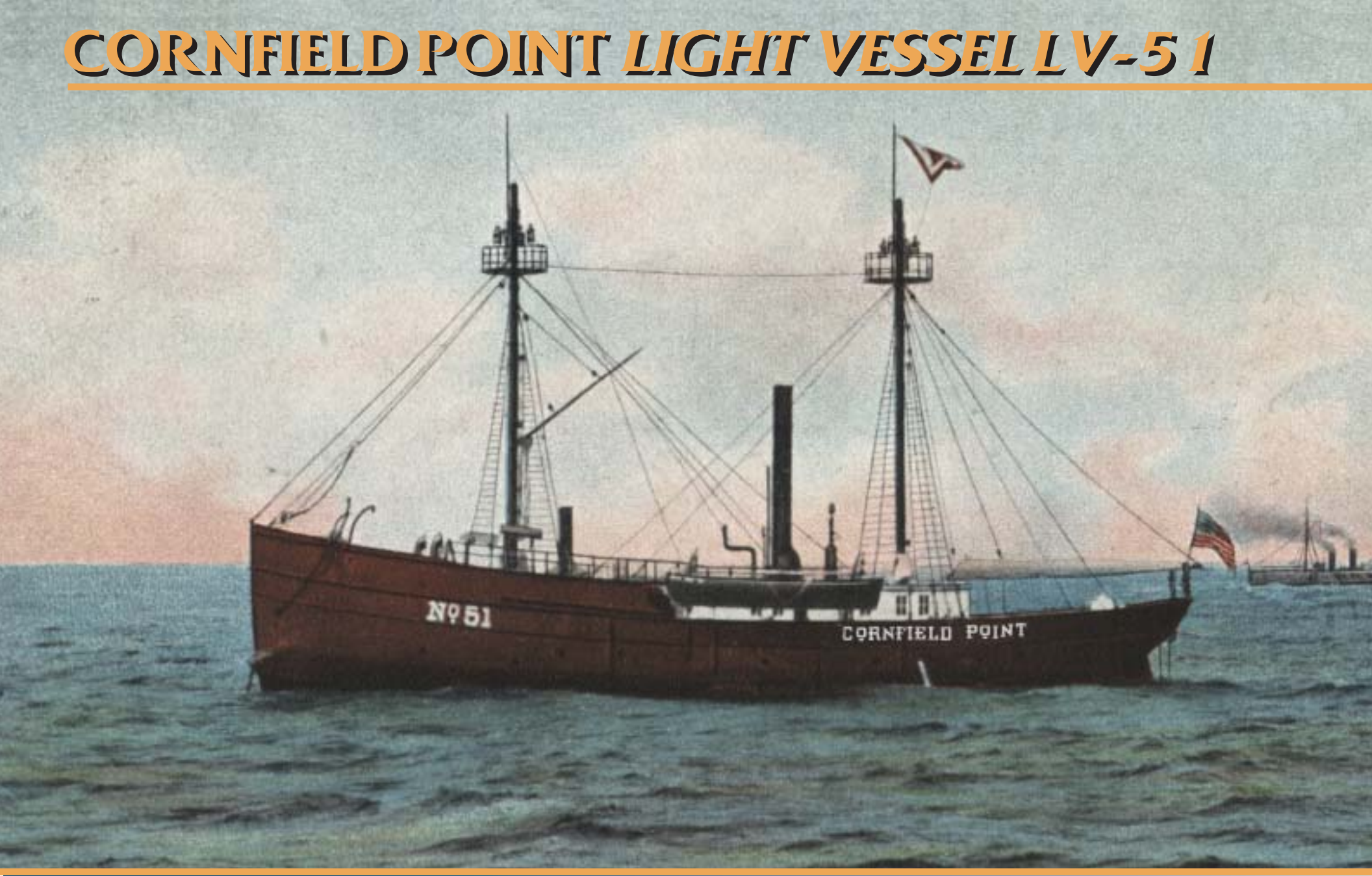
CORNFIELD POINT *LIGHT VESSEL LV-51*



STATE ARCHAEOLOGICAL PRESERVE

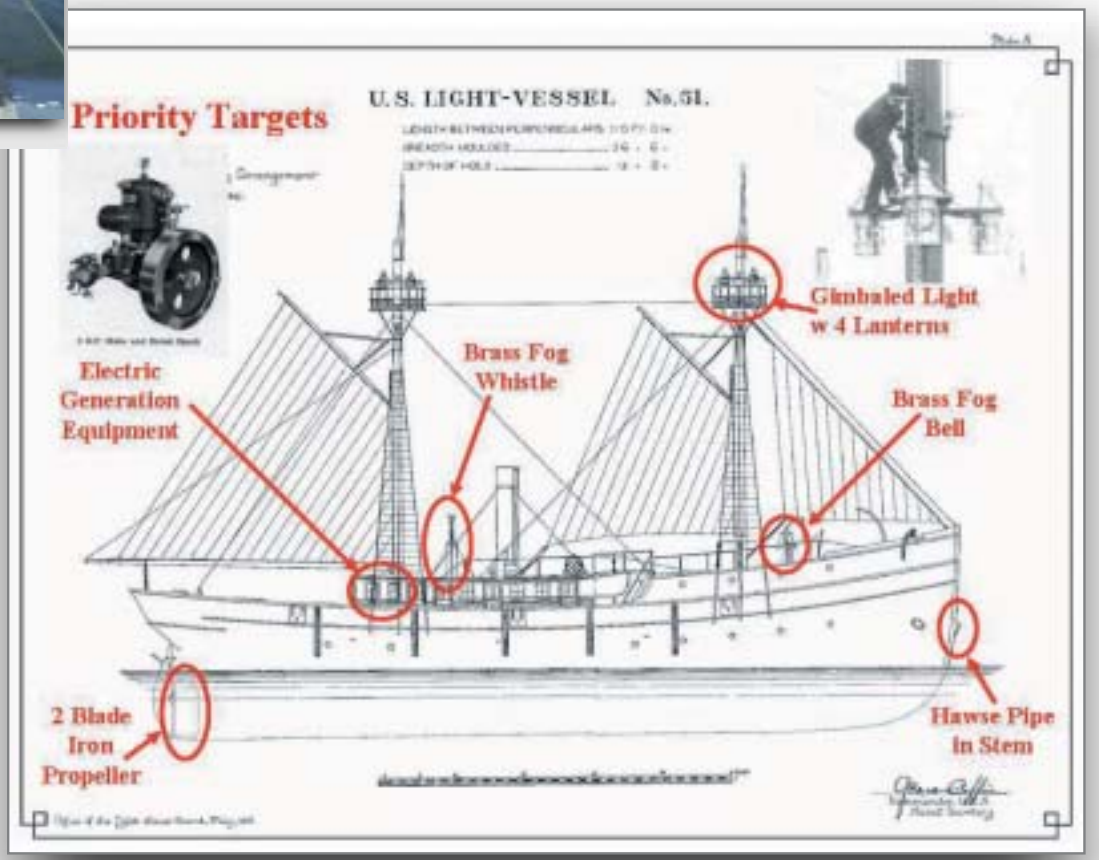
CONNECTICUT STATE HISTORIC PRESERVATION OFFICE

Light Vessel LV-51

Archaeological Preserve

Old Saybrook, Connecticut

Peter Johnson, above, of the Connecticut Underwater Advisory Committee created specific target areas for the investigation dive of the LV-51 *shipwreck. The recordation goals or targets for the dive were based on the unique features of the innovative design of this light vessel.*



Cover: Early twentieth century postcard featuring Light Vessel LV-51.

LV-51 Archaeological Preserve

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The discovery and celebration of the *LV-51* is due to the dedication and energy of Peter Johnson, an engineer, diver, and leading force of Connecticut's Underwater Advisory Committee.

Professional guidance and on-site supervision was provided by several offices, each contributing invaluably: Dr. David A. Poirier, Staff Archaeologist for the Connecticut Commission on Arts, Tourism, Culture, History and Film; Dr. P. J. Capelotti, Chief Petty Officer and representative for the U. S. Coast Guard Historical Office; Dr. Jim O'Donnell, Professor of the Department of Marine Science; University of Connecticut, and, Mr. Doug Bingham of the Lightship Sailors Association.

Richard Petri, a retired light vessel crewman, shared his memories and photographs of duty off Cornfield Point.

The University of Connecticut at Avery Point and the National Underwater Research Center (NURC) managed the shipwreck survey. Turner Cabaniss served as Captain of the *RV Connecticut.* Underwater exploration was directed by NURC specialists Ivar Babb and Craig Bussel, both of whom managed the equipment and the on-board landlubbers with equal professionalism.

CONNECTICUT LIS-FUND

Funded by the Long Island Sound License Plate Program
Connecticut Department of Environmental Protection

CORNFIELD POINT *LIGHT VESSEL LV-51*
A Connecticut State Archaeological Preserve

INTRODUCTION

A Floating Light

Images of light vessels, like lighthouses, can evoke the romance and danger of our dependence on coastal waters. Twin lamps glowing, rocking with the sea. The low, mournful sound of the fog horn echoing over the waters. Protector of the waterways, more versatile than a fixed lighthouse, able to guard other vessels from running aground, or foundering on sandbars, able to raise anchor and move when necessary. The lightship was a revolution in maritime technology, one that held place on the coasts of the United States for over two centuries.

The lighthouse is a familiar and beloved symbol of life by the sea. What may not be as well known is the importance and place of lightships, or light vessels, in United States' coastal history. At one point there were over 200 vessels serving as lightships along the coasts. Other ships relied upon the official light vessels and the crew who served them. It was a lonely commission, serving on ships that rarely raised anchor and were at the whim of storm, wind, ice and the danger of other vessels.

This era in maritime history has only recently ended, the last in-service light vessel having been de-commissioned in 1985. The evolution of new lighting technologies, and the ability to safely maintain floating platforms, without the risk of manned ships always kept at sea, sounded the death knell for the light vessel. The experience of sighting a light vessel on active duty is no longer possible.

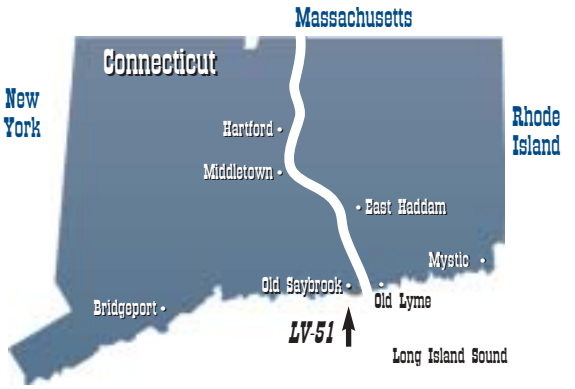
Off the coast of Connecticut, near Cornfield Point, at Old Saybrook, lie the remains of a very important shipwreck, the *Light Vessel LV-51*, which was the first lightship to be fitted with electric lights. It served on and around the waters around New York and Long Island Sound for almost 30 years, from 1892-1919. The *LV-51* sank in 1919 after being rammed by a barge. The remains were unreachable, until now, beneath 170-190 feet of water. In the Spring of 2003, an expedition was launched to explore the wreck of the Cornfield Point *Light Vessel LV-51*. Using remote cameras, scientists and historians were able to get a view of the ship in its resting place. Established by the Connecticut State Historic Preservation Office, it has become the state's first Underwater Archaeological Preserve.

THE HISTORY OF LIGHT VESSELS

In ancient Roman times, ships patrolled the shores with signal lights burning in small wire baskets, to deter pirates and protect the coasts. These are considered the ancestors of the light vessel. In England, in the 18th Century, the first light vessel was ordered by King George II and was stationed at Nore in 1730. The lanterns were lashed on, and as the nature of the ocean is to pitch and roll, the flames were often blown out or the lanterns would break free off their lashings. Despite these problems the lightships were invaluable aids to sailors. They were able to mark dangers, such as sandbars, rocks and shoals, which could not be marked from land.

As the 18th Century progressed, so did the improvement of the designs of the lightship. Heavier anchors were used to better keep the boats from rolling or coming unmoored. A lantern was constructed that could be fitted to the mast. In the early 19th Century, British engineers, including the predecessor of famed author Robert Louis Stevenson, designed lanterns which encased the mast. They held ten oil lamps with silver-plated reflectors, and were hinged so they could be turned easily. This design was so successful that it was barely modified until the early 20th century.

In the United States, the first light vessels to be constructed were ordered in 1819. They were built by John Pool of Virginia and placed in the Chesapeake Bay at Wolf Trap Shoal in 1830. The early designs show a small fishing sloop with



two small oil-burning lanterns posted at separate ends of the boat. Within a year three more were authorized, built to be placed in southern waters. These early light vessels were considered such efficient aids to navigation that by 1841 there were 30 in service. Light vessels' main duties were to ensure safety and aid navigation on the shipping lanes of the coastal waters. Their ease of movement, ability to receive and relay messages, and the dependability of the crews of the lightships kept them on the waters, serving the ocean-faring community for two hundred years.

