2004 – 2006 Residential Fire Loss Estimates*

U.S. National Estimates of Fires, Deaths, Injuries, and Property Losses from Unintentional Fires

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Executive Summary

This report presents estimates of consumer product-related fire losses that occurred in U.S. residential structure fires attended by the fire service. The estimates were derived from data for 2004 through 2006 provided by the U.S. Fire Administration's (USFA) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA) Survey of Fire Departments for U.S. Fire Experience.

The fire and fire loss estimates presented in this report pertain to unintentional residential structure fires and civilian casualties. These estimates show that there were:

- 386,100 fires, 2,850 deaths, 13,330 injuries, and $5.31 billion in property loss in 2004
- 375,100 fires, 2,630 deaths, 12,820 injuries, and $6.22 billion in property loss in 2005
- 390,900 fires, 2,280 deaths, 12,070 injuries, and $6.30 billion in property loss in 2006
- An estimated annual average of 384,100 fires, 2,590 deaths, 12,740 injuries, and $5.94 billion in property loss over the three year period 2004-2006.

Consumer products involved in fires can be categorized as sources of ignition or as the materials first ignited. As sources of ignition, they can be small sources like candles or large sources like ranges, which are usually categorized as the equipment involved in ignition. Since the fire losses are derived separately for sources of ignition and materials first ignited, estimates presented in this report overlap in some cases.

For each year from 2004 through 2006, the relative ranking of the greatest contributors to fire loss has remained unchanged. For example, Tables 1a-1d show that:

- Cooking equipment accounted for the largest percentage of fires. An estimated annual average of 143,300 cooking equipment-related fires during 2004-2006 accounted for 37.3% of total residential fires for the same period. The corresponding death estimates averaged around 7.5% of total deaths annually. The annual average number of cooking fire injuries for 2004-2006 was estimated to be 3,350 which is 26.3% of the total estimated annual average number of injuries for the same time period. Most of these losses were associated with range and oven fires.

- Heating and cooling equipment fires constituted the second largest share of total residential fires. The estimated annual average of 56,500 fires for 2004-2006 was 14.7% of the annual average estimate of total residential fires during the same period. The death estimates averaged around 9.9% of total deaths annually. The corresponding injuries for the three years averaged to an annual estimate of 980. This accounts for 7.7% of the annual average estimate of total injuries during 2004-2006.

- During 2004-2006, an estimated annual average of 11,800 fires was attributable to electrical distribution system components (e.g., installed wiring, lighting, etc.). This corresponds to 3.1% of the estimated annual average of total residential fires for the same time period. The death estimates averaged around 6.1% of total deaths while the injury estimates averaged around 3.7% of total injuries annually.

- By item first ignited, upholstered furniture ignition was involved in the greatest number of deaths. From 2004 through 2006, an estimated annual average of 530 deaths was associated with these fires. This constitutes 20.7% of the estimated annual average of total deaths associated with residential structure fires for the same period. On average, during 2004-2006, mattress or bedding ignitions accounted for 13.4% of the total deaths annually.

- By heat source, smoking materials were the largest contributor to deaths, associated with an annual average of 640 deaths from 2004-2006. This accounts for 24.6% of the estimated annual average of total residential fire deaths. The estimated annual average number of deaths from candle fires constituted around 5.6% of total deaths during 2004-2006. Death estimates from lighter fires averaged around 2.5% of total deaths annually, while, on average, matches were responsible for 1.0% of total deaths annually over the three years.

Beginning with 1999 and including the period covered in this report, the NFIRS system underwent some major changes. As such, the staff at the U.S. Consumer Product Safety Commission (CPSC) recommends against comparing fire loss estimates from before 1999 with those after 1999. Rather, the estimates in this report are best viewed as reflecting estimates from a substantially different reporting system because of the inherent system design differences. This report presents annual estimates and estimates averaged across three consecutive years because of the year-to-year variability.

Introduction

The fire loss estimates presented in this report are based on the National Fire Protection Association's (NFPA) national fire loss estimates[1] and the U.S. Fire Administration's (USFA) National Fire Incident Reporting System (NFIRS) data. The NFPA makes national estimates of fires, deaths, injuries, and property loss based on a probability sample survey of U.S. fire departments. The NFIRS is a compilation of voluntarily submitted fire incident reports completed by U.S. fire departments that are sent to the USFA. These reports come from the states and the District of Columbia. However, not all the states reporting data include data from all fire departments in the state. Among the multitude of information collected, product specific information such as the equipment involved in the ignition of the fire or the item that was first ignited in the fire is available in NFIRS data. The NFIRS product specific frequency counts are weighted up to the NFPA estimates for total U.S. fire losses to arrive at the estimates that are presented in this report.

In keeping with reports from previous years, there are five main tables in this report. Each numbered table (1-5) has four tables associated with it; table "a" presents the fire estimates, "b" presents the death estimates, "c" presents the injury estimates, and "d" presents the property loss estimates. As in previous years, only selected product-specific estimates are included in these tables. Therefore, the detail may not add to the totals that appear in the headings. All the product categories in the tables, with the exception of smoking materials, contain products within the jurisdiction of the CPSC. Intentionally set fires, which include the deliberate misuses of heat sources or fires of an incendiary nature, are excluded from the estimates.

The fires and fire losses pertain only to fires in residential properties. These include single family and multifamily dwellings. Mobile and motor homes, while used as a structure and not in transit, are also included. Injury and death estimates pertain to civilian casualties only. The property losses include property and content losses. For convenience, they are referred to as "property loss" only in this report. Fire departments provide a rough estimate for this figure. As such, these property loss estimates are based on crude estimates themselves and the significance of variations in these estimates is ambiguous.

In Tables 1, 3, 4, and 5, equipment codes were used to identify the products, while in Table 2 either the heat source or the item first ignited was the primary means of identifying the product. As such, some estimates provided in the different sections of the tables overlap. For example, in Table 2, estimates of fires involving cigarette ignition of upholstered furniture are included in estimates for cigarettes (by heat source) and estimates for upholstered furniture-smoking material ignition (by item first ignited). Additional details about the estimates and the data system are included in the Methodology section of this report.

The estimates for 2003 through 2005 were published in the August 2008 Residential Fire Loss Estimates report. The estimates for 2004 and 2005 that are presented here remain unchanged from that earlier report. Annual average estimates generated from the most recent three years of data are presented in this report.

[1] M.J. Karter, "Fire Loss in the U.S. During 2003", National Fire Protection Association (NFPA), October 2004; M.J. Karter, "Fire Loss in the U.S. During 2004", NFPA, September 2005; M.J. Karter, "Fire Loss in the U.S. During 2005", NFPA, July 2006.

The CPSC staff has been producing estimates of unintentional residential fires and related deaths, injuries, and property losses since the early 1980s. However, over the years, NFIRS has undergone major changes. This in turn has necessitated changes in the way the CPSC analysts produce the product specific estimates. A discussion of some of these changes follows.

Beginning with 1999 data, a major revision to the NFIRS data coding system, designated version 5.0, was implemented. In 1999, 5% of the residential fire data was coded by fire departments in the new NFIRS version 5.0; in 2000, 20% was coded in version 5.0. The proportion increased to 50% in 2001, 70% in 2002, 80% in 2003, 89% in 2004, 94% in 2005, and 95% in 2006. However, from 1999 onwards, the NFIRS data received from the USFA is entirely in version 5.0 format. In order to produce a dataset entirely in version 5.0 format, where some of the source data was originally coded in version 4.1, data elements were converted. The conversion was done completely by computer programs. Since version 5.0 has many more data fields than version 4.1 and some of the new data fields have many more choices than in 4.1, the converted data is not the same as data originally coded in version 5.0.

As mentioned above, in 2005 and 2006, 94% and 95% of the residential fire data respectively was originally coded in version 5.0. Given this large proportion of version 5.0 data, CPSC analysts produced the 2005 and 2006 estimates using the version 5.0 data only. The NFIRS product specific frequency counts based only on this component of the data were weighted up to the 2005 and 2006 NFPA estimates for total U.S. fire losses to arrive at the 2005 and 2006 product-specific estimates presented in this report.

Beginning with version 5.0, NFIRS has introduced newly created codes to identify confined fires (those that do not spread beyond the originating item). To encourage the reporting of these fires, NFIRS requires only limited information on these fires. From 1999 onwards, as the use of version 5.0 increased, an increasingly larger number of confined fires were reported. In 1999, about 2% of residential fires were reported as confined; by 2006, over 42% of fires reported to NFIRS were confined fires.

Because it is not required information, in most confined fire cases it is not possible to determine the type of equipment involved. For example, when a fire is identified as a confined cooking fire in NFIRS, it is not possible to separate ranges from other cooking equipment. As a result, confined cooking fire losses are only included as part of the “cooking equipment” totals and cannot be broken down further into ranges and by the power source. However, since ranges undoubtedly are involved in confined fires, evaluation of the range-related hazard needs to take into account that some cooking fires that are included only in the totals are actually range fires.

