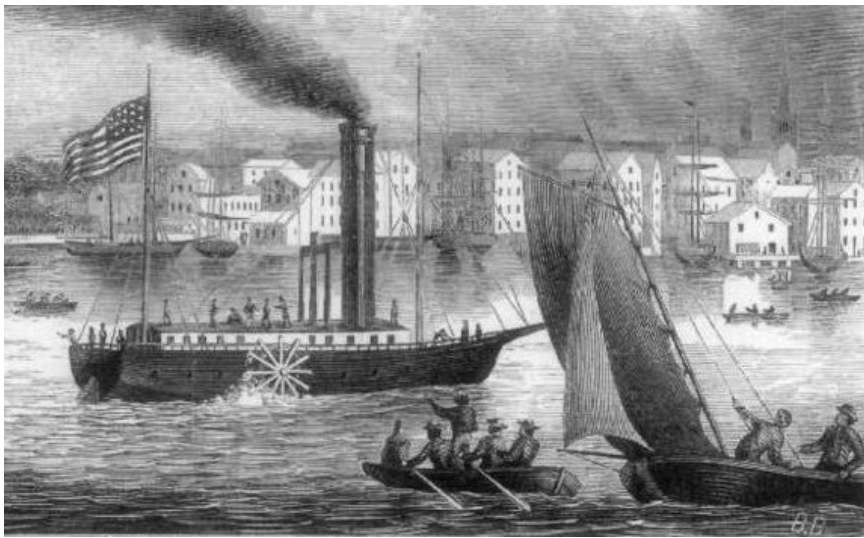


From Steamboat Inspection Service to U.S. Coast Guard: Marine Safety in the United States from 1838-1946

By PACS Barbara Voulgaris

The American push westwards in the late 18th and early 19th centuries required increasing amounts of goods and services that only a new transport infrastructure could provide. As state and local governments and private companies funded road improvements and new road construction, this period came to be known as the 'Transportation Revolution.'



Artist's rendition of Robert Fulton's steamboat *Clermont*. Commons.wikimedia.org/wiki/File:Robert_Fulton.

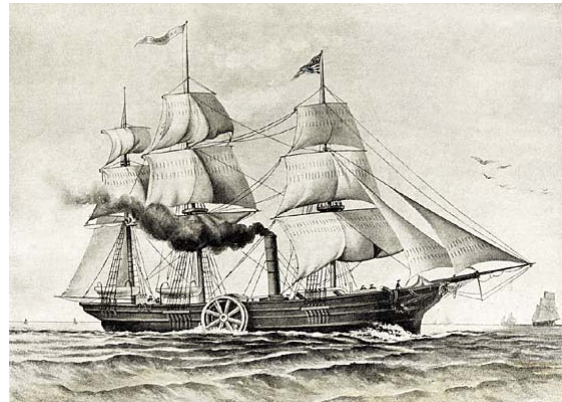
The transport of people and goods by animal power, however, proved slow and expensive. In 1797, Robert Fulton sent to President George Washington a copy of his "*Treatise on Canal Navigation*," in which he suggested canal navigation between Philadelphia and Lake Erie. Fulton's 1807 launching of the North River steamboat, more commonly known as *Clermont*, would have a dramatic affect on nearly every aspect of life in the new nation. It took *Clermont* 62 hours to steam from New York City to Albany, New York on its maiden voyage, in the process becoming the first commercially-successful steamship built in the U.S. A local publication described the intense local reaction to the journey:

The surprise and dismay excited among the crews of [other river] vessels by the appearance of the steamer was extreme. These simple people, the majority of whom had heard nothing of Fulton's experiments, beheld what

they supposed to be a huge monster, vomiting fire and smoke from its throat, lashing the water with its fins, and shaking the river with its roar, approaching rapidly in the very face of both wind and tide. Some threw themselves flat on the deck of their vessels, where they remained in an agony of terror until the monster had passed, while others took to their boats and made for the shore in dismay, leaving their vessels to drift helplessly down the stream. Nor was this terror confined to the sailors. The people dwelling along the shore crowded the banks to gaze upon the steamer as she passed by.

