



Fire Service History

by Don Cannon

OBJECTIVES

Upon completion of this chapter, you should be able to do the following:

- Identify the origins of the fire service from the 5th century A.D. through the 14th century A.D.
- Identify major events that impacted the fire service during the 18th century
- Identify major events that impacted the fire service during the 19th century
- Identify major events that impacted the fire service during the 20th century
- Identify major events that are impacting the fire service during the 21st century

INTRODUCTION

The ancient Greeks recognized that the essential forces that act upon our physical world are fire, air, earth, and water. And thus mankind's ability to control and direct each of those factors has determined the success or failure of communities since they were first established.

5TH CENTURY A.D. TO 14TH CENTURY A.D.

While there were many cities in the ancient world of India and Mesopotamia and the classical world of the Greeks, Rome provided us with the first model of a major urban society in the West. Its population of more than a million made it the largest city in the West. The Emperor Augustus (63 B.C.–14 A.D.) is credited with transforming Rome from a city of brick into a city of marble by sponsoring a planned infrastructure of buildings, monuments, roads, aqueducts, and sewers. He is also credited with creating the **Vigiles**, the watchmen of the city and first public force of firefighters (fig. 2–1). Equipped with primitive though familiar apparatus and tools, the Vigiles coped with dozens of fires a day and fought several conflagrations, the most notable of which occurred in 68 A.D. during the reign of the Emperor Nero. With the collapse of the Empire, the cities of Rome declined as well and the Vigiles passed into history. Not until the age of Charles Dickens's 19th-century London would there be another city of similar size in the West. Inevitably for centuries thereafter, fire

continued to ravage Europe's surviving small towns and settlements during the Middle Ages.



Fig. 2–1. The Vigiles of Rome were the first organized group of firefighters in recorded world history. Besides buckets of water, they actually used a primitive pump to apply water to a burning building. They also used hooks to tear down buildings, creating fire breaks—a technique that was subsequently used for more than 1,000 years.

15TH CENTURY A.D. TO 18TH CENTURY A.D.

The emergence of the modern world in the 16th century gave new impetus to the idea of commercial expansion. Great imperial cities began to grow again and connect to overseas settlements in every hemisphere. Colonial American towns were the offspring of those forces and each became subject to the same opportunities and dangers as its sponsoring community in the old world. Within a few years of the establishment of Jamestown, Plymouth, and Boston in the 17th century, the residents of each town considered fleeing back to England after they encountered midwinter fires. Adriaen Block, the Dutch explorer and trader, never intended to establish the first settlement in the area that was to become known as New Amsterdam when he and his crew were forced to spend the winter at the foot of Manhattan. Their ship the *Tyger* burned to the waterline late in 1613, a dozen years before Fort Amsterdam was constructed in the same area. Quickly, Peter Stuyvesant, governor of Nieuw Amsterdam, devoted himself to fire prevention by appointing a night patrol known as “the prowlers” or **Rattle Watch** (1648) and fire wardens to inspect chimneys, thatched roofs, and

household cooking fires. Before the English took over the town in 1664, Stuyvesant required every householder to have buckets at hand and posted hooks and ladders for use by civilians in case of fire.

The **Great Fire of London**, which destroyed almost 80% of that city in 1666, exerted a direct influence on William Penn’s original design for the city of Philadelphia. The wide streets, large tracts of land, and squares were intended to make the City of Brotherly Love a “*greene country towne . . . which will never be burnt, and always be wholesome.*” Philadelphia escaped a major conflagration. Other towns were not so lucky. Charleston, South Carolina became known as a “city of fires.” In Boston, one blaze after another, many suspected as arson, destroyed more than 100 buildings during a three-year period. Finally, capped in 1678 by the loss of “fourscore of thy . . . dwelling houses and seventy of thy warehouses in a ruinous heap,” Boston imported fire engines from England and appointed men to operate them.

Articles in Benjamin Franklin’s newspaper, the *Philadelphia Gazette*, led to the forming of America’s first volunteer fire brigade, the Union Fire Company (1736). A year later in 1737, six years after two London-built **Newsham hand pumpers** arrived in New York from London, 30 “strong, able, discreet, honest, and sober men” were appointed the first firemen in New York City (fig. 2–2). In a parallel, private-sector effort to cushion the economic impact of fire losses, The Friendly Society of Charleston (1736) and the Philadelphia Contributionship (1752), America’s first fire insurance companies were organized. Beginning in the 1750s, first in Philadelphia, insurance companies began to display **fire marks** on structures covered by them. Fire marks were wood or iron plaques with a unique design identifying the insurer of a building. They were initially displayed as advertisements that deterred vandals who feared being tracked down, and they encouraged fire companies to work hard in hopes of a future contribution in the annual distribution of awards by the various insurance companies (fig. 2–3).



Fig. 2–2. One of two Newsham engines New York City imported in 1731 from London, now on display in the American Museum of Firefighting in Hudson, New York. The two wooden handles on the sides of the engine—called “brakes”—were lifted up and down to pump the engine.



Fig. 2–3. Fire marks were used as forms of advertisement. This one of the mid-19th century is from an insurance company called the Fire Association of Philadelphia, and portrays a wooden hydrant and coil of hose.

One myth historians have recently laid to rest is that early American firefighters would only work on structures where fire marks were clearly displayed. As the myth goes, a purse or reward was associated with getting first water on such an insured property. It was said, falsely, that fire companies would fight each other to prevent later arriving companies from getting such a

reward, even as in some cases the fire building burned to the ground. American and British historians have conclusively proved that fire brigades provided services to all who were in need, regardless of insurance. On the one hand, this was a practical matter intended to prevent extension of fire to their client properties. On the other hand, services to the uninsured were provided out of goodwill and for the positive effect it had on a company’s image. In other words, fire marks were primarily posted as advertising only. Insurance companies did contribute annually to various fire companies, in some cases supplying them with needed equipment to sustain their operations, but contributions for specific fires were rare.

Arson—intentionally set fires—became a serious problem in 18th century New York. On two occasions, New York suffered a rash of arson fires attributed to discontented slaves and their sympathizers. In each case, the town’s new fire companies responded. The first, in 1712, was put down quickly. In 1741, the New York Negro Plot hysteria in the city, partially triggered by a series of fires of unknown origin, culminated in the Fort George conflagration at the lower end of Manhattan. As a result, 17 blacks and 4 whites were hanged, and 13 slaves were burned at the stake. By 1790, New York City had the highest percentage of black residents other than Charleston.

