

High-Rise Fires in Chicago: 1994-2000

**Dr. Christopher A. Janicak, CSP, ARM
Associate Professor of Safety
Indiana University of Pennsylvania
Indiana, PA 15705
(724) 357-3274**

Table of Contents

I. Unique Risks for Fire in High-Rise Buildings	3
II. High-Rise Buildings Defined	4
III. High-Rise Fires in Chicago: 1994-2000	5
IV. High-Rise Fires by Fixed Property Use	6
V. High-Rise Fires by Ignition Factors	8
VI. Comparisons to National Estimates	11
VII. Summary	14
Appendix A: Listing of Chicago High-Rise Fires in Involving Fatalities and Injuries: 1994-2000	16
References	26

I. Unique Risks for Fire in High-Rise Buildings

The fire risk in high-rise buildings has been a special concern to the fire community for as long as there have been high-rise buildings (Hall, 1). Although high-rise buildings account for a very small number of the total buildings within each occupancy class, they account for a large share of the people and property exposed (NFPA, 9-17). Studies indicate that high-rise buildings have a lower risk of fire per square foot of floor area. Sprinklers have also been shown to be beneficial in preventing deaths from fires and significantly reducing property losses (NFPA, 9-18). Some unique features of high-rise buildings that make them different from other buildings and thus affect fires include (NFPA, 9-18-19):

- High-rise buildings affect fire department accessibility to the fire. Limitations in fire apparatus in reaching the upper floors of the exterior of the building.
- The height of the fire and the number of fire service personnel required to deliver adequate types and amounts of equipment to the fire. More time and energy is required to deploy forces and equipment to the fire which could be exhausted before fire-fighting forces can mount an attack.
- Delays in deploying equipment and fire fighters can indirectly affect fire growth, resulting in a fire of greater magnitude.
- The height and location of the building can restrict the fire department's ability to approach the fire at its origin from more advantageous locations.
- Due to building heights, egress and people movement systems within a high-rise are limited.

- High-rise buildings have natural forces affecting fire and smoke movement which are not as significant in lower buildings. Due to the height of high-rise buildings, significant stack effects can be capable of moving large volumes of smoke and heat through a building.
- Due to their design, high-rise buildings significantly increase the occupant, equipment, and material load in a given building. Stacking floors increases the number of occupants and fuel load that could be exposed to a fire compared to lower-height buildings.

II. High-Rise Buildings Defined

The National Fire Protection Association (NFPA) defines a high-rise building as a building more than 75 feet in height as measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story while the City of Chicago defines a high-rise as a structure in excess of 80 feet in height.

When analyzing data from the National Fire Incident Reporting System (NFIRS) from 1994-1998, the National Fire Protection Association considered four categories of buildings as high-rise buildings; 7-12 stories, 13-24 stories, 25-49 stories, and 50 stories or more (Hall, 2). Beginning in 1999, the NFIRS system began providing the actual number of stories rather than categories (USFA, 54). In the two years of data for which the actual number of stories are provided, the shortest "high-rise" building involved in a fire that resulted in either civilian injuries or fatalities in Chicago was 10 stories. *For the purpose of this study, all buildings 7 stories or taller were included in the analysis.*

Addresses of the occupancies that were involved in a fire and resulted in a death or injury have been also provided for all the years except 1998 in which the addresses

were not available in the NFIRS database. Appendix A contains the listing of all Chicago high-rise fires identified in this study in which a civilian fatality or civilian injury was reported.

III. High-Rise Fires in Chicago: 1994-2000

The purpose of this study is to summarize the extent of high-rise fires in Chicago during 1994 to 2000. National Fire Incident Reporting System (NFIRS) datasets for 1994 to 2000 were used to complete this analysis. Around 1998, the United States Fire Administration changed from NFIRS version 4.1 to NFIRS 5.0 for data reporting. As a result, the coding of data changed as well. To combine the data, the researcher used the appropriate steps as outlined in the NFIRS 5.0 Design Documentation manual.

