

**The 20 deadliest single-building or complex fires and explosions in U.S. history**  
**Source: National Fire Protection Association (NFPA.org) - Updated 03/08**

<b>Rank</b>	<b>Event</b>	<b>Date</b>	<b>Number of deaths</b>
<b>1</b>	The World Trade Center New York, NY	September 11, 2001	2,666
<b>2</b>	Iroquois Theater Chicago, IL	December 30, 1903	602
<b>3</b>	Cocoanut Grove night club Boston, MA	November 28, 1942	492
<b>4</b>	Ohio State Penitentiary Columbus, OH	April 21, 1930	320
<b>5</b>	Consolidated School gas explosion New London, TX	March 18, 1937	294
<b>6</b>	Conway's Theater Brooklyn, NY	December 5, 1876	285
<b>7</b>	Rhythm Club Natchez, MS	April 23, 1940	207
<b>8</b>	Lakeview Grammar School Collinwood, OH	March 4, 1908	175
<b>9</b>	Rhodes Opera House Boyertown, PA	January 12, 1908	170
<b>10a</b>	Ringling Brothers Barnum & Bailey Circus Hartford, CT	July 6, 1944	168
<b>10b</b>	Alfred P. Murrah Federal Building Oklahoma City, OK	April 19, 1995	168
<b>12</b>	Beverly Hills Supper Club Southgate, KY	May 28, 1977	165
<b>13</b>	Triangle Shirtwaist Company New York, NY	March 25, 1911	146
<b>14</b>	Eddystone Ammunition Company plant explosion Eddystone, PA	April 10, 1917	133
<b>15</b>	Cleveland Clinic Hospital Cleveland, OH	May 15, 1929	125
<b>16</b>	Wincoff Hotel Atlanta, GA	December 7, 1946	119
<b>17</b>	The Station Nightclub W. Warwick, RI	February 20, 2003	100
<b>18</b>	Our Lady of the Angels School Chicago, IL	December 1, 1958	95
<b>19</b>	Happy Land Social Club New York, NY	March 25, 1990	87
<b>20</b>	MGM Grand Hotel Las Vegas, Nevada	November 21, 1980	85

## **Major Building Fires**

**Source: Report on Large Building Fires and Subsequent Code Changes**

**Jim Arnold, Assoc. Engineer, Clark County Dept. of Development Services – 4/7/05**

1. **1836 The Lehman Theatre in St. Petersburg, Russia** (killed 800); circus fire occurred in this building.
2. **1845 The Theatre in Canton, China** (killed 1,670); largest single building fire ever.
3. **1860 Elm Street Tenement in New York City** (killed 200); fire in a 6-story building resulted in a requirement for fire escapes in buildings over 6 stories and multiple exits in new buildings.
4. **1863 The Church of La Compania in Santiago, Chile** (killed 1,500); fire started by paraffin lamp.
5. **1871 Shanghai, China** (killed 900); theater fire.
6. **1876 Mrs. Conway's Brooklyn Theater in New York City** (killed over 300); fire started in stage backdrop; crowd began slow evacuation, then panicked; many crushing deaths.
7. **1881 Ring Theatre in Vienna, Austria** (killed 794); fire started on stage.
8. **1883 Circus Ferroni in Berditschoft, Poland** (killed 430).
9. **1885 Bull Theatre in Moscow, Russia** (killed 300).
10. **1886 Tinnerly Theatre in India** (killed 100).
11. **1887 Theatre Royal in Exeter, England** (killed 188); fire started on stage.
12. **1887 Opera Cornique in Paris, France** (killed 200); gas lamp started fire.
13. **1897 Charity Bazaar in Paris, France** (killed 200); fire occurred in a temporary building at Rue Jean Goujon.
14. **1903 Iroquois Theatre in Chicago** (killed 603); new building; largest theatre in Chicago; 2,000 people in matinee audience; 500 performers in backstage area; supposedly equipped with an asbestos curtain; short circuit in footlight ignited velvet stage draperies; fire-resistant curtain hung up on stage lights when lowered; curtain burned completely and was later found to be non-fireproof; actors directed audience to remain in seats; actors fled through backstage door; only 1 performer died; incoming air through the backstage door ignited a fireball inside the theatre; no extinguishers or firehose; fire burned through in 15 minutes and extinguished in 30 minutes; most killed by smoke or trampling; 250 injured; unmarked, blocked exits; inward-opening doors, locked exits; incomplete fire escape; theatre later re-opened for 20 years; deadliest single-building fire in U. S. history, subsequent code revisions required emergency exit lighting, sprinkler systems, extinguishers, fire restrictive scenery and outward-opening doors in public buildings.
15. **1908 Rhodes Opera House in Boyertown, Pennsylvania** (killed 170).