Many volunteer engine companies were organized prior to the American Revolution. Shortly before the Revolution began, American inventors began to manufacture and sell their own hand pumpers. This was a clear indication that the colonial economic system was becoming less dependent upon Britain. The various trading and manufacturing restrictions imposed by London between 1763 and 1775 became increasingly viewed by merchants, mainly in the coastal cities, as an effort to strangle the emerging American economy. In the 10 years prior to the Declaration of Independence, many colonial firefighters active as Sons of Liberty seized and destroyed ships in Newport and Providence in opposition to the British Stamp Tax and trade policies. Firemen participated in the Boston Tea Party and tossed and burned cargoes of tea in Annapolis, Maryland, Greenwich, New Jersey, and Providence in protest against a British-imposed monopoly. In spring 1770, in what has become known as The Boston Massacre, a cry of “Fire!” intended to cause the town’s church and fire bells to bring others to the scene caused British troops to open fire on an unarmed group of colonial protesters, killing several.

Real shooting began in April 1775. Fire was a cruel weapon. British forces withdrawing from skirmishes at Lexington and Concord lit up houses as they retreated back to Boston. In May, 30 buildings were set afire in the dock district of Boston. In mid-June 1775, British warships set fire to 380 dwellings in Charlestown, Massachusetts, as the Battle of Bunker Hill proceeded. Beginning in fall 1775, moving down the coast from Falmouth (now Portland), Maine, continuing south to Norfolk, Virginia, and ultimately to Charleston, the British leveled towns by naval bombardment, shelling from the seaside as shore parties set waterfront structures afire. The Revolutionaries were not guilt-free, for in the winter of 1775–76 as they withdrew from their failed invasion of Quebec, burning homes, barns, and mills along the way.

The American Revolution was a brutal war, all around. In his Declaration of Independence, Thomas Jefferson condemned King George III for using fire as a terror weapon, writing: “He has plundered our seas, ravaged our coasts, burnt our towns, and destroyed the lives of our people.” Jefferson’s words did not deter the redcoats. In fall 1777, the British set fire to every house in Kingston, New York, as punishment for the citizens’ support of the Revolution. In late September 1776, less than a week after the British occupied Manhattan, fire originating in the Fighting Cocks Tavern on Whitehall Street and several other locations in the lower west side of the island ultimately destroyed almost 500 buildings, a quarter of the city. Revolutionary sympathizers, including, as many believe, Nathan Hale (“I have but one life to lose for my country . . .”), are suspected of torching the Great Fire of 1776. At this point, New York City emptied, becoming a virtual ghost town for the remainder of the war. Historians are uncertain whether Jacob Stoutenburgh, the chief of department, and the rest of his volunteer firemen in New York left the city to join Washington’s forces.

In 1778, a second Great Fire in Manhattan consumed another fifty buildings. Remaining Tory sympathizers and British naval personnel fought the fire. A year later, the British captured and burned Norfolk. Wherever they went, the Brits were ruthless adversaries. Mel Gibson’s film *The Patriot* gets pretty close to the reality of the Revolution, as backcountry Americans were subject to terrifying experiences throughout the war. Frontier farms and communities all along the ridgeline of the Appalachians from the Mohawk Valley in New York to the Wyoming Valley in Pennsylvania, down through the Carolinas were lit up as Tories and their American Indian allies burned more than 1,000 homes and slew 300 settlers.

Finally, it was over. The Treaty of Paris recognized American independence in 1783. The Continental Army marched back into previously occupied territory, survivors staggered out of their prison ships, citizens returned to the cities from their rural refuges, and local fire departments began to reorganize themselves under the charters of their newly independent states.

In the early years following independence, towns in the new West were commonly overcrowded with shoddily built housing and mercantile facilities. Seven-eighths of New Orleans, the export point for everything being sent down the Mississippi River, was destroyed by fire on Good Friday 1788. A second conflagration seven years later burned out an additional 200 structures in New Orleans’s French Quarter. In 1805, the entire village of Detroit was virtually wiped out, save for one building. Older towns were being transformed into industrial centers and as a result experienced ever-larger fires. Paterson, New Jersey, America’s first planned industrial city, saw its first mill destroyed by fire in 1807. Philadelphia was particularly hard hit in this period but soon undertook a massive water-supply project that became the model for other cities.

19TH CENTURY

During this period, efforts were made to make fire ground operations somewhat more organized as officers using **speaking trumpets** attempted to direct ladder companies, hand-pumped engines, and informal salvage operations. Hundreds of new volunteer fire companies were formed, many including hose companies (the first was introduced in Philadelphia in 1803) using American-designed “**gooseneck**”-style, **hand-pumped fire engines** with solid-metal play pipes much like modern-day deck guns. Some engine companies were equipped with more maneuverable leather fire hoses held together by copper rivets. In New York, the first primitive American fireboat, a hand-rowed barge on which hand-pumped Engine 42 was mounted, went into operation. During this period, Philadelphia and New York insurance companies organized the first paid fire patrol units to perform salvage work. Other cities followed. In 2006, following 203 years of service, the New York Fire Patrol became the last of all the insurance-supported salvage corps to operate in the United States.

Once again, during the War of 1812, America’s War for Economic Independence, periodic raids caught border

towns such as Buffalo in the crossfire. Early in the war, a dozen suspicious fires broke out in Washington, D.C., and American forces burned York, now Toronto, Canada. In retaliation, the British burned government buildings in Washington, D.C., and Baltimore in a campaign commemorated in our national anthem.

Following the war, the nation embarked on a period of explosive growth in the cities and across the continent. Augmented by the Erie Canal, which connected the interior of the country to the sea, the port of New York became the hub of the Atlantic trade, undergoing a period of frenzied building. **New York City's Great Fire of December 1835** consumed more than 650 buildings, including most of the Wall Street financial area and the lower east side wharf and dock district (fig. 2–4). The flames were so bright that mutual aid companies responded from as far as Philadelphia, 90 miles away. The 1776 and 1835 blazes wiped out most of old New York, making room for new construction. Unfortunately, completion of New York's Croton water project proved too late to contain the conflagration of 1835. Across the East River, Brooklyn had its great fire in 1848.



Fig. 2–4. This is a scene near Wall Street in New York City after the Great Fire of 1835. Although this fire wiped out much of New York's financial district, the area was quickly rebuilt.

