,800*	*(28%)*	*0*	*(0%)*	*850*	*(10%)*	*$21*	*(0%)*
Failure of equipment or heat source	45,400	(17%)	290	(13%)	1,030	(12%)	$940	(16%)
In non-confined fire	*33,400*	*(13%)*	*290*	*(13%)*	*970*	*(11%)*	*$936*	*(16%)*
In confined fire	*12,000*	*(5%)*	*0*	*(0%)*	*60*	*(1%)*	*$4*	*(0%)*
Intentional	22,500	(9%)	280	(13%)	590	(7%)	$491	(8%)
In non-confined fire	*15,200*	*(6%)*	*280*	*(13%)*	*570*	*(6%)*	*$490*	*(8%)*
In confined fire	*7,300*	*(3%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Unclassified	15,100	(6%)	50	(2%)	170	(2%)	$668	(11%)
In non-confined fire	*11,700*	*(4%)*	*50*	*(2%)*	*170*	*(2%)*	*$667*	*(11%)*
In confined fire	*3,500*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Act of nature	5,500	(2%)	10	(0%)	40	(0%)	$262	(4%)
In non-confined fire	*5,100*	*(2%)*	*10*	*(0%)*	*40*	*(0%)*	*$262*	*(4%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
In non-confined fire	*166,400*	*(37%)*	*2,210*	(100%)	*7,930*	(100%)	*$5,868*	(100%)
In confined fire	*98,100*	*(67%)*	*0*	(0%)	*930*	(0%)	*$27*	(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
2005-2009 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	**84,500**	**(32%)**	**270**	**(12%)**	**2,900**	**(33%)**	**$557**	**(9%)**
Range or cooktop	48,200	(18%)	220	(10%)	2,210	(25%)	$380	(6%)
In non-confined fire	*20,800*	*(8%)*	*220*	*(10%)*	*1,730*	*(20%)*	*$372*	*(6%)*
In confined fire	*27,300*	*(10%)*	*0*	*(0%)*	*480*	*(5%)*	*$8*	*(0%)*
Oven or rotisserie	14,500	(5%)	20	(1%)	170	(2%)	$26	(0%)
In non-confined fire	*2,200*	*(1%)*	*20*	*(1%)*	*80*	*(1%)*	*$22*	*(0%)*
In confined fire	*12,300*	*(5%)*	*0*	*(0%)*	*90*	*(1%)*	*$3*	*(0%)*
Portable cooking or warming unit	3,700	(1%)	20	(1%)	140	(2%)	$47	(1%)
In non-confined fire	*1,600*	*(1%)*	*20*	*(1%)*	*110*	*(1%)*	*$46*	*(1%)*
In confined fire	*2,100*	*(1%)*	*0*	*(0%)*	*30*	*(0%)*	*$1*	*(0%)*
Microwave oven	4,100	(2%)	0	(0%)	90	(1%)	$21	(0%)
In non-confined fire	*1,200*	*(0%)*	*0*	*(0%)*	*80*	*(1%)*	*$20*	*(0%)*
In confined fire	*3,000*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Grill, hibachi or barbecue	2,600	(1%)	10	(0%)	80	(1%)	$63	(1%)
In non-confined fire	*1,300*	*(0%)*	*10*	*(0%)*	*60*	*(1%)*	*$63*	*(1%)*
In confined fire	*1,300*	*(0%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Other known cooking equipment or confined cooking fire	*11,500*	*(4%)*	*0*	*(0%)*	*210*	*(2%)*	*$21*	*(0%)*
Other known cooking equipment in non-confined fire	600	(0%)	0	(0%)	20	(0%)	$18	(0%)
Confined cooking fire with other or unknown equipment	10,900	(83%)	0	(100%)	180	(93%)	$3	(100%)
No equipment involved in ignition	**63,300**	**(24%)**	**840**	**(38%)**	**2,610**	**(29%)**	**$3,124**	**(53%)**
Heating equipment	**54,800**	**(21%)**	**550**	**(25%)**	**1,260**	**(14%)**	**$787**	**(13%)**
Fireplace or chimney	26,500	(10%)	30	(1%)	110	(1%)	$200	(3%)
In non-confined fire	*4,000*	*(2%)*	*30*	*(1%)*	*80*	*(1%)*	*$193*	*(3%)*
Confined chimney or flue fire	*22,500*	*(8%)*	*0*	*(0%)*	*30*	*(0%)*	*$8*	*(0%)*
Fixed or portable space heater	12,000	(5%)	440	(20%)	770	(9%)	$397	(7%)
Central heat	11,100	(4%)	40	(2%)	140	(2%)	$55	(1%)
In non-confined fire	*2,100*	*(1%)*	*40*	*(2%)*	*80*	*(1%)*	*$52*	*(1%)*
Confined fuel burner or boiler fire	*9,000*	*(3%)*	*0*	*(0%)*	*50*	*(1%)*	*$3*	*(0%)*
Water heater	4,500	(2%)	30	(1%)	230	(3%)	$111	(2%)
Other known heating equipment in non-confined fire	700	(0%)	10	(1%)	20	(0%)	$25	(0%)

Table 7A.
Reported One- or Two-Family Home Structure Fires
by Equipment Involved in Ignition
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires and Confined Cooking Fires Were Allocated Proportionally)
(Continued)

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Electrical distribution or lighting equipment*	**21,100**	**(8%)**	**350**	**(16%)**	**770**	**(9%)**	**$690**	**(12%)**
Fixed wiring or related equipment	13,200	(5%)	170	(8%)	310	(4%)	$389	(7%)
Lamp, light bulb or light fixture	4,200	(2%)	40	(2%)	180	(2%)	$167	(3%)
Cord or plug	2,400	(1%)	120	(6%)	180	(2%)	$84	(1%)
Other known electrical distribution or lighting equipment in non-confined fire	1,300	(0%)	10	(0%)	90	(1%)	$51	(1%)
Clothes dryer or washer	**13,100**	**(5%)**	**30**	**(1%)**	**370**	**(4%)**	**$176**	**(3%)**
Kitchen equipment not used to heat food	**2,600**	**(1%)**	**10**	**(0%)**	**80**	**(1%)**	**$64**	**(1%)**
Electronic, office or entertainment equipment	**2,100**	**(1%)**	**0**	**(0%)**	**120**	**(1%)**	**$71**	**(1%)**
Fan	**2,800**	**(1%)**	**20**	**(1%)**	**100**	**(1%)**	**$57**	**(1%)**
Air conditioner	**2,000**	**(1%)**	**0**	**(0%)**	**90**	**(1%)**	**$45**	**(1%)**
Unclassified equipment involved in ignition	**1,600**	**(1%)**	**10**	**(1%)**	**70**	**(1%)**	**$68**	**(1%)**
Torch, burner or soldering iron	**1,400**	**(1%)**	**0**	**(0%)**	**60**	**(1%)**	**$53**	**(1%)**
Contained or confined trash or rubbish fire	**9,400**	**(4%)**	**0**	**(0%)**	**30**	**(0%)**	**$2**	**(0%)**
Other known equipment	**5,900**	**(2%)**	**130**	**(6%)**	**400**	**(5%)**	**$202**	**(3%)**
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,896	(100%)

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 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. 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
2005-2009 Annual Averages
(Unknowns in Fires Were Allocated Proportionally)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Radiated or conducted heat from operating equipment	46,000	(17%)	290	(13%)	1,920	(22%)	$687	(12%)
In non-confined fire	*23,200*	*(9%)*	*290*	*(13%)*	*1,560*	*(18%)*	*$681*	*(12%)*
In confined fire	*22,800*	*(9%)*	*0*	*(0%)*	*360*	*(4%)*	*$7*	*(0%)*
Unclassified heat from powered equipment	39,900	(15%)	160	(7%)	1,290	(15%)	$551	(9%)
In non-confined fire	*20,900*	*(8%)*	*160*	*(7%)*	*1,050*	*(12%)*	*$544*	*(9%)*
In confined fire	*19,000*	*(7%)*	*0*	*(0%)*	*240*	*(3%)*	*$6*	*(0%)*
Arcing	29,900	(11%)	290	(13%)	850	(10%)	$888	(15%)
In non-confined fire	*27,600*	*(10%)*	*290*	*(13%)*	*850*	*(10%)*	*$887*	*(15%)*
In confined fire	*2,300*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified heat source	22,900	(9%)	160	(7%)	500	(6%)	$418	(7%)
In non-confined fire	*11,800*	*(4%)*	*160*	*(7%)*	*400*	*(5%)*	*$415*	*(7%)*
In confined fire	*11,100*	*(4%)*	*0*	*(0%)*	*100*	*(1%)*	*$3*	*(0%)*
Hot ember or ash	21,200	(8%)	100	(4%)	340	(4%)	$356	(6%)
In non-confined fire	*10,700*	*(4%)*	*100*	*(4%)*	*320*	*(4%)*	*$353*	*(6%)*
In confined fire	*10,500*	*(4%)*	*0*	*(0%)*	*20*	*(0%)*	*$3*	*(0%)*
Unclassified hot or smoldering object	18,600	(7%)	100	(4%)	450	(5%)	$408	(7%)
In non-confined fire	*11,900*	*(4%)*	*100*	*(4%)*	*400*	*(4%)*	*$405*	*(7%)*
In confined fire	*6,700*	*(3%)*	*0*	*(0%)*	*50*	*(1%)*	*$2*	*(0%)*
Spark, ember or flame from operating equipment	16,900	(6%)	140	(6%)	620	(7%)	$322	(5%)
In non-confined fire	*9,000*	*(3%)*	*140*	*(6%)*	*560*	*(6%)*	*$320*	*(5%)*
In confined fire	*7,900*	*(3%)*	*0*	*(0%)*	*50*	*(1%)*	*$2*	*(0%)*
Smoking materials	11,600	(4%)	510	(23%)	760	(9%)	$295	(5%)
In non-confined fire	*9,300*	*(3%)*	*510*	*(23%)*	*740*	*(8%)*	*$294*	*(5%)*
In confined fire	*2,400*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Candle	10,000	(4%)	110	(5%)	740	(8%)	$385	(7%)
In non-confined fire	*9,400*	*(4%)*	*110*	*(5%)*	*740*	*(8%)*	*$384*	*(7%)*
In confined fire	*600*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Match	9,000	(3%)	80	(4%)	240	(3%)	$104	(2%)
In non-confined fire	*3,500*	*(1%)*	*80*	*(4%)*	*220*	*(3%)*	*$103*	*(2%)*
In confined fire	*5,500*	*(2%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Lighter	7,300	(3%)	130	(6%)	590	(7%)	$158	(3%)
In non-confined fire	*5,500*	*(2%)*	*130*	*(6%)*	*580*	*(7%)*	*$158*	*(3%)*
In confined fire	*1,700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Heat from direct flame or convection current	5,900	(2%)	10	(1%)	90	(1%)	$110	(2%)
In non-confined fire	*3,200*	*(1%)*	*10*	*(1%)*	*80*	*(1%)*	*$109*	*(2%)*
In confined fire	*2,700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*

