Fire Safety and Learning Center, Portland Fire & Rescue
Portland, OR

The Historic Belmont Firehouse is home to Portland Fire & Rescue's new Fire Safety and Learning Center. Working closely with the center's director, Fire Science students, public education officers, firefighters and volunteers, I researched and wrote all exhibit copy and interactives, identified images, and wrote creative briefs for all multimedia programs.

Portland's Pioneering Spirit: From Volunteer to Career

From 1850 to 1920, Portland quickly grew from a small pioneer settlement with a few hundred people to a nineteenth-century boomtown of more than a quarter of a million. As the population increased, so did the fire danger.

Like most frontier towns, the first fire protection was purely an unorganized community affair where every able-bodied person, roused by shouts of "fire," joined the bucket brigade. Thomas Dryer, one of Portland's early pioneers and founder of *The Oregonian*, formed the first volunteer fire department in 1850. Called Pioneer Fire Engine #1, it had 37 volunteers called "red shirts" for their uniforms. It bought a single hand pump through subscription from local merchants.

Built to Burn

Built of combustible materials, lit and heated by open flame, early Portland was extremely vulnerable to the ever-present danger of fire. Every citizen was expected to help.

The 1858 Trevett and Company Flour Mill burned to the ground when the small, single fire bell in the Willamette Engine #1 firehouse failed to rouse a volunteer force. A new fire bell was bought with donations from local businesses.

The Great Fire of 1873

On a hot, dry day in August 1873, a fire began in a furniture factory at the corner of First and Salmon. Portland's volunteer forces were quickly overwhelmed, and word was sent to Salem and Vancouver for help.

The fire burned for twelve hours, reducing 22 blocks of downtown Portland to smoking ruin. It caused over a million dollars in damage and destroyed one-third of the business district. Two months later, the city ordered a new alarm bell weighing 4,200 pounds, 800 of which were pure silver. When rung, it could be heard all the way to Oregon City.

Firefighting Goes Professional

In 1883, the city established a paid fire department and approved funds for personnel, equipment, and horses. Fifty-three men were placed in service under Fire Chief Thomas A. Jordon. Fire horses were purchased to draw the heavy equipment, which before had to be hauled to a fire by volunteers because horses were too expensive for an all-volunteer force.

Portland continued to grow, its population increasing more than 200 percent in the 1880s. Multi-story buildings were going up downtown, presenting new firefighting challenges.

First Responders in Action

Today, Portland's first responders answer the call whenever and wherever there's an emergency of any kind, responding to an average of 60,000 emergencies per year. Being a first responder requires courage, dedication, specialized knowledge and skills, and a deep desire to serve the community. They must be certified in a variety of skills and spend an average of an hour and a half out of every ten hour day in training, just to stay current.

Fire Safety and Learning Center, Portland Fire & Rescue (*continued*)

Dressed for Success

The heat inside a burning building can be more than 1200° F. Advances in protective clothing and SCBAs (self-contained breathing apparatuses) help firefighters survive such hostile environments for short periods of time. But they aren't fireproof and they don't make firefighters invincible.

Protective clothing, called turnouts, will burn if exposed to high temperatures for too long. In fact, helmets melt at about the same temperature it takes to bake a potato. The total weight of turnouts, helmet, and self-contained breathing apparatus is about 50 pounds.

Pump Up the Volume

Modern fire engines have powerful pumps that supply the water needed to suppress a fire in a large range of volumes and pressures. To control the flow, the pump panel has a series of levers, switches and valves.

To calculate how much pressure needed at the pump panel, you need to know the pressure coming from the hydrant and the pressure lost to friction as the water passes through the hoses. This information is found on the pump card attached to the panel.

The firefighter on the nozzle needs 100 pounds of pressure at the nozzle to fight the fire safely and effectively. Think you can keep the water flowing at that pressure? If so, here are the facts.

- The pressure from the hydrant is 60 pounds. The attack line is 100 feet long and 1 3/4ths inches in diameter. It will lose 5 pounds of pressure per 100 feet.
- Subtract the amount of pressure the attack line loses due to friction (5 pounds) from the pressure coming from the hydrant (60 pounds).
- Subtract the amount of water needed at the nozzle (100 pounds) from the amount of pressure coming through the attack line (55 pounds)

How many pounds of pressure do you need to add at the pump? Open the door to learn the answer. [45 pounds of pressure]

Safety is Your Responsibility

The first few minutes in a fire or medical emergency are critical. Although emergency responders can be at your house in a matter of minutes, that may not be soon enough. Don't delay! Know what you should do in those first few moments. It could make the difference between life and death.

Fires

A fire can completely engulf a house in as little as four minutes. Make and practice an escape plan. Be sure it includes two ways out of every room and a "safe meeting place" for all family members to gather after evacuation.

Medical Emergencies

In a medical emergency such as a stroke or heart attack, time is critical. If the brain goes without oxygen for more than four to six minutes, brain damage results. Call 9-1-1 immediately if someone is unconscious or unable to respond. Learn CPR and use it if a person's heart has stopped.