16. **1908 Lakeview Grammar School in Colinwood, Ohio** (killed 176); malfunctioning basement furnace started a fire which quickly engulfed the front door; construction materials and open stairway caused rapid fire spread in 6-year old, 3-story building with 300 students; single exterior fire escape saved most students from 3rd floor; inward-opening doors, back door locked; most deaths from bottom 2 floors; fire burned out in 3 hours.

17. **1909 Flores Theatre Cinema in Acapulco, Mexico** (killed 250).

18. **1911 Triangle Shirt Waist Factory in New York City** (146 killed); non-sprinklered high-rise garment factory; 625 workers on the 8th, 9th and 10th floors; 70 injured; 4 fires in new building previous year; some exits locked from outside, inward-opening exit doors, narrow exits; wood floors and window sashes; only 2 staircases rather than 3 required by building code; 1 of 2 freight elevators was inoperable, remaining elevator soon failed; open gas lighting; cigarette dropped on cloth cuttings started afternoon fire on 8th floor; 1 stair on 9th floor was blocked by fire; locked door on other stair; inward opening doors; sole exterior fire escape collapsed under initial escapees; Fire Department ladders only reached to 6th floor; standpipe hose line was rotted, valves were rusted shut; most workers on 8th and 10th floors were able to evacuate, most on 9th died; 60 young factory girls leaped to their deaths on sidewalk from 8th, 9th and 10th floor windows; some jumped down elevator shaft from 8th floor; some escaped to adjacent high rise; fire burned through in less than 20 minutes, Asch building is still standing; resultant code changes required fire-proofing, sprinkler systems and improved exiting from high-rises; this fire resulted in creation of the first New York City Bureau of Fire Protection, better conditions for workers, enforcement of fire codes for compulsory fire drills and sprinkler installation in factories and eventually led to development of NFPA 101, The Life Safety Code.

19. **1919 Teatro Yaguez Theatre in Mayaguez, Puerto Rico** (killed 150).

20. **1929 Cleveland Clinic Hospital in Cleveland, Ohio** (killed 125); 8-year old, 4-story building with 300 occupants; basement steam explosion or cigarette ignited highly-combustible x-ray film; fire door did not work correctly; poisonous yellow smoke carried throughout building by ventilation shafts and stairways; firemen arrived quickly but were unable to enter due to gas fumes; two street entrances blocked by patients; stairways clogged with patients; many fire survivors died days later from gas effects; use of safety film was subsequently required by law.

21. **1930 Ohio State Penitentiary in Columbus, Ohio** (killed 329); total population of 4,300 inmates; interior finish contributed to flame spread, possible arson fire started in adjacent scaffold, spread to highly combustible roof; guards delayed unlocking cells; Fire Department arrived 2 minutes after alarm, some prisoners attempted to cut hose, firefighters controlled fire in 2 hours; most deaths occurred in upper 2 tiers of 6-story prison.

22. **1937 Antoung Movie Theater in China** (killed 658).

23. **1940 Rhythm Club in Natchez, Mississippi** (killed 207); fire in a crowded, 1-story dance hall; combustible decorations, 1 decoration caught fire; victims tried to exit through front of 38-foot by 120-foot building, sole exit opened inward; 200 injured in crowd of 700.

24. **1942 Coconut Grove Night Club in Boston** (killed 492); Boston Building Department inspected and approved new addition to brick and stucco building shortly before this 5-alarm fire; Fire Department approved inspection performed 8 days prior to fire; electrical wiring by unlicensed contractor; crowd of 1,000 with an occupancy rating of 600; insufficient exits, many rooms with confusing floor plan, numerous alterations; interior decorations of cloth, paper and bamboo; rattan, simulated leather and wood covered walls; ceiling of suspended satin fabric; underage busboy's match ignited gauze draperies in large basement Melody Lounge; crowd delayed exiting while 10 p.m. fire fought by customers; sole basement exit stair blocked within 2 minutes by crowd, smoke

