150 YEARS Firefighting in

The picture of a burning building or house usually brings to mind teams of brave men working in unison to put it out. However, fire departments are a relatively recent development. The first paid fire department was created in Cincinnati in 1853 (also the first year of WEM*).*

The history of organized fire service in the United States began in New Amsterdam (later New York) in 1648 when Director-General Peter Stuyvesant appointed four fire wardens. They were empowered to inspect all chimneys and could level fines on violators.

The city later appointed eight prominent citizens to the "rattle watch." These men volunteered to patrol the streets at night carrying large wooden rattles. If a fire was seen, the men spun the rattles, then directed the citizens that responded into bucket brigades. This is generally recognized as the first step in organized firefighting in America. Even earlier, Boston took the first steps in fire prevention when Governor John Winthrop outlawed thatched roofs and wooden chimneys in 1631.

After a series of fatal, destructive fires, Boston imported from England the first fire engine. (It actually was a pumper.) It arrived in a 3′ long, 18″ wide wooden box and consisted of a direct force pump that fed a small hose and had carrying handles. The tub-like section of the engine was kept filled with water by a bucket brigade.

The need to coordinate a pumper team brought about the establishment of the first engine company in colonial America. Twelve men and a captain were hired by the General Court to take care of and manage the engine. The men were paid for their work. The captain, carpenter Thomas Atkins was the first firefighting officer in the country.

A firefighting innovation to grow out of the Boston fire of 1711 was Mutual Fire Societies. Concerned Bostonians, anxious to protect their goods and property, banded together in groups of 20 or more with the pledge that should fire strike one of them, all would come to aid. Not only would they help the town firefighters in putting out the fire, they also would salvage as many belongings as possible and guard them from looters.

Seeing the destruction of fire growing up in Boston, Benjamin Franklin became a fire safety advocate when he lived in Philadelphia. He often wrote about the dangers of fire and the need for organized protection in his newspaper, *The Pennsylvania Gazette*.

Volunteers

After an extensive fire in Philadelphia in 1736, Franklin decided to form a fire

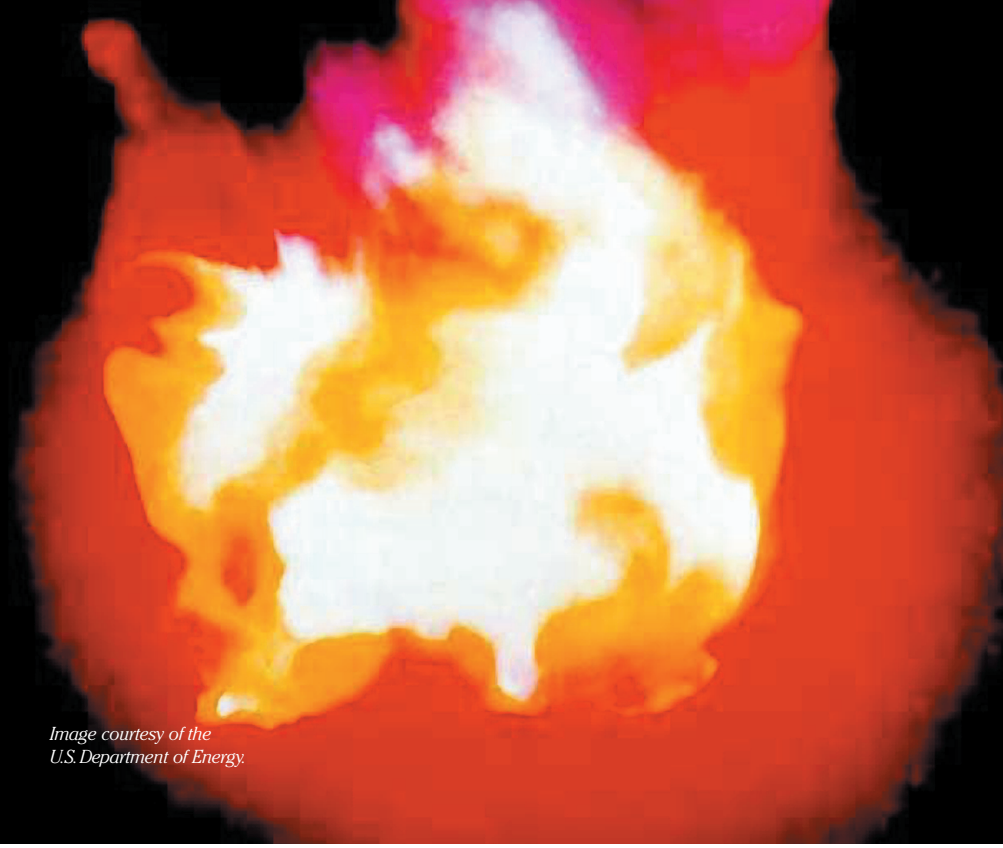

Image courtesy of the U.S. Department of Energy.

brigade that would not only respond to burning property of its members but also to any calls in their vicinity. When he called for volunteers, thirty prominent citizens joined, and America's first volunteer company (the Union Fire Company) was started.