Within a decade, construction began in Rome, N.Y. for what would become the Erie Canal. By October of 1825, the first vessel transited the canal from Lake Erie to New York City. Before the construction of the canal, according to a contemporary census, the population of Rochester, New York was 15; by 1830, that number had exploded to 9, 207.

In 1819, two years after construction began on the canal, the *Savannah* became the first steamship to cross the Atlantic Ocean when it sailed from Savannah, Georgia to Liverpool, England in just 21 days. Steamboats soon carried cargo from New Orleans to St. Louis, making stops at newly-emerging towns along the way. Before long, rivers and lakes were linked by steam power to the sea, thus moving goods more efficiently to seaports, in turn fueling the burgeoning economy.



Left: Painting depicting a ceremony commemorating the Erie Canal's opening. *Courtesy of the Library of Congress.*
Right: In 1819, *Savannah* became the first steamship to cross the Atlantic when it traveled from Savannah, Georgia to Liverpool, England in just three weeks. www.encycarta.msn.com

Travel by watercraft had always carried risks. Unsanitary conditions, overcrowding, untrained crews, bad weather, incompetent navigation, and

shoddy construction, were just a few. The introduction of the steam engine—powered by fire and water under pressure—added a new element of danger. Steamboat boiler explosions often caused horrific numbers of fatalities.

As the number of such accidents increased, some saw the need for government intervention to protect lives and property. The first investigation into a steamboat explosion came in 1817, initiated by Philadelphia’s City Council. However, no regulatory action followed as a result of the council’s report.

Lawmakers, reticent to regulate private industry, struggled with the dilemma of how to protect the public welfare without burdening business or stifling the entrepreneurial spirit. The regulation of the steamboat industry, therefore, came only grudgingly and often only in response to accidents rather than in an attempt at prevention. It would take 25 years after Fulton’s launch of the *Clermont* before Congress would enact the first steamboat legislation designed to protect the public.

On May 18, 1832, a Senate Select Committee presented a report on behalf of the Treasury Secretary to Congress entitled “The Explosions of Steamboat Boilers.” While Congress recognized its role in regulating commerce, it struggled with the precise manner of regulating steam boilers on behalf of the public. The report explains the federal reluctance as follows:

Whether the boat or vessel shall be propelled by the wind, or by paddles, or by steam, and if by steam, whether it shall be a high or low pressure engine, are questions with which it is believed Congress have nothing to do; and if the power were given by the constitution, its exercise might be of doubtful expediency.

Even as Congress saw the question as something to be left to “intellect and practical science,” they proposed that the President or Treasury Secretary appoint inspectors for boats and boilers who would be stationed at strategic points along America’s navigable waterways. Sadly, many more lives would be lost from boiler explosions before Congress would finally regulate this new technology.

When the Southern Steam Packet Company’s vessel *Home* and 95 of its passengers were lost off Cape Hatteras in 1837, the city of Charleston, S.C. passed an ordinance that ordered the inspection of steamboats. But the very nature of transportation, moving continuously through different jurisdictions, made it

evident that the only real protection would have to come from the Federal government.

Congress itself was not immune to such accidents. Between 1831 and 1838, steamboat explosions killed three U.S. Congressmen and one U.S. Senator. In 1833, President Andrew Jackson, in his State of the Union Address to Congress was moved to say:

The many distressing accidents which of late have occurred in that portion of our navigation carried on by the use of steam power, deserve the immediate and unremitting attention of the constituted authorities of the country. The fact that the number of those fatal disasters is constantly increasing, notwithstanding the great improvements which are everywhere made in the machinery employed, and in the rapid advances which have been made in that branch of science, show very clearly that they are in a great degree the result of criminal negligence on the part of those by whom the vessels are navigated, and to whose care and attention the lives and property of our citizens are so extensively entrusted. That these evils may be greatly lessened, if not substantially removed, by means of precautionary and penal legislation, seems to be highly probable...

In 1838, several tragedies finally provoked Congress to act. One of the more tragic disasters occurred early in the morning of April 21, 1838. The river steamship *Oronoko* sat quietly on the Mississippi River, just off Princeton, Mississippi with its engines off. Some passengers were sleeping on the lower deck when the ship's boilers exploded. Most of the unsuspecting victims were either tossed swiftly overboard or scalded to death by the intense heat of the steam. More than 100 passengers onboard *Oronoko* lost their lives that morning.