and fire; exterior door at top of basement stair was locked by management because panic hardware was broken; revolving doors at club entrance were jammed by bodies of evacuating guests; 2 other exit doors locked; some doors welded shut; nearby firemen responded to fire prior to receipt of 1st alarm at Fire Department; overturned chairs and tables impeded evacuation; curtains and interior decorations concealed unmarked exits; doors and windows were covered with paint and decorations; lighting system failed; inward-opening door in new street level Broadway Lounge jammed; fire spread throughout complex in just 5 minutes and burned through 4 rooms in 12 minutes; 200 people died in front of 2 revolving doors where bodies were stacked 4 and 5 deep; 100 died in front of new Broadway Lounge exit; bodies blocking doorways prevented firefighter entrance for either rescue or fire suppression; over 200 people injured; \*\*\*\*something wrong with every building exit; fire officials later stated outward-opening doors could have saved 300 people\*\*\*\*; little structural damage; subsequent building and fire code changes required revolving doors be supplemented with outward-opening hinged doors and battery-powered emergency exit lighting; led to requirements for a minimum of 2 separate exits for public assembly areas, better marking of exit doors, maximum occupancy certificates, posting of occupancy limits, prohibitions on use of basement areas for assembly, minimum aisle width between tables, securing tables to floor to prevent overturning, limitations on combustibility of interior furnishings, changed code requirements for construction materials and listing restaurants and nightclubs as public assembly areas; eventually led to nightclub requirements for sprinkler systems and accessible exits marked by emergency lighting; many improvements resulting from this fire were incorporated into the Life Safety Code; grand jury indicted 10 people; owner convicted of manslaughter and received 12-15 year sentence; contractor convicted of building law violations and sentenced to 2 years; criminal indictments issued against Building Commissioner, head of the Fire Prevention Bureau, fire inspector and police night captain, all later acquitted; worst multi-death nightclub fire of the 20th century, deadliest U. S. nightclub fire; 2nd deadliest U. S. fire in a single building; eventually led to development of counseling programs for victim family members.

**25. 1942 Knights of Columbus Hall in St. John's, Newfoundland** (killed 100); arson fire in dance hall spread rapidly; killed 100 and injured 107 of 500 people inside, mainly soldiers; windows in the new wooden building had been boarded for blackout purposes and doors were locked or barred from the exterior.

**26. 1944 Ringling Brothers Circus Tent Fire in Hartford, Connecticut** (killed 169); 700 injured in 520-foot long, 180-foot wide tent with new canvas waterproofed with a mixture of 6,000 gallons of white gas and 18,000 pounds of paraffin; world's largest circus tent; crowd of 7,500 in 13,000 capacity tent; nearest hydrant 900 feet from tent; fire extinguishers were not distributed; 4 fire trucks were parked outside tent; fire probably started by cigarette flipped on roof; crowd delayed exiting; most victims tried to exit spectator entrance, few tried to exit the 2 performer entrances, most died in front of an exit blocked by animal cages; 2 blocked exits; fire department arrived shortly after the fire began; large tent support poles began falling 3 minutes after crowd stampeded; most of tent was ablaze 6 minutes after fire start; tent was consumed in 10 minutes; some survivors found alive under piles of bodies; psychotic arsonist later confessed to setting fire, then recanted confession, sentenced to 40 years, investigators unable to verify his presence in Hartford; casualty count probably higher due to vagrancy, incineration and poor records; more than 100 children killed; 9 circus officials arrested, 7 served 1-year sentences; 2 American big tops with the same waterproofing had previously burned in 6-10 minutes in 1910 and 1912 and a huge tent burned in Los Angeles in 1929; fire resulted in development of NFPA (National Fire Protection Association) Standard 102 on Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures which requires tents be constructed from fire-resistive materials; 2000 International Building Code and 2003 NFPA 5000 Building Construction and Safety Code both reference NFPA 102; Connecticut subsequently banned circus big tops; circus profits for next 10 years paid for more than 600 damage claims; circus began treating tents with other flame retardants in 1945; fire was the deadliest American amusement facility fire.

27. **1946 Winecoff Hotel in Atlanta, Georgia** (killed 120); early morning fire injured another 168 of 304 guests; built in 1913, brick exterior with fireproofed steel frame; only one staircase in 15-story building; internal location of open stair rapidly spread flames throughout building; interior walls covered with painted burlap and wallpaper; open transom above light wood doors on half the guest rooms; window shutters prevented escape from some rooms; no fire detection or suppression system; no fire escape; building recently passed fire marshal inspection; delayed fire department notification; room temperatures exceeded 1,500 degrees Fahrenheit; many people saved by ladder bridges to adjacent building; many victims jumped to their deaths; fire extinguished after 6 hours; worst multiple-death U.S. hotel fire of the 20th century; building is still standing empty.

