

# The OSH Act—A Response to Workplace Tragedies

November 23, 2021 by Cheryl Lynn Hamilton, M.Ed.

As we celebrate the 50th anniversary of the National Institute for Occupational Safety and Health (NIOSH), we have highlighted many of the NIOSH [successes and accomplishments](#) through the years. This is also a time for reflection and looking back at our history. The roots of U.S. occupational safety and health regulation date back to the late 19th century. It was all too common then for state labor bureaus to report on horrific industrial tragedies [MacLaury 1981]. The large loss of life due to events that were wholly preventable spurred a labor movement for social reform. In 1877, Massachusetts passed the first factory inspection law, requiring factory owners to place guards between workers and machinery and to provide protection on elevators and fire exits [Massachusetts Bureau of Statistics of Labor 1870–1916]. Other states followed suit, but not enough to stop hundreds of thousands of lives from being lost at work over the century that followed. The story of labor during the late 19th century up until the passage of the Occupational Safety and Health (OSH) Act of 1970 is a troubling one, riddled with industrial accidents and tragedies.

So as not to forget the importance of what we do, or lose sight of the atrocities that occurred before the passage of the OSH Act and the creation of NIOSH and the Occupational Safety and Health Administration (OSHA), some of the early workplace tragedies are summarized below. Much of this information first appeared in the 2019 NIOSH [Bibliography of Communication and Research Products](#).

## 1873: Gloucester Fishing Fleet

In the late 1800s, an abundance of Atlantic cod led to the rapid expansion of the fishing fleet in Gloucester, Massachusetts. The fleet numbered about 400 vessels, with a mostly immigrant, largely Portuguese crew. Like others in the fishing industry, Gloucester fishermen had a high mortality rate. Workers who fished from schooners, top-heavy vessels more likely to capsize in rough seas, often failed to return home from expeditions. From 1866 through 1890, the fishing fleet in Gloucester lost 2,450 men. A particularly devastating loss happened August 24, 1873, when one storm took the lives of 128 men, along with nine fishing vessels.



Photo by Library of Congress A schooner is docked at a Gloucester port in 1900. The top-heavy vessels brought danger to the fishing profession.



Photo by The Pittsburg Press  
The Pittsburg Press announces in giant letters that another fire has claimed lives at the Monongah mine.

## 1907: Monongah Mining Disaster

December 6 is St. Nicholas Day, a significant religious holiday, especially for some immigrants. The worst mining accident in American history also happened that day. The disaster occurred in two mines, Nos. 6 and 8, of the Fairmont Coal mine in Monongah, West Virginia. At about 10:20 a.m., a massive underground explosion destroyed the entrance to the mine. Metal, timber, and rock flew into the air. After the blast, four miners walked out and another was found alive hours later. Eventually, 362 bodies of boys and men were recovered. Most were killed instantly, while others suffocated or were poisoned by the gases in the mine. The dead were largely immigrants. The exact cause of the explosion is unknown; however, a coroner's jury at the time concluded that a dynamite blast or the ignition of blasting powder set off the explosion that ended so many lives.

## 1911: Triangle Shirtwaist Factory Fire

In 1911, the Triangle Fire started in a scrap bin in a clothing factory occupying the eighth-through-tenth floors of the Asch building in lower Manhattan.



Hundreds of mostly young, immigrant women were working at the time. A manager discovered the fire and tried to put it out, but the hose had rusted closed. Without a sprinkler system, the fire quickly spread. Management kept the exit doors locked, preventing access to stairways. As workers fled down the

single fire escape, it collapsed. Firefighters tried to reach the factory floors, but their ladders were too short. The official death count from the Triangle fire is 146. Though many died by fire and smoke inhalation, some were crushed from the pressure of the crowd as they tried to open the locked exit doors. Others were crushed when they jumped down elevator shafts or out windows to escape the flames.



Photo by Library of Congress  
Families of the victims of the 1911  
Triangle Shirtwaist Factory fire gather  
outside a morgue.

## 1929: Cleveland Clinic Fire

Photo by Cleveland Clinic to Wikimedia Commons. Highly flammable X-ray film sparked a 1929 fire at Cleveland Clinic that caused 123 deaths.

During a particularly busy morning on May 15, 1929, when patients filled the Cleveland Clinic Foundation building, one massive explosion was followed by another. Three-to-four tons of nitrocellulose X-ray film stored in the basement had ignited and exploded. The heat source causing the ignition was likely a light bulb or steam pipe. The explosions forced deadly fumes through a pipe tunnel and ducts system, reaching every room in the building. Caught unaware by the poisonous vapor, most inside the clinic collapsed either where they were or while trying to escape. Fumes and flames filled the stairwells. There was no sprinkler system. Of the 234 patients and employees in the clinic at the time, 123 died from inhaling the noxious fumes. Most died immediately, while some died days later. A first responder, Officer Ernest Staab, died days after pulling 21 people from the building.