New York Common Councilmen attempted to blame effective volunteer Chief James Gulick for the extent of the Great Fire and replaced him with a political appointee. In response, a significant number of volunteers simply quit and formed the **Resigned Firemen's Association**. This was the first time any American firefighter walked off the job. With Gulick's encouragement, however, most were convinced to return shortly thereafter. They ousted the anti-Gulick members of the Council and assured their own candidate, Cornelius Anderson, the position of chief of department.

Two years after the 1835 fire in New York, the entire nation fell into a deep financial depression. As was, and remains the case today, unemployment and idleness converted into civic unrest and a significant increase in runs and workers for firemen.

The frontier West went through its own growth pangs as settlements extended from the Mississippi Valley to the Pacific Slope. St. Louis, Missouri, lost 3 lives, 430 buildings, 23 steamers, 9 flat boats, and several barges in one of a series of major fires during the 1840s. Out on California's Gold Coast, a series of seven major fires swept San Francisco between 1849 and 1851, including one that destroyed 3,000 buildings. On April 19, 1863, only five years after its founding, much of Denver was destroyed. The day after, a **brick ordinance** was enacted requiring all new buildings be constructed of brick or stone.

The 1830s through the 1850s marked the golden years of the traditional pre-modern volunteer fire system. Coast to coast, from San Francisco's Pacific Fire Company to Chicago's Washington Volunteers, Boston's Cataract Engine, New York's Hibernia Hook and Ladder, to Protection Engine in Yonkers, New York, firehouses became social centers for working- and middle-class members. Parades, civic celebrations, balls, festivals, competitive hand-pumping contests, and a cycle of visits and conventions offered countless opportunities to showcase the enthusiasm, joy, pride, and devotion of America's volunteer fire companies before an adoring public. In most places, any person having served seven years of duty as a volunteer fireman was rewarded most tangibly by being made an **exempt fireman**, meaning he was forever excused from jury and militia duty. Such older life members of fire companies often banded together to form an exempt fire company, expected only to show up for parades and civic functions or at the scenes of general-alarm incidents. The iconic image of **Mose the Fireman**, the somewhat crude but big-hearted and brave fireman, and Bowery B'hoy, the urban hero of his day, and his girlfriend Lizzie became standard features of the American theater for the next half century.

Through this period, buildings grew taller and bigger. The introduction of iron-fronted structures by James Bogardus, heavy mill construction made possible by the increased use of iron interior beams, and the introduction of the Otis elevator changed the face of urban America. Warehouses, mills, lofts, foundries, and increasingly tall office buildings became common. Their heavy fire loads substantially increased the burdens on firemen in the number of responses, severity of fires,

and threats to civilian and line-of-duty personnel. At the same time, balloon-constructed housing and shoddily built, multiple-occupancy housing turned many neighborhoods into tinderboxes. Tenement fires became frequent and killed hundreds. Complicating those threats was the uncontrolled storage of combustibles in residential-area warehouses. A New York City sperm oil storage warehouse destroyed 300 buildings in 1845. The Jennings warehouse fire and collapse claimed the lives of 11 New York City volunteers in 1854. The Pemberton Mills fire in Lawrence, Massachusetts, killed 115 occupants. Nonetheless, in the absence of effective training cycles and multi-unit coordination, volunteer operations generally remained chaotic.

As fiercely held ethnic, religious, and neighborhood loyalties pitted members of fire companies against one another, traditionally healthy competition got out of hand as some companies fought each other. In the 1830s, native-born Philadelphia firemen fought Irish newcomers. In 1834, firefighters responded to the Charlestown, Massachusetts, Convent and elite boarding school that had been set afire by an anti-immigrant mob. In the 1840s, mobs in the City of Brotherly Love destroyed the Hibernia fire station, Catholic churches, a market, and many Irish homes. Nativist and anti-immigrant riots in Baltimore (1856) and Washington (1857) divided the firefighting community.

Some departments became entangled in party politics, notably in New York City. Organized on a bottom-up, democratic basis, elections allowed popular but unskilled officers to hold rank. By the late 1840s, the controversial Tammany leader, **William M. “Boss” Tweed**, began his rise to political power as foreman of Americus Engine 6 on Henry Street in lower Manhattan (fig. 2–5). Many of the more than 4,500 volunteers in the city were among his ardent supporters.

In the larger cities, it seemed that the fire bells were ringing all the time and that the scale of fires was growing enormously. Suburban flight of older, middle-class volunteers forced a lowering of recruiting standards in the companies they left behind. Active members found it difficult to run their businesses or keep full-time jobs and respond to fires at the same time. Line-of-duty deaths and fire losses rose rapidly. Under these circumstances, it became increasingly difficult for volunteers to keep pace with the growing fire challenges of the big cities. There were no formal training cycles or multi-unit drills.



Fig. 2–5. This is a helmet frontispiece from Americus Engine Company 6 of New York, made famous by its Foreman (Captain), William “Boss” Tweed. A tiger was their symbol—they even tied a real one to their hand pumper during a parade!

On the other hand, the fire service, inventors, and civic leaders were not idle. In Great Britain, **James Braidwood**, credited with organizing the first effective paid fire department when he was appointed superintendent of the London Fire Brigade in 1833, offered a model for an effective urban fire department. In America by the early 1840s, a number of circumstances began to cast doubt on the traditional volunteer system as inventor and philanthropist Peter Cooper proposed a paid fire service for New York City.

During the 1850s, New York insurance companies began pressuring the traditional volunteer system to modernize by urging the appointment of new assistant engineers to cover newly settled uptown districts. They hired Alfred E. Baker, a former reporter for the *New York Herald*, as fire marshal in spring 1854. He was tasked “to examine into the origin of and other matters connected with fires” and to continue supporting the fire patrol. Nonetheless, in the face of legitimate appeals to change over to horse-drawn steamers made by progressive fire service leaders, insurance companies, and urban reformers, a majority of traditionalists within many departments resisted.

Real modernization began as the American industrial revolution gained traction. In 1852, Boston installed and employed a central telegraph office and street box fire-alarm telegraph system invented by **William F. Channing**. At the same time, patents were issued for the first sprinkler-perforated pipe systems, which were installed shortly thereafter. Early in 1853, advocates of theories of professional, business, and military models of organization convinced Cincinnati to introduce the horse-drawn Latta brothers' steam fire engine, **Uncle Joe Ross**, and to become the first city to employ a top-down, centralized, paid department in 1853. Six years later, New York insurance companies purchased the first two steamers put into service by the volunteers (fig. 2–6). Soon, every major city began to switch to the horse-drawn steamer. The spirit of that moment was captured most vividly by the Currier and Ives lithograph, *The Life of a Fireman. The New Era. Steam and Muscle* (fig. 2–7).