Table 8A.
Reported One- or Two-Family Home Structure Fires by Heat Source
2005-2009 Annual Averages
(Unknowns in Fires Were Allocated Proportionally)
(Continued)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Lightning	4,100	(2%)	10	(0%)	30	(0%)	$253	(4%)
In non-confined fire	*4,100*	*(2%)*	*10*	*(0%)*	*30*	*(0%)*	*$253*	*(4%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known heat source	21,200	(8%)	130	(6%)	440	(5%)	$962	(16%)
In non-confined fire	*16,400*	*(6%)*	*130*	*(6%)*	*400*	*(5%)*	*$960*	*(16%)*
In confined fire	*4,800*	*(2%)*	*0*	*(0%)*	*40*	*(0%)*	*$2*	*(0%)*
Total fires	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
In non-confined fire	*166,400*	*(63%)*	*2,210*	*(100%)*	*7,930*	*(89%)*	*$5,868*	*(100%)*
In confined fire	*98,100*	*(37%)*	*0*	*(0%)*	*930*	*(11%)*	*$27*	*(0%)*

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
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Electrical failure or malfunction	43,700	(17%)	420	(19%)	1,200	(14%)	$1,355	(23%)
In non-confined fire	*40,000*	*(15%)*	*420*	*(19%)*	*1,190*	*(13%)*	*$1,353*	*(23%)*
In confined fire	*3,700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$2*	*(0%)*
Heat source too close to combustibles	28,900	(11%)	450	(21%)	1,590	(18%)	$787	(13%)
In non-confined fire	*22,300*	*(8%)*	*450*	*(21%)*	*1,520*	*(17%)*	*$785*	*(13%)*
In confined fire	*6,600*	*(2%)*	*0*	*(0%)*	*60*	*(1%)*	*$3*	*(0%)*
Equipment unattended	27,300	(10%)	120	(5%)	1,260	(14%)	$290	(5%)
In non-confined fire	*11,200*	*(4%)*	*120*	*(5%)*	*980*	*(11%)*	*$285*	*(5%)*
In confined fire	*16,200*	*(6%)*	*0*	*(0%)*	*280*	*(3%)*	*$5*	*(0%)*
Failure to clean	25,400	(10%)	20	(1%)	120	(1%)	$68	(1%)
In non-confined fire	*3,900*	*(1%)*	*20*	*(1%)*	*100*	*(1%)*	*$65*	*(1%)*
In confined fire	*21,500*	*(8%)*	*0*	*(0%)*	*20*	*(0%)*	*$3*	*(0%)*
Abandoned or discarded material	23,300	(9%)	330	(15%)	960	(11%)	$484	(8%)
In non-confined fire	*14,700*	*(6%)*	*330*	*(15%)*	*860*	*(10%)*	*$482*	*(8%)*
In confined fire	*8,600*	*(3%)*	*0*	*(0%)*	*100*	*(1%)*	*$2*	*(0%)*
Unclassified factor contributed to ignition	20,400	(8%)	270	(12%)	680	(8%)	$521	(9%)
In non-confined fire	*11,300*	*(4%)*	*270*	*(12%)*	*580*	*(6%)*	*$518*	*(9%)*
In confined fire	*9,100*	*(3%)*	*0*	*(0%)*	*110*	*(1%)*	*$3*	*(0%)*
Unclassified misuse of material	17,900	(7%)	250	(11%)	920	(10%)	$286	(5%)
In non-confined fire	*10,200*	*(4%)*	*250*	*(11%)*	*810*	*(9%)*	*$283*	*(5%)*
In confined fire	*7,700*	*(3%)*	*0*	*(0%)*	*110*	*(1%)*	*$3*	*(0%)*
Unclassified mechanical failure or malfunction	12,400	(5%)	50	(2%)	250	(3%)	$248	(4%)
In non-confined fire	*8,100*	*(3%)*	*50*	*(2%)*	*200*	*(2%)*	*$247*	*(4%)*
In confined fire	*4,300*	*(2%)*	*0*	*(0%)*	*50*	*(1%)*	*$1*	*(0%)*
Exposure fire	10,300	(4%)	10	(1%)	50	(1%)	$728	(12%)
In non-confined fire	*10,200*	*(4%)*	*10*	*(1%)*	*50*	*(1%)*	*$728*	*(12%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unintentionally turned on or not turned off	7,200	(3%)	20	(1%)	260	(3%)	$88	(1%)
In non-confined fire	*3,100*	*(1%)*	*20*	*(1%)*	*180*	*(2%)*	*$86*	*(1%)*
In confined fire	*4,100*	*(2%)*	*0*	*(0%)*	*80*	*(1%)*	*$1*	*(0%)*
Playing with heat source	5,800	(2%)	90	(4%)	540	(6%)	$139	(2%)
In non-confined fire	*5,000*	*(2%)*	*90*	*(4%)*	*530*	*(6%)*	*$139*	*(2%)*
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Rekindle	4,500	(2%)	0	(0%)	10	(0%)	$73	(1%)
In non-confined fire	*4,200*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$73*	*(1%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*

Table 9A.
Reported One- or Two-Family Home Structure Fires
by Factor Contributing to Ignition
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)
(Continued)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Storm	4,100	(2%)	10	(0%)	30	(0%)	$231	(4%)
In non-confined fire	*4,100*	*(2%)*	*10*	*(0%)*	*30*	*(0%)*	*$231*	*(4%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known factor	45,400	(17%)	380	(17%)	1,570	(18%)	$1,054	(18%)
In non-confined fire	*27,200*	*(10%)*	*380*	*(17%)*	*1,420*	*(16%)*	*$1,048*	*(18%)*
In confined fire	*18,200*	*(7%)*	*0*	*(0%)*	*150*	*(2%)*	*$6*	*(0%)*
Total fires	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
In non-confined fire	*166,400*	*(63%)*	*2,210*	*(100%)*	*7,930*	*(89%)*	*$5,868*	*(100%)*
In confined fire	*98,100*	*(37%)*	*0*	*(0%)*	*930*	*(11%)*	*$27*	*(0%)*
-								
Total factors*	276,600	(105%)	2,420	(109%)	9,430	(106%)	$6,352	(108%)
In non-confined fire	*175,300*	*(66%)*	*2,420*	*(109%)*	*8,460*	*(96%)*	*$6,323*	*(107%)*
In confined fire	*101,300*	*(38%)*	*0*	*(0%)*	*970*	*(11%)*	*$29*	*(0%)*

* 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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen	85,600	(32%)	310	(14%)	2,870	(32%)	$736	(12%)
In non-confined fire	*30,500*	*(12%)*	*300*	*(14%)*	*2,080*	*(23%)*	*$721*	*(12%)*
In confined fire	*55,100*	*(21%)*	*0*	*(0%)*	*800*	*(9%)*	*$15*	*(0%)*
Confined chimney or flue fire*	22,500	(8%)	0	(0%)	30	(0%)	$8	(0%)
Bedroom	22,300	(8%)	540	(24%)	1,810	(20%)	$789	(13%)
In non-confined fire	21,800	(8%)	540	(24%)	1,810	(20%)	$788	(13%)
In confined fire	500	(0%)	0	(0%)	10	(0%)	$0	(0%)
Living room, family room or den	11,300	(4%)	540	(24%)	990	(11%)	$488	(8%)
In non-confined fire	*10,800*	*(4%)*	*540*	*(24%)*	*980*	*(11%)*	*$488*	*(8%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Attic or ceiling/roof assembly or concealed space	9,000	(3%)	30	(1%)	90	(1%)	$418	(7%)
In non-confined fire	*8,900*	*(3%)*	*30*	*(1%)*	*90*	*(1%)*	*$418*	*(7%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Laundry room or area	8,900	(3%)	40	(2%)	280	(3%)	$185	(3%)
In non-confined fire	*8,300*	*(3%)*	*40*	*(2%)*	*280*	*(3%)*	*$185*	*(3%)*
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Garage or vehicle storage area**	8,600	(3%)	30	(1%)	420	(5%)	$515	(9%)
In non-confined fire	*7,700*	*(3%)*	*30*	*(1%)*	*410*	*(5%)*	*$514*	*(9%)*
In confined fire	*900*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Exterior wall surface	8,500	(3%)	10	(0%)	90	(1%)	$167	(3%)
In non-confined fire	*8,300*	*(3%)*	*10*	*(0%)*	*90*	*(1%)*	*$167*	*(3%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified function area	7,900	(3%)	240	(11%)	480	(5%)	$313	(5%)
In non-confined fire	*7,300*	*(3%)*	*240*	*(11%)*	*470*	*(5%)*	*$312*	*(5%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified outside area	6,600	(2%)	10	(0%)	50	(1%)	$75	(1%)
In non-confined fire	*3,000*	*(1%)*	*10*	*(0%)*	*50*	*(1%)*	*$74*	*(1%)*
In confined fire	*3,600*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$1*	*(0%)*
Unclassified area of origin	6,500	(2%)	40	(2%)	70	(1%)	$135	(2%)
In non-confined fire	*4,600*	*(2%)*	*40*	*(2%)*	*70*	*(1%)*	*$135*	*(2%)*
In confined fire	*2,000*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Wall assembly or concealed space	6,400	(2%)	30	(1%)	110	(1%)	$201	(3%)
In non-confined fire	*6,400*	*(2%)*	*30*	*(1%)*	*110*	*(1%)*	*$200*	*(3%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Heating equipment room	6,000	(2%)	20	(1%)	140	(2%)	$99	(2%)
In non-confined fire	*3,100*	*(1%)*	*20*	*(1%)*	*120*	*(1%)*	*$98*	*(2%)*
In confined fire	*2,900*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Bathroom	5,500	(2%)	30	(1%)	200	(2%)	$99	(2%)
In non-confined fire	*5,100*	*(2%)*	*30*	*(1%)*	*200*	*(2%)*	*$99*	*(2%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*

