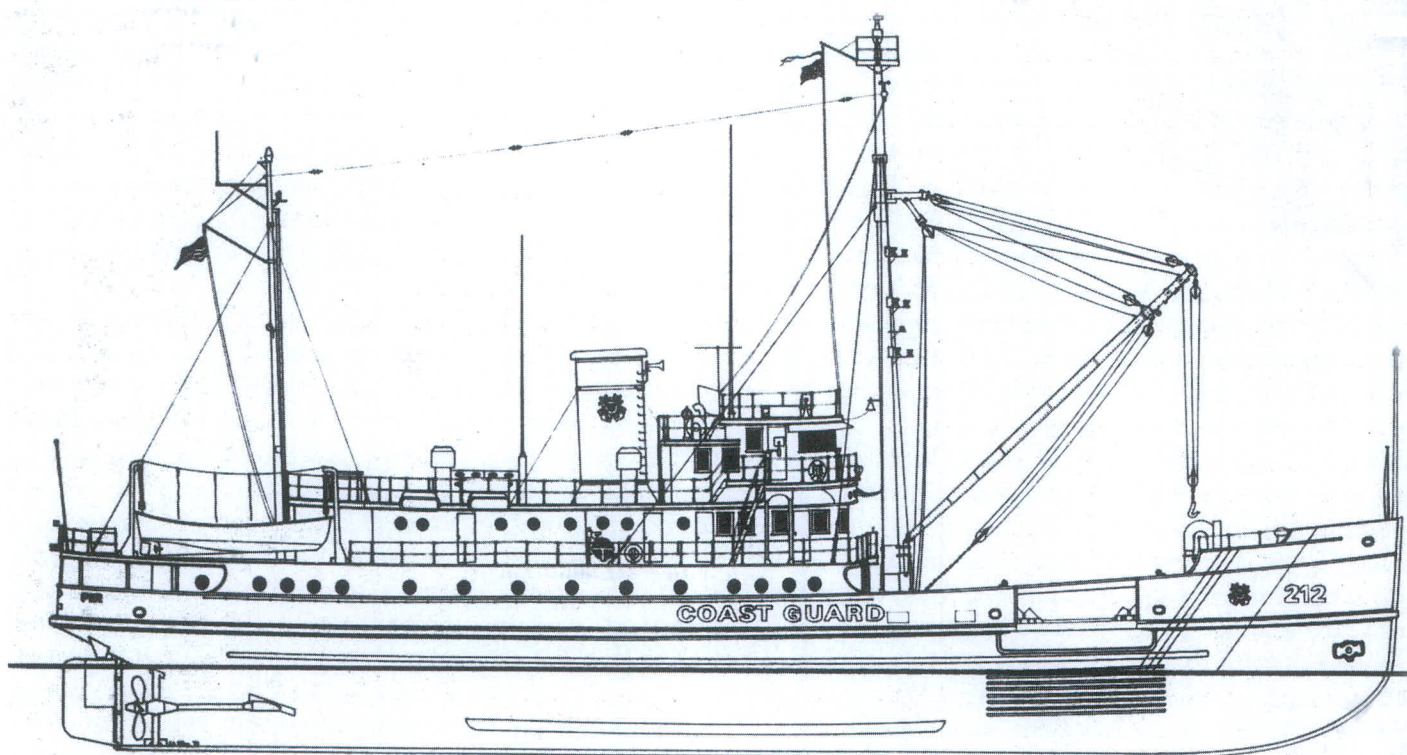




U. S. Coast Guard Cutter *Fir* (WLM-212)

by Candace Clifford

Lighthouses and buoys have been essential aids to navigation in the United States since colonial times. Originally the government contracted private vessels to service the country's aids to navigation or relied on cutters of the U.S. Revenue Cutter Service. As the nation grew, so did its system of aids to navigation, and in the 1850s, the U.S. Light-House Board designed a vessel specifically for tending aids to navigation. Gradually, most lighthouse districts came to own at least one tender, some powered by sail, others by steam. The steam-powered tenders proved much more maneuverable in tending buoys than their sail-rigged counterparts, allowing for a much more accurate placement.

Tenders were expected to be maids of all work. Light stations relied on deliveries of replacement parts, paint, oil, coal, wood and other fuel, and supplies. Keepers had to be delivered to their charges along with their family, property, livestock, mail, etc. Lighthouse

inspectors and engineers had to be transported and non-propelled lightships moved on or off their stations. One of the principal duties of tenders was relieving, repairing, and/or replacing navigational buoys. Buoy maintenance was scheduled on a regular basis, most often annually, and was interspersed with work needed to replace buoys that were off station, sunk, or out of order.

