

# Firefighters!

by  
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With our present circumstances, first responders are getting a lot of attention, and firefighters are definitively part of that group...and May 4th is International Firefighters Day.

The Roman emperor Augustus is credited with instituting a corps of fire-fighting vigiles ("watchmen") in 24 BC. Regulations for checking and preventing fires were developed. In the preindustrial era most cities had watchmen who sounded an alarm at signs of fire. The principal piece of fire-fighting equipment in ancient Rome and into early modern times was the bucket, passed from hand to hand to deliver water to the fire.

Another important fire-fighting tool was the ax, used to remove the fuel and prevent the spread of fire as well as to make openings that would allow heat and smoke to escape a burning building. In major conflagrations long hooks with ropes were used to pull down buildings in the path of an approaching fire to create firebreaks. When explosives were available, they would be used for this same purpose.

Following the Great Fire of London in 1666, fire brigades were formed by insurance companies. The government was not involved until 1865, when these brigades became London's Metropolitan Fire Brigade. The first modern standards for the operation of a fire department were not established until 1830, in Edinburgh, Scotland. These standards explained, for the first time, what was expected of a good fire department. After a major fire in Boston in 1631, the first fire regulation in America was established. In 1648, in New Amsterdam, (now New York) fire wardens were appointed, thereby establishing the beginnings of the first public fire department in North America.

In 1631, Boston's governor John Winthrop outlawed wooden chimneys and thatched roofs. In 1648, the New Amsterdam governor Peter Stuyvesant appointed four men to act as fire wardens. They were empowered to inspect all chimneys and to fine any violators of the rules. The city burghers 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 responding citizens to form bucket brigades. On January 27, 1678 the first fire engine company went into service with its captain (foreman) Thomas Atkins. In 1736, Benjamin Franklin established the Union Fire Company in Philadelphia.

The United States did not have government-run fire departments until around the time of the American Civil War. Prior to this time, private fire brigades competed with one another to be the first to respond to a fire because insurance companies paid brigades to save buildings. Underwriters also employed their own Salvage Corps in some cities. The first known female firefighter, Molly Williams, took her place with the men on the dragropes during the blizzard of 1818 and pulled the pumper to the fire through the deep snow.

On 1 April 1853, Cincinnati, Ohio featured the first professional fire department made up of 100% full-time employees. (In 2015, 70% of firefighters in the United States were volunteers. Only 4% of calls regarded actual fires, while 64% regarded medical aid, and 8% were false alarms.) Today, fire and rescue remains a mix of full-time paid, paid-on-call, and volunteer responders.

In the modern sense, fire departments constitute a comparatively recent development. Their personnel are either volunteer (non-salaried) or career (salaried). Typically, volunteer fire fighters are found mainly in smaller communities, career fire fighters in cities. The modern department with salaried personnel and standardized equipment became an integral part of municipal administration only late in the 19th century.

The first fire engines, which appeared in the 17th century, were simply tubs carried on runners, long poles, or wheels; water was still supplied to the fire site by bucket brigade. The tub functioned as a reservoir and sometimes housed a hand-operated pump that forced water through a pipe or nozzle to waiting buckets. The invention of a hand-stitched leather hosepipe in the Netherlands about 1672 enabled fire fighters to work closer to the fire without endangering their engines and to increase the accuracy of water placement.

At about the same time the development of pumping devices made it possible to draw water from rivers and ponds. In the early 19th century copper rivets replaced the stitching on hoses, and 50-ft lengths coupled with brass fittings enabled fire fighters to convey water through narrow passages, up stairways, and into buildings, while the pumps operated in the street. Cotton-covered rubber hose was developed around 1870. The steam-pump fire engine, introduced in London in 1829 by John Ericsson and John Braithwaite, was used in many large cities by the 1850s. Most steam pumpers were equipped with reciprocating piston pumps, although a few rotary pumps were used. Some were self-propelled, but most used horses for propulsion, conserving steam pressure for the pump. Steam fire engines were used in fighting the Chicago fire of 1871.

With the development of the internal-combustion engine early in the 20th century, pumpers became motorized. Because of problems in adapting geared rotary gasoline engines to pumps, the first gasoline-powered fire engines had two motors, one to drive the pump and the other to propel the vehicle. The first pumper using a single engine for pumping and propulsion was manufactured in the United States in 1907. By 1925 the steam pumper had been completely replaced by motorized pumpers. The pumps were originally of the piston or reciprocating type, but these were gradually replaced by rotary pumps and finally by centrifugal pumps, used by most modern pumpers.

At the same time, the pumper acquired its main characteristics: a powerful pump that can supply water in a large range of volumes and pressures; several thousand feet of fire hose, with short lengths of large-diameter hose for attachment to hydrants; and a water tank for the initial attack on a fire while fire fighters

connect the pump to hydrants, and for areas where no water supply is available. In rural areas, pumpers carry suction hose to draw water from rivers and ponds. Current standards for pumper fire apparatus require that a fire pump have a minimum capacity of 750 gal per minute at a pump pressure of 150 psi. They also call for a water tank capacity of at least 500 gal.

Here's to firefighters and all first responders!