Identification of child play fires in NFIRS 5.0 requires the combination of several variables (such as factors contributing to ignition, human factors contributing to ignition, and age of the fire starter; see Methodology section for detailed discussion) which often remain unreported in the data system. As a result, estimates for child play are considered to be unreliable and are no longer reported. More detail on these and other issues is included in the Methodology section.

The changes cited above and the gradual implementation of these changes in the NFIRS data system have affected the estimates since 1999 considerably. The CPSC staff strongly discourages any comparison of post 1998 estimates with estimates from earlier years.

TABLE 1a
ESTIMATED RESIDENTIAL STRUCTURE FIRES
SELECTED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**386,100**	**375,100**	**390,900**	**384,100**
Total Heating and Cooling Equipment[1]	**57,900**	**56,100**	**55,500**	**56,500**
Local Fixed Heater	4,200	5,000	4,400	4,500
Portable Heater	1,900	1,500	1,400	1,600
Central Heating	2,000	1,200	1,000	1,400
Fireplace, Chimney, Chimney Connector[1]	25,200	24,500	26,400	25,400
Water Heater	2,800	2,600	2,500	2,600
Air Conditioning	1,100	1,100	1,200	1,100
Other[1]	20,700	20,300	18,700	19,900
Total Cooking Equipment[1]	**141,900**	**137,500**	**150,600**	**143,300**
Range / Oven	23,300	13,400	14,300	17,000
Gas	*4,800*	*2,400*	*2,700*	*3,300*
Electric	*18,000*	*10,900*	*11,500*	*13,500*
Other	*500*	*	*	*200*
All Other Cooking	7,500	4,800	5,500	5,900
Gas	*1,200*	*900*	*800*	*1,000*
Electric	*5,700*	*3,800*	*4,200*	*4,500*
Other	*600*	*200*	*500*	*400*
Total Electrical Distribution	**13,600**	**9,700**	**12,000**	**11,800**
Installed Wiring[2]	4,700	3,500	4,600	4,300
Cord, Plug	2,100	1,100	1,400	1,500
Receptacle, Switch[2]	1,500	1,000	1,400	1,300
Lighting	3,000	2,300	2,600	2,700
Other	2,400	1,800	2,000	2,100
Other Selected Equipment	**10,300**	**9,200**	**9,700**	**9,800**
Audio / Visual Equipment	700	600	700	700
Clothes Dryer	6,800	6,300	6,800	6,600
Washing Machine	400	300	300	300
Torch	1,200	700	600	800
Refrigerator / Freezer	600	700	700	600
Shop / Garden Tool	700	700	700	700

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Fire estimates are rounded to the nearest 100. Subtotals do not necessarily add to heading totals. Estimates exclude intentionally set fires.

[1] There are confined fire estimates included in *Total Residential, Total Heating and Cooling Equipment, Fireplace, Chimney, Chimney Connector, Other*, and *Total Cooking Equipment* categories. These confined fire estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment. See Table 7a on p. 32 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 1b
ESTIMATED RESIDENTIAL STRUCTURE FIRE DEATHS
SELECTED EQUIPMENT, 2004 - 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**2,850**	**2,630**	**2,280**	**2,590**
Total Heating and Cooling Equipment	**290**	**280**	**200**	**260**
Local Fixed Heater	90	130	80	100
Portable Heater	130	30	50	70
Central Heating	10	30	20	20
Fireplace, Chimney, Chimney Connector	20	20	*	10
Water Heater	10	30	20	20
Air Conditioning	*	*	*	*
Other[1]	30	50	30	40
Total Cooking Equipment[1]	**240**	**210**	**130**	**200**
Range / Oven	190	160	130	160
Gas	*90*	*30*	*50*	*50*
Electric	*90*	*130*	*80*	*100*
Other	*10*	*	*	*
All Other Cooking	40	30	10	30
Gas	*10*	*	*	*10*
Electric	*30*	*30*	*	*20*
Other	*	*	*	*
Total Electrical Distribution	**140**	**200**	**140**	**160**
Installed Wiring[2]	40[3]	50	50	40
Cord, Plug	70	90	50	70
Receptacle, Switch[2]	10[2]	10	*	10
Lighting	10	20	20	20
Other	10	30	10	20
Other Selected Equipment	**30**	**10**	*****	**10**
Audio / Visual Equipment	10	*	*	*
Clothes Dryer	*	*	*	*
Washing Machine	*	*	*	*
Torch	*	*	*	*
Refrigerator / Freezer	*	10	*	*
Shop / Garden Tool	10	*	*	*

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Death estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude deaths from intentionally set fires.

[1] Includes an estimated 10 deaths in 2004 and an estimated 20 deaths in 2005 from confined cooking fires. There were no NFIRS cooking fire deaths in 2006.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 1c
ESTIMATED RESIDENTIAL STRUCTURE FIRE INJURIES
SELECTED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**13,330**	**12,820**	**1,2070**	**12,740**
Total Heating and Cooling Equipment[1]	**950**	**1,100**	**890**	**980**
Local Fixed Heater	220	330	230	260
Portable Heater	180	140	130	150
Central Heating	60	60	50	60
Fireplace, Chimney, Chimney Connector[1]	90	110	90	100
Water Heater	140	160	130	140
Air Conditioning	50	60	60	50
Other[1]	210	240	200	210
Total Cooking Equipment[1]	**3,680**	**3,250**	**3,120**	**3,350**
Range / Oven	1,890	1,410	1,260	1,520
Gas	*310*	*130*	*220*	*220*
Electric	*1,540*	*1,270*	*1,040*	*1,280*
Other	*40*	*20*	*10*	*20*
All Other Cooking	450	340	350	380
Gas	*90*	*90*	*60*	*80*
Electric	*320*	*220*	*270*	*270*
Other	*40*	*30*	*30*	*30*
Total Electrical Distribution	**480**	**500**	**430**	**470**
Installed Wiring[2]	130[2]	110	120	120
Cord, Plug	80	150	100	110
Receptacle, Switch[2]	40[2]	50	60	40
Lighting	150	120	90	120
Other	80	70	60	70
Other Selected Equipment	**390**	**360**	**310**	**350**
Audio / Visual Equipment	40	60	40	50
Clothes Dryer	190	200	170	190
Washing Machine	10	*	20	10
Torch	50	20	40	40
Refrigerator / Freezer	30	40	20	30
Shop / Garden Tool	60	40	20	40

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Injury estimates are rounded to the nearest 10. Subtotals do not necessarily add to heading totals. Estimates exclude injuries from intentionally set fires.

[1] There are confined fire injury estimates included in *Total Residential*, *Total Heating and Cooling Equipment*, *Fireplace, Chimney, Chimney Connector*, *Other*, and *Total Cooking Equipment* categories. These confined fire injury estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment. See Table 7b on p. 32 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 1d
ESTIMATED RESIDENTIAL STRUCTURE FIRE PROPERTY LOSS (In Millions)
SELECTED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**$5,308.3**	**$6,215.6**	**$6,303.3**	**$5,942.4**
Total Heating and Cooling Equipment[1]	**$490.8**	**$558.3**	**$586.5**	**$545.2**
Local Fixed Heater	$75.0	$131.0	$147.6	$117.9
Portable Heater	$60.7	$75.9	$67.6	$68.1
Central Heating	$50.2	$29.9	$26.5	$35.6
Fireplace, Chimney, Chimney Connector[1]	$120.2	$115.2	$126.6	$120.7
Water Heater	$53.9	$65.4	$77.8	$65.7
Air Conditioning	$37.5	$28.8	$27.0	$31.1
Other[1]	$93.3	$112.0	$113.3	$106.2
Total Cooking Equipment[1]	**$400.5**	**$412.7**	**$372.4**	**$395.2**
Range / Oven	$245.0	$222.0	$225.1	$230.7
Gas	*$31.3*	*$26.2*	*$39.9*	*$32.5*
Electric	*$211.1*	*$195.5*	*$183.8*	*$196.8*
Other	*$2.7*	*$0.2*	*$1.4*	*$1.4*
All Other Cooking	$132.4	$157.3	$123.6	$137.7
Gas	*$17.4*	*$62.2*	*$22.4*	*$34.0*
Electric	*$103.1*	*$90.3*	*$89.1*	*$94.2*
Other	*$11.9*	*$4.8*	*$12.0*	*$9.6*
Total Electrical Distribution	**$354.4**	**$361.3**	**$388.6**	**$368.1**
Installed Wiring[2]	$126.9	$121.6	$145.3	$131.2
Cord, Plug	$58.3	$49.4	$44.0	$50.6
Receptacle, Switch[2]	$35.4	$31.9	$52.6	$40.0
Lighting	$70.6	$81.8	$82.3	$78.2
Other	$63.2	$76.6	$64.5	$68.1
Other Selected Equipment	**$160.0**	**$177.4**	**$181.5**	**$173.0**
Audio / Visual Equipment	$16.9	$13.3	$19.6	$16.6
Clothes Dryer	$60.8	$89.2	$82.8	$77.6
Washing Machine	$2.2	$0.9	$3.1	$2.1
Torch	$47.1	$35.3	$23.4	$35.2
Refrigerator / Freezer	$9.9	$20.1	$21.1	$17.1
Shop / Garden Tool	$23.0	$19.0	$31.9	$24.7

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Property loss estimates are rounded to the nearest tenth of a million dollars. Subtotals do not necessarily add to heading totals. Estimates exclude property loss from intentionally set fires.