Table 10A.
Reported One- or Two-Family Home Structure Fires by Area of Origin
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified structural area	5,200	(2%)	80	(4%)	150	(2%)	$246	(4%)
In non-confined fire	*4,800*	*(2%)*	*80*	*(4%)*	*140*	*(2%)*	*$246*	*(4%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Crawl space or substructure space	5,000	(2%)	50	(2%)	190	(2%)	$171	(3%)
In non-confined fire	*4,600*	*(2%)*	*50*	*(2%)*	*180*	*(2%)*	*$171*	*(3%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Exterior balcony or unenclosed porch	4,600	(2%)	30	(1%)	140	(2%)	$175	(3%)
In non-confined fire	*4,100*	*(2%)*	*30*	*(1%)*	*140*	*(2%)*	*$175*	*(3%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Other known area	34,100	(13%)	200	(9%)	740	(8%)	$1,077	(18%)
In non-confined fire	*27,300*	*(10%)*	*200*	*(9%)*	*710*	*(8%)*	*$1,076*	*(18%)*
In confined fire	*6,800*	*(3%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
In non-confined fire	*166,400*	*(63%)*	*2,210*	*(100%)*	*7,930*	*(89%)*	*$5,868*	*(100%)*
In confined fire	*98,100*	*(37%)*	*0*	*(0%)*	*930*	*(11%)*	*$27*	*(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.

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	53,300	(20%)	90	(4%)	2,000	(23%)	$293	(5%)
In non-confined fire	*14,400*	*(5%)*	*80*	*(4%)*	*1,380*	*(16%)*	*$282*	*(5%)*
In confined fire	*38,900*	*(15%)*	*0*	*(0%)*	*620*	*(7%)*	*$11*	*(0%)*
Unclassified item first ignited	23,600	(9%)	80	(4%)	340	(4%)	$290	(5%)
In non-confined fire	*9,000*	*(3%)*	*80*	*(4%)*	*280*	*(3%)*	*$287*	*(5%)*
In confined fire	*14,600*	*(6%)*	*0*	*(0%)*	*60*	*(1%)*	*$3*	*(0%)*
Structural member or framing	18,500	(7%)	120	(6%)	330	(4%)	$920	(16%)
In non-confined fire	*18,000*	*(7%)*	*120*	*(6%)*	*330*	*(4%)*	*$920*	*(16%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$1*	*(0%)*
Electrical wire or cable insulation	15,200	(6%)	90	(4%)	360	(4%)	$353	(6%)
In non-confined fire	*13,700*	*(5%)*	*90*	*(4%)*	*360*	*(4%)*	*$352*	*(6%)*
In confined fire	*1,600*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Flammable or combustible liquid or gas, filter or piping	13,200	(5%)	200	(9%)	880	(10%)	$283	(5%)
In non-confined fire	*6,900*	*(3%)*	*200*	*(9%)*	*790*	*(9%)*	*$281*	*(5%)*
In confined fire	*6,300*	*(2%)*	*0*	*(0%)*	*80*	*(1%)*	*$2*	*(0%)*
Exterior wall covering or finish	12,000	(5%)	30	(1%)	140	(2%)	$370	(6%)
In non-confined fire	*11,800*	*(4%)*	*30*	*(1%)*	*140*	*(2%)*	*$370*	*(6%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Rubbish, trash, or waste	9,100	(3%)	40	(2%)	180	(2%)	$121	(2%)
In non-confined fire	*4,200*	*(2%)*	*40*	*(2%)*	*160*	*(2%)*	*$120*	*(2%)*
In confined fire	*5,000*	*(2%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Appliance housing or casing	8,700	(3%)	30	(2%)	200	(2%)	$102	(2%)
In non-confined fire	*4,700*	*(2%)*	*30*	*(2%)*	*170*	*(2%)*	*$101*	*(2%)*
In confined fire	*4,000*	*(2%)*	*0*	*(0%)*	*30*	*(0%)*	*$1*	*(0%)*
Mattress or bedding	8,000	(3%)	280	(13%)	910	(10%)	$277	(5%)
In non-confined fire	*7,700*	*(3%)*	*280*	*(13%)*	*910*	*(10%)*	*$277*	*(5%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Interior wall covering	7,100	(3%)	70	(3%)	220	(3%)	$274	(5%)
In non-confined fire	*6,900*	*(3%)*	*70*	*(3%)*	*220*	*(2%)*	*$273*	*(5%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified structural component or finish	6,600	(2%)	60	(3%)	140	(2%)	$298	(5%)
In non-confined fire	*6,100*	*(2%)*	*60*	*(3%)*	*140*	*(2%)*	*$298*	*(5%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified organic material	6,300	(2%)	0	(0%)	40	(0%)	$41	(1%)
In non-confined fire	*1,600*	*(1%)*	*0*	*(0%)*	*30*	*(0%)*	*$39*	*(1%)*
In confined fire	*4,700*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*

Table 11A.
Reported One- or Two-Family Home Structure Fires by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Clothing	6,200	(2%)	110	(5%)	390	(4%)	$145	(2%)
In non-confined fire	*5,700*	*(2%)*	*110*	*(5%)*	*380*	*(4%)*	*$145*	*(2%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Household utensil	5,700	(2%)	10	(1%)	130	(1%)	$35	(1%)
In non-confined fire	*1,700*	*(1%)*	*10*	*(1%)*	*90*	*(1%)*	*$34*	*(1%)*
In confined fire	*4,000*	*(2%)*	*0*	*(0%)*	*50*	*(1%)*	*$1*	*(0%)*
Insulation within structural area	5,500	(2%)	10	(0%)	80	(1%)	$128	(2%)
In non-confined fire	*5,400*	*(2%)*	*10*	*(0%)*	*70*	*(1%)*	*$128*	*(2%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Upholstered furniture	5,400	(2%)	420	(19%)	560	(6%)	$349	(6%)
In non-confined fire	*5,300*	*(2%)*	*420*	*(19%)*	*560*	*(6%)*	*$349*	*(6%)*
In confined fire	*200*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified furniture or utensil	5,000	(2%)	110	(5%)	300	(3%)	$180	(3%)
In non-confined fire	*4,300*	*(2%)*	*110*	*(5%)*	*280*	*(3%)*	*$180*	*(3%)*
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Multiple items first ignited	4,900	(2%)	80	(4%)	210	(2%)	$241	(4%)
In non-confined fire	*4,000*	*(1%)*	*80*	*(4%)*	*210*	*(2%)*	*$241*	*(4%)*
In confined fire	*1,000*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Cabinetry	4,600	(2%)	40	(2%)	210	(2%)	$145	(2%)
In non-confined fire	*3,800*	*(1%)*	*40*	*(2%)*	*200*	*(2%)*	*$145*	(2%)
In confined fire	*700*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	(0%)
Floor covering rug, carpet, or mat	4,500	(2%)	110	(5%)	200	(2%)	$150	(3%)
In non-confined fire	*4,400*	*(2%)*	*110*	*(5%)*	*200*	*(2%)*	*$149*	*(3%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Film or residue, including paint, resin and creosote	4,400	(2%)	0	(0%)	10	(0%)	$7	(0%)
In non-confined fire	*200*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$6*	*(0%)*
In confined fire	*4,200*	*(2%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Magazine, newspaper or writing paper	4,100	(2%)	50	(2%)	140	(2%)	$71	(1%)
In non-confined fire	*2,400*	*(1%)*	*50*	*(2%)*	*140*	*(2%)*	*$70*	*(1%)*
In confined fire	*1,700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*

Table 11A.
Reported One- or Two-Family Home Structure Fires by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known item	32,500	(12%)	160	(7%)	890	(10%)	$822	(14%)
In non-confined fire	*24,200*	*(9%)*	*160*	*(7%)*	*870*	*(10%)*	*$821*	*(14%)*
In confined fire	*8,300*	*(3%)*	*0*	*(0%)*	*20*	*(0%)*	*$2*	*(0%)*
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
In non-confined fire	*166,400*	*(63%)*	*2,210*	*(100%)*	*7,930*	*(89%)*	*$5,868*	*(100%)*
In confined fire	*98,100*	*(37%)*	*0*	*(0%)*	*930*	*(11%)*	*$27*	*(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 12A.
Reported One- or Two-Family Home Structure Fires
by Extent of Flame Damage
2005-2009Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	98,100	(37%)	0	(0%)	930	(11%)	$27	(0%)
Confined to object of origin	40,500	(15%)	130	(6%)	940	(11%)	$332	(6%)
Confined to room of origin	47,600	(18%)	270	(12%)	2,700	(30%)	$664	(11%)
Confined to floor of origin	13,700	(5%)	210	(9%)	910	(10%)	$516	(9%)
Confined to building of origin	54,700	(21%)	1,290	(58%)	2,750	(31%)	$3,472	(59%)
Extended beyond building of origin	10,000	(4%)	310	(14%)	630	(7%)	$884	(15%)
Total	264,500	(100%)	2,210	(100%)	8,860	(100%)	$5,895	(100%)
Extended beyond room of origin	78,300	(30%)	1,800	(82%)	4,300	(49%)	$4,872	(83%)