28. **1953 GM Transmission Plant in Livonia, Michigan** (killed 6); 4,200 evacuated safely; 1.5 million square feet under 1 flat roof of 4-year old building; no interior fire walls or partitions; oil-soaked wood floor; cutting torch ignited conveyor drip pan oil; building was 866 feet wide, hose streams penetrated only 75 feet; only 20% sprinklered; absence of fire walls and roof vents prevented containment of smoke and fire; no fire protection for flammable liquids; unprotected roof steel trusses collapsed in minutes allowing melted roof asphalt to drip feed fire; ineffective fire brigade; delayed fire department notification; cinderblock wall didn't stop fire; \$32 million damage; Ford Motor Company had suffered a major fire in 1952 at a Livonia tank plant; subsequent code changes included restrictions on use of combustible tar in built-up roofs, assignment of hazardous operations to separate buildings, increased sprinkler use in industrial buildings, fire coating of steel framing and introduction of automatic fire doors; fire led to development of NFPA 204, Guide for Smoke and Heat Venting.

29. **1958 Our Lady of the Angels Grade School in Chicago** (killed 95); built in 1910 and remodeled in 1958; inspected 2 months prior to fire; nearly 1,300 students in attendance; basement rubbish accumulation under stairs provided ignition source for afternoon arson fire; delayed notification to school and Fire Department; dense smoke quickly traveled up stairwell without fire doors into classroom corridors; no sprinkler system; open wood stairs contributed to fire spread through two upper floors; fire fighters arrived within 3 minutes and extinguished blaze in 1 hour; surviving children were mainly from 1st floor; 77 children injured; subsequently Illinois changed school fire code to require fire alarms, automatic sprinkler systems, 1-hour enclosed stairwells, noncombustible acoustic materials, additional exiting and signage, self-closing exit doors opening outward, 1-hour walls, dedicated emergency lighting circuits, 2-hour fire doors over basements, fire doors at corridors, stairwells and openings in room partitions and fire-resistant walls, ceilings and doors around furnaces; fire codes nationwide were revised to require sprinklers in schools; 2/3 of U. S. towns and cities subsequently improved school fire safety.

30. **1960 Amude, Syria** (killed 152); moviehouse fire killed mainly children.

31. **1960 Guatemala City, Guatemala** (killed 225); fire burned rapidly through a mental hospital; 300 injured.

32. **1961 Niteroi, Brazil** (killed 323); a fire set by an angry young former worker killed 323 people at the Gran Circus; mentally handicapped arsonist confessed to firing the nylon circus tent while an older accomplice splashed gasoline on the tent fabric.

33. **1967 McCormick Place Convention Center in Chicago** (killed 1); 6-year old \$40 million building was non-sprinklered, fire resistant, unprotected roof trusses, uncompartmented; early morning fire was caused by an accumulation of debris from a home furnishings trade show and consumed the building and \$100 million contents within one hour just prior to the trade show opening; fire department notified 6 minutes after fire discovery; a 200-foot long pre-cast concrete exterior wall section collapsed; subsequent testing proved high-ceiling sprinklers would have controlled this fire; 40,000 sprinkler heads were installed in the replacement McCormick Place.