[1] There are confined fire property loss estimates included in *Total Residential, Total Heating and Cooling Equipment, Fireplace, Chimney, Chimney Connector, Other*, and *Total Cooking Equipment* categories. These confined fire property loss estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment. See Table 7c on p. 33 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 2a
ESTIMATED RESIDENTIAL STRUCTURE FIRES
SELECTED PRODUCTS, 2004 – 2006

Product	2004	2005	2006	2004-2006 Average
Total Residential[1]	**386,100**	**375,100**	**390,900**	**384,100**
By Heat Source				
Cigarette, Other Tobacco Products	**12,700**	**10,700**	**12,200**	**11,900**
Match	**1,600**	**1,200**	**1,000**	**1,300**
Lighter	**2,700**	**2,000**	**2,100**	**2,200**
Candle	**13,400**	**12,100**	**10,800**	**12,100**
By Item First Ignited				
Upholstered Furniture	**7,200**	**6,700**	**6,900**	**7,000**
Smoking Material Ignition	2,400	1,800	1,900	2,000
Open Flame Ignition	1,200	1,100	1,100	1,100
Other	3,700	3,800	3,900	3,800
Mattress, Bedding	**11,700**	**10,200**	**10,000**	**10,600**
Smoking Material Ignition	2,600	2,100	2,200	2,300
Open Flame Ignition	3,300	2,600	2,400	2,800
Other	5,800	5,600	5,400	5,600
Other Materials				
Cooking Materials[1]	142,400	142,300	154,000	146,200
Electric Cable Insulation	18,400	16,500	17,900	17,600
Interior Wall Covering	9,700	7,900	7,800	8,500
Wearing Apparel-Worn	300	300	300	300
Wearing Apparel-Not Worn	7,200	6,400	6,800	6,800
Floor Covering	4,900	4,700	4,600	4,700
Curtains, Drapes	2,400	2,200	2,100	2,200
Magazines, Newspaper	2,500	2,500	2,300	2,400
Thermal Insulation	6,200	6,200	6,100	6,200
Cabinet, Desk	6,000	5,200	5,300	5,500
Trash, Rubbish[1]	20,600	21,700	23,100	21,800
Toy, Game	300	200	200	200
Box, Carton, Bag, Basket, Barrel	3,100	2,700	2,800	2,900

Source: U. S. Consumer Product Safety Commission/EPHA, from data obtained from the U. S. Fire Administration and NFPA.

Note: Fire estimates are rounded to the nearest 100. Subtotals do not necessarily add up to heading totals. Estimates exclude intentionally set fires.

[1] There are confined fire estimates included in *Total Residential, Cooking Materials*, and *Trash, Rubbish* categories. Estimates for confined cooking fires are included in the *Cooking Materials* fire losses because cooking materials are most likely the item first ignited. See Table 7a on p. 32 for details.

TABLE 2b
ESTIMATED RESIDENTIAL STRUCTURE FIRE DEATHS
SELECTED PRODUCTS, 2004 – 2006

Product	2004	2005	2006	2004-2006 Average
Total Residential[1]	**2,850**	**2,630**	**2,280**	**2,590**
By Heat Source				
Cigarette, Other Tobacco Products	**660**	**650**	**600**	**640**
Match	**20**	**20**	**40**	**30**
Lighter	**30**	**90**	**70**	**60**
Candle	**150**	**170**	**120**	**150**
By Item First Ignited				
Upholstered Furniture	**610**	**520**	**480**	**530**
Smoking Material Ignition	320	290	290	300
Open Flame Ignition	40	60	20	40
Other	240	170	170	200
Mattress, Bedding	**300**	**370**	**370**	**350**
Smoking Material Ignition	160	160	160	160
Open Flame Ignition	30	50	60	40
Other	110	160	150	140
Other Materials				
Cooking Materials[1]	210	130	110	150
Electric Cable Insulation	140	90	80	100
Interior Wall Covering	180	120	80	130
Wearing Apparel-Worn	90	90	90	90
Wearing Apparel-Not Worn	20	70	40	40
Floor Covering	110	110	120	110
Curtains, Drapes	10	40	10	20
Magazines, Newspaper	30	50	50	40
Thermal Insulation	20	10	*	10
Cabinet, Desk	70	60	40	50
Trash, Rubbish	60	50	50	50
Toy, Game	*	*	*	*
Box, Carton, Bag, Basket, Barrel	30	*	20	20

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Death estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude deaths from intentionally set fires.

[1] Includes an estimated 10 deaths in 2004 and an estimated 20 deaths in 2005 from confined cooking fires. There were no NFIRS cooking fire deaths in 2006. Estimates for confined cooking fire deaths are included in the *Cooking Materials* fire losses because cooking materials are most likely the item first ignited.

TABLE 2c
ESTIMATED RESIDENTIAL STRUCTURE FIRE INJURIES
SELECTED PRODUCTS, 2004 – 2006

Product	2004	2005	2006	2004-2006 Average
Total Residential[1]	**13,330**	**12,820**	**12,070**	**12,740**
By Heat Source				
Cigarette, Other Tobacco Products	**1,210**	**1,100**	**1,240**	**1,190**
Match	**170**	**110**	**150**	**140**
Lighter	**560**	**360**	**340**	**420**
Candle	**1,240**	**1,070**	**1,040**	**1,120**
By Item First Ignited				
Upholstered Furniture	**800**	**880**	**860**	**850**
Smoking Material Ignition	300	330	320	320
Open Flame Ignition	170	180	190	180
Other	330	380	340	350
Mattress, Bedding	**1,450**	**1,240**	**1,250**	**1,310**
Smoking Material Ignition	420	340	400	390
Open Flame Ignition	590	350	380	440
Other	450	540	480	490
Other Materials				
Cooking Materials[1]	4,010	3,780	3,640	3,810
Electric Cable Insulation	380	410	490	430
Interior Wall Covering	410	280	280	330
Wearing Apparel-Worn	130	100	100	110
Wearing Apparel-Not Worn	300	410	360	360
Floor Covering	340	320	230	290
Curtains, Drapes	180	140	170	160
Magazines, Newspaper	190	160	180	180
Thermal Insulation	110	80	100	90
Cabinet, Desk	370	350	270	330
Trash, Rubbish[1]	220	280	250	250
Toy, Game	20	10	30	20
Box, Carton, Bag, Basket, Barrel	130	110	130	120

Source: U. S. Consumer Product Safety Commission/EPHA, from data obtained from the U. S. Fire Administration and NFPA.

Note: Injury estimates are rounded to the nearest 10. Subtotals do not necessarily add to heading totals. Estimates exclude injuries from intentionally set fires.

[1]There are confined fire injury estimates included in *Total Residential*, *Cooking Materials*, and *Trash, Rubbish* categories. Estimates for confined cooking fire injuries are included in the *Cooking Materials* fire losses because cooking materials are most likely the item first ignited. See Table 7b on p. 32 for details.

TABLE 2d
ESTIMATED RESIDENTIAL STRUCTURE FIRE PROPERTY LOSS (In Millions)
SELECTED PRODUCTS, 2004 – 2006

Product	2004	2005	2006	2004-2006 Average
Total Residential[1]	**$5,308.3**	**$6,215.6**	**$6,303.3**	**$5,942.4**
By Heat Source				
Cigarette, Other Tobacco Products	**$319.4**	**$357.7**	**$408.5**	**$361.9**
Match	**$36.9**	**$40.1**	**$34.6**	**$37.2**
Lighter	**$86.2**	**$76.7**	**$61.3**	**$74.7**
Candle	**$390.3**	**$428.4**	**$360.3**	**$393.0**
By Item First Ignited				
Upholstered Furniture	**$250.2**	**$312.2**	**$342.0**	**$301.4**
Smoking Material Ignition	$78.1	$81.9	$111.3	$90.4
Open Flame Ignition	$51.6	$66.3	$64.5	$60.8
Other	$120.5	$164.0	$166.1	$150.2
Mattress, Bedding	**$329.3**	**$348.6**	**$343.4**	**$340.4**
Smoking Material Ignition	$76.6	$56.9	$61.5	$65.0
Open Flame Ignition	$100.4	$109.1	$86.5	$98.7
Other	$152.3	$182.6	$195.3	$176.7
Other Materials				
Cooking Materials[1]	$362.7	$406.3	$409.2	$392.7
Electric Cable Insulation	$373.8	$373.3	$385.1	$377.4
Interior Wall Covering	$297.2	$257.0	$264.1	$272.8
Wearing Apparel-Worn	$4.5	$6.8	$7.3	$6.2
Wearing Apparel-Not Worn	$107.8	$149.5	$144.3	$133.9
Floor Covering	$137.9	$138.4	$151.5	$142.6
Curtains, Drapes	$74.3	$78.4	$52.7	$68.5
Magazines, Newspaper	$56.6	$77.9	$73.7	$69.4
Thermal Insulation	$116.4	$177.6	$134.8	$142.9
Cabinet, Desk	$146.3	$150.5	$188.6	$161.8
Trash, Rubbish[1]	$94.8	$132.3	$148.9	$125.3
Toy, Game	$5.8	$7.1	$1.3	$4.7
Box, Carton, Bag, Basket, Barrel	$117.0	$113.6	$105.8	$112.1

Source: U. S. Consumer Product Safety Commission/EPHA, from data obtained from the U. S. Fire Administration and NFPA.