On April 12, 1861, Fort Sumter in Charleston Harbor was shelled by supporters of secession, and the Civil War began. Southern fire departments were at a profound disadvantage because all their hand-drawn and steam fire apparatus and much of their equipment were manufactured in the North. Thus Southern departments, unable to replace worn-out and destroyed equipment, found themselves unable to protect their towns from fire. By Christmas 1861, much of Charleston had been destroyed by relentless fire from Union gunboats. Over the duration of the war, coastal communities of the South as well as Mississippi Valley cities, such as Vicksburg and New Orleans, were severely damaged and their fire departments disabled. In retaliation late in the war, several arson-related fires struck the lower Manhattan hotel district, part of a “Southern conspiracy” to burn *New York City*.

The involvement of firemen in the Civil War was complicated. Within days of the shelling of Fort Sumter, large numbers of New York City, Boston, and Philadelphia firefighters enlisted in the Union Army. The members of so-called **Fire Zouave** regiments wore red firemen's shirts, colorful jackets, baggy trousers, reddish-brown boots, and red caps known as “fezzes.” At the same time, great numbers of firemen from Savannah, Georgia, Charleston, and other Southern towns enlisted in various Confederate units. Atlanta recruited its own Fire Zouaves. Most Zouave units took heavy casualties during the conflict and soon returned. Younger men, in many cases marginally employed, filled the ranks (fig. 2–8).



Fig. 2–6. A beautiful steam fire engine of the Passaic Engine Company Number One of Paterson, New Jersey. This heavy, hand-drawn “steamer” was built in 1874.



Fig. 2–7. Nathaniel Currier of the famed lithography firm, *Currier and Ives*, created this image called “Steam and Muscle.” It portrays the transition from hand-pumped engines to steam fire engines in New York City.

On the home front, firefighting became even more difficult than it had been prior to the war. When heavy losses forced the Union to draft young men for the army, riots broke out in many northern cities. Opposition to the draft was expressed in dozens of other cities, from Brooklyn to Staten Island, Bloomfield, New Jersey, Detroit, and as far away as Wisconsin. The most serious **draft riots** occurred in July 1863 in New York City, where pre-existing tensions between Irish and black workers over jobs and housing had precipitated conflict long before the war. Historians disagree on the level of involvement of members of Black Joke Engine 33 in carrying the riots forward once they began, but they agree that individual volunteers were on every side of the incident. Chief of Department John Decker was

almost hanged by rioters when he ordered fire companies to put out fires. Many firemen and their companies were praised for their courageous actions in turning back mobs, rescuing people, and fighting fires. Martin Scorsese's film *Gangs of New York* contains many historical inaccuracies, not the least of which is its overemphasis of the role of New York City's volunteer firemen as mob participants (fig. 2–9).



Fig. 2–8. Gettysburg monument to firefighters

In the final days of the conflict, General William T. Sherman captured and burned the city of Atlanta, portrayed so dramatically in the film *Gone With the Wind*. He then commenced his March to the Sea, torching everything in his path and leaving a swath of total destruction from Savannah to Columbia, South Carolina. When Richmond, Virginia, burned in the chaotic final days shortly before General Robert E. Lee's surrender, many Confederate records were lost. In spring 1867, New York City's Volunteer Association sent a **hose reel** to their colleagues in war-torn Columbia. The first was lost in a hurricane on its way. The New Yorkers then took up a second collection, which enabled the South Carolinians to purchase their own piece of apparatus.

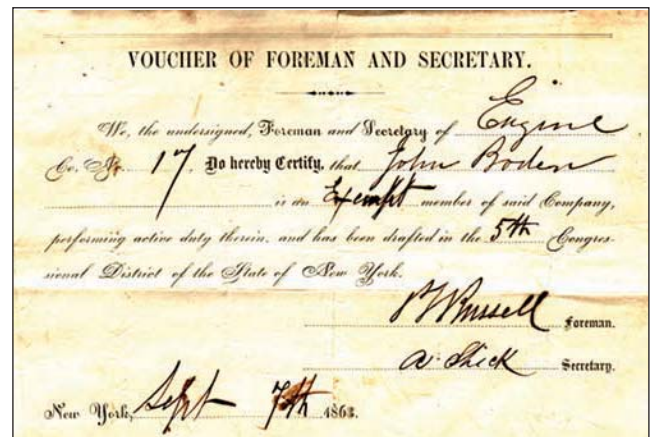


Fig. 2–9. In order to keep New York City's firemen from having to serve in the military as a result of the draft (many of whom were already "exempted" from militia duty), the city paid "substitutes" to take the firefighters place. This firefighter, John Boden of Engine 17, was replaced by a man named John Williams, as seen in this certificate.

With generational continuity broken by the loss of a substantial number of older and experienced members, the Civil War put an end to New York City's neighborhood-based, volunteer, locally controlled fire department. Amidst bitterness and controversy, New York's volunteers were dismissed in 1865. They were replaced with a paid **Metropolitan Fire Department** under the direction of commissioners appointed by the insurance-influenced, rural-based, state legislature. Hand-drawn apparatus was replaced by horse-drawn and steam-powered. **Alexander T. Shaler**, appointed as New York's fire commissioner in 1866, is credited with creating New York's paid department. In 1870 under the terms of the Tweed Charter, the **Fire Department of the City of New York** was established, thus restoring home rule to the City of New York. Departments across the country quickly followed the Cincinnati and New York models. Philadelphia went paid at year's end in 1870, and Los Angeles followed the same route in 1886.

Between the end of the Civil War and the First World War, the population of the United States more than doubled. In that environment, the American fire service coped with fires of increasing magnitude and deadliness. During this period, major technological and managerial innovations were introduced to cut response time, improve firefighting capacity, and strengthen fire-safety laws.