34. **1967 L'Innovation Department Store in Brussels, Belgium** (killed 323); fire at a major department store.
35. **1970 Cinq September Club in Saint-Laurent-du-Pont, France** (killed 146); fire at a dance hall built inside a large warehouse; lounges decorated with hardened cardboard furniture and polyester fabrics formed an interior maze; plastic ceiling above main dance floor, no phone or fire alarm in club; Halloween fire started by defective heater; Fire Department arrived soon after fire started; all exits were padlocked; turnstiles blocked main entrance; bodies were piled before exits; fire burned for 3 hours and killed mainly young adults and teens; 5 people, including mayor, were indicted and received suspended sentences.
36. **1971 Daeyongak (Taeyokale) Hotel in Seoul, South Korea** (killed 166); worst hotel fire ever.
37. **1972 Sennichi Department Store in Osaka, Japan** (killed 118); nightclub fire on the top floor of this 7-story building.
38. **1973 National Archives in St. Louis, Missouri** (killed 0); destroyed several hundred thousand military records relevant to 18 million veterans including 80% of Army personnel serving 1912-1960 and 40% of Air Force personnel serving 1947-1964.
39. **1973 Kumamoto, Japan** (killed 101); Taiyo department store fire.
40. **1974 Joelma Building in Sao Paulo, Brazil** (killed 227); 25-story high-rise office building; fire started in air conditioning unit on 12th floor; spread rapidly due to highly combustible interior wall coverings; many victims trapped on roof and balconies due to no fire escapes; several rescued by helicopter, 18 people rescued by rope path to adjacent building; many people jumped to their deaths.
41. **1977 Duc del Brabant Hotel in Brussels, Belgium** (killed 302).
42. **1977 Beverly Hills Supper Club in South Gate, Kentucky** (killed 167); injured 130; club experienced a large fire 7 years earlier; deficient wiring included aluminum wiring; state fire inspection performed 4 months prior to fire; fire of electrical origin began in Zebra Room where heat was noted by an exiting wedding party; fire flashed over Zebra Room 20 minutes later; building staff decided guests in a large ballroom called the Cabaret Room were not jeopardized due to remote location from fire origin; busboy later notified 1,300 guests in crowded Cabaret Room (3 times capacity) to evacuate 20 minutes after fire discovery; hot fire and smoke traveled down corridor to Cabaret Room and flashed over this room minutes later, trapping occupants and leaving only 2 other exits; chairs in aisles and chairs on stage ramps; excess crowd stood in hallways; temperatures reached above 2,000 degrees Fahrenheit in Cabaret Room; 125 people died before 1 exit and 34 people died before the 2nd exit; only 2 fatalities outside Cabaret Room; corridor finish materials contributed to rapid flame spread; fire burned for 5 hours and smoldered for another 24; many additions and other modifications; building was 500 people over capacity with 2,800 occupants; labyrinthine corridors in 1.5-acre building; poorly marked exits; some blocked exits; some unmarked exits; narrow exits; unprotected door and window openings; most exits led to corridors rather than exterior; insufficient exiting, code required 28 exits, 17 existed; inward-opening doors; combustible wall coverings included paneling and smoky plastics, fabrics and composite structural materials; foam seat cushions accelerated fire spread; combustible ceiling tiles; no sprinklers (required by current Kentucky code), detectors, alarms or fire separations; staff delayed evacuation announcement for 10 minutes after fire discovery and delayed fire department notification; staff had no emergency training or evacuation plan; staff assisted evacuating patrons; over \$60 million paid to settle insurance claims; subsequent code changes required sprinklers in nightclubs and public assembly areas over 300 capacity, banned aluminum wiring; first fire where scene was preserved for investigation.