Originally, lightships were constructed of wood. In 1857, iron was introduced as a structural material. Some objections made to this material were that it might not be strong enough to withstand the shock that a ship at anchor in deep sea often receives and that the high cost of iron would make it unreasonably costly. Another concern was that the hull would "sweat" inside, making living conditions unsavory [dank, unhealthy, and uncomfortable]. The increased use of iron-hulled ships within the mainstream shipbuilding community, and the demonstrated performance of those ships, helped convince nay sayers of the value of iron. By the 1890s it was the main material used for light vessel construction.

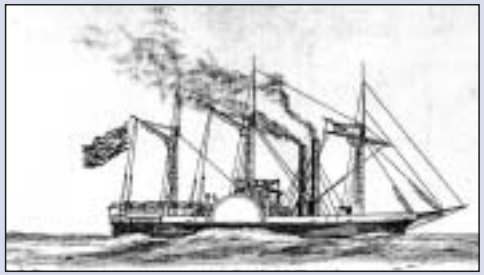
The emergence and increased role of the U.S. Coast Guard and its ships signaled the end of the need for light ships. The gas buoys in the 1890s were a predecessor to what eventually sounded the death knell for floating light houses. By the 1970s most lightships had been replaced by floating light platforms. No one can deny how important light vessels were to the safety of the seas during their time of service.

In 1819 a lighthouse keeper was paid $350 per year. Requirements for the job were that he be 18 years old, able to read and write and complete his duties. By 1874 the pay averaged $600 per year, varying by the importance of the light and the amount of responsibility placed upon the keeper. He, and his family if he had one, had to live in "a barren, exposed coastal area," and keep lamps clean as well as filled with "the best sperm whale oil," wicks trimmed, ice and snow free, lit at sunset, to sound foghorns when necessary, to keep a daily journal of careful accounts. The Lighthouse Board reported in 1874 that the "best light-keepers are old soldiers and sailors, and it is its desire that the maimed of those who served in the wars for the Union should...receive these places." Appointment to lighthouse service had been mainly political, but the Lighthouse Board attempted to change that, by placing those who had served the country through the military into such positions.

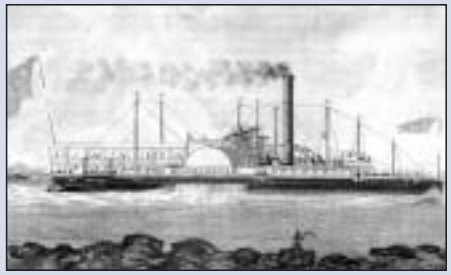
Shipwrecks in Long Island Sound

Long Island Sound has been a historically significant part of United States maritime history. As a body of water, it stretches 110 miles, with the coast of Connecticut defining it to the north and Long Island, New York to the south. In order to insure the safety of the Sound, lightships and lighthouses have been placed throughout the Sound for over 200 years. Despite these safety measures, there have been many sinkings within the Sound. In 1831 the steamboat Washington ***sank off Stratford, Connecticut. Another steamboat, the*** Lexington, ***burned and sank in January 1840, at the Stratford Shoal (Middleground). There was an estimated loss of between 127-144 people, making it the largest loss of life on the Sound. A tugboat, the*** T.A. Scott, Jr. ***sank after a collision with the German merchant submarine,*** Deutschland, ***in November 1916. An American submarine,*** Defender, ***sank in 1944 off of Old Saybrook.***

SUBMARINE DEFENDER
Built: 1906. Scuttled: 1944 southwest of Old Saybrook.



STEAMBOAT WASHINGTON
Built: 1825, Sunk: 1831 off of Stratford, CT. Third steamboat on the Sound. First steamboat with two engines.



STEAMBOAT LEXINGTON
Built: 1835 by Bishop & Simonson NY for Cornelius Vanderbuilt. Burned and sank: January 13, 1840 with 127-144 dead. Wreck located off Middleground, Stratford Shoal. Largest loss of life on the Sound.

DESIGN AND TECHNOLOGY

One of the most critical functions of the lightship was to mark a place of safety rather than to give warning. A ship passing by would know that the waters were safe, because otherwise the light vessel would be unable, itself, to anchor there. Because of this feature they were considered to be "an aid of positive character." A light vessel could be stationed in deep water, sometimes miles from land, to mark a point from which arriving and departing vessels could gain their bearing. Many lightships were placed at shifting shoals and could be moved as the shoal shifted. Light vessels were also seen as a safe haven for crews in distress, giving shelter to crews during inclement weather or heavy fog.

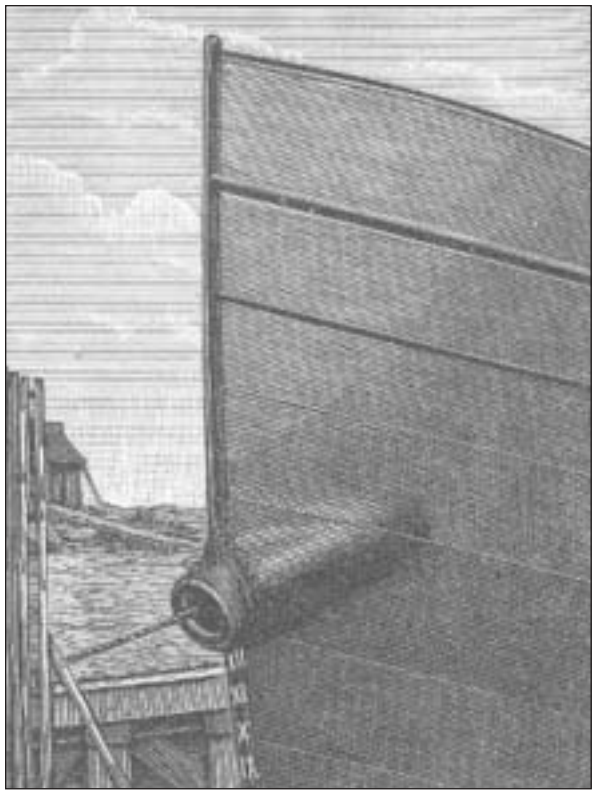
Designing a "Floating Light"

What proved to be the hardest part of light vessel design was the construction of a steady light platform. Lightships were normally stationed in deep waters, at anchor, so that the pitch and roll of the ocean caused lanterns to snap frequently. The violence of the movements of the vessels also made life uncomfortable, at times unbearable, for the crew that served aboard the ships. Because ships had always been built to move through water, it was hard for designers and builders to figure out what design modifications were necessary for a more stationary ship.

As early ship design was usually up to the builder, and there were no specific plans, advancement in design did not really begin until the 1850s. The two aspects of design most often addressed in engineering literature of this period were: the shape of the hull and the question of moorings. In 1856 at the Institution of Civil Engineers in London, a paper was presented entitled "The Form of Stationary Floating Bodies," suggesting a circular vessel would be best for a lightship. While this was not based on any true testing, it did pave the way for discussions, experiments, and study of the design of light vessels. The placement of hawse holes, above water or below, was discussed and debated at great length. Experiments were conducted on bilge keels to prevent rolling.

Hull

The initial design debates in the mid-1800s were on what shape a light vessel hull should take. Suggestions were made for circular hulls, long vessels, bluff bows, short and sharp. Earlier light vessels were built of wood; the first lightship, at Nore, was constructed of oak and ash and was still in decent condition in 1889 after nearly 160 years. Iron and steel began to come into ship-making in the 1840s. In Liverpool in 1846 a light vessel was constructed of iron, but most other lightships continued to be built of wood.



The LV-51's innovative hawse pipe placement through the stem, as well as on her three sister ships, provided greater mobility with less strain on the hull.

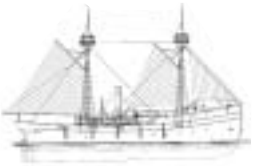
Some concerns about making lightships of iron were that it would not be as strong as wood, that the shocks of the open sea upon the hull would be too jarring, that it would be damp inside, that the cost would be too high and that the bottom would need constant repair. In fact, the truth was found to be the opposite, except for the last, the bottoms of ships needing to be serviced periodically. Because ships in regular use were being constructed of iron, lightship builders came to realize that iron was indeed a useful ship building material.

Moorings

Because so much of a lightship's duty was served while moored, and a steady light platform was required, much design consideration was put into the placement of the hawse holes in the bow for the passage of mooring cables. The main problem was the question of where the moorings cables should enter the ship. At various times, hawse-hole placement was suggested below water, close to the water, and well above the water.

Hawse Pipe

The hawse pipe (the iron lining of the hawse hole and/or a hole or tube in the deck through which a mooring cable passes to a locker) could be placed at different levels as well as through different lengths of the ship. The placement of a hawse pipe had to ensure that water could not



Iron Lightships

The first lightships to use iron were composite vessels, having iron frames and wooden planking. Another variation was to cover iron plating with a sheath of wood, which was useful in protecting the vessel from extreme fluctuations of temperature and sudden localized blows to the hull. An advantage of these composite ships was to familiarize the crew to new materials; they could learn about the care of iron, while having a ship that also contained the familiar material, wood.

enter through the hawse hole, while maintaining a steady platform.

Anchors

Anchors were of supreme importance aboard light vessels, and the stress of weighing anchor in the open sea tested many designs. Originally, lightships used the hemp (rope) anchor fastenings found aboard other ships, but it was soon realized that lightship anchors required more substantial fastenings. Chain cable then bacame the material used to secure anchors. In the 1820s, cast iron chains were introduced. Danforth anchors were mainly in use in the early years, but they had a tendency to skip or drag. In 1807, Robert Stevenson designed what he called the Mushroom Anchor, while working on the lightship *Pharos*, a reference to the light of Alexandria on the isle of Pharos. The anchor was designed to keep a ship secure in open waters and was named for its shape. The original weighed 3,000 pounds. This became the most used type of anchor on light vessels, most mushroom anchors weighing 7,500 pounds. Many light vessels carried both types of anchors, since overall safety depended on the specific situation.

Lights and Lanterns

The first lights aboard ship were lanterns that were lashed with rope, usually hemp, to the mast. These lanterns blew out, broke or fell from the mast frequently during rough seas. Next the lanterns were attached by chain link, the fastenings being stronger, but the problem of winds and rough seas still caused breakage and light outages. The biggest advancement is attributed to Robert Stevenson, when he designed the *Pharos*. He had lanterns made in two complete vertical sections which could be screwed together to encase the mast, and therefore could slide up and down the mast without coming unattached. The lanterns were fitted with ten oil lamps with small silver plated reflectors.

Markings

Light vessels needed to be easily recognizable in all weather. Early lightships were identified only by name – usually that of the station or hazard where they were positioned, but occasionally by the name of a prominent citizen. In earlier days the placement and number of lights varied per lightship, and mariners could distinguish one lightship from another by the pattern of the light flashes. This is still true of channel markers today.

In 1867 the U. S. Lighthouse Board adopted a standard numbering scheme and assigned "LV" numbers to all existing light vessels. This number permanently identified the vessel regardless of station, and provision was made for the sequential numbering of all lightships subsequently built. All official lightships were acquired by the U.S. Coast Guard in 1939. During World War II, the Coast Guard changed to a Navy designation system which also put a "W" in the designations.

To ensure easy recognition on the seas, a standard markings system was adopted. All light vessels were painted red with large white letters on the side of the hull naming the station and the number of the ship. Although the ship's number never changed, a relief light vessel crew had to continually paint the latest station name on the ship's side as the vessel switched her assigned posting every few months.

Horns, whistles and bells

An important aid to safe navigation is the fog horn, whistle or bell. The warning signals from lightships traveled over water quickly, reaching ships at sea sooner than similar warnings from land. These signals also served as guides for ships leaving harbor on foggy nights. Along with fog horns, whistles or bells, most light vessels were equipped with submarine

Lanterns

The lanterns were the main reason for a light ship's existence, but over the years, the placement of signal lanterns varied. Duties involving maintenance of the lights were of utmost priority. In 1836 the lights encircled the mast and were suspended on chains. The lights could be lowered for cleaning, trimming and lighting. Later, when lights were fixed upon the masts, crewmen had to climb the rigging to attend to the lanterns.

signals by 1906. The transmission of these signals was considered superior because of the range and accuracy of direction given from the submarine bells aboard lightships. Placed at or below water depth, the signal traveled faster than signals sent by air, and the sound was not affected by gale or severe weather. Larger ships were equipped with the technology to receive submarine signals and could rely upon them when other methods failed.