Franklin's idea was so popular that more and more people volunteered. Not wanting more than 30–40 people per company, additional companies were formed. Some of these companies were The Fellowship, Friendship, Hand-in-Hand and Heart-in-Hand. Each of the companies paid for their own equipment and located it at strategic places. Because of the costs involved, most early companies had professionals, wealthier merchants and tradespeople serve in the volunteer departments. Some famous Americans who served as volunteer firefighters include George Washington, Thomas Jefferson, Samuel Adams, John Hancock, Paul Revere, Alexander Hamilton, John Jay and Benedict Arnold.

In 1743, Thomas Lote a cooper and boatbuilder from New York developed the first engine to be built in America. Like the British-made Newsham, it could send continual streams of water with great force. New York ordered the machine and because of its gleaming copper fittings it earned the nickname "Old Brass Backs."

Hydrants

By the early 1800s, a system of hollowed-out logs or trunks carried water from the Schuykill River through the streets of Philadelphia. Fireplugs were placed at strategic spots to help firefighters easily access the water. The first "post-type" hydrant is credited to Frederick Graff, the chief engineer of the Philadelphia Water Works around the year 1801. New York's first hydrant was installed in 1808 and was made from wood.

By 1817 the first iron hydrants were being manufactured and were replacing the wood types. Most of the hydrants on the East Coast were known as dry barrel, meaning that the water to the portion above ground had to be turned on by a valve located below the surface. The depth of these valves depended on the climate.

In the 1850s, Morris Greenburg came up with the innovative "wet barrel" design for the municipality of San Francisco. This design was faster and easier to operate as well as allowed independent control of multiple hydrant outlets. Within a few years several California foundries were producing their own wet barrel hydrants.

In 1964 the East Bay Municipal Utility District (EBMUD) designed what is still considered the premier wet barrel hydrant. It had an improved hydraulic design, was more resistive to vehicle damage and used O-ring seals for the valve stems that reduced seepage and maintenance. However, although materials have improved and some elements have been refined, the basic form of hydrants has remained relatively unchanged since the 1880s.

Fire Hose

In the early days, fire hose was made of leather and sewn together like a bootleg in 50-foot lengths. James Sellars and Abraham Pennock from Philadelphia's Hose Company 1, experimented by using metal rivets instead of stitching in the hose in 1807. The introduction of rivets allowed higher pressures and greater delivery of water. It also prompted the further development of suction so water could be delivered directly to the pumper through a hose, thus eliminating the need for buckets.

The next improvement came in 1821 when James Boyd received a patent for rubber-lined, cotton-webbed fire hose. With the discovery of vulcanization by Charles Goodyear, B.F. Goodrich developed rubber hose reinforced with cotton ply. The Cincinnati Fire Department used this improved hose in 1871.

Since more manufacturers entered the marketplace producing their own sizes and couplings, the first convention for the International Association of Fire Engineers adopted the standard size of 7102 threads to the inch in 1873. Five years later, the American Hose Manufacturing Company, Chelsea, Mass., marketed their new product as the "first seamless cotton fire hose produced for steam engines." Other companies also improved hose, and in a short time the hose could handle 350 psi.

Fire Alarms

For centuries firefighting had depended on a system of bell ringing to announce a fire and tell firefighters where it was located. Samuel F.B. Morse's invention of the telegraph in the early 1840s helped give firefighting a much faster and accurate alarm system.

Boston doctor William F. Channing, who also was a fire buff, designed a system of metal alarm boxes that when pulled would immediately transmit the location to a central office. From there, the location would be tapped out to firehouses and the closest one could respond. By 1852, Boston had fire boxes located all over the city. Other cities were quick to follow.

The advent of telephones and two-way radios has made most fire boxes extinct. Most modern fire departments are now equipped with computer-aided dispatch systems that can track the status of all units and provide vital information about the buildings where fires occur.

Partnership

Today's fire departments coordinate some activities with local water departments. These practices include hydrant flushing as well as repair and taking pipes out of service. While water takes an invisible backseat to the heroes of firefighting, they go hand-in-hand.

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