43. **1977 Xinjiang, China** (killed 694); 597 people killed were children.
44. **1978 Abadan, Iran** (killed 377); arson fire at crowded theater.
45. **1980 Eventide Nursing Home in Kingston, Jamaica** (killed 157); possible arson fire.
46. **1980 MGM Grand Hotel in Las Vegas** (killed 87); injured 750; deadliest U. S. fire of 1980s and second deadliest U. S. hotel fire; most deaths on upper levels due to smoke inhalation; demonstrated importance of sprinkler systems; led to extensive Las Vegas retrofit program.
47. **1981 Municipal Theatre in Nice, France** (killed 200); caused by gas pipe.
48. **1982 K-Mart Distribution Center in Falls Township, Pennsylvania** (0 killed); \$100 million damage; 1.2 million square foot building measuring 1,085 feet by 1,180 feet, divided into 4 quadrants by firewalls; firewall openings protected by deluge system rather than fire doors; unprotected structural steel; fire started in falling carton of carburetor cleaner aerosol cans; quadrant filled with smoke in 3 minutes; roof burned through in 20 minutes; sprinklers overwhelmed by large flammable load; explosions blew flaming aerosol cans through firewall openings spreading fire to other quadrants; building engulfed within 1 hour; firewalls not designed to be free-standing after burnout in 1 quadrant; 225 employees escaped.
49. **1983 Nassameer, Egypt** (killed 357).
50. **1987 Dupont Plaza Hotel/Casino in San Juan, Puerto Rico** (killed 97); arson fire in casino ballroom set by 3 workers; Sterno cans ignited new furniture wrapping, then furniture; combustible ballroom interior and partition; fire flashed over ballrooms 9 minutes after ignition; fire spread rapidly through foyer to casino with 300 occupants and 2 exits; first exit blocked by smoke, second exit was an inward opening door which took 2 simultaneous actions to open, second exit jammed, fireball engulfed most victims, many found by second exit; smoke spread to high rise through elevator shafts, HVAC system and stairwells; no sprinkler system; no detection system; manual alarm not working; fire department notified 18 minutes after fire discovered; 85 of 97 victims found in casino; helicopters rescued some from 20-story hotel tower roof; 140 injured; fire led to legislation requiring sprinklers in U. S. motels and hotels.
51. **1990 Happy Land Social Club in New York City** (killed 87); illegal occupancy in an unlicensed club; insufficient egress; insufficient fire protection; locked exit doors; this building in the East Tremont area of the Bronx was repeatedly closed for code violations then reopened illegally; no sprinkler system on 1st floor; 2nd floor sprinkler system branch line was plugged; bouncer ejected patron after argument with ex-girlfriend; patron returned with plastic gas can and set flash fire by splashing 1 gallon of gasoline at ground entrance (only exit available for patrons); flashover in ground floor barroom; toxic smoke quickly traveled up only (open) stairway into club and filled 2nd story room; little flame reached upper floor; majority of victims were Honduran immigrants trapped on 2nd floor who died within seconds from smoke inhalation and carbon monoxide poisoning; fire exits blocked to prevent entry without paying cover charge; some escapees broke a metal gate over 1 door; arsonist went home and fell asleep; arsonist confessed hours later and was convicted of 87 arson/murder counts and sentenced to 25 years in jail; club ordered to close based on building and fire code violations; combustible interior finish materials; insurance claims settled for \$15 million; New York City later increased efforts to monitor licensed clubs and close illegal clubs.
52. **1993 Bangkok, Thailand** (killed 187); doll factory fire; 500 injured; deadliest factory fire in the world.

53. **1994 Fluxin Discotheque in Liaoning, China** (killed 234); fire in dance hall, many crushing deaths at emergency exits that were chained shut.
54. **1994 Karamay, China** (killed 385); concert hall fire killed mainly children; all exit doors except one were locked.
55. **1995 Rajiv Marriage Palace in Mandi Dabwali, India** (killed 540); spark from a short circuit in an electric generator ignited a synthetic tent erected under the tin roof of a building with brick walls; no construction permit for building; afternoon fire at the main entrance trapped 1,500 occupants inside with only a single exit door available for evacuation; fiber mats and plastic chairs contributed to rapid spread of 5-minute fire, 170 children killed.
56. **1996 Ozone Discotheque in Manila, Philippines** (killed 160); sparks at a deejay booth started a fire which consumed and collapsed the ceiling in this nightclub with 400 teens packed into a converted residence licensed for 60; crowd thought sparks were part of a strobe effect; fire flashed over club within 2 minutes when the sole, narrow, inward-opening door was ripped down by the escaping crowd; soundproofing on walls accelerated fire spread; 2nd exit blocked by neighboring construction; owner and several officials indicted and sentenced to probation.
57. **1997 Yanshan Hotel in Changsha, China** (killed 200).
58. **1997 Iron Mountain Records Storage in South Brunswick, New Jersey** (0 killed); arson fire started while arson investigators were onsite investigating 2 previous fires and access was controlled to the area of origin; over 1,000,000 cartons of paper records (100 million documents) destroyed.
59. **2000 Dongdu Commercial Building in Luoyang, China** (killed 309); only construction crew and hundreds of disco patrons were in building on Christmas day; welders performing unlicensed renovation work in a large, 4-story shopping mall started a 9:30 p.m. basement fire by dropping molten metal on flannel rags and wooden furniture; welders fled without warning others; construction workers trapped on 2nd and 3rd floors; over 200 party guests in an illegal 4th floor discothèque were overcome by smoke quickly traveling up stairwells; no fire prevention equipment or emergency exits in the poorly lit room; construction materials blocked exits; a shop blocked 1 emergency exit. 1 of 2 disco exits was hidden behind a bar while the other was blocked by smoke; only 60 escaped the Christmas night fire which was extinguished after 3 hours; many jumped from 4th story; dozens injured; firefighters used cranes to rescue people from upper floors; fire extinguished after 3 hours; 12-year old building had a 3-year history of safety violations and failed a fire inspection 1 week before the fire due to merchandise blocking emergency exits; building had no fire alarms, sprinklers or smoke detectors; 23 people placed on trial; some sentenced to 7-13 years in prison including the construction manager, 2 policemen for bribery and 1 fire inspector who altered reports.
60. **2003 The Station Nightclub in West Warwick, Rhode Island** (killed 100); an 11 p.m. fire injured more than 200, many smoke inhalation injuries, backstage pyrotechnics at the start of a crowded indoor concert ignited combustible urethane foam packaging used as soundproofing on wall behind stage; foam soundproofing added 18 months earlier due to neighbor noise complaints; combustible foam purchased at half the cost of fire retardant foam; owner was well aware of combustibility of urethane foam; foam is 20 times more combustible than wood and emits dense, toxic smoke; flames climbed foam at 1 foot per second, then flames climbed curtains; lead singer failed to extinguish fire with a water bottle; no fire extinguishers on stage; crowd thought flames were part of the pyrotechnic effects; exiting crowd jammed main entrance; lights went out as crowd was evacuating; toxic smoke quickly filled low-ceiling room; most bodies were found piled at front entrance; some were trampled; few in crowd used 3 other fire exits; 60-year old building did not require sprinklers; local code exempted small buildings built before 1974 from sprinkler installation; club passed a fire inspection New Year's Eve; no pyrotechnics permit for this property; crowd was