Power

It was recommended that light vessels be fitted with propelling machinery as early as 1860, to increase safety, but the proposal was rejected. It wasn't until 1891 that lightships were built to move under their own power. This power ability enabled a ship to be more independent, reaching its station without a tug. It could reduce strain on its moorings by moving in case of a storm. Getting to and from the station would not require waiting for a message to be taken ashore, which was vital, as most ships at this time were not capable of communicating wirelessly. The initial installations of propelling machinery had little power, a single non-condensing engine, with a 14-inch cylinder and a 16-inch stroke, with a boiler capable of 100 pounds of pressure. Nevertheless, it proved the helpfulness of self-propulsion, and ships were consequently built with the addition of one or two boilers.

Communications

Radio equipment was another technology that became invaluable upon ships. Lightships were seen as an important connector for radio transmissions. They were valuable relay stations, able to receive and pass on messages from ships and shore, messages which may otherwise have failed to continue. They were able to radio life-saving stations notice of vessels in distress. Light vessels were considered more dependable than shore wireless stations and were outfitted with the most recent improvements in radio technology. During the winter of 1912 many shore wireless stations were destroyed by severe weather, but *LV-94*, stationed at the Frying Pan Shoal, North Carolina, kept her moorings and relayed all radio transmissions.

Dangers at Sea

Lightships were often lost because of to the inherent dangers of their service. Storms, ice and collisions with other ships were all causes of lost light vessels. Early in the history of lightships, in 1807 when assembling for duty upon the lightship Pharos, an amusing incident occurred. The crew stood awaiting their orders; when notified of where their ship would be serving, "two of the men took immediately to their heels and were never seen again... such was the dread of the Inchcape Rock." Official records contain 237 instances of lightships that were blown adrift or dragged off-station by severe weather or moving ice. Due to the bravery and determination of the crews, only five of these lightships were lost due to such inclement weather.

At times it seemed that lightships were targets for seagoing traffic. Early charts were printed with dotted lines running from lightship to lightship, giving measurements, course and distance according to those ships. Sailing directions often encouraged passing close to lightships. Many pilots in the early to mid nineteenth century were not well trained in navigation or piloting. For these reasons it is understandable that there was some reluctance to serve aboard a lightship.

Olympic accident

In 1934, off the Nantucket Shoal, Nantucket Light Vessel* LV-117 *was riding anchor over the shoals in a heavy fog. Its signal blared to warn away any passing transatlantic traffic. Unfortunately, the huge ocean liner,* Olympic *(sister ship to the* Titanic*) was using the sounds of the fog signal to navigate by, planning to alter course when it neared* LV-117*. Due to a miscalculation on the bridge, the course was not altered correctly and the bow of the tall* Olympic *emerged from the fog and cut the* LV-117 *in half. Seven of the eleven crew serving aboard ship died in the collision. In response to the tragedy, the British government replaced their light vessels with a ship that resembled a small battleship. It was fitted with a light at fifty feet above deck, and the fog signal transmitted its position as well.

Lake Erie

On Lake Erie, a severe gale was the end of the Buffalo* Light Vessel LV-82, *in 1913. There were no survivors. A few days after the sinking a message washed ashore. A board from the* LV-82 *was found, with the words, from the captain to his wife, "Goodbye Nellie, ship is breaking up fast. ——- Williams." hastily scrawled upon its surface.

Cape Hatteras

During World War I, in 1918, the Diamond Shoals* Light Vessel LV-71, *off Cape Hatteras, North Carolina, spotted a German submarine. It gave a radio alert to other ships warning of the presence of an enemy ship. Twenty-five Allied ships received the radio signal, but the* LV-71 *was not so lucky; after all 12 men disembarked, the ship was sunk by shellfire, becoming the first coastal casualty of the war.

THE LIGHT VESSEL LV-51

In 1890, Congress ordered that four light vessels be built to serve America's coastal waters: Light Vessels *LV-51, LV-52, LV-53*, and *LV-54*. These were ordered under a Sundry Civil Bill, which was approved on August 13, 1890. Bidding $214,000, the shipbuilder F. W. Wheeler and Co. of West Bay City, Michigan won the contract. The lightships were designed by Mr. Wilfrid Sylvan, Chief Engineer of the Lighthouse Board. Built in 1892 in West Bay, Michigan, the LV-51 steamed to the Atlantic Ocean by way of the Welland Canal and the St. Lawrence River. After the building of each ship was complete, the contractor was required to send her on a trial trip to test the safety and seaworthiness of each vessel. LV-51 had her trial trip on Saginaw Bay on July 2, 1892. She proceeded down the coast to Staten Island and the Lighthouse Department Docks, where she received her final fittings on July 26.

With regard to her principal dimensions, *LV-51* had an overall length of 118 feet 10 inches, a beam 26 feet 6 inches long, and a depth hold of 14 feet 6 inches. She had a displacement capacity of 350 tons, and could reach sustained speeds of 9 miles per hour. *LV-51* was divided by four main bulkheads extending to the main deck, and had a wrecking pump with 8-inch suction in case of a hull breech. She had her steering wheel in the deck house, which was situated on the 45-foot-long raised forecastle. Her stern was elliptical, while her bow was nearly straight.

Her two main boilers, made of steel with a tensile strength of 60,000 pounds, were constructed for a maximum steam pressure of 110 pounds. In addition, a separate donkey-engine and boiler were used to run the steam windlass, to heat the vessel, and to blow the lightship's 12-inch steam whistle in foggy weather.

Technical Innovations

These light vessels were to be an experimental step, a hopeful advancement in lightship construction. The *LV-51* was designed as a steel vessel, while her sister ships were to be of iron. As a lightship, *LV-51* was expected to remain continuously at anchor in an exposed position, even in the most violent weather. The tremendous strain of such duty dictated that her hull be constructed with a tensile strength of 48,000 pounds. As such, she was fitted with two continuous deck stringers, and stiffened with breasthooks, five keelsons, and two outside bilge-keels. Her plating varied from one-half to five-sixteenths of an inch in thickness.

Another improvement was the placement of the hawse hole and pipe, which would give the boat greater mobility paired with less strain upon the hull. *LV-51* was the first to have a hawse pipe through the stem, the very front of the bow, and aligned with the centerline of the vessel, as did her three sister vessels. The anchors were powered by a steam windlass. There were three anchors, the Mushroom weighing 5,000 pounds, the Bower, weighing 2,500 pounds and the Harbor, weighing 2,000 pounds. The chain link for these anchors measured 250 fathoms.

The steam propulsion would make the ships more mobile and safe in times of inclement weather. Prior to this design, lightships had to set sail away from land during storms, which required other Coast Guard ships to have to search and retrieve the ships after the storm passed. Unlike older lightships, which demanded time-consuming tug service for rescue in foul weather, *LV-51* was the first light vessel provided with a 140-horsepower, 16 inch compound stream engine for use when weighing anchor during violent storms.

The fog bell, weighing 1,000 lbs. and located in the forecastle, was operated by hand lever. The fog whistle was to be operated by steam and could be heard 15 miles away.

Subsequently, in 1906, she was the first lightship to be fitted with a submarine bell signal.

One of the benefits of having steam boilers for propulsion on board was steam heating, a luxury in comparison to the older method of heating. There were four state rooms for officers on the new vessel. The crew space was built to house fourteen. According to an August 13, 1892, issue of *Scientific American*, her interior accommodations were "of the best." There were four officers' state rooms and the interiors were "finished in a plain and substantial manner." Even the cook's galley in the forward end of the deck house was furnished "with everything essential to the comfort of the men."

LV-51 also had state of the art communications and fire safety systems. An assemblage of bell pulls and speaking tubes made communication throughout the vessel possible. A complete

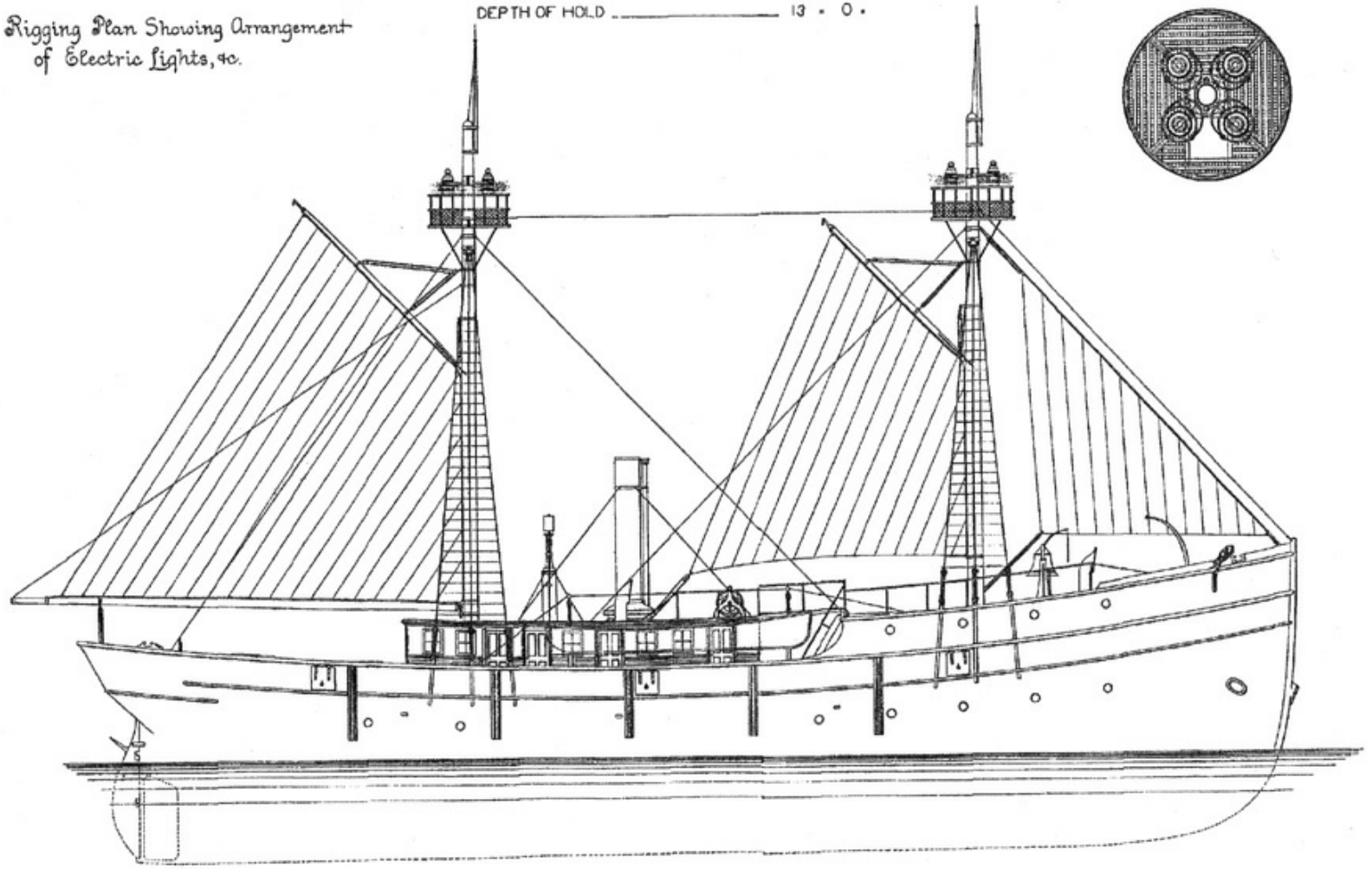
***The mess (dining room) of the* LV-51.**

Plate A.

U. S. LIGHT-VESSEL No. 51.

LENGTH BETWEEN PERPENDICULARS 110 Ft. 0 In.
BREADTH MOULDED ..... 26 . 6 .
DEPTH OF HOLD ..... 13 . 0 .

Rigging Plan Showing Arrangement of Electric Lights, &c.



Geo. Coffin
Commander, U.S.N.
Naval Secretary.

Office of the Light-House Board, May, 1891.