Cincinnati, Philadelphia, New York, and other cities established fire department and hospital-related ambulance services based upon the military model that emerged from the carnage of the Civil War. (During the Civil War, volunteer fire companies in Philadelphia built

their own ambulances to transport wounded members coming back from the war on the railroad to city hospitals.) In that same era, the Boston Fire Department commissioned into service the **William F. Flanders** (1873), the first American steam-powered fireboat, followed in 1875 by FDNY's **William F. Havemeyer**. In 1868, **Daniel Hayes** of the San Francisco Fire Department developed the first successful aerial extension ladder truck (all ladders up to that point were individual ground ladders) that allowed firefighters to reach the upper portions of many of the newest, tallest buildings. Additional improvements saved time in hitching up fire horses. Sliding poles were installed in some New York firehouses. Cotton-covered, rubber-lined, more flexible fire hose replaced traditional, awkward, riveted-leather hoses. One of the first medals for bravery, the **James Gordon Bennett Medal**, was introduced in New York City in 1869.

Despite the efforts of inventors, fire department managers, and firefighters, a series of conflagrations swept Portland, Maine (1866), Boston (1872), Seattle (1889), and Paterson (1902). The most serious late-19th-century fires occurred in fall 1871. The **Chicago Fire** raged for four days in early October 1871, destroyed almost 20,000 buildings in a four-square-mile area in the city center, and left 100,000 people homeless (fig. 2–10). Chicago's recovery was so swift that it became known as one of the most dynamic urban communities in the country. Years after the blaze, a news reporter confessed that he had made up the story blaming Mrs. O'Leary's cow for starting the blaze. Chicago's Fire Department Training Academy is now located on the former O'Leary property. Early October continues to be celebrated as Fire Prevention Week. A prairie fire in northeastern Wisconsin and upper Michigan swept more than 1.5 million acres. The town of Peshtigo was destroyed, and between 1,500 and 2,500 people were killed. The event drew little media attention, overshadowed as it was by the Chicago conflagration.

In the light of common problems facing the firefighting profession in the late 19th century, a number of organizations were established to coordinate fire prevention and operations across the nation. The **National Board of Fire Underwriters** was established by a consortium of insurance companies in 1866 and began to urge communities to upgrade their firefighting forces and building regulations. The **National Association of Fire Engineers**, later known as the International Association of Fire Chiefs, was formed in 1873. Founded by William H. Merrill in

the spring of 1894, the Underwriters' Electrical Bureau, later known as the **Underwriters' Laboratories**, began laboratory testing of materials for combustibility in the upper floors of a Chicago Fire Patrol house. The **National Fire Protection Association** was established in 1896 with the original intention of standardizing codes for sprinkler and electrical systems.



Fig. 2–10. The Great Fire of Chicago was one of the largest conflagrations in American history (second only to the San Francisco Earthquake and Fire of 1906). These are the ruins at Dearborn and Madison Streets.

20TH CENTURY

As the 20th century dawned, the **Baltimore fire of 1904** raged for more than two days with mutual aid companies responding from as far away as Philadelphia, Washington, New York City, Wilmington, and Atlantic City. Tragically, most mutual aid companies found that the lack of standard fire hose couplings and threads and the absence of adaptors limited their usefulness. The Baltimore conflagration was the precipitating event for the creation of a new **model building code** (a generically written code that could be adopted by any city in the United States) known as the **National Building Code** (fig 2–11).



Fig. 2–11. The Great Baltimore Fire of 1904 led to creation of the first comprehensive standardized building code. Firefighters were not successful in standardizing hose threads; many responding mutual aid fire departments, including New York City, were unable to attach their hoses to Baltimore's hydrants. There are still a multiplicity of hose threads across the United States today.

Individual catastrophes such as the **Brooklyn Theater fire** (1876), the **Iroquois Theater fire** (fig. 2–12) in Chicago (1903), and the **Triangle Shirtwaist Factory fire** in lower Manhattan (1911) led to improved laws for high-occupancy structures. A series of marine disasters were led by one in Hoboken, New Jersey (1900), followed by another on the excursion boat *General Slocum* in the East River in New York (1904), and a third on Chicago's excursion boat *Eastland* (1915). Several "high-rise" fires in New York City, one in the Home Insurance building (1898) and the other in the Equitable Life building (1912), pointed out the need for better fire-prevention regulations in office buildings. **San Francisco's Great Earthquake and Fire of 1906** destroyed more than 28,000 buildings and caused the death of Chief of Department Dennis T. Sullivan (fig. 2–13). Originally reported to have cost fewer than 400 lives, researchers now suspect the loss of life to be in excess of 3,000 after revealing a great cover-up by the city after the event. It was the largest fire in American history.

At the same time, a generation of experienced fire service leaders introduced revolutionary changes in apparatus, fire prevention laws, and technology. In 1901, New York City's chief of department was assigned a gasoline-driven **Locomobile** (fig. 2–14). By 1922, the last horse-drawn apparatus made its final run. **Rescue companies** were established in major cities, and **high-pressure water systems** aided central business district fire companies. Following the Triangle

Shirtwaist fire that cost 146 workers' lives, political leaders from the Progressive Movement, advised by fire department personnel, introduced factory legislation intended to guarantee greater safety in industrial workplaces. The **International Association of Firefighters** was established (1918), followed by the founding of fire officer associations intended to support their professional interests.



Fig. 2–12. The Iroquois Theater was supposedly "fireproof" (this is never an accurate term). 602 people died in a fire during a performance of "Mr. Bluebeard" soon after the new theater opened in 1903. It still stands today as our country's worst theater disaster. This image shows victims' bodies being removed in a hose wagon.



Fig. 2–13. The San Francisco Earthquake and Fire of 1906 was America's largest conflagration. It destroyed nearly 28,000 buildings, including City Hall as seen in this photograph.



Fig. 2–14. The transition to motorized apparatus was a major turning point in the fire service. This image shows the brand new “motor” Fire Engine Company One of San Antonio, Texas. The term “motor” is still with us today in many parts of the United States where the operators of fire engines are called motor pump operators (m.p.o.).

Along with the rest of the country, the firefighting community was swept into the vortex of each of America’s 20th-century wars. Before and after America’s entry into the first World War, German saboteurs created numerous problems for firefighters from coast to coast as explosions lit secondary fires. In July 1916 on **Black Tom Island**, a major munitions depot situated in the Hudson River near Jersey City, two million pounds of explosives were detonated with such force that it could be felt 90 miles away. In January 1917, another explosion at the Canadian Car and Foundry in the New Jersey Meadowlands near Lyndhurst set off more than a half million, high-explosive shells. There were no deaths among the 1,400 people in the facility, who were warned building by building by company switchboard operator Tessie McNamara, to flee for their lives. In April 1917, the same month that the United States entered World War I, the Eddystone Ammunition Corporation in Pennsylvania blew up with the loss of 133 lives. In May 1918, six months before the Armistice that ended World War I, a TNT explosion in an Oakdale, Pennsylvania, chemical factory killed 200.