Just four days later, the steamship *Moselle*, loaded with more than 235 passengers and a crew of 30, departed Cincinnati for Fulton, Missouri. There the vessel was to embark more passengers and cargo before its final destination of St. Louis. To the horror of onlookers, *Moselle's* boilers exploded with such intensity that bodies were literally flung onto the rooftops of nearby houses lining the riverbank. A total of 136 people died. On June 18, the steamboat *Pulaski*, traveling between Baltimore and Charleston, became the third major steamboat disaster in

less than three months when its boilers exploded, killing more than 100 passengers.



Artist's rendition of the riverboat *Ben Sherrod* on fire and exploding on the Mississippi River in 1837. More than 125 people lost their lives that day. *Courtesy of the Library of Congress.*

These three accidents were responsible for the deaths of more than 300 people. The issue had now become too great for Congress to ignore. Still, Congress argued that there was insufficient evidence to evaluate the cause of the accidents. Was it the technology or careless operators? Some explosions were caused by a phenomenon known as “racing.” To increase a vessel’s speed, an engineer would intentionally tamper with the safety valve, thus causing additional steam to build up in the boiler, which increased the chance of explosions.

Some lawmakers called for a total ban on high pressure steam engines until more information was available to understand the problem. Others, considering this too drastic, proposed inspections and licensing as well as locked safety valves on the engines to prevent tampering.

After much debate, Congressional leaders on July 7, 1838 passed the first legislation dedicated to “provide better security of the lives of passengers on board vessels propelled in whole or in part by steam,” (5 Stat. L. 304). Administered by the Justice Department, vessels were required to be inspected by engineers appointed by U.S. district court judges. Specifically, steamship operators were now required to do the following:

- employ sufficient numbers of competent engineers;
- carry safety equipment, such as fire pumps, hoses, signal lights; and lifeboats;
- undergo annual hull inspections and;
- undergo biannual boiler inspections.

Moreover, before any vessel could carry passengers, it was required to carry a certificate of compliance. While this was a start, and several amendments would follow, the act was not sufficient to prevent future accidents. More than 700 more lives would be lost in steamboat disasters in the years between 1847 and 1852, before Congress acted once more in an attempt to stem the loss of life and property.



Left: A 19th century artist's depiction of the danger and horror of a maritime disaster. Above: An early steamboat resting on the Mississippi River. Courtesy of the Library of Congress.

The Steamboat Act of 1852

The Steamboat Act of 1852 (10 Stat. 61) revised and improved the laws governing marine inspection and would form the basis for today's Coast Guard marine safety program. Now in the Treasury Department, the President appointed, with Senate confirmation, nine supervising inspectors in the following districts:

- First District, Boston;
- Second District, New York City;
- Third District, Baltimore;
- Fourth District, New Orleans;
- Fifth District, St. Louis;
- Sixth District, Louisville, Kentucky;
- Seventh District, Pittsburgh, Pennsylvania;
- Eighth District, Chicago;
- Ninth District, Black Rock, New York.

Inspectors met annually to create and publish regulations so that the inspection laws would be administered uniformly across all districts. Supervisory inspectors were also responsible for overseeing inspectors within their districts.

The act tasked the service with three primary functions that included:

- the inspection of the hulls, machinery, and equipment of vessels of the merchant marine of the United States made subject to inspection by acts of Congress;
- the licensing of the officers and the certification of the crews of such vessels;
- conduct trials and investigations to ascertain violations of the steamboat-inspection laws and of the rules and regulations established for their proper administration.

However, the act failed on one very important point. It did not make the service accountable to one specific executive department. The Treasury Secretary had some indirect supervisory role, but with the service divided into nine districts, each steamboat inspector used his own discretion in exercising rules and regulations, leaving little room for uniformity. In a report to the Secretary of Treasury in 1855, a special agent stated: "The powers that the law confers on the Secretary of the Treasury are very limited. A body without a head is a monster; and so like wise is a body with nine heads." Another aspect of the act was that it only regulated steamboats that carried passengers. It did not include freight vessels, tugboats, and other commercial steamers. In 1858 and 1859, three other steamboat explosions claimed 175 more lives.

