



Fire Helmets

As firefighters hurry to respond to an alarm, they must don protective gear to prevent injury from the perilous conditions of a fire. The fire helmet is an important part of this equipment as it protects the firefighter from falling objects and prevents items from dropping down the firefighters' neck into his jacket. Jacobus Turck, a volunteer fireman in New York in the 1730s and 1740s, is credited with creating the first fire helmet in the form of a leather hat with a high crown and a wide brim. As the idea caught on, a number of strange and ineffective hats were produced. Firefighters used a variety of materials for their helmets including paper mache, pressed felt, wool, or painted oil cloth. Styles varied as well and some of these hats were stovepipe shaped and brightly painted. These colorful creations worked well for parade purposes but did not stand up to the pressure of an actual fire. As a result, many firefighters turned to the leather fire helmet due to its strength and ability to repel water, especially after it was further strengthened in 1824 when Matthew DuBois added a metal wire around the brim to reinforce the helmet and eliminate warpage when exposed to heat.



By the 1880s, leather helmets were the standard and could be purchased in a variety of styles, including derby, jockey, South American, and continental. The traditional style, which resembles what is used by firefighters today, was designed by Henry Gratacap in 1836. Gratacap's design was a reinforced dome shaped leather helmet with a front shield and a brim that extended to a long black tail. The leather dome helped to protect the firefighter's head from impact while the brim and tail kept water from dripping down the neck into his coat.

The black leather helmet shown here is indicative of the type of helmets worn by early firefighters. The helmet is a traditional style helmet with a reinforced brim which is wide at the sides and long at the back. The helmet has four large and four small combs on the dome, or ridges where the seam is sewn together. These combs were thought to make the helmet stronger so as a result, manufacturers began making helmets with greater amounts of combs. Some helmets, although mostly used for presentation, could have upwards of three hundred combs.



The helmet pictured here also features a black leather front piece. Originally made of paper and later from metal, the front piece indicated the company of the firefighter. For instance, this front piece reads “J.E. Bates Hose” in red around a large white number three, meaning the firefighter who wore this helmet worked for J.E. Bates Hose No. 3. Henry Gratacap’s original design featured a front piece such as this one along with a front piece holder, or an ornamental metal figurine that ran from the top of the helmet to the top of the front piece. Front piece holders came in many shapes, although the most common was Gratacap’s original eagle. This helmet has a rarer front piece holder: a brass colored firefighter holding a trumpet. Some other helmets had a lion, tiger, seahorse, serpent, dog, fox, beaver, whippet, or rooster.

While the reinforced leather was strong, helmet manufacturers attempting to improve the helmet continued their search for a better material. At the turn of the century, they tried their hand at helmets made out of aluminum. While these helmets were often cheaper, the firefighter soon found that they were also dangerous as they conducted heat and electricity. As a result, the leather helmet returned until the 1970s when they were replaced by plastics and composite materials, such as the black and white helmet shown here. As well as being made of composite plastics, it has a chin strap, and includes reflective yellow squares all around the sides to help make the firefighter more visible. Notice that the general shape is similar to that of the leather helmet, although the brim is slightly narrower and the tail shorter. It also features a front piece, which shows that the firefighter who owned this helmet was a Lieutenant employed by Station 11. This front piece is held in place by a front piece holder which vaguely resembles the earlier eagles, although it is less decorative.



The helmets being used currently are similar to this one as they are often made of lightweight composite materials with a chin strap; however they also feature interior suspension, a face shield, and a fire resistant flap to cover the ears and neck. Based on the National Fire Protection Agency's (NFPA) standards, helmet manufacturers must create products designed for impact force, heat and flame resistance, electrical current resistance, sufficient ear coverage, sufficient visibility with fluorescent markings, and the incorporation of a heat resistant face shield.

The featured podcast includes an interview with retired Denver Fire Department Division Chief Eldon Buller regarding the helmets used when he first joined the department and his opinion on the helmets used today.