Cases were selected in which a fire incident report was submitted by the City of Chicago involving a fire and the building was classified as having 7 or more stories. The incident reports were then used to identify civilian fatalities and injuries. The overall experience in high-rise fires in Chicago was analyzed as well as the factors that contribute to high-rise fires specifically in the four primary categories of high-rise buildings; apartments, hotels and motels, offices, and institutional facilities. The categories of high-rise buildings were defined as follows (USFA, 21-23):

- *Apartments*: Apartments, tenements, and flats. Fixed property use codes included 420, 421, 422, 423, 424, 429. This grouping was renamed "Multifamily residential" in the NFIRS 5.0 system.
- *Hotels and motels*: Hotels, motels, inns and lodges. Fixed property use codes included 440, 441, 442, 443, 444, 445, 446, 449.

- *Offices:* Office properties. Fixed property use codes included 590, 591, 592, 593, 594, 595, 596, 599.
- *Institutional facilities:* Include facilities that care for the aged, care for the young, care for the sick, and care for the physically restrained. Fixed property use codes included 300 through 360.

A summary of the high-rise fire incidents, injuries involving civilians, and fatalities involving civilians by year is presented in Table 1.

Table 1: High-Rise Fire Experience in Chicago: 1994-2000

Year	Fires	Deaths	Injuries	Estimated Dollar Loss
1994	520	11	84	\$918,506
1995	437	3	36	1,124,611
1996	458	10	91	853,783
1997	385	1	37	756,198
1998	480	5	45	983,847
1999	410	4	20	996,718
2000	358	10	55	1,162,531
Total	3,048	44	368	\$6,796,194

IV. High-Rise Fires by Fixed Property Use

High-rise fires in the United States occur predominantly in one of four fixed property classes; apartments, hotels and motels, offices, and facilities that care for the sick. The City of Chicago does not differ from national trends in terms of the types of occupancies that experience the majority of the fires. Approximately 92 percent of the high-rise fires in this analysis occurred in buildings classified as either apartments, hotels and motels, offices, or institutional property. Apartments accounted for a significant number of high-rise fires (84%), a significant number of civilian injuries

(89%), and all of the civilian fatalities reported in high-rise buildings (100%).

Apartments also accounted for approximately 76 percent of the estimated property losses involving high-rise fires. A summary of the number of reported fires, civilian injuries and civilian fatalities by fixed property use appear in Tables 2, 3, 4 and 5.

Table 2: Chicago High-Rise Building Fire Experience in Apartment Buildings: 1994-2000

Year	Fires	Deaths	Injuries	Estimated Dollar Loss	Percentage of All High-Rise Fires
1994	417	11	61	\$633,710	80.2%
1995	343	3	34	731,526	78.5%
1996	404	10	89	702,672	88.2%
1997	338	1	34	597,118	87.8%
1998	406	5	40	766,387	84.6%
1999	352	4	16	733,318	85.9%
2000	295	10	54	1,018,130	82.4%
Total	2,555	44	328	\$5,182,861	83.5%

Table 3: Chicago High-Rise Building Fire Experience in Office Buildings: 1994-2000

Year	Fires	Deaths	Injuries	Estimated Dollar Loss	Percentage of All High-rise Fires
1994	17	0	1	\$20,460	3.3%
1995	19	0	0	140,500	4.3%
1996	4	0	0	56,100	.9%
1997	8	0	0	65,950	2.1%
1998	8	0	0	27,600	1.7%
1999	4	0	0	7,000	1.0%
2000	10	0	0	9,300	2.8%
Total	70	0	1	\$326,910	2.3%

Table 4: Chicago High-Rise Building Fire Experience in Hotels and Motels: 1994-2000

Year	Fires	Deaths	Injuries	Estimated Dollar Loss	Percentage of All High-rise Fires
1994	23	0	8	\$182,825	4.4%
1995	13	0	0	36,200	3.0%
1996	13	0	0	39,200	2.8%
1997	10	0	0	17,620	2.6%
1998	16	0	0	19,350	3.3%
1999	9	0	0	55,600	2.2%
2000	8	0	0	16,000	2.2%
Total	92	0	8	\$366,795	

Table 5: Chicago High-Rise Building Fire Experience in Institutional Property: 1994-2000

Year	Fires	Deaths	Injuries	Estimated Dollar Loss	Percentage of All High-rise Fires
1994	22	0	11	\$25,361	4.2%
1995	17	0	2	12,210	3.9%
1996	13	0	1	12,100	2.8%
1997	8	0	1	15,800	2.1%
1998	10	0	1	92,000	2.1%
1999	9	0	4	10,050	2.2%
2000	6	0	0	26,600	1.7%
Total	85	0	20	\$194,121	3.0%

V. High-Rise Fires by Ignition Factors

To gain a better understanding of the circumstances that surround high-rise fires in Chicago and the factors that contribute to them, characteristics of the fires were examined including the heat of ignition, the type of material ignited, and the area of fire origin. For each characteristic, the top five most frequently cited factors for all fires were identified.