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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	12,200	(16%)	120	(7%)	280	(7%)	$849	(17%)
Exterior wall covering or finish	8,200	(10%)	30	(2%)	140	(3%)	$350	(7%)
Electrical wire or cable insulation	4,600	(6%)	90	(5%)	210	(5%)	$284	(6%)
Unclassified structural component or finish	4,100	(5%)	60	(3%)	120	(3%)	$272	(6%)
Interior wall covering	4,000	(5%)	70	(4%)	150	(4%)	$230	(5%)
Unclassified item first ignited	3,600	(5%)	60	(4%)	130	(3%)	$234	(5%)
Mattress or bedding	3,500	(5%)	200	(11%)	540	(12%)	$217	(4%)
Flammable or combustible liquid or gas, filter or piping	3,500	(4%)	160	(9%)	460	(11%)	$251	(5%)
Upholstered furniture	3,100	(4%)	330	(18%)	390	(9%)	$220	(5%)
Cooking materials, including food	3,100	(4%)	70	(4%)	370	(9%)	$175	(4%)
Multiple items first ignited	2,900	(4%)	70	(4%)	160	(4%)	$211	(4%)
Floor covering, rug, carpet, or mat	2,400	(3%)	100	(6%)	130	(3%)	$130	(3%)
Insulation within structural area	2,400	(3%)	10	(1%)	50	(1%)	$106	(2%)
Unclassified furniture or utensil	2,100	(3%)	80	(5%)	170	(4%)	$142	(3%)
Rubbish, trash, or waste	2,000	(3%)	40	(2%)	100	(2%)	$103	(2%)
Clothing	1,800	(2%)	50	(3%)	170	(4%)	$108	(2%)
Exterior roof covering or finish	1,700	(2%)	0	(0%)	10	(0%)	$145	(3%)
Interior ceiling cover or finish	1,400	(2%)	20	(1%)	40	(1%)	$87	(2%)
Cabinetry	1,300	(2%)	30	(2%)	70	(2%)	$99	(2%)
Light vegetation, including grass	1,300	(2%)	10	(0%)	30	(1%)	$57	(1%)
Other known item	9,100	(12%)	200	(11%)	590	(14%)	$602	(12%)
Total	78,300	(100%)	1,800	(100%)	4,300	(100%)	$4,872	(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.

Item First Ignited	Civilian Deaths	
Magazine, newspaper or writing paper	40	(2%)
Appliance housing or casing	30	(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
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	21,100	(27%)	320	(18%)	740	(17%)	$1,582	(32%)
Unclassified structural component or finish	8,500	(11%)	170	(10%)	390	(9%)	$593	(12%)
Exterior wall covering or finish	7,800	(10%)	40	(2%)	190	(4%)	$347	(7%)
Interior wall covering	5,700	(7%)	200	(11%)	320	(7%)	$293	(6%)
Upholstered furniture	3,400	(4%)	290	(16%)	410	(10%)	$210	(4%)
Flammable or combustible liquid or gas, filter or piping	3,200	(4%)	170	(9%)	390	(9%)	$225	(5%)
Mattress or bedding	2,900	(4%)	100	(6%)	410	(10%)	$150	(3%)
Unclassified furniture or utensil	2,800	(4%)	130	(7%)	270	(6%)	$200	(4%)
Multiple items first ignited	2,500	(3%)	70	(4%)	150	(3%)	$177	(4%)
Unclassified item contributed most	2,200	(3%)	40	(2%)	90	(2%)	$120	(2%)
Interior ceiling cover or finish	2,000	(3%)	40	(2%)	100	(2%)	$116	(2%)
Insulation within structural area	2,000	(2%)	0	(0%)	40	(1%)	$85	(2%)
Cabinetry	1,900	(2%)	30	(2%)	110	(3%)	$113	(2%)
Exterior roof covering or finish	1,700	(2%)	10	(1%)	20	(1%)	$137	(3%)
Clothing	1,300	(2%)	20	(1%)	100	(2%)	$59	(1%)
Other known item	9,500	(12%)	170	(10%)	560	(13%)	$464	(10%)
Total	78,300	(100%)	1,800	(100%)	4,300	(100%)	$4,872	(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.

Item Contributing	Civilian Deaths	
Floor covering, rug, carpet, or mat	40	(2%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 1B.
Reported Apartment Structure Fires
by Year: 1980-2009

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions)	
				As Reported	In 2009 Dollars
1980	143,500	1,025	3,600	$401	$1,046
1981	137,000	970	4,250	$415	$978
1982	116,500	860	4,700	$353	$784
1983	102,000	845	4,300	$413	$889
1984	99,500	785	3,650	$417	$860
1985	104,500	865	3,925	$476	$948
1986	97,500	650	3,925	$472	$925
1987	103,500	790	4,765	$521	$984
1988	106,000	830	4,950	$548	$995
1989	96,000	790	5,050	$541	$937
1990	95,500	680	4,975	$623	$1,024
1991	101,500	595	5,675	$609	$959
1992	101,000	545	5,825	$597	$913
1993	100,000	685	6,300	$653	$970
1994	97,000	640	5,475	$678	$982
1995	94,000	605	5,200	$649	$914
1996	93,000	565	5,175	$748	$1,024
1997	93,000	660	5,000	$718	$960
1998	86,500	445	5,000	$631	$831
1999	88,500	520	4,500	$842	$1,084
2000	84,500	500	4,400	$886	$1,105
2001	88,000	460	3,800	$864	$1,048
2002	88,500	390	3,700	$926	$1,105
2003	91,500	410	3,650	$897	$1,047
2004	94,000	510	3,200	$885	$1,007
2005	94,000	460	3,000	$948	$1,042
2006	91,500	425	3,700	$896	$954
2007	98,500	515	3,950	$1,164	$1,204
2008	95,500	390	3,975	$1,351	$1,348
2009	90,000	465	3,350	$1,225	$1,225

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 2B.
Reported Apartment Structure Fires by Month
2005-2009 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	10,000	(9%)	60	(14%)	360	(9%)	$121	(10%)
February	9,100	(8%)	50	(10%)	380	(10%)	$110	(9%)
March	9,800	(9%)	50	(11%)	360	(9%)	$114	(9%)
April	9,300	(9%)	30	(8%)	350	(9%)	$114	(9%)
May	9,200	(8%)	30	(7%)	330	(8%)	$104	(8%)
June	8,200	(7%)	30	(7%)	310	(8%)	$113	(9%)
July	8,100	(7%)	30	(7%)	330	(8%)	$96	(8%)
August	7,900	(7%)	30	(6%)	290	(7%)	$96	(8%)
September	8,300	(8%)	30	(7%)	290	(7%)	$74	(6%)
October	9,200	(8%)	20	(6%)	320	(8%)	$97	(8%)
November	9,800	(9%)	30	(6%)	300	(8%)	$92	(7%)
December	10,300	(9%)	50	(12%)	400	(10%)	$118	(9%)
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
Monthly average	9,100	(8%)	40	(8%)	340	(8%)	$104	(8%)

Table 3B.
Reported Apartment Structure Fires by Day of Week
2005-2009 Annual Averages

Day of Week	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	17,700	(16%)	70	(16%)	640	(16%)	$184	(15%)
Monday	15,200	(14%)	60	(13%)	550	(14%)	$190	(15%)
Tuesday	14,800	(14%)	70	(15%)	560	(14%)	$191	(15%)
Wednesday	14,800	(14%)	50	(12%)	540	(14%)	$157	(13%)
Thursday	15,100	(14%)	50	(11%)	620	(15%)	$168	(13%)
Friday	14,800	(14%)	60	(13%)	520	(13%)	$165	(13%)
Saturday	17,000	(16%)	80	(18%)	600	(15%)	$195	(16%)
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
Daily average	15,600	(14%)	60	(14%)	580	(14%)	$179	(14%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 4B.
Reported Apartment Structure Fires by Alarm Time
2005-2009 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 12:59 a.m.	3,500	(3%)	30	(6%)	160	(4%)	$48	(4%)
1:00 - 1:59 a.m.	2,800	(3%)	30	(7%)	170	(4%)	$64	(5%)
2:00 - 2:59 a.m.	2,500	(2%)	20	(5%)	170	(4%)	$50	(4%)
3:00 - 3:59 a.m.	2,200	(2%)	30	(7%)	170	(4%)	$56	(4%)
4:00 - 4:59 a.m.	2,000	(2%)	30	(6%)	150	(4%)	$50	(4%)
5:00 - 5:59 a.m.	1,800	(2%)	20	(5%)	120	(3%)	$44	(4%)
6:00 - 6:59 a.m.	1,900	(2%)	20	(4%)	110	(3%)	$39	(3%)
7:00 - 7:59 a.m.	2,400	(2%)	20	(5%)	130	(3%)	$33	(3%)
8:00 - 8:59 a.m.	3,000	(3%)	20	(4%)	130	(3%)	$37	(3%)
9:00 - 9:59 a.m.	3,600	(3%)	10	(3%)	130	(3%)	$34	(3%)
10:00 - 10:59 a.m.	4,200	(4%)	10	(3%)	140	(3%)	$47	(4%)
11:00 - 11:59 a.m.	4,900	(4%)	10	(3%)	160	(4%)	$40	(3%)
Noon - 12:59 p.m.	5,400	(5%)	10	(3%)	160	(4%)	$48	(4%)
1:00 - 1:59 p.m.	5,500	(5%)	10	(3%)	170	(4%)	$58	(5%)
2:00 - 2:59 p.m.	5,700	(5%)	10	(3%)	170	(4%)	$61	(5%)
3:00 - 3:59 p.m.	6,000	(5%)	10	(3%)	180	(4%)	$76	(6%)
4:00 - 4:59 p.m.	6,700	(6%)	10	(3%)	210	(5%)	$70	(6%)
5:00 - 5:59 p.m.	7,700	(7%)	10	(3%)	200	(5%)	$57	(5%)
6:00 - 6:59 p.m.	8,100	(7%)	20	(4%)	220	(5%)	$70	(6%)
7:00 - 7:59 p.m.	7,700	(7%)	20	(4%)	250	(6%)	$60	(5%)
8:00 - 8:59 p.m.	7,000	(6%)	20	(4%)	220	(5%)	$57	(5%)
9:00 - 9:59 p.m.	6,000	(5%)	20	(4%)	190	(5%)	$45	(4%)
10:00 - 10:59 p.m.	4,700	(4%)	20	(5%)	170	(4%)	$52	(4%)
11:00 - 11:59 p.m.	3,900	(4%)	20	(5%)	160	(4%)	$54	(4%)
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
Average	4,600	(4%)	20	(4%)	170	(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 Structure Fires
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	70,100	(64%)	110	(25%)	1,910	(47%)	$221	(17%)
Cooking equipment in non-confined fire	*10,200*	*(9%)*	*110*	*(25%)*	*1,170*	*(29%)*	*$210*	*(17%)*
Confined cooking fire	*59,900*	*(55%)*	*0*	*(0%)*	*740*	*(18%)*	*$11*	*(1%)*
Heating equipment	9,500	(9%)	40	(8%)	350	(9%)	$115	(9%)
Heating equipment in non-confined fire	*4,000*	*(4%)*	*40*	*(8%)*	*330*	*(8%)*	*$113*	*(9%)*
Confined fuel burner or boiler fire	*5,000*	*(5%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Confined chimney or flue fire	*600*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Smoking materials	7,000	(6%)	140	(32%)	510	(13%)	$185	(15%)
Intentional	6,500	(6%)	60	(13%)	340	(8%)	$140	(11%)
Candle	2,800	(3%)	30	(6%)	300	(7%)	$91	(7%)
Electrical distribution or lighting equipment*	2,700	(2%)	50	(11%)	200	(5%)	$130	(10%)
Clothes dryer or washer	2,300	(2%)	0	(0%)	70	(2%)	$26	(2%)
Exposure fire	2,100	(2%)	10	(2%)	20	(0%)	$128	(10%)
Playing with heat source	1,900	(2%)	10	(3%)	220	(5%)	$51	(4%)