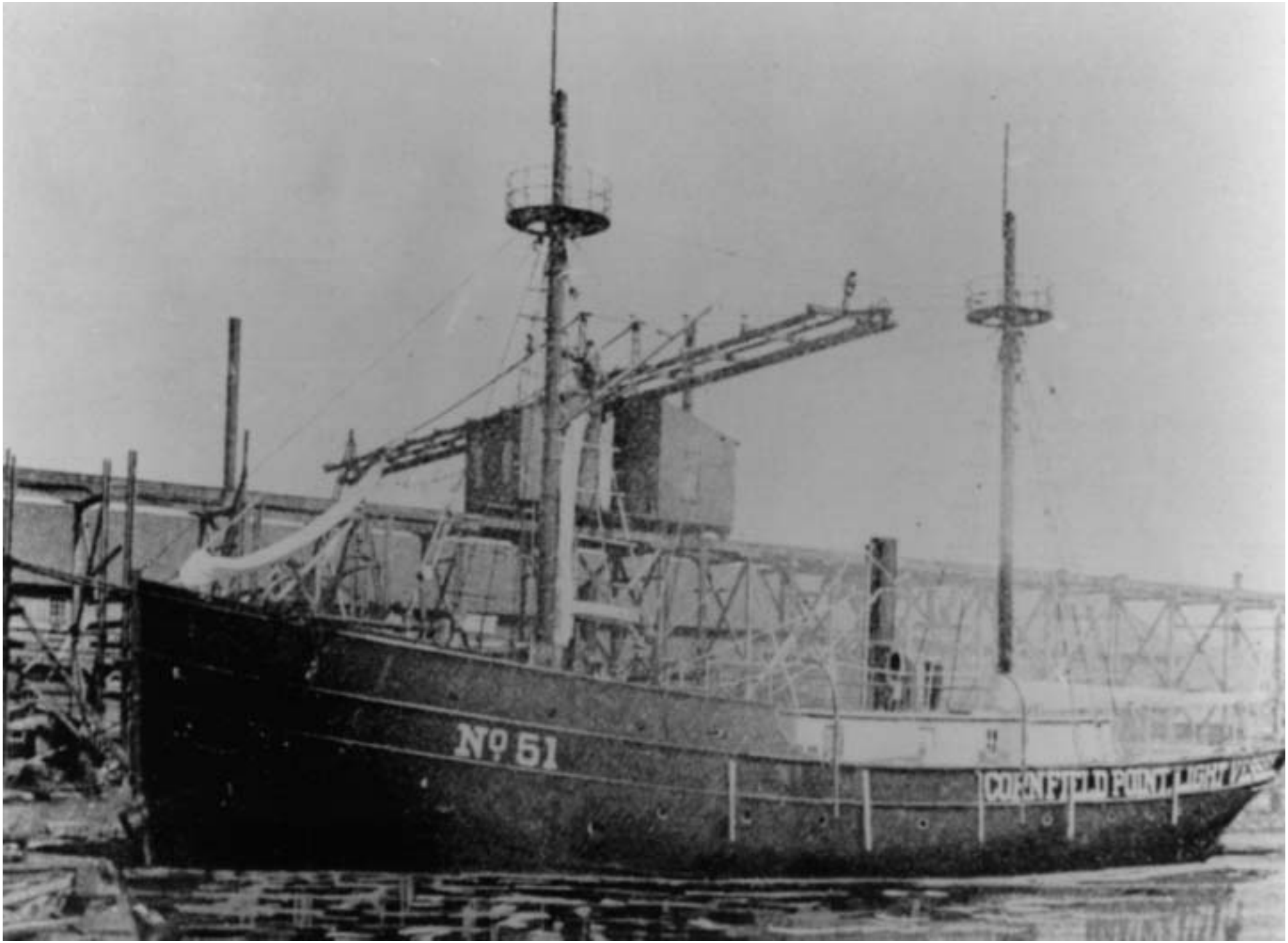
fire-extinguishing system, by which all parts of the lightship could be reached by a 2.5" stream of water in 10 seconds, was in constant readiness in the event of an emergency. Six iron tanks held fresh water, a total of 4,500 gallons.

No doubt *LV-51's* greatest claims to fame were her signal lanterns. The design of the *LV-51* called for electric illumination, another first in lightship design. However, the *LV-51* was not fitted with an electric lantern system until she reached the New York Harbor. An electric plant, to be situated aft, was built separately, in New York, under Major D.P. Heap of the U.S. Corps of Engineers. Two horizontal high speed engines could produce eight horsepower with 70 lbs. of steam for the signal lanterns.

A cluster of four gimbaled-lens lanterns were hung in brackets 55 feet above the water level and permanently fixed to the vessel's two mastheads. Each lantern was filled with a 100 candle-power (cp) incandescent lamp, which acting through the lenses, gave each cluster a combined equivalent of 4,000 cp. An occulting device managed her signal, a fixed white light that flashed for a period of 12 seconds, separated by a three-second eclipse. During excessively thick and foggy weather, a 12-inch steam whistle would blow continuously at the three-second intervals separating the 12-second light flashes. This was the first time that electricity would be used to power signal lanterns, and many people were worried that the electric illumination would not be as dependable as oil lanterns. Their fears turned out to be unfounded.

The *LV-51* spent two experimental years on the Cornfield Point light station, off the coast of Old Saybrook, Connecticut in Long Island Sound. When her electrical systems were proven reliable and easy to maintain, she was transferred to Sandy Hook, New York, on the tip of Gedneys Channel, where she was visible to every vessel entering the Port of New York from the ocean. The *LV-51* remained on this station from 1894 through 1908, when she was assigned as the relief lightship for the Third Lighthouse District, where she continued to serve until 1919. Her sinking occurred while relieving the regular lightship off Cornfield Point, the same point at which she had her first two years of service. She traveled a full circle, indeed.

LV-51 ***was not fitted with an electric lantern system until she reached the New York Harbor when an electric plant was added that provided 70 lbs. of steam for the signal lanterns. The lanterns were designed for eight 100-candle power bulbs - the first time that electricity would be used to power signal lanterns. The lanterns were gimbaled to swing freely with the motion of the light vessel. Reliability was proven after a two year trial off the Connecticut shoreline. The crew's maintenance of the signal lights was drastically reduced from the pre-electric days.***



LV-51 ***being "fitted out" at the shipyard.***

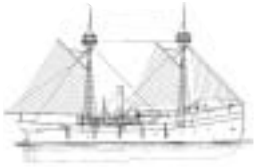
Life On Board

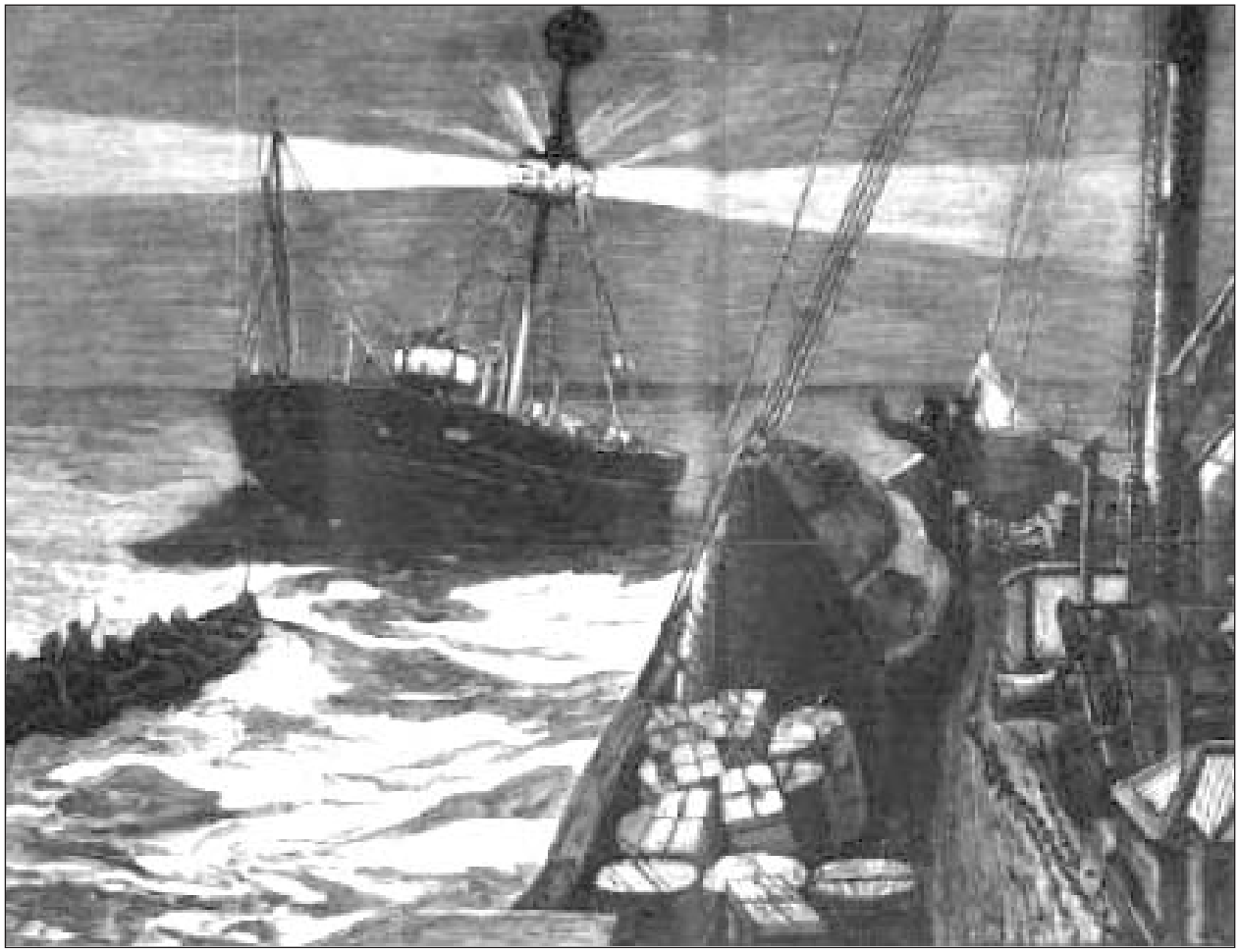
The waves they tumble o'er and o'er
There's no such a life to be had on shore.

Operating all of the technological equipment was the duty of the crew on the lightships. It was a hard station, but taken seriously, as the crew knew how much other ships depended upon their beacon of light. A light vessel would stay anchored through storm, gale and ice. Lightships would only leave their station under extreme duress or when relieved for repairs by a relief boat.

Life for keepers of lighthouses and crews of lightships could be quite similar. In service to the safety of the ocean-faring public, it was often a lonely position. A lighthouse keeper could have his family with him, something not possible for those aboard lightships. Although lighthouses were usually solitary, placed away from other inhabitants, on points of land often most subject to severe weather caused by the ocean, a lightship was even more isolated and vulnerable.

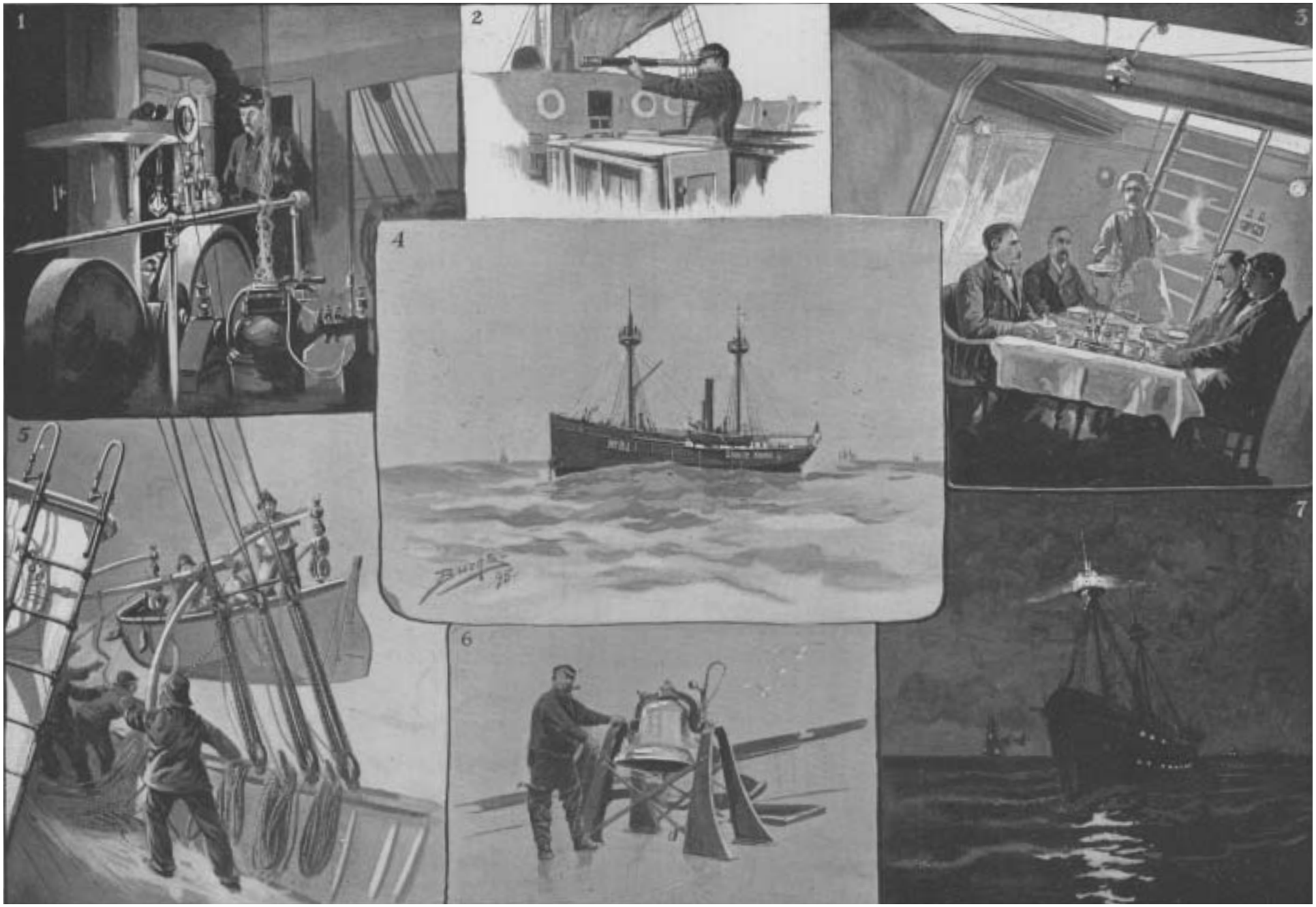
The crew of a light vessel consisted of four officers: a captain, a mate, a chief engineer and an assistant engineer, and eight crewmen: three firemen, four seamen and a cook. Leave was divided so that each man received ten days ashore each month, four men ashore, eight on duty. Because the lightship needed to remain at its post, the crew had to rely upon other pilots to transport them ashore, which meant that uncertain weather conditions and other factors could make shore liberty difficult. By the 1930s, leave was given by seniority. The masters of the ship would work one month and then have one month off. The crew worked one month and had fourteen days off.