Cigarettes and smoking materials were identified as the ignition sources for the majority of high-rise fires in Chicago. These heat sources were responsible for starting fires in approximately 30 percent of all high-rise apartment fires, 21 percent of all hotel fires, 20 percent of all high-rise office fires and 29 percent of all high-rise institutional occupancy fires (See Table 6). Fuel powered equipment such as stoves accounted for approximately 25 percent of fires in apartments while arcing was the predominant heat source in hotels and offices.

Table 6: Chicago High-Rise Building Fire Experience by Form of Heat of Ignition: 1994-2000

Heat	Apartment Buildings		Hotels/Motels		Offices		Institutional	
	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires
Cigarettes/Smoking Materials	756	29.6%	19	20.7%	14	20.0%	25	29.4%
Fuel Powered Equipment	640	25.0%	17	18.5%	12	17.1%	10	11.8%
Matches	286	11.2%	7	7.6%	2	2.9%	9	10.6%
Arcing	174	6.8%	20	21.7%	18	25.7%	14	16.5%
Incendiary Device	102	4.0%	2	2.2%	1	1.4%	4	4.7%
Total	1,958	76.6%	65	70.7%	47	67.1%	62	73.0%

Fabrics and textiles were the most common types of materials first ignited in apartments (39%), hotels (42%), and institutional facilities (35%). Paper was the most common material first ignited in office occupancies (46%) (See Table 7). Food grease and food starch, materials commonly found in the kitchen, were involved in approximately 22 percent of the fires in apartment high-rise fires.

Table 7: Chicago High-Rise Building Fire Experience by Type of Material First Ignited: 1994-2000

Material	Apartment Buildings		Hotels/Motels		Offices		Institutional	
	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires
Fabric, textiles	1,006	39.4%	39	42.3%	3	4.3%	30	35.3%
Wood, paper	605	23.7%	19	20.7%	32	45.7%	16	18.8%
Food grease	450	17.6%	12	13.0%	4	5.7%	10	11.7%
Natural Product, Food starch, rubber	115	4.5%	3	3.3%	4	5.7%	8	9.4%
Plastics	89	3.5%	9	9.8%	13	18.6%	12	14.1%
Total	2,265	88.7%	82	89.1%	56	80.0%	76	89.3%

The area of fire origin refers the location identified as the starting point for the fire. The City of Chicago's experience follows the national pattern in apartments in which the majority of high-rise fires involving apartments begin in the kitchen area or the sleeping area. Approximately 27 percent of all high-rise apartment fires began in the kitchen while approximately 26 percent began in the sleeping area (See Table 8). Sleeping areas were the leading areas of fire origin in hotels and institutional facilities.

Table 8: Chicago High-Rise Building Fire Experience by Area of Fire Origin: 1994-2000

Area	Apartment Buildings		Hotels/Motels		Offices		Institutional	
	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires	Fires	% of All Fires
Kitchen	697	27.3%	16	17.4%	2	2.9%	10	11.8%
Sleeping areas, < 5 people	669	26.2%	21	22.8%	0	0.0%	27	31.8%
Storage areas	379	14.8%	8	8.7%	9	12.9%	9	10.6%
Means of egress	239	9.4%	11	12.0%	13	18.6%	8	9.4%
Equipment rooms	155	6.1%	4	4.3%	9	12.9%	3	3.5%
Total	2,139	83.8%	60	65.2%	33	47.3%	57	67.1%

VI. Comparisons to National Estimates

The latest estimates on high-rise building fires published by the National Fire Protection Association comparable to figures in this study include the years 1994 to 1998 for the property classes involving apartments, offices, hotels and motels, and hospitals and other facilities that care for the sick. Tables 9 through 12 compare the City of Chicago's high-rise fire experience for these five years to the national estimates. High-rises in this comparison involved buildings 7 stories or taller for both Chicago and for the national estimates.

Results indicate that during this five year analysis period, the deaths rates for Chicago as measured per 1,000 fires, are at or below the national rates for fires occurring in hotels and motels, offices, and hospitals and other facilities that care for the sick. Chicago did not experience a single fatality in any of these facilities during the five year comparison period. As discussed previously, Chicago also did not experience a fire related fatality in these occupancies during the entire seven year analysis period.