The war accelerated the migrations of hundreds of thousands of immigrants and rural black Americans seeking jobs in northern heavy industry. Auto plants in the Detroit area and steel mills in western Pennsylvania and Indiana began hiring workers without regard to race or ethnicity. Competition for jobs and housing exploded into race riots in dozens of cities including Atlanta, Omaha, Nebraska, and Tulsa, Oklahoma. Peaking in 1919, the Chicago Race Riots caused 38 deaths and left a thousand people homeless. The Tulsa Race Riots burned

more than 35 city blocks with almost 1,300 buildings and, depending on the source, killed anywhere from 75 to 300. As usual, firefighters in each affected city were caught in the middle.

The period between the Great Depression and WWII was marked as an era of lean budgets, the extended use of older equipment, deferred apparatus acquisition, manpower shortages, and little or no increases in salaries. New York Mayor Fiorello LaGuardia, a fire buff himself, attempted to keep the department together by promising better pensions if members put up with the lean years of the 1930s. At the same time, the first two-way radios were making their way into many departments. Most were assigned to rescue companies, marine units, and senior command officers. In one unanticipated side effect of the Depression, many who might have gone into other lines of work or professions entered the fire service seeking security. Thus potential doctors, dentists, and teachers, and others, found themselves in the ranks.

In March 1937, a natural gas explosion leveled the **New London, Texas, Junior-Senior High School** and killed 298 students and teachers. Because natural gas is odorless, this explosion led to the requirement of using mercaptan as an odorant so leaks can be detected quickly. It was flammable hydrogen gas (used for buoyancy) and a highly combustible outer surface that spelled disaster for the airship *Hindenburg* when it caught fire at Naval Air Station Lakehurst in New Jersey, killing 36 people in May of 1937. On December 1, 1958, a fire in Chicago’s Our Lady of the Angels parochial school killed 92 children and three nuns. An open stairwell allowed fire to rapidly spread from the basement of the second floor where the fatalities occurred.

When the Japanese attacked the naval base at Pearl Harbor, three civilian firefighters from the Honolulu Fire Department were among the 2,400 people killed. In New York in February 1942, a welding accident burned and sank the *USS Lafayette*, a former French luxury liner named the *SS Normandie*. In 1943, the Liberty ship *El Estero*, loaded with munitions, took fire while loading at Bayonne, New Jersey. With a cargo capable of devastating the entire lower harbor, the ship was towed to deeper water and scuttled by the heroic intervention of FDNY fireboats and Coast Guard vessels. On the West Coast, 328 ammunition loaders were killed when the Port Chicago Naval Magazine, 35 miles (56 km) north of San Francisco, blew up. On the civilian front, a fire in the **Cocanut Grove Night Club** in Boston resulted in 492 deaths and injuries to hundreds in November 1942. Late in the war, the **Ringling Bros. and Barnum**

& **Bailey circus tent** caught fire in Hartford, Connecticut, killing 167 and injuring nearly 500 in early summer 1944 (fig. 2-15). Just before V-J Day in 1945, FDNY responded when a B-25 bomber lost in fog crashed into the 79th floor of the **Empire State Building**. The crew and at least 11 office workers died.

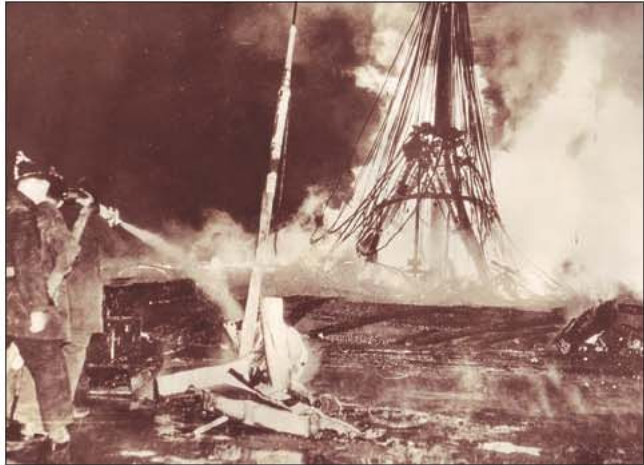


Fig. 2-15. As the band played the *Stars and Stripes* to signal a fire to circus workers, attendees scrambled to get out from under the big tent and away from the quickly spreading fire. The July, 1944 fire in Hartford cost many lives. Here firefighters wet down the ruins of the tent which had been soaked with paraffin and kerosene to prevent rotting of the canvas.

After the end of World War II, American manufacturers and Boeing Airplane Co. dominated the airways. The incredible growth of private aviation, the introduction of jet aircraft, and reasonable ticket pricing, enabled tourists to travel in relative comfort and ease. As the industry grew, the number of fires related to air crashes rose, commencing in 1947 with the loss of 52 when a United Airlines DC-6 went down near Bryce Canyon, Utah. The collision of two aircraft in the crowded airspace approaching LaGuardia and Idelwild International (now known as JFK) airports in December 1960 resulted in more than 130 deaths when one plane came down in Staten Island and the other in a crowded Brooklyn neighborhood. Prior to the World Trade Center attacks, the deadliest crash was an American Airlines flight at O'Hare International Airport in Chicago, which killed all 271 people on board (1979). More reliable equipment, effective inspections and maintenance, and rapid, advance firefighting tactics when aircraft hit the ground have reduced crash and death tolls for American flights.

On December 7, 1946, a fire moved quickly through Atlanta's Wincoff Hotel, killing 119 people. Starting on the third floor and moving rapidly up through the structure because of a lack of fire doors and other fire

containment features, it became America's worst hotel fire. Other significant hotel fires include the MGM Grand Hotel-Casino fire in Las Vegas (1980), where 87 died, and the Hotel Dupont Plaza fire in Puerto Rico where 97 were killed in an arson fire on New Year's Eve in 1986.

In April 1947, an explosion rocked the port of Texas City. The French Liberty ship *Grandcamp*, loaded with ammonium nitrate fertilizer, caught fire and blew up, killing 26 Texas City volunteer firefighters (fig. 2-16). It was the largest loss of firefighters prior to the attack at the World Trade Center on September 11, 2001.