Night image of a supply ship relieving the light vessel on the Tongue station. **Illustrated London News*, January 14, 1882.***

A ship held by anchor in open water will roll and jar with the changing waves. This not only affected the safety of the vessel, but also the comfort and health of the crew. The pitch of the ocean was known to nauseate even the most seafaring of sailors. This discomfort, combined with the monotony of a position that rarely changed, made service aboard a light vessel unpopular for most. But no one could argue that lightships were invaluable to the safety of ships, and for some that service was recommendation enough. Once electricity was common aboard lightships life became easier, although electricity may have aided in promoting the boredom of the crew. The signal lights stayed lit more easily. Getting the ship clean and fit was easily accomplished each day and days became more boring and monotonous.



CORNFIELD POINT LIGHT-SHIP NO. 51 – THE ONLY ELECTRIC LIGHT-SHIP IN THE WORLD. DRAWN BY M.J. BURNS. –

1. Dynamo-Room. 2. The Lookout. 3. Meal-Time. 4. A Daylight View of the Light-Ship. 5. Life-boat Drill. 6. Eight Bells. 7. A Night View, showing Electric Light.

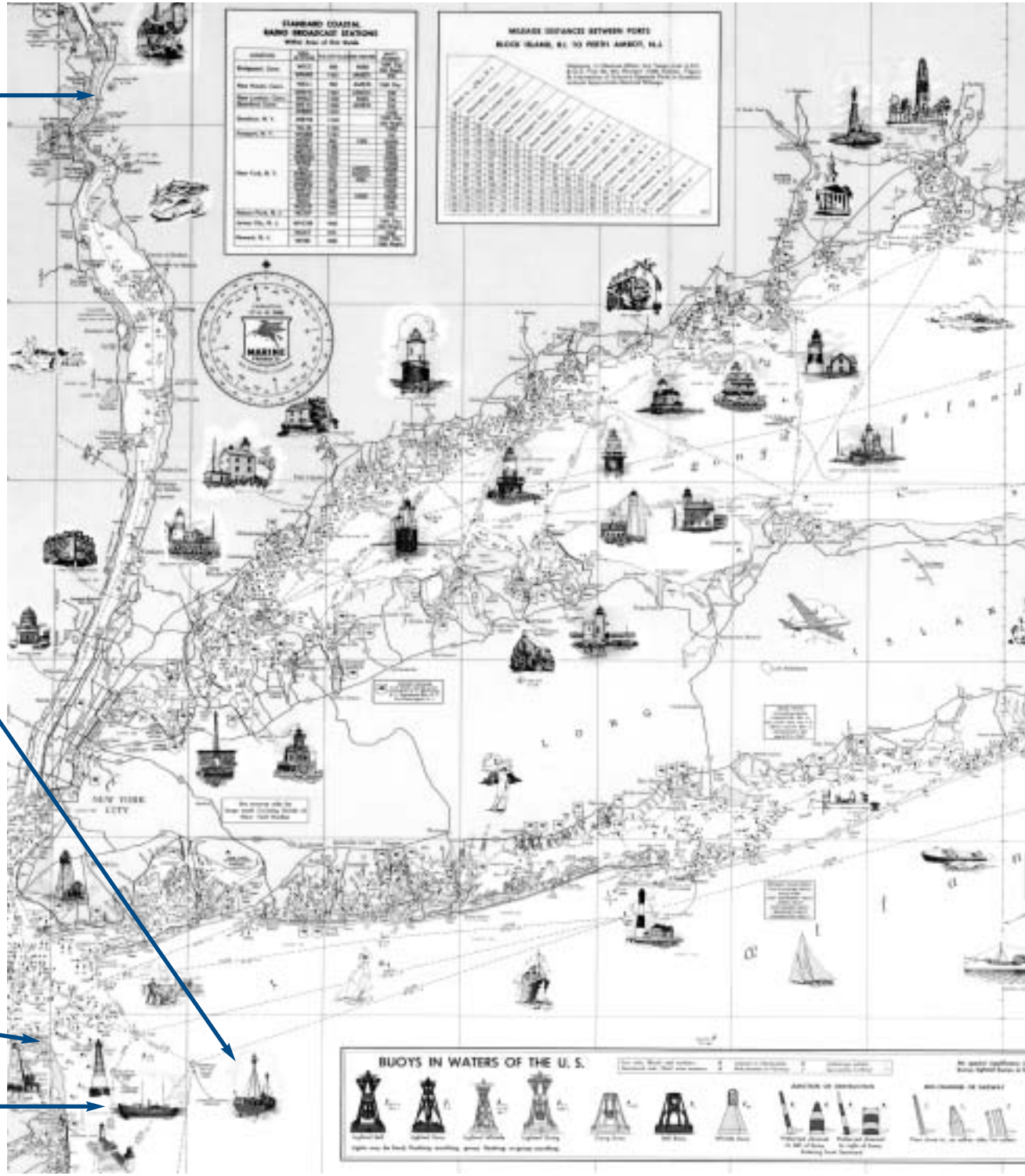
***Harpers Weekly* May 11, 1895**

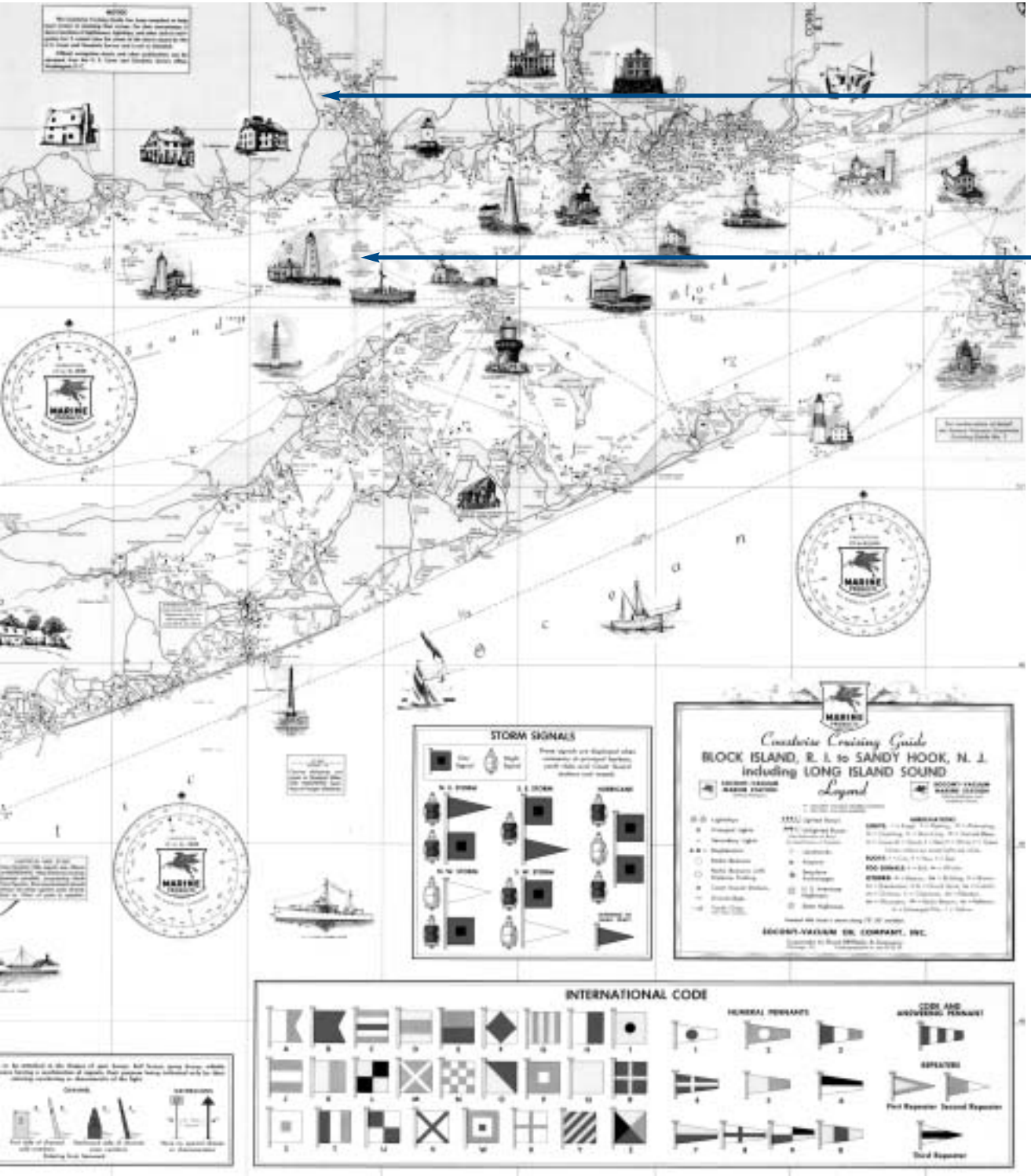
Hudson River

Ambrose Channel Lightship

LV-51 ***served the*** **Sandy Hook** ***station from 1894-1908.***

Scotland Station





Connecticut River

Light Vessels Stationed at Cornfield Point:

LV-14	*1856 - 1872*
LV-12	*1872 - 1882*
LV-23	*1882 - 1892*
LV-51	*1892 - 1894*
LV-20	*1894 - 1895*
LV-48	*1895 - 1925*
LV-44	*1926 - 1938*
LV-118	*1938 - 1957*

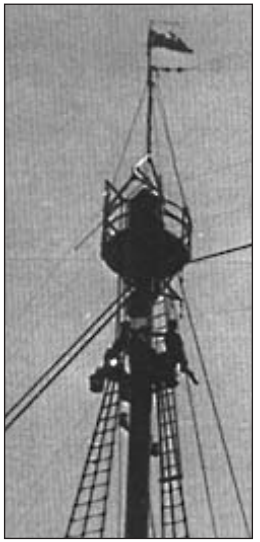
In 1957 the Lightship Station was replaced by an automatic buoy.

Chart provided by Doug Bingham of the Lightship Sailors Association.

Reminiscences of a Retired Light Vessel Crewman

Richard Petri, center, was in the U.S. Coast Guard and served on a relief lightship for several years, including the successor to the *LV-51*. Petri's ship, out of Staten Island, was on a constant rotation between three lightships: the *Ambrose* that was positioned at the broad mouth of lower New York Bay between Coney Island, New York and Sandy Hook, New Jersey - an area filled with sand bars and shoals invisible to vessels approaching from the Atlantic Ocean; the lightship at the *Scotland* position closer to Sandy Hook, New Jersey; and, the lightship on the more protected waters off Cornfield Point in Connecticut. Each lightship in the Coast Guard fleet returned to the docks at St. Georges, Staten Island once a year for repairs and "airing," which could take up to three months. While in port, station duties were assumed by the relief light vessel and the relief vessel's crew. Once restocked, a lightship would then go back on station and the relief vessel and crew would be dispatched to the next scheduled station.

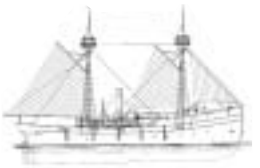
While on station, Petri was one of the two cooks on board, preparing three meals a day, seven days a week for a 12- to 13-man crew. The standard rotation by the late 1940s was three weeks on board and one week on shore leave. Petri remembers that "at Cornfield Point, going ashore was just a short whale-boat ride into Old Saybrook, which in itself was a nice place to go to with the great bar at the Peace House." There was also interaction between the light vessel crew and the lighthouse keepers and the local



fishermen. Lobstermen would come along the relief vessel and hand over the "shorts" from the day's haul, providing a very special meal to the Coast Guard crew. Grocery orders were radioed to the lighthouse, which relayed them to the grocery store in Old Saybrook. The tall-stack, old buoy tender, *The Oak*, would bring the returning relief crew, stores (groceries), and water to the relief vessel once a week. Duty on board could be boring. The generators always kicked in to electrify the signal lights up on the mast. Climbing up to the "lights" was for exercise only, since little maintenance was required by Petri or his mates.