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 is used is described in the appendix.

Source: NFIRS 5.0 and NFPA survey.

Table 6B.
Cause of Ignition in Reported Apartment Structure Fires
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	90,000	(82%)	340	(78%)	3,380	(84%)	$821	(66%)
In non-confined fire	*24,900*	*(23%)*	*340*	*(78%)*	*2,640*	*(65%)*	*$809*	*(65%)*
In confined fire	*65,000*	*(59%)*	*0*	*(0%)*	*750*	*(19%)*	*$12*	*(1%)*
Failure of equipment or heat source	8,700	(8%)	20	(6%)	240	(6%)	$130	(10%)
In non-confined fire	*5,500*	*(5%)*	*20*	*(6%)*	*220*	*(6%)*	*$129*	*(10%)*
In confined fire	*3,300*	*(3%)*	*0*	*(0%)*	*20*	*(0%)*	*$1*	*(0%)*
Intentional	6,500	(6%)	60	(13%)	340	(8%)	$140	(11%)
In non-confined fire	*3,500*	*(3%)*	*60*	*(13%)*	*330*	*(8%)*	*$140*	*(11%)*
In confined fire	*3,000*	*(3%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified	3,800	(3%)	20	(4%)	60	(1%)	$131	(10%)
In non-confined fire	*2,300*	*(2%)*	*20*	*(4%)*	*40*	*(1%)*	*$131*	*(10%)*
In confined fire	*1,500*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Act of nature	400	(0%)	0	(0%)	10	(0%)	$28	(2%)
In non-confined fire	*300*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$28*	*(2%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
In non-confined fire	*36,500*	*(33%)*	*440*	*(100%)*	*3,240*	*(80%)*	*$1,237*	*(99%)*
In confined fire	*72,900*	*(67%)*	*0*	*(0%)*	*790*	*(20%)*	*$13*	*(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 Structure Fires by Equipment Involved in Ignition
2005-2009 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	**70,100**	**(64%)**	**110**	**(25%)**	**1,910**	**(47%)**	**$221**	**(18%)**
Range or cooktop	42,600	(39%)	100	(22%)	1,490	(37%)	$175	(14%)
In non-confined fire	*8,400*	*(8%)*	*100*	*(22%)*	*1,030*	*(26%)*	*$168*	*(13%)*
In confined fire	*34,200*	*(31%)*	*0*	*(0%)*	*460*	*(11%)*	*$8*	*(1%)*
Oven or rotisserie	8,700	(8%)	0	(0%)	90	(2%)	$8	(1%)
In non-confined fire	*700*	*(1%)*	*0*	*(0%)*	*40*	*(1%)*	*$8*	*(1%)*
In confined fire	*8,000*	*(7%)*	*0*	*(0%)*	*60*	*(1%)*	*$1*	*(0%)*
Portable cooking or warming unit	3,000	(3%)	10	(1%)	80	(2%)	$17	(1%)
In non-confined fire	*400*	*(0%)*	*10*	*(1%)*	*60*	*(1%)*	*$16*	*(1%)*
In confined fire	*2,600*	*(2%)*	*0*	*(0%)*	*20*	*(1%)*	*$0*	*(0%)*
Microwave oven	2,900	(3%)	0	(0%)	50	(1%)	$8	(1%)
In non-confined fire	*300*	*(0%)*	*0*	*(0%)*	*30*	*(1%)*	*$7*	*(1%)*
In confined fire	*2,600*	*(2%)*	*0*	*(0%)*	*30*	*(1%)*	*$1*	*(0%)*
Grill, hibachi or barbecue	600	(1%)	10	(1%)	10	(0%)	$9	(1%)
In non-confined fire	200	(0%)	10	(1%)	10	(0%)	$9	(1%)
In confined fire	400	(0%)	0	(0%)	10	(0%)	$0	(0%)
Other known cooking equipment or confined cooking fire	12,200	(11%)	0	(0%)	180	(5%)	$4	(0%)
Other known cooking equipment in non-confined fire	200	(0%)	0	(0%)	10	(0%)	$3	(0%)
Confined cooking fire with other or unknown equipment	12,100	(11%)	0	(0%)	170	(4%)	$1	(0%)
No equipment involved	13,500	(12%)	210	(47%)	1,170	(29%)	$598	(48%)
Heating equipment	**9,500**	**(9%)**	**40**	**(8%)**	**350**	**(9%)**	**$115**	**(9%)**
Furnace, central heat or boiler	5,300	(5%)	10	(1%)	30	(1%)	$12	(1%)
In non-confined fire	*300*	*(0%)*	*10*	*(1%)*	*10*	*(0%)*	*$11*	*(1%)*
Confined fuel burner or boiler fire	*5,000*	*(5%)*	*0*	*(0%)*	*10*	*(0%)*	*$1*	*(0%)*
Fixed or portable space heater	2,600	(2%)	30	(6%)	260	(6%)	$68	(5%)
Water heater	900	(1%)	10	(1%)	50	(1%)	$16	(1%)
Fireplace or chimney	700	(1%)	0	(0%)	10	(0%)	$18	(1%)
In non-confined fire	*100*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$18*	*(1%)*
Confined chimney or flue fire	*600*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known heating equipment in non-confined fire	100	(0%)	0	(0%)	0	(0%)	$1	(0%)
Electrical distribution and lighting equipment	**2,700**	**(2%)**	**50**	**(11%)**	**200**	**(5%)**	**$130**	**(10%)**
Fixed wiring or related equipment	1,400	(1%)	20	(4%)	70	(2%)	$74	(6%)
Lamp, light bulb or light fixture	800	(1%)	10	(3%)	70	(2%)	$32	(3%)
Other known electrical distribution or lighting equipment in non-confined fire	500	(0%)	20	(4%)	50	(1%)	$25	(2%)