## 1930s: Hoover Dam Construction

In 1928, then President Coolidge authorized the Boulder Canyon Project to build what would later be known as the Hoover Dam. Although eventually named as a National Historic Landmark and an engineering “wonder,” the new dam came with a high human cost. The official death count during construction is reported at 96 “industrial” fatalities: deaths caused by falls, rock slides, heat, blasting, electrocution, strikes by heavy equipment, drowning, and others. Unofficial numbers include dozens more fatalities, as workers also died while surveying the land, laying miles of electrical lines, and constructing rail lines to bring materials. Other worker deaths were considered “nonindustrial fatalities.” Most of these were logged by the company as caused by pneumonia, but families disputed that claim. They believed the deaths came from carbon monoxide exposure, and they claimed the employer logged pneumonia as the cause of death to avoid a death benefit payment.

## 1930–1935: Hawk’s Nest Tunnel Disaster

During the Great Depression, about three thousand men, mostly migrant and black workers, came to West Virginia to dig a 3-mile tunnel through Gauley Mountain to divert water from the New River to a hydroelectric plant near Gauley Bridge. The men worked ten- to fifteen-hour shifts, without masks or breathing equipment. They used drills and dynamite to mine the sandstone, which is composed primarily of cemented quartz (silica) sand. As a result of the exposure to silica dust, many workers developed silicosis, a debilitating lung disease caused by the effects of silica dust in the lungs [NPS 2020]. Although no definitive statistics exist as to the death toll from the [Hawks Nest disaster](#), a historical marker on the site states there were 109 admitted deaths. A Congressional hearing placed the death toll at 476 with other sources ranging from 700 to over 1,000 deaths amongst the 3,000 workers.

## 1947: Texas City Industrial Disaster

On April 16, 1947, a freighter, the S.S. Grandcamp, was docked at the Port of Texas City. The crew loaded its cargo, which included about 2,200 tons of the fertilizer ammonia nitrate. At about 8 a.m., the crew discovered a small fire in the hold. At the captain’s direction, workers tried to suppress the flames without water because water would ruin the cargo. The fire grew, and the colorful smoke attracted onlookers. At 9 a.m., the Texas City volunteer fire department arrived. At 9:12 a.m., the ship exploded. The force of the violent blast leveled about 1,000 buildings, including oil storage facilities, railway warehouses, and hundreds of homes. Most workers and bystanders were killed instantly. This included the chief and all but one of the firefighters. A nearby Monsanto chemical plant was destroyed, with 234 of 574 workers killed that day. The explosion also started fires in nearby ships. About 15 hours after the S.S. Grandcamp explosion, another freighter loaded with ammonia

started fires in nearby ships. About 15 hours after the Big Sandcamp explosion, another freighter loaded with ammonium nitrate exploded, and two more died. In total, almost 600 people died and thousands more were injured in one of the largest industrial disasters in history.

## 1964: C.P. Baker Drilling Barge Accident

In the early morning hours of June 30, 1964, a 2-year-old C.P. Baker drilling barge capsized in the Gulf of Mexico. Constructed like a catamaran with two 260-foot hulls, the vessel was drilling the 22nd well of its career. Around 3 a.m., water surrounding the vessel began to bubble, shooting up between the two hulls with such force that it entered the main deck. In 5 minutes, an explosion on the barge engulfed the entire vessel. A blowout, the uncontrolled release of crude oil from a well after pressure control systems fail, triggered the disaster. Thirty minutes later, the boat capsized. Of the 43 crew on board, 21 died and 22 were injured.

## 1968: Farmington Mine Disaster

At approximately 5:30 a.m. on November 20, 1968, an explosion occurred at the Consol No. 9 coal mine north of Farmington, West Virginia. At the time of the explosion, which was felt 12 miles away, 99 miners were inside. Over the next few hours, 21 miners made it to the surface but 78 remained trapped underground. The fires burned for a week. Recovery efforts continued for almost 10 years, but only 59 of the miners' bodies were recovered. The cause of the explosion was never determined. A year after the [Farmington Mine disaster](#), the [1969 Coal Mine Safety and Health Act](#) was passed.