Petri remembers that the relief light vessel's foghorn was just above the galley, so the fewer times that the foghorn had to "blow," the happier the cook would be. Duty at the *Ambrose* or *Scotland* stations could be very rough with rolling seas, and dangerous with heavy freighter traffic coming into New York Harbor. A lightship's duty is to be a well-lit target so that ships of all sizes can steer toward a clear channel. A crewman lived with that nibbling fear that a freighter's captain would temporarily forget that the beacon was really just a small lightship. "I liked Cornfield because it was more or less in protected water," confided Richard Petri.

These photographs of lightship activities are courtesy of Richard Petri, U.S. Coast Guard retired.

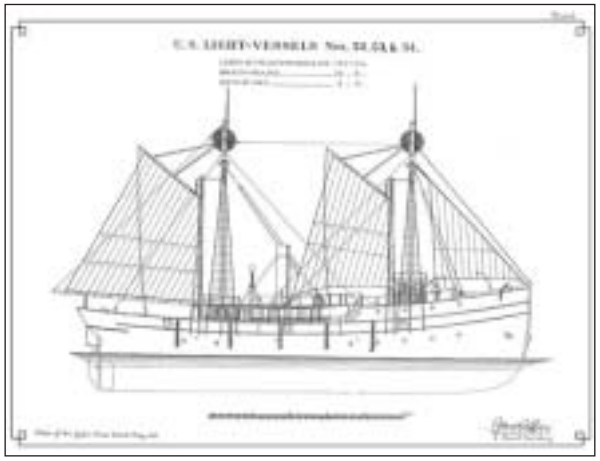


The Sister Ships

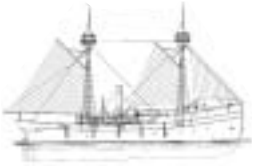
Three ships of similar design were also built in the Great Lakes: *LV-52, -53,* and *-54*. All three ships were constructed with iron hulls, hawse pipes centered in the bow, and steam to power the whistles and anchors. The *LV-51* was the only ship to be outfitted with electricity for lantern illumination. The others had two lanterns, each with 8 oil lamps with reflectors.

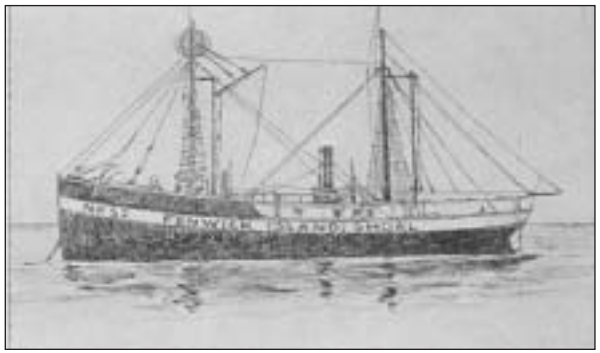
LV-52 was stationed off the coast of Delaware. *LV-53* was stationed off the coast of South Carolina and *LV-54* was stationed off the coast of Massachusetts. Improvements were made aboard each ship as the years passed. Each ship was outfitted with a submarine bell by the year 1910. Between 1912 - 1919 each lightship was equipped with a radio. Over the years, electric lanterns were placed on each ship.

The sister ships survived the seas, hurricanes, and even being rammed by other ships. *LV-54* was rammed by a British steamer in 1935; a hole was torn in the ship at the water line but the crew stuffed bags of coal into it and the ship remained afloat until it was towed to shore. Each of the sister ships entered relief duty and was retired in due course: *LV-52* in 1931, *LV-53* in 1951, and *LV-54* in 1946.

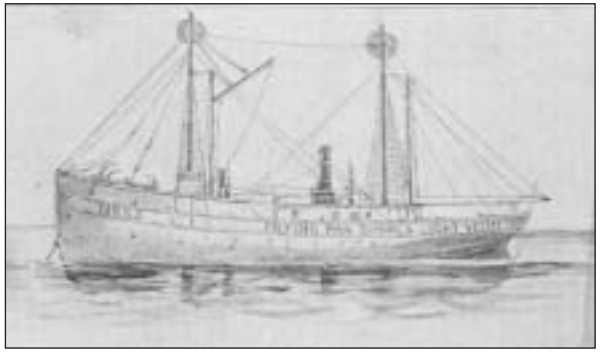


The original Rigging Plan of the three sister ships did not include an arrangement for electric lights. Office of the Light-House Board, 1891.



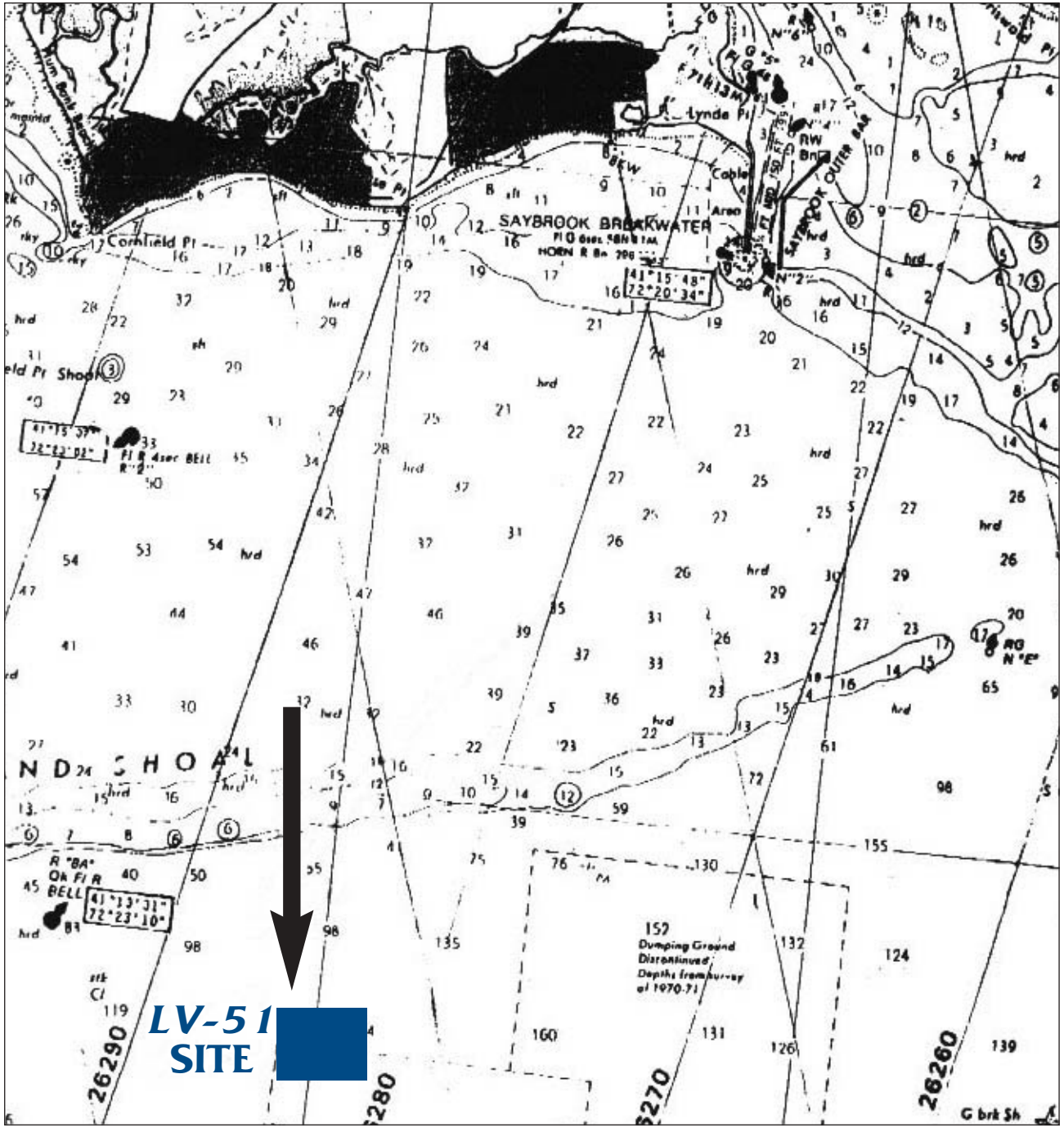


The sister ship,* LV-52*, assigned to the Fenwick Island Shoal station in Delaware. She had two fixed red lights and a steam whistle.



The sister ship,* LV-53*, assigned to the Frying Pan Shoals station (1896). She had two fixed white lights and a steam whistle (blasts, 5 seconds; intervals, 10 and 40 seconds).

***The sister ship,* LV-54.**



U.S. coastal chart includes Cornfield Point on the upper left, the Saybrook Breakwater, and the mouth of the Connecticut River on the upper right. The location of the* LV-51 *shipwreck is approximated.

The Sinking of *Light Vessel LV-51*

It was a sunny Thursday afternoon, April 14, 1919, when the *Light Vessel LV-51*, on relief duty, was rammed. It was struck by a tug barge, The Standard Oil Company barge, *Standard*, which was towing *Socony Barge #58*. The Hartford Courant reported that the skipper "either misjudged his course or failed to figure on the incoming tide" and rammed into the side of *LV-51*. The force of the collision was so strong that the shipmates below rushed to the deck. All crew responded "with immediate discipline" and disembarked to the lifeboats. The lightship crew was subsequently picked up by the crew of the tug and taken to New London. No lives were lost, but no personal effects were saved. The only property of the vessel that was saved was the lifeboat dory and the log and fog-signal books. *LV-51* foundered in the water and sank within eight minutes, disappearing under 30 fathoms of water.

It was the third light vessel of the U. S. Lighthouse Service to have been lost in 15 months.

Shipwrecks and Underwater Archaeology

Shipwrecks are powerful archaeological sites. The lines of the ship, its equipment and features, the artifacts on it - all combine to tell us of the interplay between man and vessel in a bygone era. Each shipwreck is a frozen snap-

shot of a particular time in history. The discovery of a shipwreck holds an indefinable allure. It blows through the imagination with a breeze that tastes of salt.

Underwater archaeology connects the romance and myth of shipwrecks with historical facts and real people. It carries scientific studies of the past into a specialized environment. A central focus of underwater archaeology is nautical archaeology: the study of ships, shipping, and the construction and operation of all types of prehistoric and historic watercraft. Nautical archaeologists document and recover artifacts from shipwreck sites. Other types of sites studied by underwater archaeologists include: inundated land sites; sinkholes or bogs; and sites along watercourses. Much underwater archaeology is conducted with standard scuba equipment, using simple measuring, mapping, and drawing techniques, alongside special methods for working in the underwater environment. Very importantly, the allure of the ocean continues to be powerful even after the archaeological exploration of a shipwreck has provided us with photographic images, measurements and facts.

Survey of the LV-5 1 Shipwreck

The *LV-51* wreck was originally located after research with the Coast Guard Historian's Office provided a high probability "search box." A search by sidescan sonar within the limits of the "search box" located the wreck in 190 feet of water, south of Cornfield Point, Old Saybrook, in November 2000. The precise location of the

National Register Recognition of Maritime Resources

For over two hundred years, the United State relied on ships as connective links of a nation. Vessels crossing the Atlantic, Caribbean, and Pacific Oceans, and our inland waters made fundamental contributions to colonial settlement, development of trade, exploration, national defense, and territorial expansions. Unfortunately, we have lost much of this maritime tradition, and most historic vessels have gone to watery graves or have been scrapped by shipbreakers. Many vessels, once renowned or common, now can only be appreciated in print, on film, on canvas, or in museums.

To recognize those cultural resources important in America's past and to encourage their preservation, Congress expanded the National Register of Historic Places in 1966. Among the diverse types of properties listed on the National Register are ships and shipwrecks, as well as buildings and structures, such as canals, drydocks, shipyards, and lighthouses that survive to document the Nation's maritime heritage.

There are five basic types of historic vessels which may be eligible for listing on the National Register. These categories are: Floating historic vessels; Dry-berthed historic vessels; Small craft; Hulks; and, Shipwrecks.