Table 7B.
Reported Apartment Structure Fires by Equipment Involved in Ignition
2005-2009 Annual Averages
(Unknowns in 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%)**	**70**	**(2%)**	**$26**	**(2%)**
Confined commercial compactor fire	**1,300**	**(1%)**	**0**	**(0%)**	**0**	**(0%)**	**$0**	**(0%)**
Fan	**900**	**(1%)**	**0**	**(0%)**	**30**	**(1%)**	**$23**	**(2%)**
Other known equipment or confined fire	**3,000**	**(3%)**	**30**	**(8%)**	**270**	**(7%)**	**$141**	**(11%)**
Contained trash or rubbish fire	**5,900**	**(5%)**	**0**	**(0%)**	**30**	**(1%)**	**$1**	**(0%)**
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 8B.
Reported Apartment Structure Fires by Heat Source
2005-2009 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	31,100	(28%)	60	(14%)	1,040	(26%)	$145	(12%)
In non-confined fire	*6,800*	*(6%)*	*60*	*(14%)*	*730*	*(18%)*	*$142*	*(11%)*
In confined fire	*24,400*	*(22%)*	*0*	*(0%)*	*310*	*(8%)*	*$2*	*(0%)*
Unclassified heat from powered equipment	25,700	(24%)	40	(10%)	680	(17%)	$135	(11%)
In non-confined fire	*5,900*	*(5%)*	*40*	*(10%)*	*470*	*(12%)*	*$128*	*(10%)*
In confined fire	*19,900*	*(18%)*	*0*	*(0%)*	*210*	*(5%)*	*$7*	*(1%)*
Unclassified heat source	10,500	(10%)	20	(4%)	250	(6%)	$75	(6%)
In non-confined fire	*2,200*	*(2%)*	*20*	*(4%)*	*170*	*(4%)*	*$74*	*(6%)*
In confined fire	*8,300*	*(8%)*	*0*	*(0%)*	*70*	*(2%)*	*$1*	*(0%)*
Unclassified hot or smoldering object	7,500	(7%)	30	(6%)	210	(5%)	$66	(5%)
In non-confined fire	*2,600*	*(2%)*	*30*	*(6%)*	*160*	*(4%)*	*$64*	*(5%)*
In confined fire	*4,900*	*(5%)*	*0*	*(0%)*	*50*	*(1%)*	*$2*	*(0%)*
Smoking materials	7,000	(6%)	140	(32%)	510	(13%)	$185	(15%)
In non-confined fire	*3,800*	*(3%)*	*140*	*(32%)*	*480*	*(12%)*	*$184*	*(15%)*
In confined fire	*3,200*	*(3%)*	*0*	*(0%)*	*30*	*(1%)*	*$0*	*(0%)*
Spark, ember or flame from operating equipment	5,500	(5%)	20	(4%)	210	(5%)	$59	(5%)
In non-confined fire	*2,000*	*(2%)*	*20*	*(4%)*	*160*	*(4%)*	*$59*	*(5%)*
In confined fire	*3,400*	*(3%)*	*0*	*(0%)*	*50*	*(1%)*	*$0*	*(0%)*
Arcing	4,700	(4%)	20	(5%)	220	(5%)	$135	(11%)
In non-confined fire	*3,800*	*(3%)*	*20*	*(5%)*	*210*	*(5%)*	*$135*	*(11%)*
In confined fire	*900*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Heat from direct flame or convection current	3,300	(3%)	0	(1%)	40	(1%)	$29	(2%)
In non-confined fire	*600*	*(1%)*	*0*	*(1%)*	*30*	*(1%)*	*$29*	*(2%)*
In confined fire	*2,700*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Hot ember or ash	3,000	(3%)	20	(4%)	100	(3%)	$71	(6%)
In non-confined fire	*1,600*	*(1%)*	*20*	*(4%)*	*100*	*(2%)*	*$71*	*(6%)*
In confined fire	*1,500*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Candle	2,800	(3%)	30	(6%)	300	(7%)	$91	(7%)
In non-confined fire	*2,500*	*(2%)*	*30*	*(6%)*	*290*	*(7%)*	*$91*	*(7%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Lighter	2,100	(2%)	40	(10%)	250	(6%)	$65	(5%)
In non-confined fire	*1,500*	*(1%)*	*40*	*(10%)*	*250*	*(6%)*	*$65*	*(5%)*
In confined fire	*600*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*

Table 8B.
Reported Apartment Structure Fires by Heat Source
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Match	1,900	(2%)	10	(2%)	70	(2%)	$28	(2%)
In non-confined fire	*700*	*(1%)*	*10*	*(2%)*	*70*	*(2%)*	*$28*	*(2%)*
In confined fire	*1,200*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known heat source	4,100	(4%)	10	(2%)	150	(4%)	$166	(13%)
In non-confined fire	*2,400*	*(2%)*	*10*	*(2%)*	*120*	*(3%)*	*$166*	*(13%)*
In confined fire	*1,700*	*(2%)*	*0*	*(0%)*	*30*	*(1%)*	*$0*	*(0%)*
Total fires	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
In non-confined fire	*36,500*	*(33%)*	*440*	*(100%)*	*3,240*	*(80%)*	*$1,237*	*(99%)*
In confined fire	*72,900*	*(67%)*	*0*	*(0%)*	*790*	*(20%)*	*$13*	*(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 9B.
Reported Apartment Structure Fires by Factor Contributing to Ignition
2005-2009 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment unattended	28,300	(26%)	40	(10%)	880	(22%)	$97	(8%)
In non-confined fire	*4,600*	*(4%)*	*40*	*(10%)*	*560*	*(14%)*	*$94*	*(8%)*
In confined fire	*23,700*	*(22%)*	*0*	*(0%)*	*320*	*(8%)*	*$3*	*(0%)*
Abandoned or discarded material	17,500	(16%)	90	(21%)	600	(15%)	$222	(18%)
In non-confined fire	*5,600*	*(5%)*	*90*	*(21%)*	*490*	*(12%)*	*$221*	*(18%)*
In confined fire	*11,800*	*(11%)*	*0*	*(0%)*	*110*	*(3%)*	*$1*	*(0%)*
Heat source too close to combustibles	12,300	(11%)	100	(23%)	680	(17%)	$196	(16%)
In non-confined fire	*5,400*	*(5%)*	*100*	*(23%)*	*610*	*(15%)*	*$193*	*(15%)*
In confined fire	*6,900*	*(6%)*	*0*	*(0%)*	*60*	*(2%)*	*$3*	*(0%)*
Unclassified misuse of material	11,500	(11%)	60	(14%)	570	(14%)	$99	(8%)
In non-confined fire	*3,500*	*(3%)*	*60*	*(14%)*	*460*	*(12%)*	*$96*	*(8%)*
In confined fire	*8,000*	*(7%)*	*0*	*(0%)*	*110*	*(3%)*	*$2*	*(0%)*
Unclassified factor contributed to ignition	8,500	(8%)	50	(11%)	300	(8%)	$95	(8%)
In non-confined fire	*2,500*	*(2%)*	*50*	*(11%)*	*240*	*(6%)*	*$93*	*(7%)*
In confined fire	*6,100*	*(6%)*	*0*	*(0%)*	*70*	*(2%)*	*$2*	*(0%)*
Electrical failure or malfunction	6,800	(6%)	40	(9%)	290	(7%)	$196	(16%)
In non-confined fire	*5,400*	*(5%)*	*40*	*(9%)*	*280*	*(7%)*	*$196*	*(16%)*
In confined fire	*1,400*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unintentionally turned on or not turned of	5,800	(5%)	10	(2%)	150	(4%)	$25	(2%)
In non-confined fire	*1,100*	*(1%)*	*10*	*(2%)*	*100*	*(3%)*	*$24*	*(2%)*
In confined fire	*4,700*	*(4%)*	*0*	*(0%)*	*40*	*(1%)*	*$0*	*(0%)*
Failure to clean	4,000	(4%)	0	(0%)	30	(1%)	$6	(0%)
In non-confined fire	*700*	*(1%)*	*0*	*(0%)*	*20*	*(1%)*	*$6*	*(0%)*
In confined fire	*3,300*	*(3%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified mechanical failure or malfunction	2,600	(2%)	0	(0%)	50	(1%)	$26	(2%)
In non-confined fire	*1,400*	*(1%)*	*0*	*(0%)*	*40*	*(1%)*	*$26*	*(2%)*
In confined fire	*1,200*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Exposure fire	2,100	(2%)	10	(2%)	20	(0%)	$128	(10%)
In non-confined fire	*2,000*	*(2%)*	*10*	*(2%)*	*10*	*(0%)*	*$128*	*(10%)*
In confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Playing with heat source	1,900	(2%)	10	(3%)	220	(5%)	$51	(4%)
In non-confined fire	*1,300*	*(1%)*	*10*	*(3%)*	*210*	*(5%)*	*$51*	*(4%)*
In confined fire	*600*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified operational deficiency	1,800	(2%)	10	(2%)	60	(1%)	$10	(1%)
In non-confined fire	*400*	*(0%)*	*10*	*(2%)*	*40*	*(1%)*	*$10*	*(1%)*
In confined fire	*1,400*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*

Table 9B.
Reported Apartment Structure Fires by Factor Contributing to Ignition
2005-2009 Annual Averages
(Unknowns Fires Were Allocated Proportionally)
(Continued)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment not being operated properly	1,700	(2%)	10	(1%)	70	(2%)	$7	(1%)
In non-confined fire	*300*	*(0%)*	*10*	*(1%)*	*50*	*(1%)*	*$7*	*(1%)*
In confined fire	*1,300*	*(1%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Other known factor	8,500	(8%)	40	(10%)	340	(8%)	$181	(14%)
In non-confined fire	*3,800*	*(3%)*	*40*	*(10%)*	*290*	*(7%)*	*$179*	*(14%)*
In confined fire	*4,700*	*(4%)*	*0*	*(0%)*	*40*	*(1%)*	*$2*	*(0%)*
Total fires	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
In non-confined fire	*36,500*	*(33%)*	*440*	*(100%)*	*3,240*	*(80%)*	*$1,237*	*(99%)*
In confined fire	*72,900*	*(67%)*	*0*	*(0%)*	*790*	*(20%)*	*$13*	*(1%)*
Total factors*	113,300	(104%)	470	(108%)	4,240	(105%)	$1,339	(107%)
In non-confined fire	*38,200*	*(35%)*	*470*	*(108%)*	*3,430*	*(85%)*	*$1,325*	*(106%)*
In confined fire	*75,100*	*(69%)*	*0*	*(0%)*	*810*	*(20%)*	*$14*	*(1%)*

