

The Fire Service: History, Traditions, & Beyond.

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**The Fire Service:  
History, Traditions  
&  
Beyond**

By

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# **THE HISTORY**

## **First Fire Engine**

The term “fire engine” was possibly first used in the 17<sup>th</sup> century, in exactly the same sense it is used now, a machine for throwing water to extinguish fires. The evolution of the fire engine spans over a time frame prior to that of the Roman era. There are many accounts of “firsts” when it comes to taking credit for the invention of the fire engine.

Though the Romans have been credited with many technological firsts such as the invention of the roadway systems, establishment of running water in a city through aqueducts, and the organization of some of the first fire companies in history, they cannot take credit for the creation of the fire engine. The first fire engine, as we know it, was not a Roman invention, but an Egyptian one. Technically it would not be an engine but rather the first fire pump. The city of Alexandria, between second and third century B.C., saw the first primitive device that was used to spray water. Ancient inventor Ctesibius made a pump which was later improved by Heron in the first century B.C. Much like a primitive engine, Heron's pump had pistons that were moved by a rocker arm that pivoted from a center post. The pipe that led out of the pump could be moved up and down, or left to right. The remains of such a pump have been found both in Italy and in England.

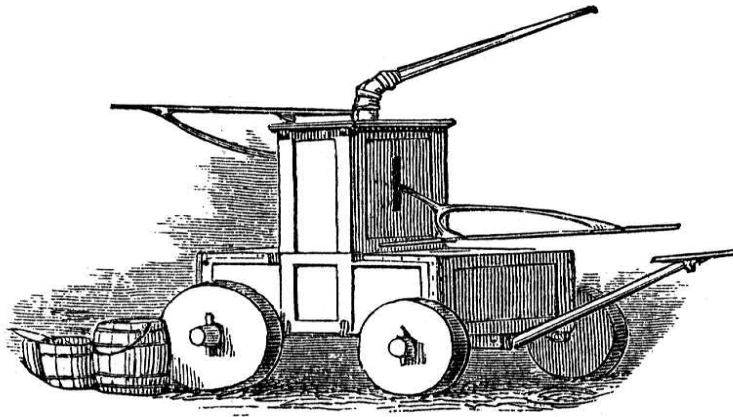
The fire pump was then reinvented in Europe during the 1500's, reportedly used in Augsburg in 1518 and Nuremberg in 1657. A book of inventions mentions in the year 1655 a steam engine

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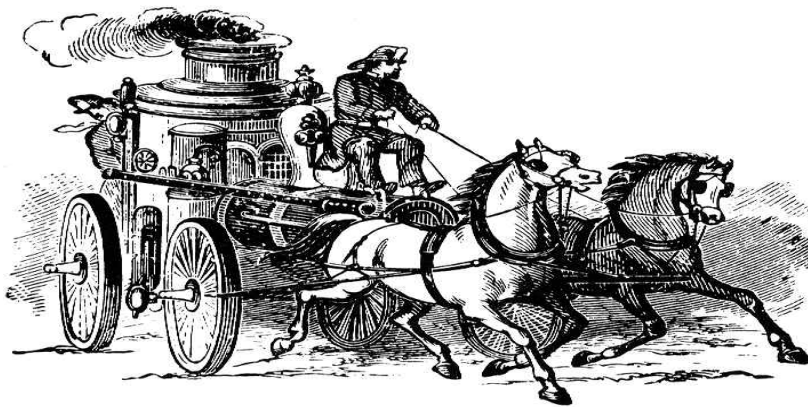
pump called the “fire engine” used to raise a column of water 40 feet, but there was no reference to whether or not it was portable.

In 1654, a local iron maker, Joseph Jynks of Saugus, MA, built a small “ingine” which was probably a syringe-type pump. Boston experienced a series of arson fires and finally an inferno in 1676. The iron maker’s pump was ineffective against the advancing flames. In 1679, Boston then sent for what would be considered a “state of the art fire engine”, then being made in England. Philadelphia obtained a hand-pumped fire engine in 1719, years after Boston’s 1654 model appeared, but before New York’s two engines arrived from London.

There are also accounts that the fire engine was perfected by Richard Newsham of London in between 1725 and 1730. The engine would be pulled as a cart to the fire. These manual pumps were manned by teams of men and could deliver up to 160 gallons per minute at up to 120 feet. In 1731 Newsham’s models were sent to New York six years before the formation of the NYC volunteer fire department. The first pumping engine built in America was attributed to Thomas Lote. In 1743 the engine was created and named “Old Brass Backs” because of his excessive use of brass trim.