Note: Property loss estimates are rounded to the nearest tenth of a million dollars. Subtotals do not necessarily add to heading totals. Estimates exclude property loss from intentionally set fires.

[1] There are confined fire property loss estimates included in *Total Residential*, *Cooking Materials*, and *Trash, Rubbish* categories. Estimates for confined cooking fire property losses are included in the *Cooking Materials* fire losses because cooking materials are most likely the item first ignited. See Table 7c on p. 33 for details.

TABLE 3a
ESTIMATED RESIDENTIAL STRUCTURE FIRES
HEATING AND COOLING EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**386,100**	**375,100**	**390,900**	**384,100**
Total Heating and Cooling Equipment[1]	**57,900**	**56,100**	**55,500**	**56,500**
Solid Fuel	**3,800**	**2,400**	**2,500**	**2,900**
Fixed Heater	800	700	600	700
Portable Heater	*	*	*	*
Fireplace, Chimney, Chimney Connector	2,900	1,600	1,800	2,100
Central Heating	*	*	*	*
Water Heater	*	*	*	*
Other	100	*	*	*
Gas-Fired	**4,300**	**4,500**	**3,900**	**4,200**
Fixed Heater	1,100	1,400	1,100	1,200
Portable Heater	200	200	200	200
Fireplace, Chimney, Chimney Connector	200	200	200	200
Central Heating	700	600	500	600
Water Heater	1,700	1,700	1,700	1,700
Fixed, Central Air Conditioning	*	*	*	*
Other	300	300	200	300
Electric	**9,400**	**9,500**	**9,600**	**9,500**
Fixed Heater	2,100	2,700	2,500	2,400
Portable Heater	1,200	1,000	1,000	1,100
Central Heating	800	400	400	500
Water Heater	1,000	900	800	900
Fixed, Central Air Conditioning	700	700	800	700
Portable Air Conditioner	300	400	400	400
Other	3,200	3,500	3,700	3,500
Liquid Fuel	**1,200**	**800**	**600**	**800**
Fixed Heater	100	200	100	100
Portable Heater	400	400	300	300
Fireplace, Chimney, Chimney Connector	100	*	*	*
Central Heating	400	200	100	200
Water Heater	*	*	*	*
Other	100	100	100	100
All Other Fuel	**300**	**100**	**200**	**200**

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Fire estimates are rounded to the nearest 100. Rounded estimates less than 100 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude intentionally set fires.

[1] There are confined fire estimates included in *Total Residential*, and *Total Heating and Cooling Equipment* categories. These confined fire estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7a on p. 32 for details.

TABLE 3b
ESTIMATED RESIDENTIAL STRUCTURE FIRE DEATHS
HEATING AND COOLING EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**2,850**	**2,630**	**2,280**	**2,590**
Total Heating and Cooling Equipment	**290**	**280**	**200**	**260**
Solid Fuel	**80**	**120**	**30**	**70**
Fixed Heater	50	90	20	60
Portable Heater	*	*	*	*
Fireplace, Chimney, Chimney Connector	20	20	*	10
Central Heating	*	10	*	10
Water Heater	*	*	*	*
Other	*	*	*	*
Gas-Fired	**50**	**80**	**70**	**70**
Fixed Heater	10	20	30	20
Portable Heater	30	*	*	10
Fireplace, Chimney, Chimney Connector	*	*	*	*
Central Heating	*	10	10	10
Water Heater	*	30	20	20
Fixed, Central Air Conditioning	*	*	*	*
Other	*	20	*	10
Electric	**120**	**60**	**80**	**90**
Fixed Heater	20	10	30	20
Portable Heater	70	30	30	40
Central Heating	*	*	10	*
Water Heater	*	*	*	*
Fixed, Central Air Conditioning	*	*	*	*
Portable Air Conditioner	*	*	*	*
Other	30	30	20	20
Liquid Fuel	**40**	**20**	**20**	**30**
Fixed Heater	*	10	*	*
Portable Heater	40	10	20	20
Fireplace, Chimney, Chimney Connector	*	*	*	*
Central Heating	*	*	*	*
Water Heater	*	*	*	*
Other	*	*	*	*
All Other Fuel	*	*	*	*

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Death estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude deaths from intentionally set fires.

[1] Includes an estimated 10 deaths in 2004 and an estimated 20 deaths in 2005 from confined cooking fires. There were no NFIRS cooking fire deaths in 2006.

TABLE 3c
ESTIMATED RESIDENTIAL STRUCTURE FIRE INJURIES
HEATING AND COOLING EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**13,330**	**12,820**	**12,070**	**12,740**
Total Heating and Cooling Equipment[1]	**950**	**1,100**	**890**	**980**
Solid Fuel	**80**	**100**	**80**	**90**
Fixed Heater	30	40	20	30
Portable Heater	*	*	*	*
Fireplace, Chimney, Chimney Connector	50	60	50	50
Central Heating	*	*	*	*
Water Heater	*	*	10	*
Other	*	*	*	*
Gas-Fired	**260**	**280**	**250**	**260**
Fixed Heater	50	50	90	60
Portable Heater	20	20	10	20
Fireplace, Chimney, Chimney Connector	10	10	*	10
Central Heating	50	40	30	40
Water Heater	120	140	110	120
Fixed, Central Air Conditioning	*	*	*	*
Other	10	10	10	10
Electric	**420**	**530**	**390**	**450**
Fixed Heater	120	220	120	160
Portable Heater	140	80	70	90
Central Heating	10	20	10	10
Water Heater	10	20	20	20
Fixed, Central Air Conditioning	20	30	30	30
Portable Air Conditioner	30	20	20	30
Other	90	140	120	120
Liquid Fuel	**40**	**60**	**60**	**50**
Fixed Heater	*	*	*	*
Portable Heater	30	40	50	40
Fireplace, Chimney, Chimney Connector	*	10	*	*
Central Heating	*	*	10	*
Water Heater	*	*	*	*
Other	10	*	*	*
All Other Fuel	**10**	**10**	*****	**10**

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Injury estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude injuries from intentionally set fires.

[1] There are confined fire injury estimates included in *Total Residential*, and *Total Heating and Cooling Equipment* categories. These confined fire injury estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7b on p. 32 for details.

TABLE 3d
ESTIMATED RESIDENTIAL STRUCTURE FIRE PROPERTY LOSS (In Millions)
HEATING AND COOLING EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**$5,308.3**	**$6,215.6**	**$6,303.3**	**$5,942.4**
Total Heating and Cooling Equipment[1]	**$490.8**	**$558.3**	**$586.5**	**$545.2**
Solid Fuel	**$112.0**	**$125.3**	**$110.7**	**$116.0**
Fixed Heater	$18.8	$35.2	$21.6	$25.2
Portable Heater	$0.8	*	$1.2	$0.7
Fireplace, Chimney, Chimney Connector	$85.8	$87.1	$85.1	$86.0
Central Heating	$5.7	$3.0	$2.3	$3.7
Water Heater	$0.3	*	*	$0.1
Other	$0.6	*	$0.5	$0.4
Gas-Fired	**$109.0**	**$148.9**	**$173.0**	**$143.6**
Fixed Heater	$17.4	$40.5	$34.0	$30.6
Portable Heater	$7.2	$23.0	$12.7	$14.3
Fireplace, Chimney, Chimney Connector	$16.6	$8.8	$34.0	$19.8
Central Heating	$15.8	$16.7	$13.7	$15.4
Water Heater	$46.5	$50.1	$70.3	$55.6
Fixed, Central Air Conditioning	*	$0.4	*	*
Other	$5.6	$9.3	$8.4	$7.7
Electric	**$197.8**	**$236.6**	**$268.1**	**$234.1**
Fixed Heater	$34.1	$49.2	$86.9	$56.7
Portable Heater	$36.3	$40.7	$43.2	$40.1
Central Heating	$8.5	$8.1	$4.9	$7.1
Water Heater	$6.3	$15.2	$7.4	$9.6
Fixed, Central Air Conditioning	$30.8	$20.3	$19.8	$23.7
Portable Air Conditioner	$6.6	$8.0	$7.2	$7.3
Other	$75.2	$95.0	$98.6	$89.6
Liquid Fuel	**$52.8**	**$20.9**	**$25.1**	**$32.9**
Fixed Heater	$4.7	$5.4	$4.4	$4.9
Portable Heater	$16.3	$12.2	$10.4	$13.0
Fireplace, Chimney, Chimney Connector	$3.1	*	$1.6	$1.6
Central Heating	$20.3	$2.1	$5.6	$9.3
Water Heater	$0.8	$0.1	*	$0.3
Other	$7.6	$1.1	$3.0	$3.9
All Other Fuel	**$4.2**	**$2.8**	**$2.7**	**$3.2**

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Property loss estimates are rounded to the nearest tenth of a million dollars. Rounded estimates less than $0.1m are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude property loss from intentionally set fires.