* 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 Structure Fires by Area of Origin
2005-2009 Annual Averages
(Unknowns Fires Were Allocated Proportionally)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen	69,100	(63%)	90	(20%)	1,880	(47%)	$231	(18%)
In non-confined fire	*11,500*	*(11%)*	*90*	*(20%)*	*1,160*	*(29%)*	*$220*	*(18%)*
In confined fire	*57,600*	*(53%)*	*0*	*(0%)*	*720*	*(18%)*	*$11*	*(1%)*
Bedroom	6,000	(5%)	130	(30%)	830	(21%)	$216	(17%)
In non-confined fire	*5,500*	*(5%)*	*130*	*(30%)*	*820*	*(20%)*	*$216*	*(17%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Living room, family room or den	2,900	(3%)	100	(22%)	430	(11%)	$115	(9%)
In non-confined fire	*2,500*	*(2%)*	*100*	*(22%)*	*420*	*(10%)*	*$115*	*(9%)*
In confined ire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Trash or rubbish chute, area or container	2,500	(2%)	0	(0%)	20	(0%)	$2	(0%)
In non-confined fire	*100*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$2*	*(0%)*
In confined fire	*2,400*	*(2%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Laundry room or area	2,100	(2%)	0	(0%)	60	(1%)	$21	(2%)
In non-confined fire	*1,500*	*(1%)*	*0*	*(0%)*	*50*	*(1%)*	*$21*	*(2%)*
In confined fire	*600*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Bathroom	2,000	(2%)	10	(1%)	90	(2%)	$28	(2%)
In non-confined fire	*1,600*	*(1%)*	*10*	*(1%)*	*90*	*(2%)*	*$28*	*(2%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified area of origin	1,900	(2%)	10	(2%)	30	(1%)	$18	(1%)
In non-confined fire	*700*	*(1%)*	*10*	*(2%)*	*30*	*(1%)*	*$18*	*(1%)*
In confined fire	*1,200*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Exterior balcony or unenclosed porch	1,900	(2%)	0	(1%)	50	(1%)	$96	(8%)
In non-confined fire	*1,500*	*(1%)*	*0*	*(1%)*	*50*	*(1%)*	*$96*	*(8%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Interior stairway or ramp	1,800	(2%)	10	(2%)	40	(1%)	$16	(1%)
In non-confined fire	*500*	*(0%)*	*10*	*(2%)*	*40*	*(1%)*	*$16*	*(1%)*
In confined fire	*1,300*	*(1%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Unclassified function area	1,700	(2%)	40	(10%)	170	(4%)	$73	(6%)
In non-confined fire	*1,300*	*(1%)*	*40*	*(10%)*	*170*	*(4%)*	*$73*	*(6%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Other known area	17,500	(16%)	50	(11%)	440	(11%)	$436	(35%)
In non-confined fire	*9,800*	*(9%)*	*50*	*(11%)*	*410*	*(10%)*	*$434*	*(35%)*
In confined fire	*7,700*	*(7%)*	*0*	*(0%)*	*30*	*(1%)*	*$1*	*(0%)*
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
In non-confined fire	*36,500*	*(33%)*	*440*	*(100%)*	*3,240*	*(80%)*	*$1,237*	*(99%)*
In confined fire	*72,900*	*(67%)*	*0*	*(0%)*	*790*	*(20%)*	*$13*	*(1%)*

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

Table 11B.
Reported Apartment Structure Fires by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking materials, including food	52,800	(48%)	30	(7%)	1,370	(34%)	$121	(10%)
In non-confined fire	*6,800*	*(6%)*	*30*	*(7%)*	*800*	*(20%)*	*$113*	*(9%)*
In confined fire	*46,100*	*(42%)*	*0*	*(0%)*	*560*	*(14%)*	*$9*	*(1%)*
Unclassified item first ignited	6,500	(6%)	10	(3%)	150	(4%)	$50	(4%)
In non-confined fire	*1,800*	*(2%)*	*10*	*(3%)*	*120*	*(3%)*	*$48*	*(4%)*
In confined fire	*4,700*	*(4%)*	*0*	*(0%)*	*30*	*(1%)*	*$1*	*(0%)*
Rubbish, trash, or waste	6,500	(6%)	10	(3%)	90	(2%)	$30	(2%)
In non-confined fire	*1,200*	*(1%)*	*10*	*(3%)*	*60*	*(2%)*	*$30*	*(2%)*
In confined fire	*5,300*	*(5%)*	*0*	*(0%)*	*30*	*(1%)*	*$0*	*(0%)*
Household utensil	4,400	(4%)	0	(1%)	80	(2%)	$13	(1%)
In non-confined fire	*700*	*(1%)*	*0*	*(1%)*	*50*	*(1%)*	*$13*	*(1%)*
In confined fire	*3,700*	*(3%)*	*0*	*(0%)*	*40*	*(1%)*	*$1*	*(0%)*
Flammable or combustible liquid or gas, filter or piping	3,400	(3%)	30	(7%)	230	(6%)	$45	(4%)
In non-confined fire	*1,200*	*(1%)*	*30*	*(7%)*	*200*	*(5%)*	*$45*	*(4%)*
In confined fire	*2,200*	*(2%)*	*0*	*(0%)*	*30*	*(1%)*	*$1*	*(0%)*
Appliance housing or casing	3,000	(3%)	10	(2%)	90	(2%)	$17	(1%)
In non-confined fire	*1,100*	*(1%)*	*10*	*(2%)*	*70*	*(2%)*	*$17*	*(1%)*
In confined fire	*1,900*	*(2%)*	*0*	*(0%)*	*20*	*(0%)*	*$0*	*(0%)*
Electrical wire or cable insulation	2,700	(2%)	10	(1%)	90	(2%)	$54	(4%)
In non-confined fire	*2,100*	*(2%)*	*10*	*(1%)*	*80*	*(2%)*	*$54*	*(4%)*
In confined fire	*500*	*(0%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Mattress or bedding	2,700	(2%)	90	(20%)	430	(11%)	$98	(8%)
In non-confined fire	*2,500*	*(2%)*	*90*	*(20%)*	*430*	*(11%)*	*$98*	*(8%)*
In confined fire	*300*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Structural member or framing	2,400	(2%)	10	(2%)	70	(2%)	$167	(13%)
In non-confined fire	*2,300*	*(2%)*	*10*	*(2%)*	*70*	*(2%)*	*$167*	*(13%)*
In confined fire	*0*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Magazine, newspaper or writing paper	2,000	(2%)	10	(2%)	60	(2%)	$22	(2%)
In non-confined fire	*800*	*(1%)*	*10*	*(2%)*	*60*	*(1%)*	*$22*	*(2%)*
In confined fire	*1,200*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Unclassified furniture or utensil	1,900	(2%)	20	(4%)	140	(4%)	$51	(4%)
In non-confined fire	*1,200*	*(1%)*	*20*	*(4%)*	*130*	*(3%)*	*$51*	*(4%)*
In confined fire	*700*	*(1%)*	*0*	*(0%)*	*10*	*(0%)*	*$0*	*(0%)*
Clothing	1,800	(2%)	30	(6%)	130	(3%)	$33	(3%)
In non-confined fire	*1,400*	*(1%)*	*30*	*(6%)*	*130*	*(3%)*	*$33*	*(3%)*
In confined fire	*400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*

Table 11B.
Reported Apartment Structure Fires by Item First Ignited
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known item	19,300	(18%)	190	(43%)	1,100	(27%)	$548	(44%)
In non-confined fire	*13,400*	*(12%)*	*190*	*(43%)*	*1,050*	*(26%)*	*$547*	*(44%)*
In confined fire	*5,900*	*(5%)*	*0*	*(0%)*	*50*	*(1%)*	*$2*	*(0%)*
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
In non-confined fire	*36,500*	*(33%)*	*440*	*(100%)*	*3,240*	*(80%)*	*$1,237*	*(99%)*
In confined fire	*72,900*	*(67%)*	*0*	*(0%)*	*790*	*(20%)*	*$13*	*(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 12B.
Reported Apartment Structure Fires by Extent of Flame Damage
2005-2009 Annual Averages
(Unknowns in Non-Confined Fires Were Allocated Proportionally)

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined or contained fire identified by incident type	72,900	(67%)	0	(0%)	790	(20%)	$13	(1%)
Confined to object of origin	11,100	(10%)	30	(7%)	430	(11%)	$57	(5%)
Confined to room of origin	15,000	(14%)	130	(29%)	1,420	(35%)	$163	(13%)
Confined to floor of origin	3,500	(3%)	70	(15%)	450	(11%)	$154	(12%)
Confined to building of origin	6,100	(6%)	170	(39%)	820	(20%)	$697	(56%)
Extended beyond building of origin	800	(1%)	40	(9%)	110	(3%)	$166	(13%)
Total	109,400	(100%)	440	(100%)	4,030	(100%)	$1,251	(100%)
Extended beyond the room of origin	10,400	(10%)	280	(63%)	1,390	(34%)	$1,017	(81%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 13B.
Apartment fires that Spread beyond the Room of Origin, by Item First Ignited
2005-2009 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%)	60	(4%)	$161	(16%)
Cooking materials, including food	800	(8%)	20	(7%)	180	(13%)	$65	(6%)
Mattress or bedding	800	(8%)	50	(17%)	230	(17%)	$75	(7%)
Exterior wall covering or finish	800	(8%)	0	(2%)	30	(2%)	$67	(7%)
Unclassified structural component or finish	500	(5%)	10	(5%)	40	(3%)	$49	(5%)
Upholstered furniture	500	(5%)	50	(18%)	170	(12%)	$75	(7%)
Electrical wire or cable insulation	500	(5%)	0	(1%)	50	(3%)	$43	(4%)
Unclassified item first ignited	500	(4%)	0	(1%)	50	(3%)	$39	(4%)
Rubbish, trash, or waste	400	(3%)	10	(3%)	30	(2%)	$26	(3%)
Unclassified furniture or utensil	400	(3%)	10	(4%)	70	(5%)	$41	(4%)
Flammable or combustible liquid or gas, filter or piping	400	(3%)	20	(8%)	90	(6%)	$39	(4%)
Multiple items first ignited	300	(3%)	20	(6%)	50	(4%)	$28	(3%)
Floor covering, rug, carpet, or mat	300	(3%)	10	(2%)	40	(3%)	$22	(2%)
Clothing	300	(3%)	10	(5%)	50	(3%)	$22	(2%)
Insulation within structural area	300	(2%)	0	(0%)	10	(1%)	$41	(4%)
Interior wall covering	300	(2%)	10	(3%)	40	(3%)	$21	(2%)
Exterior roof covering or finish	200	(2%)	0	(0%)	10	(0%)	$37	(4%)
Cabinetry	200	(2%)	10	(2%)	30	(2%)	$13	(1%)
Magazine, newspaper or writing paper	200	(2%)	10	(3%)	30	(2%)	$18	(2%)
Unclassified soft goods or wearing apparel	200	(2%)	0	(1%)	20	(2%)	$11	(1%)
Other known item	1,400	(13%)	20	(7%)	130	(9%)	$124	(12%)
Total	10,400	(100%)	280	(100%)	1,390	(100%)	$1,017	(100%)

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

Source: NFIRS 5.0 and NFPA survey.