Source: **Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places*, James P. Delgado and a National Park Service Maritime Task Force, National Register Bulletin-20.***

Light Vessel LV-44 ***served at the Cornfield Point Station between 1926 and 1938. The* LV-44, *launched in 1882, was the first U.S. lightship designed and built with an unsheathed, all-metal hull. In 1912 both original masts were replaced with the steel skeleton towers.***

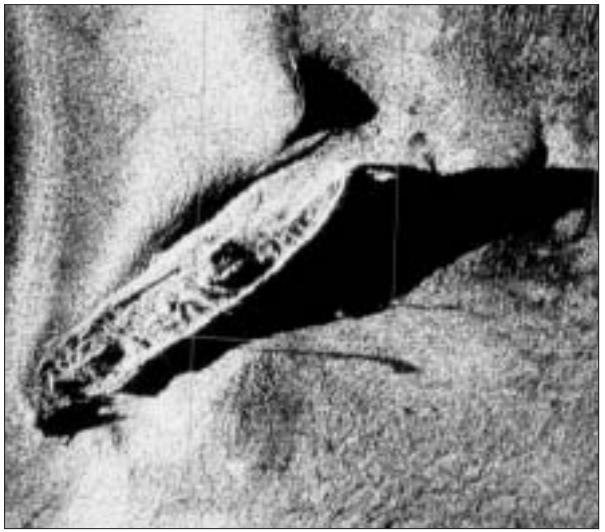
shipwreck was transferred to a nautical chart. Peter Johnson, a member of the State Underwater Advisory Committee, verified the shipwreck and its location with a reconnaissance dive and subsequently brought the wreck to the attention of the Connecticut State Historic Preservation Office and the Office of State Archaeology.

In order to establish the existing conditions of the *LV-51* for designation as a State Archaeological Preserve, a non-invasive survey of the ship was coordinated through the University of Connecticut at Avery Point and the National Underwater Research Center (NURC). An investigation team, including archaeologists, Coast Guard historians, State Underwater Advisory Committee members, and local news reporters boarded the University's *RV Connecticut* on March 12, 2003.

The research was guided by Peter Johnson. After thoroughly studying the historic plans of *LV-51*, he had pinpointed critical areas of the shipwreck that needed to be investigated. These "dive targets" represented distinctive elements of the *LV-51* that, if found, would verify that the shipwreck was indeed the historic light vessel. An illustration of the target components is on the inside front cover. The dive targets included:

- electric generation equipment
- two-blade iron propeller
- brass fog whistle
- brass fog bell
- gimbaled light with four lanterns
- hawse pipe in stern.

The underwater exploration was directed by Ivar Babb and Craig Bussel of the National Underwater Research Center. Although the divers on board would have preferred to risk the dangers of such a deep dive for a "hands-on" investigation of the shipwreck, the *LV-51* was best approached by the Phantom III, a Remote



The sidescan sonar image taken in 2000 clearly captured the upright* LV-51 *on the floor of Long Island Sound.

The Explorer's Club

Peter Johnson is displaying the flag of The Explorer's Club which was founded in 1904 to preserve the vital instinct to explore the world through field research and scientific endeavors. It is headquartered in New York City, but has multi-disciplinary members and chapters all over the world. If a member's project is approved for its value to exploration, he or she is allowed to carry one of the Explorer Club flags into the field. It is an honor to take one of the two hundred and two flags, each of which has a unique history. They have flown on both poles and the highest mountain peaks as well as traveling to the moon and outer space. Johnson's "Documentation of Relief Light Vessel (LV) - 51" was one of the Flag Expeditions reported in 2003.

The* R/V Connecticut*, a 76-foot, steel hull, single screw diesel powered research vessel, is considered the "University at sea." Its homeport is the University of Connecticut's Marine Sciences and Technology Center at Avery Point, Groton.

Operated Vessel or ROV. Specialized electronic equipment onboard the *Connecticut* allowed the vessel to constantly adjust for wind and tide changes and remain over the wreck site as the ROV descended 190 feet and began searching for the shipwreck. The Phantom III, tethered to the mother ship by hundreds of feet of protected tubing and piloted from control panels on the *Connecticut*, was able to instantly send brightly lit video images of the floor of Long Island Sound and the sunken lightship. The pre-selected dive targets were sought by the controllers as they gently guided the ROV over the wreck.

The ability to record the details of the* LV-51 *shipwreck at 190 feet below the surface was possible through video equipment mounted on the* Phantom III. *The crew of the* R/V Connecticut *hoists the* Phantom III *off the rear deck of the ship. As a remote operated vehicle (ROV), the* Phantom III *has its own swiveling halogen lights, video recorder, and propulsion units. The ROV moves with amazing quickness, despite its shape and size.

The video footage by Phantom III cameras yielded images of the *LV-51*. The wreck is upright and down slightly by the bow, settled into the monochromatic depths of the Sound. The forward 15-20 feet of the bow are buried in an underwater sand dune. The video documented the ship's propeller and rudder, the main anchor winch, and electrical generation equipment, as well as basic structural elements. A V-shaped collision scar was identified. The glass in the porthole, although encrusted with mollusks, eerily reflected the camera lights. The identified features and elements of *LV-51* are illustrated on the rear cover.

Future of the LV-51

Although settled in deep waters that provide protection against ice, collisions, and waves, the *LV-51* shipwreck remains under the administrative custody of the U.S. Coast Guard. Although tangled fishing lines and a modern beer bottle were noted at the wreck during the ROV survey, it is assumed that these are intrusions introduced by natural action. The wreck does not appear to have been "discovered" since the features of the light vessel are intact, most probably due to the depth of the wreck. The currents in the area require diving at only slack water and this wreck is beyond the recommended depth for sport diving.

Designation of the *LV-51* as a state archaeological preserve provides both recognition and additional protection of the shipwreck. Connecticut's underwater resources are fragile and management through *in situ* preservation is paramount. Shipwrecks must be left undisturbed, whether on the sandy floor of the Sound, in a harbor or on a riverbank, so that the opportunity to apply future, ever more advancing technology is not lost. Although the *LV-51* archaeological preserve is not available for public viewing or on-going marine research, it is now preserved as an important part of Connecticut's nautical history.

LV-51 — the Best of the Floating Lighthouses

Lightships have been called floating lighthouses, and in a way they served a similar purpose: to send light over water to guide ships and to keep ships safe. But, lightships proved to be more versatile than lighthouses, by virtue of their flexibility, able to move freely as a building cannot. The light vessel LV-51 was called by some "probably the finest equipped vessel of her kind afloat." Her launching caused a nationwide stir of interest in her advanced technology.

The ROV dive in 2003 was based on the coordinates of the sidescan sonar discovery in the year 2000. The original search for the LV-51 shipwreck in that year was conducted with a Klein System digital sonar. The search consisted of east-to west scans with the sonar sweeping 200 meters each side per sweep. The wreck was located on the eighth sweep approximately one-quarter of a mile from the official lightship station position at the time of the accident. ***See page 19.***

All movement of the ROV was controlled through electronic monitors and power panels on board the Connecticut, above left. As the Phantom III cameras recorded the shipwreck, additional data on the dive depth, pitch, roll and the conditions of the submersed equipment was collected. The Phantom III video was broken down into stills of specific features of the LV-51 shipwreck, such as portholes, above.

Lightship Baskets

Nowadays the word "lightship" is more well-known because of Nantucket lightship baskets than for the service that light vessels provided for the safety of the coasts. Nantucket lightship baskets are baskets that were originally made aboard the Nantucket light vessel by its crew.

When the New South Shoal light vessel was placed into service in 1856 its crew began making baskets to pass the time and to supplement their income. The baskets were a variation of the Nantucket rattan basket. People on Nantucket had been making baskets for a long time. When Englishmen came to Nantucket the Native Americans on the island taught them to make baskets using pounded wood. As the years progressed and the whaling industry took off, the whaling ships brought back materials from other lands to improve the baskets.

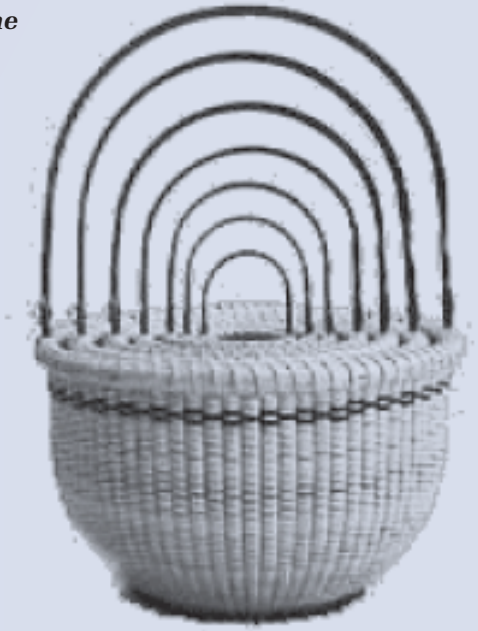
The baskets were designed for utilitarian purposes: for berry-picking, for sewing baskets and for storage baskets. They were lightweight and had handles. To save space they were made to nest, basket inside basket. Originally they were made of rattan, with wooden bottoms and side-spokes; eventually they were made of oak and hickory.

The baskets were formed around wooden molds. The molds were originally made from ship masts, but were later made by lathe-turning, which enabled the basket-makers to make the nesting baskets. A wooden bottom was slotted and hardwood staves were inserted into it and then rattan was woven tightly over the mold. Rattan was a material that was brought to Nantucket from the Pacific Rim on homeward bound whaling ships. This material was unusual and helped make the baskets more unique; today it is known as cane. When a member of the crew had his leave he would bring home his baskets, his family would keep some, and the rest would be sold in local stores.

A state law in the early 1890s was made forbidding lightship baskets to be made aboard light vessels, as it was considered profiting from the government's time. But by then the appeal of the baskets had grown widely, so the industry moved ashore and flourished. Early baskets were usually labeled with the name of the maker and the name of the shopkeeper who sold the baskets. A small rhyme was also attached to some of the baskets:

"I was made on Nantucket,
I'm strong and I'm stout,
Don't lose me or burn me,
And I'll never wear out."

In 1945 a basket-maker named Jose Reyes came to Nantucket from the Philippines. He added a woven lid to the top of the basket, which he attached with leather straps. He also added pieces of carved whale ivory, shaped as seagulls or seashells, some of which were etched with ink, a style called scrimshaw. These additions to the design made the baskets even more collectible, and today lightship baskets are still made. Collectors search for the original baskets made on lightships. The baskets made aboard the New South Shoal lightship earn the most money in auctions, an original set going for $50,000.



Timothy D. Parsons photograph

Glossary

Bilge - either of the rounded areas that form the transition between the bottom and the sides on the exterior of a ship's hull.

Bilge Keel - either of two structural members in the bottom of the hull extending lengthwise along a ship's bilge, one on each side, to reduce rolling.

Bow - the forward part of a vessel's sides (front).

Buoy - a distinctively shaped and marked float, anchored to mark a channel, anchorage, navigational hazard, etc., or to provide a mooring place away from the shore.

Chart - a map showing coastlines, water depths, or other information of use to navigators.

Fathom - a unit of length equal to six feet, used in measuring marine depths.

Gimbal - a device, consisting of a ring or base on an axis, which allows an object (such as a ship's compass or lantern) mounted on it to tilt freely in any direction so that the base always remains horizontal.

Hawse Hole - an opening in the bow of a ship through which a cable or hawser (rope) is passed for mooring or towing the ship.

Hull - the hollow, lowermost portion of a ship, floating partially immersed in the water and supporting the remainder of the vessel.

Knot - a unit of speed equal to one nautical mile (1.5 statute miles) per hour.

Locker - a chest or compartment in which to store things.

Mooring - a place where a ship may be secured, usually by means of cables and anchors or by lines.

BENJ. F. PACKARD
Built: 1883 by Goss, Sawyer & Packard, Bath Maine. Scuttled: May 19, 1939 off of Eatons Neck, Anchor & Cable Reef. Named "Battleship of the Merchant Marine" by National Seaman's Union of America. Officers Cabin preserved and displayed at Mystic Seaport, CT.

Shoal - a shallow area in a sea, river or other body of water.

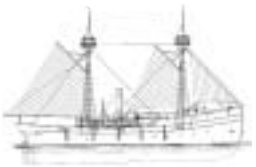
Stern - the back or after part of the vessel.

Underwater archaeology - takes scientific studies of the past into a specialized environment. A central focus of underwater archaeology is nautical archaeology: the study of ships, shipping, and the construction and operation of all types of prehistoric and historic watercraft. Nautical archaeologists also document and recover artifacts from shipwreck sites.

CONNECTICUT'S UNDERWATER ADVISORY COMMITTEE

Connecticut's Underwater Advisory Committee was created to promote mutual respect among diverse constituencies (divers, archaeologists, maritime historians, and state and federal agencies), to provide a forum for different perspectives, to better understand the legal and technical difficulties associated with shipwreck preservation, and to offer guidance for the responsible management of the state's underwater heritage. It includes representatives from the Mystic Seaport Museum, the U.S. Naval Submarine Base New London, the Department of Environmental Protection's Office of Long Island Sound Programs, and the Connecticut recreational diving community.