The first true steam engine that was horse-drawn, was developed in London in 1829 by a gentleman named John Braithwaite and was assisted by John Ericsson.



Paul Hodge, who came to America from England sometime before 1837, built the first steam fire engine in United States. On March 27<sup>th</sup>, 1841 he demonstrated the apparatus named the

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“Exterminator” in front of City Hall to firefighters, city councilmen, and many curious onlookers. His new invention was scorned by the volunteer firefighters of New York due to many concerns and complaints ranging from taking too long to fire up to fear that the boiler would explode. The engine was returned and sold to a box manufacturer for use as a stationary engine.

In the fall of 1851, in Cincinnati, a fire broke out in a mill, which brought outside volunteer companies to help extinguish the blaze. The mill was ultimately destroyed when the 13 companies stopped fighting the fire and began to fight amongst themselves. The city fathers, outraged by the repetitiveness of such instances, wanted to disband the volunteers and create a paid fire department. The key to such a possibility would be to find a way to fight fires effectively with fewer men. Because the city was centered for steamboats and locomotive construction, the city fathers, already familiar with steam power, decided to seriously explore the possibilities of steam fire engines. Two entrepreneurs in Cincinnati, Alexander Latta and Abel Shawk had come up with an idea for a fire engine with a steam-powered pump. The new machine nicknamed “Uncle Joe Ross” after its sponsor was demonstrated on January 1<sup>st</sup>, 1853. It would revolutionize firefighting in more ways than one. On March 10<sup>th</sup>, 1853, the Cincinnati city council voted to create what would be the first paid fire department in America starting on April 1<sup>st</sup> of that year.

In the mid to late 1800’s horses would be phased in as the primary means of pulling apparatus.



In 1824 the basic principles of the internal combustion engine were developed and soon the fire service would take a technological leap that would be utilized all the way through modern day times.

Other “firsts” worth noting are the first successful aerial ladder and water tower. The aerial ladder was patented in 1868 by Daniel Hayes. It was constructed of wood and required several firefighters to raise the ladder by hand through a series of gears and pulleys. The rights to this patent were eventually sold to LaFrance. The Fire Extinguisher Manufacturing Company, Babcock and Dedrick, also developed their own aerial ladders.

In 1879, John Hogan and Abner Greenleaf developed the first water tower. This tower consisted of a 50-foot mast of pipe sections that had to be assembled to attain the desired height and was then raised manually by cranks and gears. Water towers were capable of delivering a large-capacity elevated stream into the upper floors of burning structures.

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As with steam engines, the first gasoline engines were gradually improved over time. The first gasoline automobiles were seen on the roads in the 1890's, but it wasn't until the year 1904 that fire service saw its first gasoline-powered American-Mercedes touring car that was presented to Chief Edward F. Croker of the New York City Fire Department. Fire engines would now take a step that would, over time, phase out the use of horses to pull the machines. Gasoline-powered motors and pumps began to appear in the fire service and the invention of the first pumper with a single engine to do both driving and pumping occurred. By the 1920's, the disappearance of the steam engines would mark a page in the history books.

Are the Egyptians able to hold rights to the creation of the first fire engine or was Newsham's invention the first or just a modification of earlier versions? No matter where the actual "first" fire engine came from, it did however lay a solid foundation for what we see in today's modern fire engines. The engines of today have great pumping capabilities, upwards of 1500 gallons per minute and have tanks that are able to hold 750 gallons of water or more, a far cry from the small hand tubs that needed to be fed by bucket brigades and literally hand pumped.

So what does the future of fire apparatus design hold? The American fire apparatus industry is in the midst of a restructuring. In recent years, many of the industry's manufacturers have been sold, merged, or gone out of business. This restructuring continues with acquisitions and mergers. The end result is hard to predict, but it's possible that only a handful of major manufacturers or aligned companies will remain.

The trend toward commercial chassis will continue, as will the greater use of foreign chassis on which to mount fire apparatus



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body work. In all probability, American apparatus will soon mirror European designs to a greater degree. Much of the industry restructuring that is going on involves foreign parent companies that will ultimately look to market their products worldwide. Another trend that is taking hold is the multi use vehicle known as a “Quint.” These vehicles are able to perform the functions of an aerial ladder combined with an engine. Alternate-fuel vehicles are sure to come, but like the changeover to horses, gasoline and diesel, will be slow to take hold. Most important, fire apparatus will continue to be interesting, eye-catching vehicles.

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