Table 14B.
Apartment Fires that Spread beyond the Room of Origin
by Item Contributing Most to Flame Spread
2005-2009 Annual Averages
(Unknowns Were Allocated Proportionally)

Item Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Structural member or framing	2,300	(23%)	40	(15%)	210	(15%)	$344	(34%)
Exterior wall covering or finish	1,100	(11%)	10	(3%)	90	(6%)	$110	(11%)
Unclassified structural component or finish	1,000	(10%)	20	(8%)	90	(7%)	$118	(12%)
Mattress or bedding	700	(6%)	40	(14%)	170	(12%)	$42	(4%)
Upholstered furniture	600	(6%)	30	(12%)	170	(12%)	$46	(5%)
Unclassified furniture or utensil	500	(5%)	20	(8%)	130	(10%)	$37	(4%)
Cabinetry	400	(4%)	10	(5%)	70	(5%)	$22	(2%)
Interior wall covering	400	(4%)	30	(9%)	60	(4%)	$31	(3%)
Flammable or combustible liquid or gas, filter or piping	300	(3%)	10	(5%)	70	(5%)	$36	(4%)
Cooking materials, including food	300	(3%)	10	(3%)	60	(4%)	$19	(2%)
Unclassified item contributed	300	(3%)	10	(3%)	20	(2%)	$28	(3%)
Multiple items first ignited	300	(2%)	10	(4%)	40	(3%)	$25	(2%)
Exterior roof covering or finish	200	(2%)	0	(1%)	20	(1%)	$46	(5%)
Insulation within structural area	200	(2%)	0	(0%)	10	(0%)	$25	(2%)
Clothing	200	(2%)	10	(3%)	40	(3%)	$12	(1%)
Interior ceiling cover or finish	200	(2%)	0	(1%)	20	(1%)	$14	(1%)
Floor covering, rug, carpet, or mat	200	(2%)	10	(2%)	20	(1%)	$8	(1%)
Rubbish, trash, or waste	200	(2%)	0	(1%)	10	(1%)	$3	(0%)
Other known item	940	(9%)	9	(3%)	86	(6%)	$51	(5%)
Total	10,400	(100%)	280	(100%)	1,390	(100%)	$1,017	(100%)

Note: 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 by 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 http://www.nfirs.fema.gov/. Copies of the paper forms may be downloaded from http://www.nfirs.fema.gov/documentation/design/NFIRS_Paper_Forms_2008.pdf.

NFIRS has a wide variety of data elements and code choices. The NFIRS database contains coded information. 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 impossible 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, methodological and definitional changes can occur. *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.*

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 and 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 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, so no one can say with confidence that they are or are not serious problems. 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.

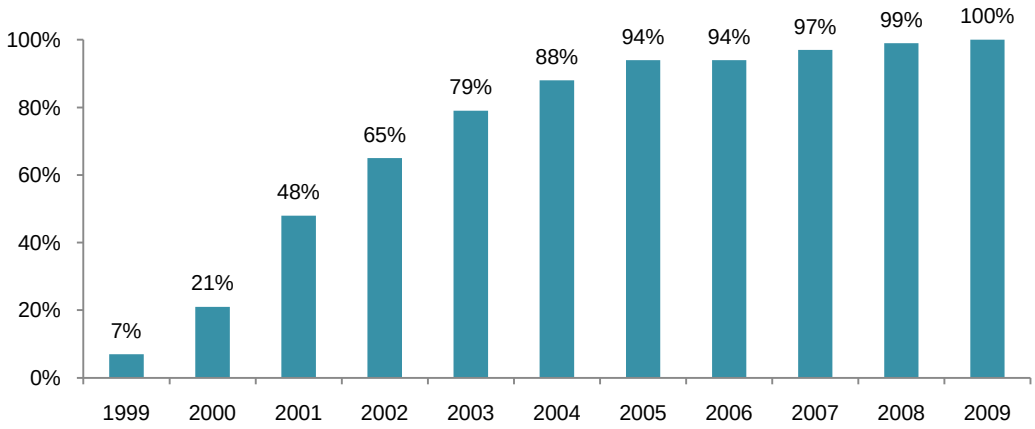
Scaling ratios are obtained by comparing NFPA's projected totals of residential structure fires, non-residential structure fires, vehicle fires, and outside and other fires, and associated civilian deaths, civilian injuries, and direct property damage with comparable totals in NFIRS. Estimates of specific 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 specific basic analytical rules used for this procedure. "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. A copy of the article is available online at http://www.nfpa.org/osds or through NFPA's One-Stop Data Shop.

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.

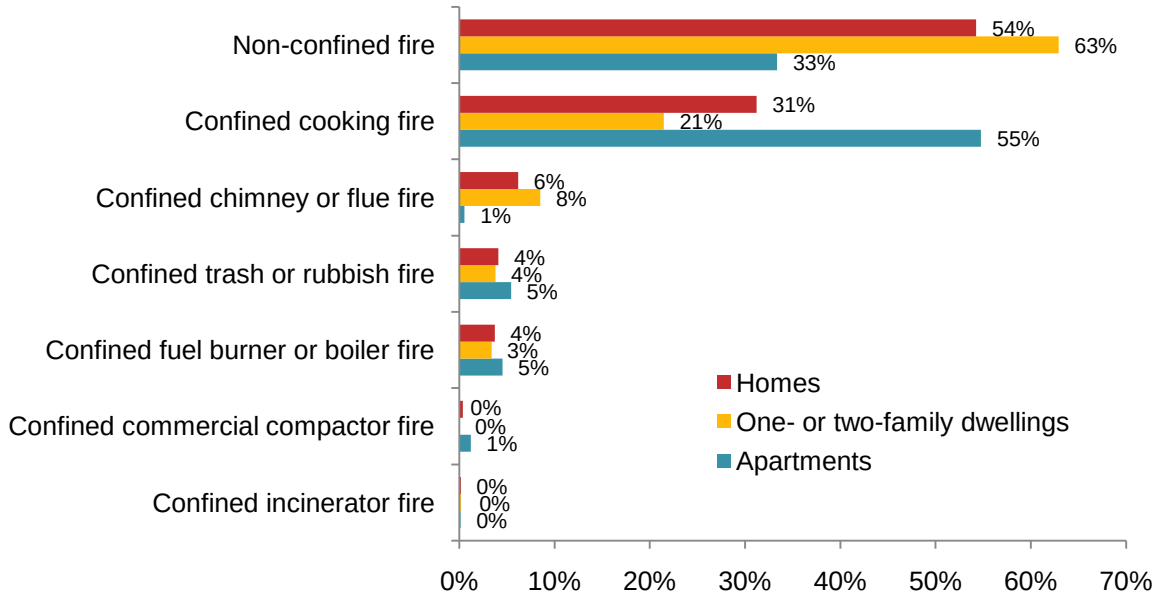
Although causal and other detailed information is typically not required for these incidents, it is provided in some cases. Some analyses, particularly those that examine cooking equipment, heating equipment, fires caused by smoking materials, and fires started by playing with fire, may examine the confined 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
2005-2009 Annual Averages

Type of Fire	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fires	171,000	(46%)	0	(0%)	1,720	(13%)	$41	(1%)
Confined cooking fire	*116,700*	*(31%)*	*0*	*(0%)*	*1,560*	*(12%)*	*$27*	*(0%)*
Confined chimney or flue fire	*23,100*	*(6%)*	*0*	*(0%)*	*40*	*(0%)*	*$8*	*(0%)*
Confined or contained trash or rubbish fire	*15,300*	*(4%)*	*0*	*(0%)*	*60*	*(0%)*	*$2*	*(0%)*
Confined fuel burner or boiler fire	*13,900*	*(4%)*	*0*	*(0%)*	*70*	*(1%)*	*$3*	*(0%)*
Confined commercial compactor fire	*1,400*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Confined incinerator fire	*600*	*(0%)*	*0*	*(0%)*	*0*	*(0%)*	*$0*	*(0%)*
Non-confined fires	202,900	(54%)	2,640	(100%)	11,160	(87%)	$7,105	(99%)
Total	373,900	(100%)	2,650	(100%)	12,890	(100%)	$7,146	(100%)

Source: NFIRS 5.0 and NFPA survey.

Figure A.2. Home Structure Fires by Incident Type and Occupancy
2005-2009



Source: NFIRS 5.0 and NFPA survey.

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 71% of the fires, 47% of the civilian deaths, 71% of the civilian injuries, and 60% of the direct property damage. For confined fires, the cause was known in 14% 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 46% of the non-confined home structure fires, 64% of the associated deaths, 42% of the associated injuries, 53% of the associated direct property damage and 90% 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 32% of the non-confined home structure fires, 55% of the civilian deaths, 28% of the civilian injuries, and 44% of the direct property damage. The heat source was known in 14% 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
	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, 82% of the associated deaths, 71% of the injuries, 78% of the direct property damage, and in 95% 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 11% of non-confined home structure fires, 18% of associated deaths, 6% of associated injuries, and 18% 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 32% of the non-confined structure fires, 54% of the associated deaths, 28% of the associated injuries, 46% of the direct property damage, and in 87% of the confined home fires.

Extent of Flame Damage. All structure fires with incident types indicating a confined fire were shown separately, and in discussion, 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 flame damage 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 flame damage extending beyond the room of origin. Rules for item first ignited apply. The item contributing most to flame spread was undetermined or unreported in 70% of the non-confined structure fires that extended beyond the room of origin, 69% of the associated deaths, 57% of the associated injuries, 63% 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 93% of the fires, 97% of the civilian deaths and injuries, and 95% of the direct property damage. For confined fires, structure status was known in 5% 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 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 share unknown, 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 in 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 in 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.