The Civil War that began two years later overshadowed any regulatory efforts. A tragic irony at the Civil War's end would remind the nation that more protections were imperative.

The *Sultana*

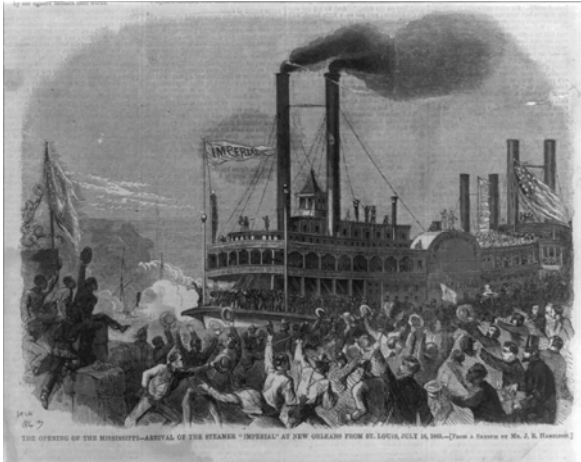
In the early morning hours of April 27, 1865, *Sultana*, a 260-foot wooden-hulled steamer, exploded on the Mississippi River near Memphis. This steamer had the legal capacity to carry 376 passengers. But *Sultana* was carrying more than 2,400! Tragically, the majority of passengers were Union soldiers who had been recently released from Confederate prison camps and were returning to their Midwestern homes.

The explosion happened so swiftly that many victims literally dove through flames into the Mississippi to avoid certain death. Some estimates place the total loss of life at 1,800, almost 300 more than in the much more well-known *Titanic* disaster 47 years later. One survivor recounted that:

The disaster was made worse by several factors. First, *Sultana* was badly overloaded. There was just one lifeboat on the vessel and after the lifeboat was tossed into the river, one hundred or more men struggled to hold on or to get inside. Under the weight of so many men, the lifeboat sank into the river.

At the board of inquiry, the pilot said that *Sultana* was “fully supplied with life preservers. A total of 76.” In addition, according to witnesses at the inquiry, *Sultana*’s boiler was damaged and needed more repairs than what it received at Vicksburg. R.G. Taylor, who repaired the boiler at Vicksburg, said that the captain was in a hurry to get *Sultana* back on the river and did not want to take the time to make the necessary repairs.

This needless tragedy—which still stands as the worst marine disaster in American history—made it only too clear that more oversight was critical.



Left: The opening of the Mississippi – arrival of the steamer *Imperial* at New Orleans from St. Louis July 16, 1863. From a sketch by Mr. J.R. Hamilton. Courtesy of the Library of Congress.

The Act of 1871 and the Establishment of the Steamboat Inspection Service

The Act of February 28, 1871 (16 Stat. 458) addressed some of the limitations of the Steamboat Act by firmly establishing the Steamboat Inspection Service with a central office in Washington dedicated to navigational safety. Under the Treasury Secretary, a Supervisory Inspector General would now manage all nine inspectors in each district. The act provided inspectors with broader authorities, such as:

- the authority to regulate all steam-powered vessels (excluding public vessels);
- to protect passengers and crews;
- to require licenses for all masters and chief mates;

- to revoke licenses; and
- to prescribe nautical Rules of the Road.

Further, in June of 1872, shipping commissioners were placed at specific ports.

On July 5, 1884, the Bureau of Navigation was created within the Treasury Department. The new agency enforced laws connected with the construction, operation, equipment, inspection, safety, and documentation of merchant ships. Moreover, the Bureau investigated marine accidents, collected taxes and navigation fees, and examined, certified, and licensed merchant seamen.

The Act of February 14, 1903 (32 Stat. 825) created the Department of Commerce and Labor and the Steamboat Inspection Service was transferred from the Treasury Department to this new department.



Left: Passengers boarding the *General Slocum* on June 15, 1904. www.archives.gov.