The high-rise fire problem in Chicago appears to be in apartment buildings. All of the fatalities in high-rise fires experienced in Chicago occurred in multifamily residential buildings and are occurring at a rate that is approximately three times the fatality rate experienced in the national estimates. For the five years for which comparisons can be made, the national fatality rate was approximately 5.1 deaths per 1,000 fires while Chicago experienced approximately 15.7 deaths per 1,000 fires. Again, this is comparing fires in buildings 7 stories or taller in Chicago to fires in buildings 7 stories or taller in the United States.

Table 9: Comparisons to National Death Rates for Apartment Buildings

Year	Fires	Chicago		National Estimates		
		Civilian Deaths	Deaths/1,000 Fires	Fires	Civilian Deaths	Deaths/1,000 Fires
1994	417	11	26.4	8,900	51	5.7
1995	343	3	8.7	7,700	53	6.9
1996	404	10	24.8	9,600	56	5.8
1997	338	1	3.0	9,200	27	2.9
1998	406	5	12.3	8,100	35	4.3
Total	1,908	30	15.7	43,500	222	5.1

Table 10: Comparisons to National Death Rates for Office Buildings

Year	Fires	Chicago		National Estimates		
		Civilian Deaths	Deaths/1,000 Fires	Fires	Civilian Deaths	Deaths/1,000 Fires
1994	17	0	0	700	0	0
1995	19	0	0	500	0	0
1996	4	0	0	500	0	0
1997	8	0	0	600	0	0
1998	8	0	0	500	0	0
Total	56	0	0	2,800	0	0

Table 11: Comparisons to National Death Rates for Hotels and Motels

Year	Fires	Chicago		National Estimates		
		Civilian Deaths	Deaths/1,000 Fires	Fires	Civilian Deaths	Deaths/1,000 Fires
1994	23	0	0	900	0	0
1995	13	0	0	1,000	0	0
1996	13	0	0	1,100	8	7.3
1997	10	0	0	800	6	7.5
1998	16	0	0	800	0	0
Total	75	0	0	4,600	14	3.0

Table 12: Comparisons to National Death Rates for Hospitals and Other Facilities that Care for the Sick.*

Year	Fires	Chicago		National Estimates		
		Civilian Deaths	Deaths/1,000 Fires	Fires	Civilian Deaths	Deaths/1,000 Fires
1994	15	0	0	900	0	0
1995	11	0	0	800	2	2.5
1996	8	0	0	900	0	0
1997	5	0	0	800	0	0
1998	10	0	0	600	2	3.3
Total	49	0	0	4,000	4	1.0

*Fixed property use codes of 330-339 were used in this comparison.

VII. Summary

This study examined high-rise fires in Chicago from 1994 to 2000. National Fire Incident Reporting System (NFIRS) data was used to identify the number of fires reported, the number of civilian injuries, the number of civilian fatalities and various characteristics about the fires. The time period was selected because these are the most recent years for which NFIRS data is available to the public for analysis. Also, due to NFIRS data coding methods used from 1994 to 1997 and the practice of the National Fire Protection Association of classifying buildings 7 stories or taller as a high-rise in their data analyses, this study examined fires in Chicago that occurred in buildings reported to be seven stories or taller.

Results from this study indicate that from 1994 to 2000, high-rise apartments, tenements, and flats (later renamed as multifamily residential dwellings) experienced the greatest number of fires, the greatest number of civilian fatalities, the greatest number of civilian injuries, and the greatest civilian fatality rate per 1,000 fires. During this period, there were 44 civilian fatalities identified, all of which occurred in multifamily residential dwellings. There were no fatalities found in office high-rises, hotel and motel high-rises, or institutional high-rises during this seven year period.

This higher risk of injuries and deaths in multifamily residential high-rises in Chicago follows the same patterns found in the United States overall. On a national level, fatality rates are highest for multifamily residential high-rises with approximately 5.1 civilian deaths per 1,000 fires and office buildings the lowest with no reported fatalities during five comparable years (1994-1998). Chicago's civilian fatality rate in multifamily residential high-rises during this same period was much higher than the national estimates with approximately 15.7 deaths per 1,000 fires. Chicago's civilian

fatality rates in office high-rises, hotel and motel high-rises, and hospitals and other facilities that care for the sick were at or below the national estimates.