[1] There are confined fire property loss estimates included in *Total Residential*, and *Total Heating and Cooling Equipment* categories. These confined fire property loss estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7c on p. 33 for details.

TABLE 4a
ESTIMATED RESIDENTIAL STRUCTURE FIRES
SELECTED ELECTRICAL EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**386,100**	**375,100**	**390,900**	**384,100**
Total Electrical	**57,700**	**43,700**	**48,000**	**49,800**
Electric Heating and Cooling	**9,400**	**9,500**	**9,600**	**9,500**
Central Heating	800	400	400	500
Local Fixed Heater	2,100	2,700	2,500	2,400
Portable Heater	1,200	1,000	1,000	1,100
Water Heater	1,000	900	800	900
Fixed, Central Air Conditioning	700	700	800	700
Portable Air Conditioner	300	400	400	400
Other	3,200	3,500	3,700	3,500
Electric Cooking Equipment	**23,600**	**14,700**	**15,700**	**18,000**
Range / Oven	18,000	10,900	11,500	13,500
Range / Oven Hood	300	200	200	200
Deep Fat Fryer	100	*	100	100
Grill	*	*	*	*
Small Heat-Producing Appliance	1,000	800	1,000	900
Other	4,200	2,700	3,000	3,300
Electrical Distribution	**13,600**	**9,700**	**12,000**	**11,800**
Installed Wiring[2]	4,700	3,500	4,600	4,300
Light Fixture	1,800	1,400	1,600	1,600
Receptacle, Switch[2]	1,500	1,000	1,400	1,300
Cord, Plug	2,100	1,100	1,400	1,500
Lamp, Light Bulb	1,200	900	1,000	1,000
Panel Board	800	500	600	600
Meter	300	200	300	300
Transformer	100	100	100	100
Other	1,200	900	1,000	1,000
Other Selected Electrical Appliances	**7,300**	**6,500**	**7,000**	**6,900**
Clothes Dryer	5,300	4,600	5,100	5,000
Audio / Visual Equipment	700	600	600	700
Washing Machine	400	300	300	300
Refrigerator / Freezer	600	600	600	600
Shop / Garden Tools	300	200	200	200
Torch	100	100	100	100

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Fire estimates are rounded to the nearest 100. Rounded estimates less than 100 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude intentionally set fires.

[1] There are confined fire estimates included in *Total Residential* category. These confined fire estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7a on p. 32 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 4b
ESTIMATED RESIDENTIAL STRUCTURE FIRE DEATHS
SELECTED ELECTRICAL EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**2,850**	**2,630**	**2,280**	**2,590**
Total Electrical	**490**	**450**	**370**	**440**
Electric Heating and Cooling	**120**	**60**	**80**	**90**
Central Heating	*	*	10	*
Local Fixed Heater	20	10	30	20
Portable Heater	70	30	30	40
Water Heater	*	*	*	*
Fixed, Central Air Conditioning	*	*	*	*
Portable Air Conditioner	*	*	*	*
Other	30	30	20	20
Electric Cooking Equipment	**120**	**160**	**80**	**120**
Range / Oven	90	130	80	100
Range / Oven Hood	*	*	*	*
Deep Fat Fryer	*	*	*	*
Grill	*	*	*	*
Small Heat-Producing Appliance	*	*	*	*
Other	20	30	*	20
Electrical Distribution	**140**	**200**	**140**	**160**
Installed Wiring[2]	40[2]	50	50	40
Light Fixture	*	10	10	10
Receptacle, Switch	10[2]	10	*	10
Cord, Plug	70	90	50	70
Lamp, Light Bulb	*	20	10	10
Panel Board	*	*	10	*
Meter	*	10	*	*
Transformer	*	*	*	*
Other	10	20	10	10
Other Selected Electrical Appliances	**20**	**10**	*****	**10**
Clothes Dryer	*	*	*	*
Audio / Visual Equipment	10	*	*	*
Washing Machine	*	*	*	*
Refrigerator / Freezer	*	10	*	*
Shop / Garden Tool	*	*	*	*
Torch	*	*	*	*

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Death estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude deaths from intentionally set fires.

[1] Includes an estimated 10 deaths in 2004 and an estimated 20 deaths in 2005 from confined cooking fires. There were no NFIRS cooking fire deaths in 2006.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 4c
ESTIMATED RESIDENTIAL STRUCTURE FIRE INJURIES
SELECTED ELECTRICAL EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**13,330**	**12,820**	**12,070**	**12,740**
Total Electrical	**3,240**	**2,960**	**2,550**	**2,920**
Electric Heating and Cooling	**420**	**530**	**390**	**450**
Central Heating	10	20	10	10
Local Fixed Heater	120	220	120	160
Portable Heater	140	80	70	90
Water Heater	10	20	20	20
Fixed, Central Air Conditioning	20	30	30	30
Portable Air Conditioner	30	20	20	30
Other	90	140	120	120
Electric Cooking Equipment	**1,860**	**1,490**	**1,310**	**1,550**
Range / Oven	1,540	1,270	1,040	1,280
Range / Oven Hood	10	*	*	10
Deep Fat Fryer	10	*	10	10
Grill	*	*	*	*
Small Heat-Producing Appliance	40	50	80	60
Other	260	170	180	200
Electrical Distribution	**480**	**500**	**430**	**470**
Installed Wiring[2]	130[2]	110	120	120
Light Fixture	80	60	40	60
Receptacle, Switch	40[2]	50	60	40
Cord, Plug	80	150	100	110
Lamp, Light Bulb	60	60	50	60
Panel Board	20	20	10	20
Meter	10	10	*	10
Transformer	10	10	*	10
Other	30	40	50	40
Other Selected Electrical Appliances	**280**	**260**	**200**	**250**
Clothes Dryer	140	140	120	130
Audio / Visual Equipment	40	60	30	40
Washing Machine	10	*	20	10
Refrigerator / Freezer	30	40	20	30
Shop / Garden Tool	30	10	10	20
Torch	10	*	10	10

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Injury estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude injuries from intentionally set fires.

[1] There are confined fire injury estimates included in *Total Residential* category. These confined fire injury estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7b on p. 32 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 4d
ESTIMATED RESIDENTIAL STRUCTURE FIRE PROPERTY LOSS (In Millions)
SELECTED ELECTRICAL EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**$5,308.3**	**$6,215.6**	**$6,303.3**	**$5,942.4**
Total Electrical	**$1,062.6**	**$1,130.9**	**$1,174.6**	**$1,122.7**
Electric Heating and Cooling	**$197.8**	**$236.6**	**$268.1**	**$234.1**
Central Heating	$8.5	$8.1	$4.9	$7.1
Local Fixed Heater	$34.1	$49.2	$86.9	$56.7
Portable Heater	$36.3	$40.7	$43.2	$40.1
Water Heater	$6.3	$15.2	$7.4	$9.6
Fixed, Central Air Conditioning	$30.8	$20.3	$19.8	$23.7
Portable Air Conditioner	$6.6	$8.0	$7.2	$7.3
Other	$75.2	$95.0	$98.6	$89.6
Electric Cooking Equipment	**$314.2**	**$285.9**	**$272.9**	**$291.0**
Range / Oven	$211.1	$195.5	$183.8	$196.8
Range / Oven Hood	$7.5	$2.8	$2.7	$4.3
Deep Fat Fryer	$1.1	$2.3	$2.2	$1.9
Grill	$3.8	*	$0.1	$1.3
Small Heat-Producing Appliance	$26.8	$20.2	$26.3	$24.4
Other	$63.9	$65.1	$57.7	$62.2
Electrical Distribution	**$354.4**	**$361.3**	**$388.6**	**$368.1**
Installed Wiring[2]	$126.9	$121.6	$145.3	$131.2
Light Fixture	$43.6	$48.9	$51.6	$48.0
Receptacle, Switch	$35.4	$31.9	$52.6	$40.0
Cord, Plug	$58.3	$49.4	$44.0	$50.6
Lamp, Light Bulb	$27.0	$33.0	$30.7	$30.2
Panel Board	$17.1	$15.7	$10.4	$14.4
Meter	$7.6	$11.0	$3.9	$7.5
Transformer	$0.6	$3.1	$6.7	$3.4
Other	$37.8	$46.8	$43.5	$42.7
Other Selected Electrical Appliances	**$93.7**	**$110.0**	**$116.7**	**$106.8**
Clothes Dryer	$51.3	$67.3	$63.2	$60.6
Audio / Visual Equipment	$16.9	$13.3	$19.5	$16.6
Washing Machine	$2.2	$0.9	$3.1	$2.1
Refrigerator / Freezer	$9.9	$19.6	$20.8	$16.8
Shop / Garden Tool	$7.2	$3.1	$2.4	$4.3
Torch	$6.3	$5.7	$7.7	$6.5

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Estimates are rounded to the $0.1m. Rounded estimates less than $0.1m are denoted by an asterisk . Subtotals do not necessarily add to heading totals. Estimates exclude property loss from intentionally set fires.