The evolution of the buoy tender is directly related to the functions it has served, the materials and technology available at the time of construction, and the mission and traditions of the administering agency. Over time, the tenders' consistent function has been to service aids to navigation, i.e., buoys, light stations, and lightships. As the technology and care of aids to navigation have evolved and changed, so have the vessels that service them. In more recent years, tender duties have expanded to include search and rescue, icebreaking, military readiness, and law enforcement – a reflection of the expanded mission of the modern U.S. Coast Guard.

The Engineer's Digest of September 1939 included the following description of a light-house tender:

Lighthouse Tenders are used for general duty which consists mainly of servicing navigational aids and supplying necessities to light-houses and lightships. In order to perform these duties the vessel must be able to carry personnel, cargo, fuel and water. In addition to the above, the vessel must have adequate deck space for working, storing and servicing buoys. In order to lift the buoys with their chains and sinkers, the vessels are equipped with derricks of a capacity commensurate with the size and duties of the vessel. In order that the buoys may be worked alongside, with reasonable safety to personnel, low freeboard is essential. The large tenders are equipped with booms approximately fifty feet long with a working capacity of twenty tons. The vessels are of medium speed, in general rather shoal draft, and are usually twin screw due to the requirement of handling heavy weights over the side, coupled with a low freeboard require-

ment. The larger tenders are designed for open sea work, a smaller type being used for bays and sounds, and still smaller type for protected waters. Vessels are powered with steam, diesel, and diesel-electric drives.

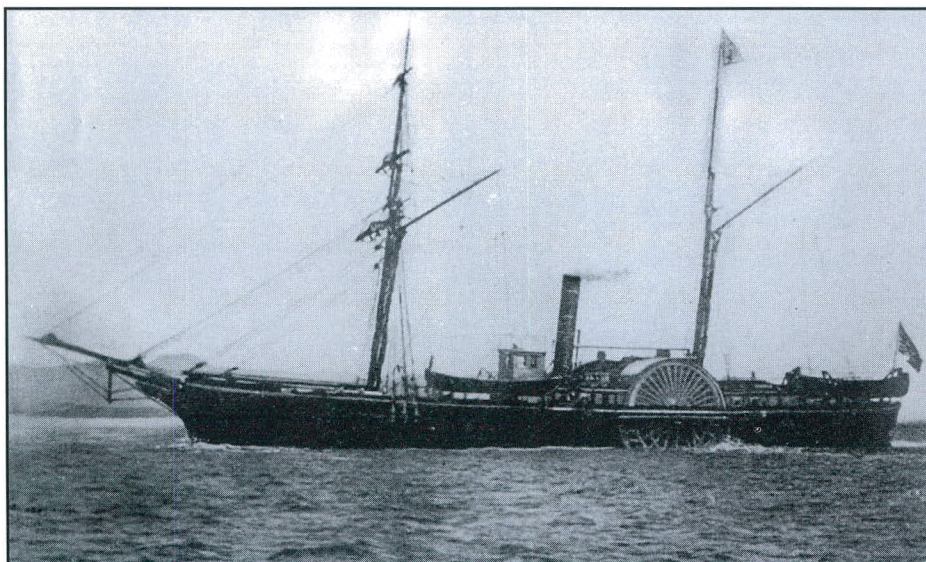
In 1940 the U.S. Coast Guard had to maintain a grand total of 30,420 aids to navigation in U.S. waters. These included lighted aids (lighthouses, lightships, and buoys), fog signals, unlighted buoys, and daymarks. In the 13th U.S. Coast Guard District, which included Washington and Oregon, it was reported that at the time of consolidation in 1939, there were 1,362 aids to navigation, including "31 major light stations, three lightship stations, 133 fog signals, 12 radiobeacons, 672 minor lights including lighted buoys, and 676 unlighted buoys and daymarks."

Considered to be the last tender built by the U.S. Lighthouse Service, *Fir* was part of the *Hollyhock* class, a three-ship class designed as coastwide (type "A") tenders for use by the Lighthouse Service. The first ship of the class, *Hollyhock*, was contracted in March 1936, launched on March 24, 1937, and commissioned on August 7, 1937. The third ship, *Walnut*, was contracted to the same shipyard as *Fir*, and was launched in the same month. The contract for *Fir* was let by the U.S. Lighthouse Service to the Moore Dry Dock Company, a shipyard located at the Foot of Adeline Street in Oakland, California, on August 17, 1938. Funding from the Public Works Administration (PWA) covered the cost of construction – \$389,746 – and additional fittings brought the price closer to \$400,000.

Fir's keel was laid on January 7, 1939. She was launched on March 22, 1939. The Lighthouse Service was consolidated under the U.S. Coast Guard on July 1, 1939. Trials for *Fir* were held on San Francisco Bay on August 17, 1939. Assigned to the U.S. Coast Guard 13th District that encompasses the Pacific Northwest, *Fir*'s home port was Seattle, Washington. The vessel was formally commissioned as the U.S. Coast Guard Cutter *Fir* (WAGL-212) on October 1, 1940. (As part of the Coast Guard's reclassification system, *Fir* was redesignated a Coastal Buoy Tender – WLM-212 in 1965.)