These are only some of the workplace tragedies that galvanized the labor movement culminating in the OSH Act of 1970—the first comprehensive federal law regulating the safety and health of the U.S. workforce. The Act created both NIOSH and OSHA (see [blog](#) on the history of NIOSH). OSHA estimates that in 1970, around 14,000 workers lost their lives at work [OSHA 2010]. Today the working population is around 155 million workers, almost double the number in 1970 [BLS 2019a]. We have made progress. In 2018, around 5,000 workers lost their lives at work [BLS 2019b]. In 2018, more than 3.5 million workers were injured or harmed on the job [BLS 2019c]. NIOSH holds as a basic tenet that all workplace injuries and illnesses are preventable. In 2021, the OSH Act is as necessary today as it was 50 years ago.

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This blog is part of a [series](#) for the NIOSH 50th Anniversary. Stay up to date on how we're celebrating NIOSH's 50th Anniversary on our [website](#).

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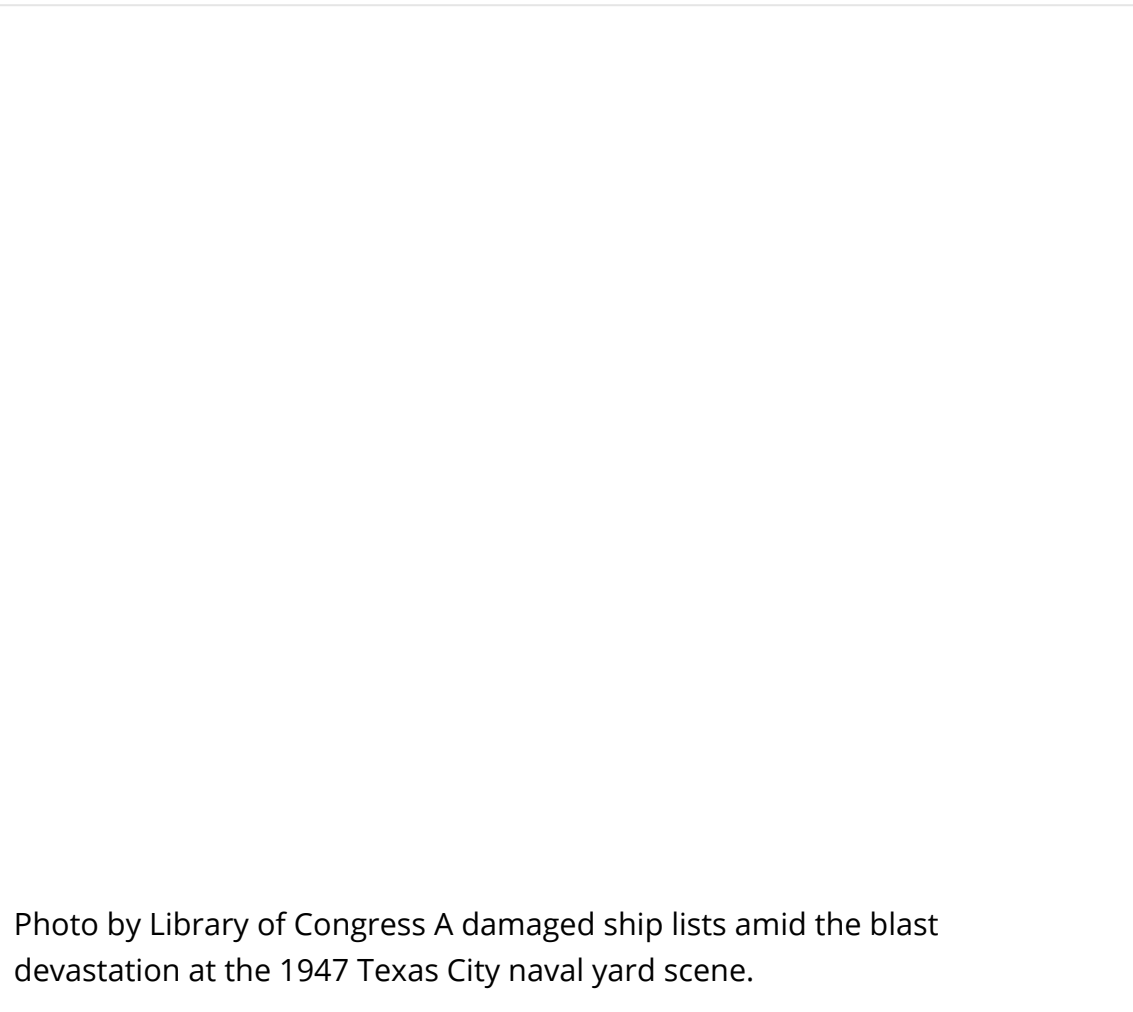


Photo by Library of Congress A damaged ship lists amid the blast devastation at the 1947 Texas City naval yard scene.



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