The increased risks for fires, injuries, and fatalities in residential occupancies in the United States have for a long time been tied to the increased presence of ignition sources associated with smoking, cooking, and heating equipment. This pattern is the same in Chicago. Approximately 55 percent of the fires in multifamily residential high-rises in Chicago were started with smoking materials, and fuel powered equipment. Approximately 53 percent of the high-rise fires in multifamily residential high-rises began in either the kitchen or the sleeping area. In conclusion, it is the opinion of this researcher that the high-rise fire experience in Chicago rests predominantly in multifamily residential occupancies.

**Appendix A: Listing of Chicago High-Rise Fires in Involving Fatalities and Injuries
1994-2000**

1994 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	5000 N. HERMITAGE		2	\$30,000	7-12	Crawl space
Apartment (Over 20 units)	124 N. HOYNE		1	2,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	900 W. ARGYLE	1	1	20,000	7-12	Kitchen, cooking area
Care of the physically inconvenienced	5009 N. SHERIDAN		1	2,000	7-12	Sleeping room, under 5 people
General business office	77 W. JACKSON		1	100	25-49	Office
Apartment (Over 20 units)	3100 N. LAKE SHORE		1	3,500	13-24	Sleeping room, under 5 people
Laundry, dry cleaner shop	2913 N. COMMONWEALTH		3	0	25-49	Laundry room
Hotel, motel (Over 100 Units, year round use)	1152 S. WABASH		3	100,000	7-12	Light shaft
Hospital	2233 W. DIVISION		1	500	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	4350 N. MARINE		1	300	25-49	Kitchen, cooking area
Apartment (Over 20 units)	4750 N. CLARENDON		1	10,000	13-24	Means of egress
Apartment (Over 20 units)	3550 N. LAKE SHORE		1	300	25-49	Sleeping room, under 5 people
Apartment (Over 20 units)	5670 W. LAKE		2	100	7-12	Kitchen, cooking area
Hotel, motel (Over 100 Units, year round use)	300 E. OHIO		4	1,000	25-49	Lavatory,
Apartment (Over 20 units)	1255 N. STATE		2	10,000	7-12	Lounge area
Apartment (Over 20 units)	5550 N. KENMORE		2	10	7-12	Kitchen, cooking area
Hotel, motel (Over 100 Units, year round use)	15 E. OHIO		1	5,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	5225 N. KENMORE		1	800	25-49	Kitchen, cooking area
Apartment (Over 20 units)	534 W. DIVISION		3	1,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	1410 W. 14 ST		1	100	13-24	Trash area
Apartment (Over 20 units)	3600 N. LAKE SHORE		1	10,000	25-49	Kitchen, cooking area
Apartment (Over 20 units)	2757 N. PINE GROVE		2	5,000	7-12	Storage room
Apartment (Over 20 units)	4120 S PRAIRIE	1	3	5,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)	4414 S COTTAGE GROVE	2	1	10,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)	4218 S. COTTAGE GROVE		2	5,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	6000 S. INDIANA		1	1,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	220 E. 63 ST		1	7,000	13-24	Lounge area
Apartment (7- 20 units)	6410 S. YALE		2	1,000	7-12	Kitchen, cooking area

(Continued on next page)

1994 Chicago High Rise Fires Involving Fatalities and Injuries (Continued)

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	4554 S. DREXEL		1	15,000	13-24	Undetermined
Care of the aged without nursing staff	4537 S. DREXEL		9	10,000	7-12	Laundry room
Apartment (Over 20 units)	4844 S. STATE	4	3	7,500	13-24	Laundry room
Apartment (Over 20 units)	5322 S. STATE		1	1,500	13-24	Lounge area
Apartment (Over 20 units)	4410 S. STATE		5	5,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)	4101 S. FEDERAL		1	500	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	7447 S. SOUTH SHORE		18	20,000	25-49	Incinerator room
Apartment (Over 20 units)	3639 N. PINE GROVE	1		300	13-24	Lounge area
Apartment (Over 20 units)	920 W. LAWRENCE	1		5,000	13-24	Supply storage
Apartment (Over 20 units)	3833 S. FEDERAL	1		10,000	13-24	Sleeping room, under 5 people
Totals		11	84	\$305,510		