over capacity of 404; flames engulfed 1-story wood-frame building in 3 minutes; club owners claimed they denied permission for the band to use pyrotechnics; band claimed club owners granted permission; other bands claimed pyrotechnics were previously used at this club; other clubs claimed this band recently had used indoor pyrotechnics without permission; worst fire ever in Rhode Island which subsequently placed a moratorium on indoor pyrotechnics at facilities with less than a 300 person occupancy limit; charges of 200 counts of involuntary manslaughter were filed against the band manager and club owners; many states later began extensive nightclub inspections; 8 states tightened indoor pyrotechnics regulations; Boston banned indoor fireworks; the National Fire Protection Association (NFPA) adopted a new standard which recommended sprinklers in new clubs with 50 or more occupants and existing clubs with 100 or more occupants; Rhode Island adopted new regulations 5 months after the fire which banned indoor pyrotechnics in assembly facilities with less than a 1,000 person occupancy limit, required sprinklers by 7/1/2005 for nightclubs with more than 300 occupants, required sprinklers by 7/1/2006 for nightclubs with more than 150 occupants, eliminated the "grandfather clause" exempting older buildings from new code compliance, required low-level exit signage for all nightclubs by 2006 and gave local fire officials the authority to inspect nightclubs during operating hours and close those violating fire codes.

**61. 2004 Ycua Bolanos Botanico Supermarket in Asuncion, Paraguay** (killed 464); injured 524; grease buildup in a horizontal section of charcoal grille chimney started this noon fire in an upper level food court of this crowded, new, 2-story supermarket; emergency exit was welded; guards locked many of the main exits to prevent looting; exit doors did not swing outward; building was non-sprinklered; roof coated with sprayed urethane foam which was not fireproofed; building had fire hose cabinets, fire alarms, smoke and heat detectors; flames engulfed food court and lower level parking garage; flames burst through upper face of duct, then ignited foam roof; 1 floor collapsed; many children killed; firefighters knocked holes in walls of neighboring houses to access supermarket; store owners and 4 security guards arrested for questioning.

**62. 2004 Cro-Magnon Republic Club in Buenos Aires, Argentina** (killed 188); fans shooting flares ignited a foam ceiling in this nightclub at 11 p.m. during the start of a rock concert attended by 4,000 people in a building with a capacity of 1,500; concert permit was for 1,100 guests; staff searched entering guests for firecrackers and flares and made announcements not to ignite pyrotechnics; some of the casualties were children in an improvised day care center located in a club restroom; 4 of 6 exit doors, including 2 emergency exits, were either tied shut or chained and locked to prevent entry without paying a cover charge; 1 usable exit door was narrow while wider doors were locked; many bodies piled up before 1 locked exit; building quickly filled with thick smoke; crowd panicked and stampeded for exits; fire was quickly extinguished; many fatalities from smoke inhalation; 889 injured; firefighters inspected club 8 months previously and foam ceiling was installed after this inspection; club owner was arrested and mayor subsequently closed all nightclubs in city for 15 days.