It meets informally to discuss current research, potential threats to shipwrecks, development of cooperative approaches, and other pertinent concerns related to historic shipwreck identification and protection within Long Island Sound. For further information regarding the Underwater Advisory Committee, contact either the Office of State Archaeology or the State Historic Preservation Office.



Additional Information:

Connecticut Office of State Archaeology/Underwater. www.cac.uconn.edu/underwater/index.html

Connecticut Sea Grant College Program. http://seagrant.uconn.edu

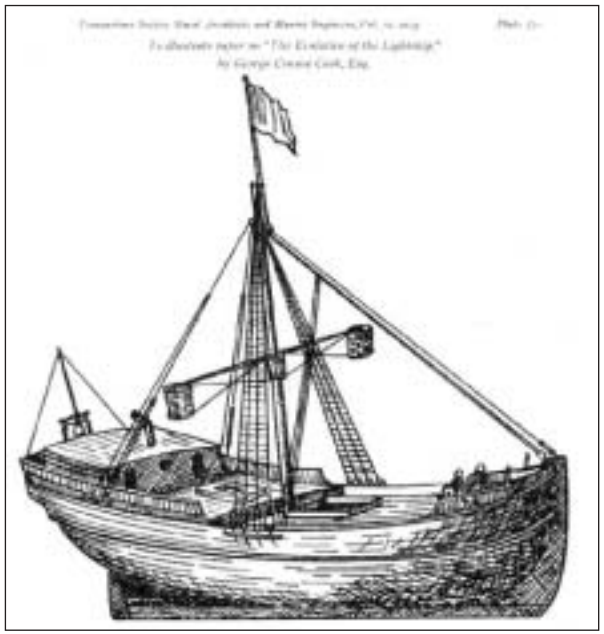
Diving Heritage. www.divingheritage.com

Guide to Underwater Archaeological Resources on the Internet. www.pophaus.com/underwater

Institute of Marine Archaeological Conservation. www.imacdigest.com

Long Island Sound Keeper. www.soundkeeper.org

"Vessel Designation: LV-51," and "A History of Lightships," by Willard Flint, both available on the U. S. Coast Guard Website. www.uscg.mil/nq/gcp/history



The first recorded lightship was licensed by George II in 1730 and stationed on the Nore Sands, England.

Connecticut Lighthouse, Marine, & Nautical Sites Open to the Public:

Black Rock Harbor Lighthouse. Bridgeport.

Historic Ship *Nautilus* & U.S.Navy Submarine Force Museum. U. S. Naval Submarine Base, New London. www.ussnautilus.org

National Undersea Research Center. University of Connecticut at Avery Point. 1080 Shennecossett Road, Groton. www.nurc.uconn.edu

NOAA Office of Ocean Exploration. http://oceanexplorer.noaa.gov/welcome

Project Oceanology. UConn campus at Avery Point, 1084 Shennecossett Road, Groton. www.oceanology.org

Stonington Borough Lighthouse, Stonington.

Fairfield County Diving Association, www.hometown.aol.com/fcda/index.html

Gillmen Dive Club of Hartford, www.gillmen.org

SECONN DIVE CLUB, www.seconndivers.org/Join.html

***The* Ambrose *light vessel guided incoming ships safely from the Atlantic Ocean into the broad mouth of the lower New York Bay between Coney Island, New York and Sandy Hook, New Jersey - an area filled with sand bars and shoals invisible to approaching vessels. Her statistics, listed below, are comparable to the* LV-51.**

Length: 112 ft. 12 in.
Breadth: 29 ft.
Depth of Hold: 15 ft. 4 in.

The *Ambrose*

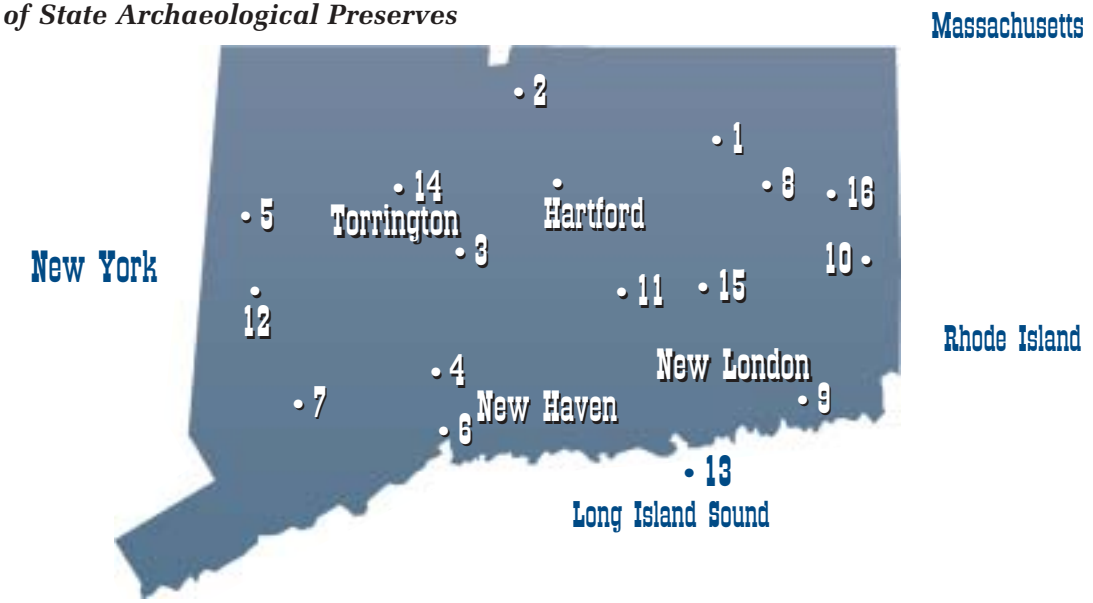
The* Ambrose *lightship was built in 1908 to guide ships safely from the Atlantic Ocean into the New York Harbor. While a lighthouse is normally used for this purpose, the water of this harbor entrance was too deep, and the bottom too soft, and this floating alternative was devised. The* Ambrose *lightship occupied her original station until 1933, and then served as the Scotland station lightship closer to Sandy Hook until 1963. She was given to New York City's Southstreet Seaport Museum by the U.S. Coast Guard in 1968. Today, visitors can board the* Ambrose *to view an exhibition of photographs, charts, and artifacts on navigation and the role of lightships.

State Archaeological Preserves

Connecticut's State Archaeological Preserves
(May 2004)

1. Fifth Camp of Rochambeau's Infantry, Bolton
2. Newgate Prison and Copper Mine, East Granby
3. Small Pox Hospital Rock Site, Farmington
4. Axle Shop-Spring Factory, Hamden
5. Kent Iron Furnace, Kent
6. Fort Wooster Park, New Haven
7. Putnam Memorial State Park, Redding and Bethel
8. Fourth Camp of Rochambeau's Army, Windham
9. New London Engine House and Turntable
10. Quinebaug River Prehistoric Archaeological District, Canterbury
11. *Aunt Polly*, East Haddam
12. Bridgeport Wood Finishing Company Industrial Archaeological Site, New Milford
13. Cornfield Point *Light Vessel LV-51*, Long Island Sound off Old Saybrook
14. John Brown Birthplace, Torrington
15. Air Line Railroad, Cochester and East Hampton
16. Governor Samuel Huntington Homestead, Scotland

Location of State Archaeological Preserves

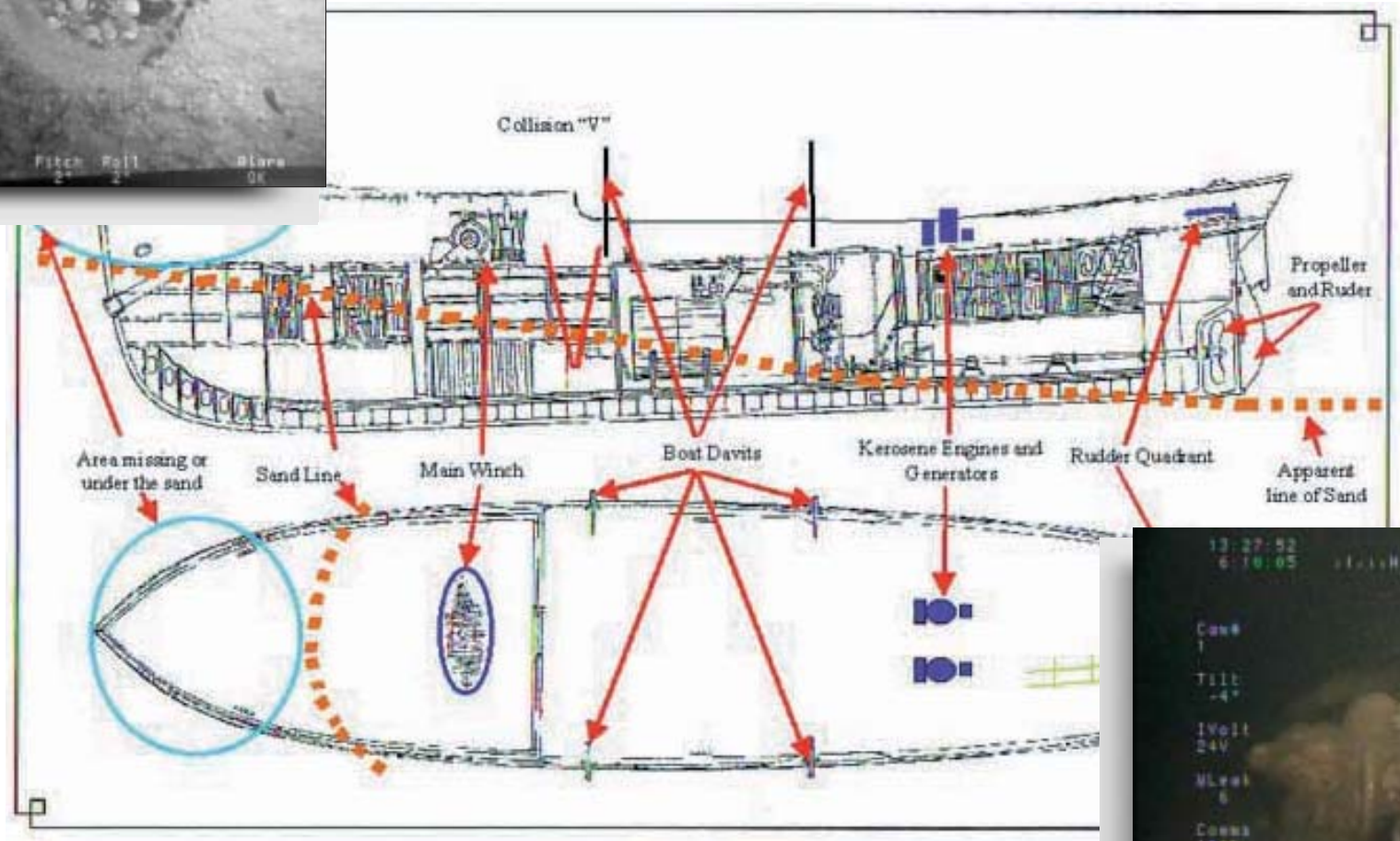


State Archaeological Preserves were established by the Connecticut Legislature as a mechanism to protect significant archaeological sites. Archaeological sites that are listed on the National Register of Historic Places and/or the State Register of Historic Places qualify for designation as a Preserve, whether the land is private or public property. The National Register is the official Federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture worthy of preservation. These contribute to an understanding of the historical and cultural foundations of the Nation. Similarly, the State Register of Historic Places is a census of historic and archaeological resourses that are integral to the development of Connecticut's distinctive character.

The Commission on Arts, Tourism, Culture, History and Film is empowered to designate archaeological sites as Preserves (C.G.S. Section 10-384). The Commission, in coordination with the Office of State Archaeology and, when appropriate, the Native American Heritage Advisory Council, works with property owners to nominate significant sites as Archaeological Preserves. The Commission is also charged with maintaining the master listing of all archaeological preserves.

Preserves recognize both the educational and cultural value, as well as the fragile nature, of archaeological resources. Many of Connecticut's Preserves are on private land and fall under the protection of property owner rights. In addition, Connecticut law provides that, regardless of whether a Preserve is on private or public land, no person shall "excavate, damage or otherwise alter or deface the archaeological integrity or sacred importance" of a Preserve. Connecticut State Statute Section 10-390 provides significant penalties for vandalism and the unlawful collecting of archaeological remains from State Archaeological Preserves.

The "hands free" archaeological dive on the LV-51 *shipwreck recorded many of the ship's features through the lens of a remotely operated camera. The identified features, as well as its natural setting at 190 feet below the surface of the water, are noted in color on the original, 1892, plans for the lightship. The wreck is intact to the main deck but the fore deck has collapsed with only the bulkheads remaining and almost all of the wooden decking has deteriorated. Identified features included portholes, left, and the electrical generation equipment, below right.*



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