Fig. 2-16 A large group of vehicles damaged in the 1947 Texas City explosion. 576 people, including 26 Texas City volunteer firefighters, were killed in a series of explosions over two days. The disaster began with an initial explosion of ammonium nitrate in the ship *Grandcamp* on April 16, 1947.

Throughout the century, San Francisco continued to be battered by earthquakes. One in spring 1957 registered 5.3 on the Richter scale. In October 1989, Americans watched the developing tragedy on television as the most severe earthquake since 1906 hit the City by the Bay just before the beginning of the third game of the World Series at Candlestick Park. Quickly, San Francisco's *Fireboat Phoenix* went into operation, supplying saltwater through large-diameter hoses. Hundreds of civilian volunteers stretched lines to land companies fighting the ensuing Marina District fire.

The 1960s was an era of confusing and often violent social, racial, and economic confrontation. Beginning in the early 1960s, the fire service entered what is commonly known as **The War Years**, or the Long Hot Summers. A complicated set of factors, including frustration over poor living conditions, the emptying of some neighborhoods to the suburbs, arson, and bitterness, led to riots, burning, and looting in more than 100 American inner cities from Watts in Los Angeles to Newark, Detroit, East New York, and the South Bronx in New York City. In 1950, the number of alarms in New York had

been only 62,021, rising to 261,131 annually by 1970. As portrayed by Dennis Smith in *Report From Engine Company 82*, some companies made 7,000 to 8,000 runs per year. Canopies were constructed over apparatus cabs, and members rode inside for fear of “air mail” and shooting. The orgy of destruction eventually diminished in the 1980s, and now, in many of those same neighborhoods, firefighters are viewed much more favorably.

Several reports emanated from the period. The first was from the National Advisory Commission on Civil Disorders, also known as the Kerner Commission (1968), which assessed the underlying causes for the period’s civil unrest. The second, the National Commission on Fire Prevention and Control summary report on the period, *America Burning* (1973), noted that the mission of the American fire service had expanded rapidly beyond fire prevention, suppression, and investigation. Recognizing that firefighters are the first line of defense for citizens facing any type of disaster or emergency, the report presented an agenda for improving firefighters’ ability to deal with such situations in the future.

In the words of author Terry Golway, the period after the 1960s was dominated by a “Search for Equity” in recruiting, promoting, and retaining personnel in the fire service. Since the 1970s there has been some progress toward gender, ethnic, and racial equity in recruiting, holding, and promoting firefighters from every dimension of American society. In 1973, Arlington County, Virginia, made headlines by hiring its first woman career firefighter. By the opening years of the 21st century, the number of women holding career-firefighter and officer positions exceeded 7,000. During the same time, it is estimated that there were more than 40,000 women volunteer firefighters. The 100th anniversary celebration of the San Francisco Earthquake and Fire was hosted by Chief of Department Joanne Hayes-White, a 14-year veteran and married mother to three sons. Rochelle “Rocky” Jones, whose career spans more than 20 years and whose company was part of the first alarm assignment for the Twin Towers, later earned the rank of FDNY battalion commander. Nonetheless, there were still fewer than 50 women in FDNY at the opening of the 21st century.

The situation facing black Americans is equally challenging. FDNY remains 90% white, while the Boston, Philadelphia, and Chicago departments are between 70% and 75% white. Tensions over promotions in the Saint Louis Department, led by a black chief of department, remain high, a common situation in many cities. Van Davis Jr., the first black appointment to Los

Angeles County Fire Department in 1953, served 20 years, during which time no blacks were promoted to upper rank. Many fire departments in large and small communities across the nation still struggle to resolve challenges relating to gender and racial staffing, recruiting, and promotion standards.

Beginning in the 1960s, some firefighters underpaid, overworked, and convinced that they were getting little respect from politicians and residents, grew frustrated and angry. In the face of no-strike laws but encouraged by their national union, the International Association of Firefighters (IAFF), uniformed personnel went on strike in New York City, Yonkers, Chicago, New Hampshire, California, and elsewhere. Improved working conditions, binding arbitration agreements, better equipment, and some improvement in contracts diminished the number of similar job actions over time.

In the 1970s, the completion of the interstate highway system and the return of Vietnam veterans willing to serve made it possible to establish a standardized, national **Emergency Medical System** staffed by paramedics and emergency medical technicians. The onset of the high-rise and highway strip mall era in the 1950s was accompanied by cost efficiencies in architectural design and construction, as well as by major deficiencies in fire safety. In such manner, the lives of firefighters trying to effect rescues of workers and residents were placed at risk. Major blazes occurred in the **McCormick Place Exhibition Hall** in Chicago (1967) and **1 New York Plaza** (1970). Philadelphia officials described the 38-story **Meridian Plaza blaze** (1991) as the “most significant fire of the 20th century.” Two significant hazardous materials incidents: propane BLEVEs (boiling liquid expanding vapor explosion, described in chapter 23, Analyzing the Hazmat/WMD Incident) occurred in the 1970s. In 1973, a rail tank car of propane BLEVEd in Kingman, Arizona, killed 12, including 11 firefighters. A few years later in 1978 at Waverly, Tennessee, another propane rail tank car exploded and killed 16. These incidents and others led to changes in rail tank cars: there have not been any rail tank car BLEVEs in the last several years.

Three notable fires in nightclubs (“places of public assembly”) occurred around the last quarter of the 20th century. On May 28th, 1977, a fire erupted in the Zebra Room of the **Beverly Hills Supper Club** in Southgate, Kentucky. One hundred sixty-five people were killed, many of the victims caught in a crowd crush (jam of people) at exits as fire and smoke moved into the Cabaret Room where a large audience was waiting to hear 1970s singing sensation, John Davidson. On March

25th, 1990, an arson fire in the **Happyland Social Club** in the Bronx, New York, killed 87 people. Polyurethane foam lining the walls of **The Station nightclub** in West Warwick, Rhode Island, was ignited by indoor pyrotechnics used during a performance of the band, Great White, on February 20, 2003. One hundred people eventually died as a result of the Station fire; lethal conditions in the nightclub developed in about 90 seconds.