1995 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	1165 N. MILWAUKEE		1	\$5,000	25-49	Means of egress
Apartment (Over 20 units)	4520 N. CLARENDON		1	1,000	25-49	Storage room
Apartment (Over 20 units)	1030 N. STATE		4	100,000	50 or more	Utility shaft
Apartment (Over 20 units)	5969 N. RAVENSWOOD	1		5,000	7-12	Kitchen, cooking area
Apartment (Over 20 units)	4827 N. SHERIDAN		2	10,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	1730 N. CLARK		1	8,000	25-49	Sleeping room, under 5 people
Apartment (Over 20 units)	3146 S. WENTWORTH	1		5,000	7-12	Lounge area
Apartment (Over 20 units)	7100 S. SOUTH SHORE	1		10,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	4848 S. STATE		3	0	13-24	Kitchen, cooking area
Apartment (Over 20 units)	501 E. 32 ST		1	5,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)	5323 S. FEDERAL		4	2,000	13-24	Undetermined
Apartment (Over 20 units)	4429 S. FEDERAL		8	1,500	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	6217 S. CALUMET		1	0	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	4825 S. DREXEL		1	300	13-24	Laundry room
Apartment (Over 20 units)	7251 S. SOUTH SHORE		4	50,000	25-49	Sleeping room, under 5 people
Totals		3	36	\$233,800		

1996 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	100 W. CHESTNUT		1	\$100	25-49	Kitchen, cooking area
1 or 2 living units with business	5415 N. SHERIDAN		1	1,000	50 or more	Crawl space
Apartment (Over 20 units)	175 E. CHESTNUT		1	20,000	50 or more	Kitchen, cooking area
Apartment (Over 20 units)	2031 S. CLARK		2	150	13-24	Means of egress
Apartment (Over 20 units)	333 W. MAYPOLE		1	2,000	7-12	Storage room
Apartment (Over 20 units)	1255 N. SANDBURG TR		1	50,000	25-49	Kitchen, cooking area
Apartment (Over 20 units)	2030 S. STATE		6	10,000	13-24	Storage room
Care of the aged with nursing staff	5009 N. SHERIDAN		1	5,000	7-12	Means of egress
Apartment (Over 20 units)	1170 W. ERIE		2	1,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	399 W. FULLERTON		2	0	13-24	Storage room
Unknown	1410 W. 14 ST		1	2,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)	2641 W. 12 PL		1	5,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	838 N. NOBLE		1	100	13-24	Kitchen, cooking area
Apartment (Over 20 units)	170 W. OAK		2	10,000	13-24	Lounge area
Apartment (Over 20 units)	3530 N. LAKE SHORE		1	0	25-49	Storage room
Apartment (Over 20 units)	6301 N. SHERIDAN	1	1	5,000	25-49	Sleeping room, under 5 people
Apartment (Over 20 units)	3555 S. COTTAGE GROVE		1	400	7-12	Closet
Apartment (Over 20 units)	3555 S. COTTAGE GROVE	4	41	200,000	7-12	Closet
Apartment (Over 20 units)	3750 S. ELLIS	2		3,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	511 E. BROWNING		1	5,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	5550 S. SOUTH SHORE		1	5,000	13-24	Storage room
Apartment (Over 20 units)	401 E. BOWEN		1	1,000	13-24	Lounge area
Apartment (Over 20 units)	5800 S. MICHIGAN		8	3,000	7-12	Incinerator room
Apartment (Over 20 units)	740 E. 43 ST	1	1	500	13-24	Multiple location
Apartment (Over 20 units)	3625 S. LAKE PARK		3	30,000	7-12	Kitchen, cooking area
Apartment (Over 20 units)	3250 S. WENTWORTH		4	0	7-12	Function area not classified
Apartment (Over 20 units)	7456 S. SOUTH SHORE		1	1,000	7-12	Kitchen, cooking area

(Continued on next page)

1996 Chicago High Rise Fires Involving Fatalities and Injuries (Continued)

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	3620 S. RHODES		2	3,200	25-49	Sleeping room, under 5 people
Apartment (Over 20 units)	2330 S. STATE	2	1	5,000	13-24	Storage room
Apartment (Over 20 units)	740 E. 43 ST		1	200	13-24	Lounge area
Totals		10	91	\$368,650		