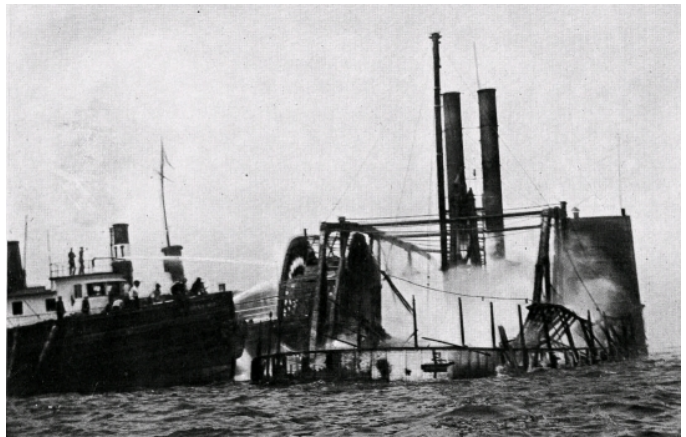
General Slocum

The following year, on June 15th, the excursion steamer *General Slocum* caught fire in New York's East River, causing the death of more than 1,000 people, the majority of which were women and children. This disaster produced the largest loss of life in New York in a single day until more than 2,700 people lost their lives in the World Trade Center on September 11, 2001. An outraged President Theodore Roosevelt immediately ordered an investigation, which revealed that the *General Slocum* catastrophe could have been avoided had the vessel's captain equipped the vessel with adequate and working firefighting equipment, conducted fire drills, and conducted firefighting training for the crew.

The *General Slocum* became a means for improvements in the steamboat safety regulations, which led to a reform of the Steamboat Inspection Service. One month prior to the calamity, *General Slocum* passed a safety inspection. The steamboat inspectors never should have passed the vessel. Soon after, Roosevelt fired all of the Steamboat Inspection Service officers who were involved in the *General Slocum's* inspection.

Additional safety requirements that were subsequently enacted included the following:

- fireproof metal bulkheads;
- steam pipes to extend from the boiler into the cargo areas to act as a sprinkler system;
- better lifejackets and one for each passenger and crewmember;
- easily accessible lifeboats;
- improved fire hoses with a 100-pound pressure capacity.



Left: Rescuers rush to save a victim from the *General Slocum* disaster in 1904. www.thefreedictionary.com/.../19/2006. Right: Fireboat sprays water on what remains of the *General Slocum*. http://en.wikibooks.org/wiki/Historical_Disasters_and_Tragedies

Motor Boat Act of 1910

Prompted by an alarming number of accidents and deaths related to recreational motor boats, Congress enacted the Motor Boat Act of 1910 on June 9 (Public Law 61-201 36 Stat. 462). For the first time, inspections were now required for recreational and commercial motor boats over 40 feet in length. Additionally, certain motor boats were required to carry life preservers and fire

extinguishers and be outfitted with navigational equipment such as horns, bells, and navigation lights. Moreover, licenses were required for boat operators that transported passengers for hire. Congress had now had extended its authority to regulate those vessels propelled by equipment other than steam.

From *Titanic* to *Mohawk*

On its maiden voyage on April 14, 1912, the luxury-liner *Titanic* ran into an iceberg and sank in the frigid waters of the North Atlantic, taking 1,513 passengers and crew to their grave. This disaster was the catalyst for the International Convention of Safety of Life at Sea in 1914. It was evident that *Titanic* did not carry enough lifeboats to accommodate the number of passengers and crew. The convention's main goal was to adopt lifesaving devices geared to protecting lives at sea such as ensuring passenger vessels carried adequate numbers of lifeboats for its complement of crew and passengers, watertight hull subdivisions, and radio communications.

The first International Conference on Maritime Safety was convened in London in 1914. However, the outbreak of WWI prevented full development of the Convention's recommendations and preventable accidents continued.