[1] There are confined fire property loss estimates included in *Total Residential* category. These confined fire property loss estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7c on p. 33 for details.

[2] For the 2004 estimates, cases coded in 4.1 as '41 – Fixed Wiring' or '45 – Switch, receptacle, outlet' were confounded in the conversion. They were allocated between 'Installed Wiring' and 'Receptacle, Switch' to produce these estimates. In 2005 and 2006 only data coded in 5.0 was used so this was not necessary. See discussion on p. 30 for more details.

TABLE 5a
ESTIMATED RESIDENTIAL STRUCTURE FIRES
SELECTED GAS-FIRED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**386,100**	**375,100**	**390,900**	**384,100**
Total Gas-Fired Equipment	**13,400**	**10,900**	**10,300**	**11,500**
Gas Heating Equipment	**4,300**	**4,500**	**3,900**	**4,200**
Fixed Heater	1,100	1,400	1,100	1,200
Portable Heater	200	200	200	200
Central Heating	700	600	500	600
Fireplace, Chimney, Connector	200	200	200	200
Water Heater	1,700	1,700	1,700	1,700
Fixed, Central Air Conditioning	*	*	*	*
Other	300	300	200	300
Gas Cooking Equipment	**6,000**	**3,300**	**3,500**	**4,300**
Range / Oven	4,800	2,400	2,700	3,300
Open Gas Grill	400	300	400	300
Other	800	600	500	600
Other Selected Gas Equipment	**2,700**	**2,700**	**2,500**	**2,700**
Clothes Dryer	1,500	1,700	1,700	1,600
Torch	1,000	600	500	700
Shop / Garden Tool	300	400	400	400

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Fire estimates are rounded to the nearest 100. Rounded estimates less than 100 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude losses from intentionally set fires.

[1] There are confined fire estimates included in *Total Residential* category. These confined fire estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7a on p. 32 for details.

TABLE 5b
ESTIMATED RESIDENTIAL STRUCTURE FIRE DEATHS
SELECTED GAS-FIRED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**2,850**	**2,630**	**2,280**	**2,590**
Total Gas-Fired Equipment	**160**	**110**	**120**	**130**
Gas Heating Equipment	**50**	**80**	**70**	**70**
Fixed Heater	10	20	30	20
Portable Heater	30	*	*	10
Central Heating	*	10	10	10
Fireplace, Chimney, Connector	*	*	*	*
Water Heater	*	30	20	20
Fixed, Central Air Conditioning	*	*	*	*
Other	*	20	*	10
Gas Cooking Equipment	**100**	**30**	**50**	**60**
Range / Oven	90	30	50	50
Open Gas Grill	*	*	*	*
Other	10	*	*	10
Other Selected Gas Equipment	**10**	*****	*****	*****
Clothes Dryer	*	*	*	*
Torch	*	*	*	*
Shop / Garden Tool	10	*	*	*

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Death estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude deaths from intentionally set fires.

[1]Includes an estimated 10 deaths in 2004 and an estimated 20 deaths in 2005 from confined cooking fires. There were no NFIRS cooking fire deaths in 2006.

TABLE 5c
ESTIMATED RESIDENTIAL STRUCTURE FIRE INJURIES
SELECTED GAS-FIRED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**13,330**	**12,820**	**12,070**	**12,740**
Total Gas-Fired Equipment	**810**	**610**	**620**	**680**
Gas Heating Equipment	**260**	**280**	**250**	**260**
Fixed Heater	50	50	90	60
Portable Heater	20	20	10	20
Central Heating	50	40	30	40
Fireplace, Chimney, Connector	10	10	*	10
Water Heater	120	140	110	120
Fixed, Central Air Conditioning	*	*	*	*
Other	10	10	10	10
Gas Cooking Equipment	**400**	**210**	**270**	**290**
Range / Oven	310	130	220	220
Open Gas Grill	40	20	10	20
Other	50	70	40	50
Other Selected Gas Equipment	**100**	**100**	**80**	**100**
Clothes Dryer	50	60	50	50
Torch	40	20	20	30
Shop / Garden Tool	10	30	10	20

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Injury estimates are rounded to the nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude injuries from intentionally set fires.

[1] There are confined fire injury estimates included in *Total Residential* category. These confined fire injury estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7b on p. 32 for details.

TABLE 5d
ESTIMATED RESIDENTIAL STRUCTURE FIRE PROPERTY LOSS (In Millions)
SELECTED GAS-FIRED EQUIPMENT, 2004 – 2006

Equipment	2004	2005	2006	2004-2006 Average
Total Residential[1]	**$5,308.3**	**$6,215.6**	**$6,303.3**	**$5,942.4**
Total Gas-Fired Equipment	**$224.5**	**$311.2**	**$308.0**	**$281.2**
Gas Heating Equipment	**$109.0**	**$148.9**	**$173.0**	**$143.6**
Fixed Heater	$17.4	$40.5	$34.0	$30.6
Portable Heater	$7.2	$23.0	$12.7	$14.3
Central Heating	$15.8	$16.7	$13.7	$15.4
Fireplace, Chimney, Connector	$16.6	$8.8	$34.0	$19.8
Water Heater	$46.5	$50.1	$70.3	$55.6
Fixed, Central Air Conditioning	*	$0.4	*	$0.2
Other	$5.6	$9.3	$8.4	$7.7
Gas Cooking Equipment	**$48.6**	**$88.4**	**$62.4**	**$66.5**
Range / Oven	$31.3	$26.2	$39.9	$32.5
Open Gas Grill	$8.1	$43.4	$9.5	$20.3
Other	$9.3	$18.8	$12.9	$13.7
Other Selected Gas Equipment	**$54.3**	**$64.1**	**$60.5**	**$59.6**
Clothes Dryer	$9.5	$21.9	$19.6	$17.0
Torch	$34.9	$29.3	$14.8	$26.3
Shop / Garden Tool	$9.9	$12.8	$26.1	$16.3

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Property loss estimates are rounded to the nearest tenth of a million dollars. Rounded estimates less than $0.1m are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. Estimates exclude property loss from intentionally set fires.

[1] There are confined fire property loss estimates included in *Total Residential* category. These confined fire property loss estimates could not be included in the detail lines because NFIRS does not provide information to determine the type of equipment or the power source of the equipment. See Table 7c on p. 33 for details.

Methodology

The Methodology section is divided into four major sections. Section 1 describes the data from which fire loss estimates were made, Section 2 describes the procedures for preparing the data especially focusing on missing data, Section 3 describes how the fire loss estimates were made, and Section 4 describes other issues that relate to the data and the estimates.

Data

Sources of Data for Fire Loss Estimates

The estimates in this report are based on the National Fire Protection Association's (NFPA) Survey of Fire Departments and the U.S. Fire Administration's (USFA) National Fire Incident Reporting System (NFIRS) data.

The NFPA survey is a stratified random sample of fire departments in the U.S.[1] The sample is stratified by the size of the community protected. The NFPA makes national estimates of aggregated fires, deaths, injuries, and property loss by weighting sample results according to the proportion of the total U.S. population accounted for by communities of each size. The table below shows the NFPA estimates of residential structure fires and the associated losses for 2004 through 2006.

NFPA Estimates of Residential Structure Fires and Associated Losses 2004 – 2006

	2004	**2005**	**2006**
Structure Fires	410,500	396,000	412,500
Civilian Deaths	3,225	3,055	2,580
Civilian Injuries	14,175	13,825	12,925
Property Loss	$5.95 billion	$6.88 billion	$6.99 billion

Source: See footnote 1 below.

The table above contains the only data used from the NFPA survey for making fire loss estimates.

The NFIRS is a compilation of voluntarily submitted incident reports completed by U.S. fire departments. As such, the NFIRS is not a probability sample and is insufficient to support precision estimation. The reports come from states (50 in 2004 and 2006, 49 in 2005), the District of Columbia (in 2004 and 2005), and U.S. territories. Not all the states reporting data included data from all fire departments in the state. In 2006, there were over 20,000 fire departments that participated in NFIRS. The table below shows the number of residential structure fires and the corresponding losses reported to USFA during the years 2004 through 2006.

[1] M.J.Karter, "Fire Loss in the U.S. During 2003", NFPA, October 2004; M.J.Karter, "Fire Loss in the U.S. During 2004", NFPA, September 2005; M.J.Karter, "Fire Loss in the U.S. During 2005", NFPA, July 2006.

Residential Structure Fires and Associated Losses Reported to USFA 2004 – 2006

	2004	2005		2006	
	All	All	Version 5.0 Only	All	Version 5.0 Only
Structure Fires	229,447	252,739	238,204	260,507	247,201
Civilian Deaths	1,416	1,328	1,225	1,444	1,335
Civilian Injuries	6,997	7,125	6,574	7,387	6,867
Property Loss	$2.60 billion	$3.19 billion	$2.95 billion	$3.55 billion	$3.24 billion

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration.

According to the NFPA, there was an estimated annual average of 406,333 residential structure fires in the U.S. during 2004-2006. NFIRS captured about 61% of these fires. During the same time period, NFPA also estimated an annual average of 2,953 deaths, 13,642 injuries and $6.6 billion in property loss. On average, NFIRS captured 47% of the deaths, 53% of the injuries and 47% of the property loss.