21ST CENTURY AND BEYOND

With increasingly intrusive human use of naturally forested areas, wildfires are a growing hazard in most regions of the United States, posing a threat to life and property. Thus, **wildland firefighting** is a major and most significant professional specialty, particularly in western states. The **Mann Gulch Fire** in the Helena Forest in Montana killed 16 smoke jumpers (1949); the **Rattlesnake Fire** in the Mendocino Forest took 15 firefighters (1953); and in the summer of 1994, 14 wildland firefighters died when shifting 70-mile-per-hour winds trapped them and fire swept over their position in **South Canyon Glenwood Springs, Colorado**. In fall 2007, out-of-hand wildfires destroyed thousands of homes and dislocated hundreds of thousands, resulting in major economic losses in Southern California.

Recurrent and more frequent fires involving major commitments of personnel and equipment spurred many incident command models in the late 20th century. **Firefighting Resources of Southern California Organized for Potential Emergencies (FIREScope)** initiated a version of ICS for wildfire operations that was a major improvement over previous systems. Under the leadership of Alan Brunacini, FIREScope evolved into the **Incident Management System**. Inspired by Capt. Ron Gore, the first **hazmat** team formally went online in Jacksonville in January 1977, inspiring the introduction of such units all over the nation. In 1989, the **National Urban Search and Rescue System** established regional task forces under the jurisdiction of the **Federal Emergency Management Agency (FEMA)** designed to coordinate emergency services during major disasters.

The attacks on the World Trade Center **Twin Towers** (1993 and 2001) were not the first terrorist events American firefighters faced. Left-wing extremists include those who destroyed the Los Angeles Times building (1910), anarchists who bombed Wall Street (1920) (fig. 2-17), and revolutionary Weathermen (1960s) whose bomb factory exploded in New York's Greenwich

Village in 1970. Racists bombed homes, schools, and churches from the post-Civil War KKK years throughout the Civil Rights era of the 1960s and later. During the long, hot summer of 1964, Mt. Zion Church was burned to the ground, one of 20 black Mississippi churches to be firebombed that year. The FBI initiated the MIBURN (Mississippi Burning) investigation. Violent nationalists from Croatia and Puerto Rico (FALN) were active in the 1970s. Anti-government, right-wing radicals bombed the **Alfred P. Murrah Building** in Oklahoma City (1995). The firefighting community was on the front line in each case.



Fig. 2-17. Many Americans think that the terrorist attacks of September 11, 2001, were the first on American soil. There have been many attacks through the country's history, including this one on Wall Street in 1920. Damage to this building's (the J.P. Morgan bank) exterior wall, near the corner of Wall and Broad Streets, is still visible.

Fires in aging commercial buildings, some occupied, others abandoned and deteriorated, continue to take an increasingly heavy toll. A fire in the basement of a lower Manhattan loft killed 12 in 1966. Warehouse fires killed four firefighters in Seattle (1995) and six in Worcester, Massachusetts (1999). After nine of their members died in a collapsing furniture store in June 2007, the Charleston Fire Department requested FDNY's Emerald Society Pipes & Drums to play at the memorial service.

The destruction of the World Trade Center Towers and the Pentagon on September 11, 2001, was the most despicable act of mass murder ever perpetrated in the United States (fig. 2-18). At the Towers, it is estimated that nearly 15,000 were led to safety prior to the collapse. The retired FDNY Fireboat John Jay Harvey, which was maintained by a historical association of private citizens and retired firefighters, responded immediately and supplied the only water at the scene for more than 96 hours. Hundreds of ambulances from New

Jersey were summoned to staging areas in the region, with many being sent into **Ground Zero**. Fire, police, and emergency medical service units and personnel began to respond from as far away as New Brunswick, Canada, Florida, and Oregon. Ultimately, four FEMA Urban Search and Rescue Task Forces were sent to Washington and six to New York. Among the approximately 3,000 dead were 343 FDNY members, 1 fire patrolman, 23 New York Police Department officers, and 37 Port Authority Police Department personnel. FDNY losses included First Deputy Commissioner and former Chief of Department William M. Feehan, Chief of Department Peter Ganci, FDNY Chaplain Mychal Judge, as well as officers and firefighters of every rank, amounting to a loss of more than 4,400 years of formal and intuitive knowledge.

The outpouring of sympathy and tangible support from around the world for the city in general and for FDNY in particular was astounding. Among dozens of fund-raising efforts around the world, the citizens of Columbia, South Carolina, presented FDNY with a tiller aerial now operating as Ladder 101 in Brooklyn, a grateful thank you for the support sent to that city in 1867. The Spirit of Louisiana, donated by citizens of that state, was assigned to Engine 283 in Brownsville. In the early stages of the Hurricane Katrina disaster, FDNY sent The Spirit of Louisiana to New Orleans, where it remains a part of that city's reviving department.

What remains and what has changed? Today's **first responders** are aware that they are primary targets of terrorists. And yet the roles of firefighters, police, and EMS personnel, both career and volunteer, remain to rescue those at risk, to contain disasters, and to comfort survivors.



Fig. 2–18. This image shows the initial response of the New York City Fire Department on 9/11. It shows the Marriott Hotel on the left along West Street. The north tower of the World Trade Center is out of view to the far left. (Courtesy of FDNY Photo Unit)

QUESTIONS

1. As early as 1648, Peter Stuyvesant, the governor of New Amsterdam, implemented the use of fire wardens and strong fire prevention techniques and imposed requirements for homeowners. Nearly 360 years later and following countless large loss fires, is American society more conscious of the effects of fire or better prepared to prevent them?
2. Around 1852 the first patents were issued for the first sprinkler-perforated pipe systems. Almost 156 years after the first patents were issued, the American fire service still battles to educate politicians, model code developers, builders, businesses, and homeowners to adopt requirements to protect all structures. Discuss why the efforts to do so have been and continue to be difficult.
3. Name four professional organizations that were developed in the late 19th century. What positive effects have these organizations had on the fire service?
4. A document titled _____ was first published in 1973 in an attempt to focus attention on the nation's fire problem.
5. Two national programs were created from this document. What are they and what are their current responsibilities?
6. George Santayana, the author of "Reason in Common Sense" is quoted as saying, "Those who cannot learn from the past are doomed to repeat it." The history of the American fire service is riddled with accounts of large fires resulting in property loss, and loss of life to civilians and firefighters. Many of the circumstances surrounding those events mirror one another. Why does it appear that the American fire service has failed to take heed of our past and take the necessary steps to prevent such losses in the future?