1997 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)	850 W. EASTWOOD		1	\$1,000	13-24	Means of egress
Apartment (Over 20 units)	559 E. BROWNING		11	1,000	7-12	Incinerator room
Apartment (Over 20 units)	6414 S. KING		1	20,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)	44 W. 24 ST		1	0	13-24	Kitchen, cooking area
Apartment (Over 20 units)	40 N. MARINE		2	0	7-12	Kitchen, cooking area
Apartment (Over 20 units)	2417 W. ADAMS		1	5,000	13-24	Lounge area
Apartment (Over 20 units)	2964 S. STATE		1	500	7-12	Kitchen, cooking area
Apartment (Over 20 units)	3625 S. LAKE PARK	1	1	10,000	7-12	Kitchen, cooking area
Building under construction	302 N. STATE		1	1,000	13-24	Ceiling and floor assembly
Apartment (Over 20 units)	7000 S. PARNELL		1	1,000	7-12	Sleeping room, under 5 people
Building under renovation	300 N. STATE		1	0	7-12	Trash area
Apartment (Over 20 units)	445 E. OHIO		1	10,000	25-49	Kitchen, cooking area
Apartment (Over 20 units)	502 W. OAK		1	0	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)	5528 S. HYDE PARK		1	1,500	13-24	Laundry room
Totals		1	37	\$81,000		

1998 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address*	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Apartment (Over 20 units)			1	\$10,000	7-12	Means of egress
Apartment (Over 20 units)			1	3,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)			1	100	25-49	Kitchen, cooking area
Apartment (Over 20 units)			1	1,000	7-12	Means of egress
Apartment (Over 20 units)		1		700	13-24	Storage room
Apartment (Over 20 units)			1	250	25-49	Storage room
Apartment (Over 20 units)		1		20,000	7-12	Kitchen, cooking area
Apartment (Over 20 units)			1	3,000	25-49	Storage room
Apartment (Over 20 units)			1	10,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)		1	1	0	7-12	Lounge area
Hospital			1	5,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)			1	200	13-24	Storage room
Wood products, furniture storage			4	10,000	7-12	Storage room
Apartment (Over 20 units)			1	5,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)			11	20,000	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)			3	500	7-12	Trash area
Apartment (Over 20 units)			2	3,000	7-12	Dining area
Apartment (Over 20 units)		1		30,000	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)			1	10,000	7-12	Trash area
Apartment (Over 20 units)			2	0	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)		1		5,000	7-12	Lounge area
Apartment (Over 20 units)			2	0	7-12	Sleeping room, under 5 people
Apartment (Over 20 units)			3	10,000	7-12	Means of egress
Apartment (Over 20 units)			1	500	13-24	Sleeping room, under 5 people
Apartment (Over 20 units)			1	9,000	13-24	Kitchen, cooking area
Apartment (Over 20 units)			4	40,000	50 or more	Storage room
Totals		5	45	\$196,250		

*Addresses not provided in the 1998 NFIRS 4.1 Data set.

1999 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Multifamily dwelling	1448 N. LAKE SHORE		1	\$50,000	18	Sleeping room, under 5 people
Asylum, mental institution	2233 W. DIVISION		2	300	18	Sleeping room, under 5 people
Asylum, mental institution	820 S. DAMEN		1	200	10	Sleeping room, under 5 people
Multifamily dwelling	624 W. DIVISION		1	5,000	18	Sleeping room, under 5 people
Multifamily dwelling	527 E. BROWNING		1	0	10	Chute, trash
Multifamily dwelling	535 W. CORNELIA		1	0	10	Kitchen, cooking area
Asylum, mental institution	7531 S. STONY ISLAND		1	300	35	Sleeping room, under 5 people
Multifamily dwelling	320 S. MAPLEWOOD		1	1,500	10	Kitchen, cooking area
Multifamily dwelling	5670 W. LAKE		1	666	10	Kitchen, cooking area
Multifamily dwelling	2350 S. STATE		2	0	10	Kitchen, cooking area
Multifamily dwelling	6007 N. SHERIDAN	2		6,000	35	Lounge
Multifamily dwelling	4030 S. LAKE PARK		1	0	18	Kitchen, cooking area
Multifamily dwelling	7150 S. CYRIL	1		3,000	10	Lounge
Multifamily dwelling	344 W. 28 PL		1	0	10	Kitchen, cooking area
Multifamily dwelling	3510 S. RHODES		1	0	18	Lounge
Multifamily dwelling	5040 N. KENMORE		1	0	10	Lounge
Multifamily dwelling	3739 S. FEDERAL	1		2,000	18	Sleeping room
Multifamily dwelling	6360 S. MINERVA		3	75,000	10	Sleeping room
Multifamily dwelling	5415 N. SHERIDAN		1	9,000	35	Sleeping room
Totals		4	20	\$152,966		