NFIRS Variables

The NFIRS version 5.0 coding system includes many variables but CPSC staff has used only a few of them for this report. The list of variables used by CPSC staff is shown below.

Variable	Description
Civilian Deaths	Number of people who died in connection with the fire incident other than fire service personnel.
Civilian Injuries	Number of people who were injured (but did not die) in connection with the fire incident other than fire service personnel.
Property Loss	Estimate of loss, in whole dollars, if structure sustained damage from flame, smoke, or suppression efforts. Property loss is not adjusted for inflation.
Contents Loss	Estimate of loss in whole dollars for contents (which had value) that sustained damage from flame, smoke, suppression efforts, or otherwise. Contents loss is not adjusted for inflation.
Property Use	Refers to the specific use of the property where the incident occurred. For residential structure fires, the properties that were deemed appropriate were single / multi family dwellings, any type of boarding houses, dormitories, sorority / fraternity houses, hotels / motels and mobile property not in transit.

Incident Type	Identifies the various types of incidents to which fire departments respond. It may include fires, rescue and emergency medical services, false alarms, etc. For this report, the incident codes of interest included structure fires (which include confined fires) and fires in mobile and portable structures used as fixed residences.
Equipment Involved	Equipment that provided the heat which started the fire, e.g., heater, clothes dryer, etc.
Power Source	The type of power for the equipment involved in the fire's ignition. These are grouped into electrical, gas-fueled, liquid-fueled, solid-fueled, and other.
Equipment Portability	Identifies the equipment involved as stationary or portable.
Heat Source	Source of heat that ignited the fire, e.g., candle, lighter, cigarette, heat from operating equipment, hot object, etc.
Item First Ignited	The functional description or use of that item which was first ignited by the heat source, e.g., upholstered furniture, mattress, bedding, electric cable insulation, curtains or drapes, etc.
Cause of Ignition	This indicates the general causal factor that resulted in a heat source igniting a combustible material. The cause code values are: 1: intentional 2: unintentional 3: failure of equipment or heat source 4: act of nature 5: cause under investigation 0: cause, other U: cause undetermined after investigation. CPSC staff regrouped the codes as: 1: intentional 0, 2, 3, 4 or fire involving child play*: unintentional 5, U, missing information: unknown.
Factors Contributing to Ignition	The event that allowed the heat source and the material first ignited to combine to start the fire. Factors adding specificity to the cause of ignition, such as playing with heat source, heat source too close to combustibles, equipment malfunction, etc.

* See discussion on child play later in this section.

Human Factors Contributing to Ignition	Factors relating to the person or persons involved with the start of the fire. Examples are asleep, possibly impaired by alcohol or drugs, age, unattended or unsupervised person, etc.
Age	Age of the person if age was considered a factor in contributing to the ignition of the fire.

The NFIRS coding manual defines some variables as "required fields," that is, if known, values must be supplied for those variables. Other variables may or may not be supplied at the discretion of the reporting department. In the list above Equipment Involved, Power Source, Equipment Portability, Factors Contributing to Ignition, Human Factors Contributing to Ignition, and Age are not required fields. Variables that are not required are more likely to be missing from a given fire incident report in NFIRS than those that are required.[1]

Data Preparation – Addressing Different Types of Missing Data

There are four general types of missing data in NFIRS. These are as follows: (1) data where the value of the missing variable can be inferred logically, (2) missing data from exposure fires, (3) other missing data, and (4) missing data from confined fires. Standard practice in analysis of fire data over the last 20 years has been to fill in the missing values whenever possible.

Missing data that can be logically inferred

As mentioned above, only a few of the available fire incident characteristics were used to generate estimates in this report. Of these, only the variables Incident Type, Property Use, Cause of Ignition, Item First Ignited, Heat Source, and the loss variables are required to be filled out by the fire departments. Even less is required for confined fires, which will be discussed below. Tables 1, 3, 4, and 5 in this report rely heavily on the variables Equipment Involved and the Equipment Power Source. In an effort to lessen the extent of missing data, the CPSC staff has implemented some conventions as necessary following consultation with USFA technical staff.

Some examples illustrate this. If the heat source is known to be matches, lighters, or candles, and no equipment is reported, then it is likely that no equipment was involved rather than equipment being unknown. Similarly, if the factor contributing to the ignition of a fire is reported to be an act of nature such as an earthquake or a storm and no equipment is reported, then it is likely that no equipment was involved.

Another scenario would be when the reported equipment code is electrical but the equipment power source is missing. In this case, it is evident that the power source should have been reported as electrical. On the other hand, when it is known that there is no equipment involved, power source should be reported as "none" instead of "unknown".

These changes are made before any other steps in data preparation.

[1] NFIRS Complete Reference Guide, January 2004.

Exposure fires

Some fires involved more than one residential structure. The initial structure is identified as exposure zero in the data file. Structure fires that spread from the initial fire are identified as exposure fires numbered from "one" to however many are necessary. Typically in exposure fires most of the information on the variables listed above is not filled out.

The CPSC staff transferred the fire cause values such as Cause of Ignition, Equipment Involved, Heat Source, etc. from the initial fire to the exposure fires. Thus, if the initial fire was caused by a portable heater, all exposures would be considered portable heater fires. All associated deaths, injuries, and property loss in these exposures also would be attributed to portable heaters. Any residential structure exposure fire that originated from a non-residential structure fire is also considered within scope for this report.

Other missing data

Tables 6a-6c show the extent of data still missing after logically inferring missing data when appropriate and information transfer was completed for exposure fires. Since most of the data fields for confined fires (those that do not spread beyond the originating item) were not reported per NFIRS version 5.0 reporting instructions, they have been excluded from the tabulations below. Confined fires are discussed later in this section.

Table 6a
Missing Data on Residential Structure Fires: 2004 – 2006

	2004	2005	2006
Cause of Ignition	27%	29%	29%
Heat Source	30%	32%	32%
Item First Ignited	30%	32%	32%
Equipment Involved	45%	52%	50%
Equipment Power	46%	51%	50%

Source: U.S. Consumer Product Safety Commission / EPHA, from NFIRS data obtained from the U.S. Fire Administration. Table excludes confined fires. Table includes only version 5.0 component of total residential structure fires data for 2005 and 2006 (94% and 95% of the fires respectively).

Table 6b
Missing Data on Residential Structure Fire Deaths: 2004 – 2006

	2004	2005	2006
Cause of Ignition	52%	51%	49%
Heat Source	55%	53%	50%
Item First Ignited	51%	48%	52%
Equipment Involved	48%	51%	47%
Equipment Power	48%	51%	47%

Source: U.S. Consumer Product Safety Commission / EPHA, from NFIRS data obtained from the U.S. Fire Administration. Table excludes deaths from confined fires. Table includes only version 5.0 component of total residential structure fire death data for 2005 and 2006 (92% of the deaths in 2005 and 2006).

Table 6c
Missing Data on Residential Structure Fire Injuries: 2004 – 2006

	2004	2005	2006
Cause of Ignition	26%	26%	28%
Heat Source	26%	26%	26%
Item First Ignited	24%	24%	27%
Equipment Involved	40%	45%	43%
Equipment Power	41%	45%	44%

Source: U.S. Consumer Product Safety Commission / EPHA, from NFIRS data obtained from the U.S. Fire Administration. Table excludes injuries from confined fires. Table includes only version 5.0 component of total residential structure fire injury data for 2005 and 2006 (92% and 93% of the injuries, respectively).

For these data, an assumption was made that the unknown values for a characteristic had the same distribution as the known values for that characteristic. To allocate these unknowns for the various characteristics, "raking" was used. A SAS® macro[1] performed the raking. The raking procedure maintains the marginal distributions for the known data while allocating the unknown data for all characteristics involved.[2] For each year, the raking procedure was applied separately for fires, deaths, injuries, and property loss.

There is one situation that requires special handling in preparing the estimates in Table 1 and Table 4. This is for the categories *Installed Wiring* and *Receptacle, Switch*. Incident reports in NFIRS 4.1, using Equipment Involved code 45 (Switch, Receptacle, Outlet), cannot be separated in order to be assigned to NFIRS 5.0 Equipment Involved codes 217 (Outlet, Receptacle) or 218 (Wall Switch). Instead, all such incidents are changed in the public data release of NFIRS by the conversion program to Equipment Involved code 210 (Electrical Wiring, Other), which also includes converted NFIRS 4.1 Equipment Involved code 41 (Fixed Wiring). As a result, Equipment Involved code 210 contains all the 4.1 fire losses for *Installed Wiring* and *Receptacle, Switch*. Equipment Involved codes 217 and 218 do not have incidents that were converted from NFIRS 4.1. Consequently, there are too many incidents in code 210 and not enough in codes 217 and 218. A second stage of raking takes place for these incidents. Cases coded in 4.1 and converted to 5.0 code 210 are allocated through raking between the two separate categories of *Installed Wiring* and *Receptacle, Switch.*

In the years 2005 and 2006 only NFIRS 5.0 data was used so there were no such cases to allocate. This second stage of raking to allocate the 4.1 cases converted to an *Equipment Involved* code of 210 was used for the 2004 estimates.