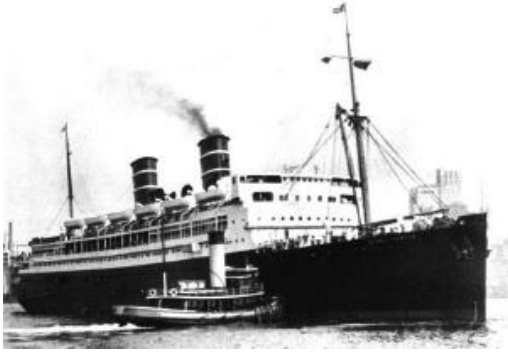
One year later, on July 24, 1915, Western Electric Company employees never dreamed what would happen when they chartered the excursion steamship *Eastland* on a warm Chicago day. With 2,500 people on board, *Eastland* broke from its moorings, drifted, then turned to port. *Eastland* floated on its side for a few minutes before sinking in shallow water taking 812 people to their deaths. It was later determined that "improper procedural methods in the control of the vessel's stability" caused the vessel to roll over. Legislation was introduced to Congress as a direct result of this accident; however, it would take nearly 20 more years before the legislation was approved.



Left: Coast Guardsmen hold a memorial service near the area where so many lost their lives after *Titanic* struck an iceberg and sank in 1912. Photo circa 1920s. Coast Guard Historians Office.

Bureau of Navigation and Steamboat Inspection

Maritime safety responsibilities continued to be reorganized and consolidated when the Act of June 30, 1932 (47 Stat. L., 415), combined the Steamboat Inspection Service and the Bureau of Navigation, which became known as the Bureau of Navigation and Steamboat Inspection. The Commerce Department directed the newly-merged agency.



Left: SS Morro Castle. Right: SS Morro Castle burning September 8, 1934. http://en.wikipedia.org/wiki/SS_Morro_Castle

Morro Castle and Mohawk

Shuffling directorates and reorganizing responsibilities would not prevent two more high-profile maritime disasters. On September 8, 1934, the 508-foot luxury liner *Morro Castle*, enroute from Havana, Cuba, to New York, burned at sea, killing 124 people. The ensuing investigation found many safety inconsistencies concerning the vessel's firefighting equipment and further discovered that the crew had not received proper firefighting training.

Less than five months later on January 24, 1935, the passenger vessel *Mohawk* collided with the Norwegian motorship *Talisman*, killing 45 people. In response to these accidents, more legislation was passed between 1936 and 1937 than during the previous 20 years. Congress would now regulate three categories regarding passenger vessel safety:

- passenger ship structure, equipment, and material;
- they would define the number of officers and crew necessary to safely operate a vessel;
- the Federal government would supervise the merchant marine.

Moreover, this new legislation required that all marine casualties involving regulated vessels be reported and investigated.

The Bureau of Marine Inspection and Navigation

The Act of May 27, 1936 (Public Law 622), reorganized and renamed the Bureau of Navigation and Steamboat Inspection as the Bureau of Marine Inspection and Navigation (BMIN) (49 Stat. L. 1380). The Bureau remained within the Commerce Department. It continued to enforce the laws and regulations of its predecessor agency; however, the 1936 act authorized the creation of a marine casualty investigation board and prescribed rules and regulations to investigate marine casualties.

Motor Boat Act of 1940

Congress amended the Motorboat Act of 1910 by passing the Motor Boat Act of 1940 (Public Law 76-484, 54 Stat. 163). The new act expanded regulatory controls over safety equipment, running lights, and reckless or negligent operations to vessels propelled by machinery not more than 65-feet in length. This law authorized the Bureau of Marine Inspection and Navigation to inspect boat operators and issue licenses to operators that carried passengers for hire.

Executive Order Number 9083

As a result of World War II, a final definitive shift occurred, when President Franklin D. Roosevelt transferred the Bureau of Marine Inspection and Navigation to the Coast Guard under Executive Order #9083. Under Roosevelt's reorganization plan, the transfer would outlast the wartime emergency and the bureau would never again return to the Commerce Department. In 1946 the shift was made permanent.

At long last, all of the responsibilities associated with maritime safety were centralized into one agency. "The nation has now for the first time a single agency which is charged with the administration of all maritime safety procedures," said U.S. Representative Schuyler Otis Bland of Virginia in 1946. A new strategy emerged from this new partnership that would study and implement new safety measures for navigation as well as protecting lives and property. The Coast Guard now took the lead as the central federal agency responsible for the safety of life and property both at sea and on the navigable waters of the United States.

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