2000 Chicago High Rise Fires Involving Fatalities and Injuries

Fixed Property Use	Address	Deaths	Injuries	Estimated Dollar Losses	Number of Stories	Area of Fire Origin
Multifamily dwelling	2930 S. DEARBORN		1	\$200	10	Storage: Supplies or tools
Multifamily dwelling	660 E. 85 ST		1	500	10	Kitchen, cooking area
Multifamily dwelling	2111 S. CLARK		3	0	18	Sleeping room, under 5 people
Multifamily dwelling	1850 W. WASHINGTON		3	0	10	Undetermined
Multifamily dwelling	575 W. MADISON	1		1,000	50	Storage room
Multifamily dwelling	3930 N. PINE GROVE		1	4,000	50	Storage room
Multifamily dwelling	660 W. DIVISION		2	1,000	18	Lounge
Multifamily dwelling	5421 N. EAST RIVER RD		4	20,000	18	Sleeping room, under 5 people
Multifamily dwelling	6144 N. WINTHROP		6	0	10	Kitchen, cooking area
Multifamily dwelling	1343 N. CLEVELAND		2	1,000	10	Kitchen, cooking area
Multifamily dwelling	7000 S. PARNELL		3	10,000	10	Means of egress
Multifamily dwelling	4250 S. PRINCETON	1	1	5,000	18	Storage room
Multifamily dwelling	6000 S. INDIANA		1	300	10	Multiple areas
Multifamily dwelling	5330 S. HARPER		6	150,000	10	Crawl space
Multifamily dwelling	4848 N. WINTHROP		1	5,000	18	Storage: Supplies or tools
Multifamily dwelling	1020 W. LAWRENCE		1	0	18	Sleeping room, under 5 people
Multifamily dwelling	1920 W. WASHINGTON		1	4,000	10	Sleeping room, under 5 people
Multifamily dwelling	5501 W. WASHINGTON		1	10,000	10	Means of egress
Multifamily dwelling	2001 S. MICHIGAN		11	0	35	Lounge
Multifamily dwelling	6748 N. ASHLAND		3	10,000	10	Means of egress
Multifamily dwelling	1734 N. PAULINA		1	5,000	10	Lounge
Clubhouse	936 E. 47 ST		1	10,000	18	Lounge
Multifamily dwelling	9177 S. SOUTH CHICAGO		1	20,000	10	Kitchen, cooking area
Multifamily dwelling	30 W. CERMAK	8	0	100,000	18	Sleeping room, under 5 people
Totals		10	55	\$357,000		

References

- Hall, John R. (2001). High-Rise Building Fires. National Fire Protection Association: Quincy, MA.
- National Fire Protection Association. (1997). Fire Protection Handbook: Eighteenth Edition. National Fire Protection Association: Quincy, MA.
- National Fire Protection Association. (1976). NFPA 901: Uniform Coding for Fire Protection ((NFIRS) Version 4.1 Documentation). National Fire Protection Association: Quincy, MA.
- National Technical Information Service. (1994). National Fire Incident Reporting System (NFIRS) Database: 1994. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (1995). National Fire Incident Reporting System (NFIRS) Database: 1995. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (1996). National Fire Incident Reporting System (NFIRS) Database: 1996. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (1997). National Fire Incident Reporting System (NFIRS) Database: 1997. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (1998). National Fire Incident Reporting System (NFIRS) Database: 1998. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (1999). National Fire Incident Reporting System (NFIRS) Database: 1999. National Technical Information Service: Springfield, VA.
- National Technical Information Service. (2000). National Fire Incident Reporting System (NFIRS) Database: 2000. National Technical Information Service: Springfield, VA.
- United States Fire Administration. (2002). National Fire Incident Reporting System: Version 5.0 Quick Reference Guide. United States Fire Administration. Washington, DC.
- United States Fire Administration. (2002). National Fire Incident Reporting System (NFIRS) Version 5.0 Design Documentation. Washington, DC.