Confined fires

By far the biggest proportion of missing data was encountered among the confined fires. By NFIRS definition, a fire that is confined to a non-combustible container causing no flame damage beyond the container is considered to be confined.

[1] M. Battaglia, D. Hoaglin and D. Izrael, "To Rake or Not To Rake Is Not the Question Anymore with the Enhanced Raking Macro", SAS® Users Group International (SUGI) 29th Annual Conference, May 9-12, 2004, Paper #207-29.
[2] M.A. Greene, L.E. Smith, M.S. Levenson, S. Hiser, and J.H. Mah, "Raking Fire Data", Presented at the Federal Conference on Statistical Methodology, Arlington, VA, 2001.

In NFIRS version 5.0, the following incident type codes are used to identify the different types of confined fires.

Incident Type Code	*Definition*
113	Fire involving the contents of a cooking vessel without fire extension beyond the vessel.
114	Fire originating in and confined to a chimney or flue.
115	Fire caused by overload or malfunction of an incinerator, with no flame damage outside the incinerator.
116	Fire caused by delayed ignition or malfunction of a fuel or oil burner / boiler, with no flame damage outside the fire box.
117	Fire originating in and confined to contents of a trash compactor. Home trash compactors are excluded.
118	Fire involving a trash or rubbish fire in a structure with no flame damage to structure or its contents.

These Incident Type codes are unavailable in version 4.1 of NFIRS. It was believed that many of these cases were not being reported; so in version 5.0, these codes were created to simplify the coding of these fires. When reporting confined fires, the Cause of Ignition, Equipment Involved, Item First Ignited, or Power Source is not required to be reported.

Since 1999, more and more of the NFIRS data has been reported in version 5.0. With the opportunity to identify confined fires using the specific codes, more and more "confined" fires are also being reported to NFIRS. However, very little other useful information about them is available. With the proportion of reported confined fires increasing, the proportion of missing data also increased. However, imputation of unknowns based on the information from confined fires is not a viable option. From the definition of the Incident Type of confined fires, it is unclear that they are at all similar to the rest of the fires in terms of the equipment involved, the equipment power source, the heat source, or the item first ignited. As such, the CPSC staff separated out all confined fires from the data before the product-specific estimates were derived. The confined fire and fire loss counts were weighted up to the NFPA estimates using the same weights as the rest of the data and presented at the aggregate levels (and sometimes at more specific levels as allowed by the Incident Type definitions). See the section on Estimation Procedure below for a discussion on the weights used. Tables 7a through 7c present all estimates related to confined fires. These estimates are also included in Tables 1a through 5d, as appropriate. Note that they do not appear in Tables 4a through 5d at any of the specific levels since there is no information available on equipment power source.

Table 7a : Estimated Residential Confined Fires: 2004 – 2006

Included in Table Categories:	Appear in Tables:	2004	2005	2006
Total Residential	1a, 2a, 3a, 4a, 5a	167,300	177,300	190,400
Total Heating and Cooling Equipment	1a, 3a	38,900	38,900	38,800
Fireplace, Chimney, Connector	*1a, 3a*	*21,900*	*22,600*	*24,300*
Other (Burner / Boiler)	*1a, 3a*	*17,000*	*16,300*	*14,600*
Cooking	1a, 2a	111,100	119,200	130,900
Trash, Rubbish	2a	14,900	17,000	18,200
Incinerator		600	600	800
Trash Compactor		1,800	1,500	1,700

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.
Note: Fire estimates are rounded to nearest 100. Rounded estimates less than 100 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. No information was available on the intentionality of these fires.

There were 10 deaths estimated in 2004 and 20 deaths estimated in 2005 from confined residential cooking fires. In 2006 there were fewer than 10 deaths estimated from all residential confined fires. No table is presented showing these death estimates.

Table 7b : Estimated Residential Confined Fire Injuries: 2004 – 2006

Included in Table Categories:	Appear in Tables:	2004	2005	2006
Total Residential	1c, 2c, 3c, 4c, 5c	1,510	1,710	1,670
Total Heating and Cooling Equipment	1c, 3c	130	120	110
Fireplace, Chimney, Connector	*1c, 3c*	*30*	*30*	*40*
Other (Burner / Boiler)	*1c, 3c*	*100*	*90*	*70*
Cooking	1c, 2c	1,350	1,500	1,510
Trash, Rubbish	2c	40	80	50
Incinerator		*	*	*
Trash Compactor		*	*	*

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.
Note: Injury estimates rounded to nearest 10. Rounded estimates less than 10 are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. No information was available on the intentionality of these fires.

Table 7c : Estimated Residential Confined Fire Property Loss (In Millions): 2004 – 2006

Included in Table Categories:	Appear in Tables:	2004	2005	2006
Total Residential	1d, 2d, 3d, 4d, 5d	$39.6	$61.4	$33.5
Total Heating and Cooling Equipment	1d, 3d	$14.9	$23.8	$6.9
Fireplace, Chimney, Connector	*1d, 3d*	*$11.4*	*$17.3*	*$5.2*
Other (Burner / Boiler)	*1d, 3d*	*$3.5*	*$6.6*	*$1.7*
Cooking	1d, 2d	$23.0	$33.4	$23.7
Trash, Rubbish	2d	$1.2	$3.7	$2.2
Incinerator		$0.4	$0.3	$0.7
Trash Compactor		$0.1	$0.2	$0.1

Source: U.S. Consumer Product Safety Commission/EPHA, from data obtained from the U.S. Fire Administration and NFPA.

Note: Property loss estimates are rounded to the nearest tenth of a million dollars. Rounded estimates less than $0.1m are denoted by an asterisk (*). Subtotals do not necessarily add to heading totals. No information was available on the intentionality of these fires.

Estimation Procedure

After applying the conventions and the raking procedure previously discussed, the estimation process was carried out. For each year, CPSC staff computed weights for residential fires, civilian deaths, civilian injuries, and property content loss respectively by dividing the NFPA estimated totals for these losses by the corresponding NFIRS totals. These weights were multiplied by the NFIRS product-specific frequency counts which were then used to produce the estimates in the tables. As already mentioned, the confined fires were separated out and the estimates for them were computed separately.

The estimates presented in this report pertain to unintentional fires and fire losses only. To this end, the CPSC analysts excluded all incidents where the Cause of Ignition could be identified as intentional. While fires involving children playing with the source of heat have become more difficult to identify in the new NFIRS system (see discussion in the next section), whenever such a fire could be identified, the CPSC analysts designated it as “unintentional”, even if the Cause of Ignition was coded as “intentional”.

Estimated annual averages recorded in this report are arithmetic averages of the un-rounded estimates from each of the three years. The reported annual averages are rounded to the nearest 100 for fires, nearest 10 for deaths and injuries, and nearest $0.1 million for property loss.

Other Issues

Child Play

When a fire is caused by the act of a child (under 10 years of age) playing with a source of heat, the cause of fire is considered child play.

In version 4.1 of NFIRS data, the variable Ignition Factor had specific codes to indicate the cause of the fire. The codes allowed for the identification of child play fire losses which were associated with matches and lighters. In version 5.0, there is no one variable reserved to identify child play cases. A combination of variables such as Factors Contributing to Ignition, Human Factors Contributing to Ignition, and Age (of fire starter when age was considered a factor contributing to ignition of fire) provides the means to identify these scenarios. However, for data that is reported in version 5.0, fire departments are not required to fill in these three variable fields. Consequently, much of the data is missing and estimates of child play fires (which were presented in pre 1999 years) have become unreliable for post 1998 years. However, as already mentioned in the previous section, to keep consistency with version 4.1, whenever a fire can be identified as involving child play in version 5.0, the intentionality is designated to be "unintentional".

Trend in Estimates

Since 1999, many product-specific fire estimates and the corresponding injury estimates seem to have decreased substantially. This is, at least partially, a consequence of the decline in the weights that are applied to the product-specific frequency counts to derive the estimates. Over the years, while the NFPA estimates have remained steady, the overall number of fire incidents reported to NFIRS has been increasing dramatically due to the increased reporting of confined fires in version 5.0. As such, the scaling weights, which are proportions of NFPA estimated totals to corresponding NFIRS totals, have declined. This decline is especially noticeable for fires and fire injury estimates. In searching for an explanation for this decline, CPSC staff, along with other NFIRS analysts at other organizations, is exploring the possibility that fire departments may not be reporting confined fires to the NFPA survey. The 2007 survey will ask fire departments to make separate entries for confined and non-confined fires. CPSC staff will be able to separate scaling weights for confined and non-confined fires starting with data from that year.

Conclusion

The major changes introduced by the version 5.0 NFIRS system in the area of coding specificity, limitations encountered in converting data reported under the old system to the new system, the creation of an entirely new class of fire incidents not defined under the old system, and a substantial increase in missing data for important analysis variables, have posed many challenges. The CPSC staff constantly consults with other NFIRS analysts at NFPA, USFA, and TriData[1] to discuss different and improved options for analysis of NFIRS.

[1] TriData is a consulting firm that works with USFA on fire data and fire protection issues.