Launching *Fir* on March 22, 1939. Photo courtesy Coast Guard Museum N.W.



The Lighthouse Service side-wheel tender *Shubrick*. The first tender on the West Coast and the first constructed especially for the Service. She was named for the first Chairman of the Lighthouse Board, RADM William Shubrick. Lighthouse Society photo.

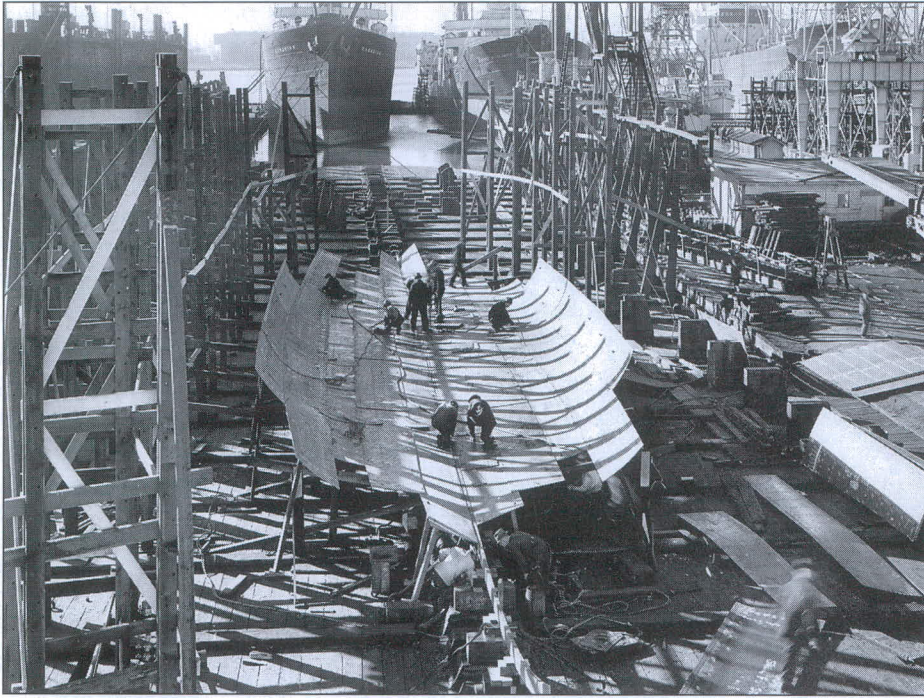
The first revenue cutter dispatched to the Pacific Northwest was the topsail schooner *Jefferson Davis*, which sailed into Puget Sound on September 28, 1854. The first lighthouse tender to serve the Pacific coast was *Shubrick*, a wooden-hulled side-wheeler built in Philadelphia in 1857. After arriving on the West Coast, she assisted in the construction of the first lighthouses in Washington Territory. She served double-duty as a buoy tender and a revenue cutter, carrying three 12-pound cannons and small arms. *Shubrick* serviced the entire Pacific coast until 1880, when a second vessel, *Manzanita*, was assigned the northwest portion and *Shubrick* continued to serve the lower Pacific coast. As traffic increased in Northwest waters, so did the need for aids to navigation, and for more tenders. When the Coast Guard absorbed the Lighthouse Service in 1939, the 13th District had four tenders in service: *Heather*, *Rose*, *Manzanita*, and *Rhododendron*. Upon the arrival of *Fir*, *Heather* was removed from duty.

The hazardous nature of work on the Northwest tenders during the 1940s was described as follows:

The jobs confronting the buoy tenders were much the same – relieving buoys annually, replacing and recharging batteries, installing acetylene accumulators, and establishing new aids. The routine, however, was never monotonous. Treacherous waters, dangerous shoals, fog, storms, and the nature of the equipment made the task of the buoy man a hazardous as well as a highly specialized operation. Winter activities were especially grueling, as sharp winds blew icy water on the men as they worked, while the rolling ship with its slippery deck made each movement a hazardous one.

When *Fir* reported for duty, the *Seattle Times* reported on June 9, 1940, that she was "one of the most modern vessels of her type" with both a gyro stabilized compass and a radio direction finder. Within a month of the article's publication, a depth sounder was installed, completing the state-of-the-art electronics package. With the exception of a short stint in Long Beach, California, where she temporarily replaced *Walnut* after her decommissioning in 1982, *Fir* spent her entire career operating out of Seattle.

Fir started her career under the command of Chief Warrant Officer Ole Eriksen, a seasoned Lighthouse Service master who had last served on USLHT *Heather*. *Fir*'s duties included resupplying coal, potable water, food,



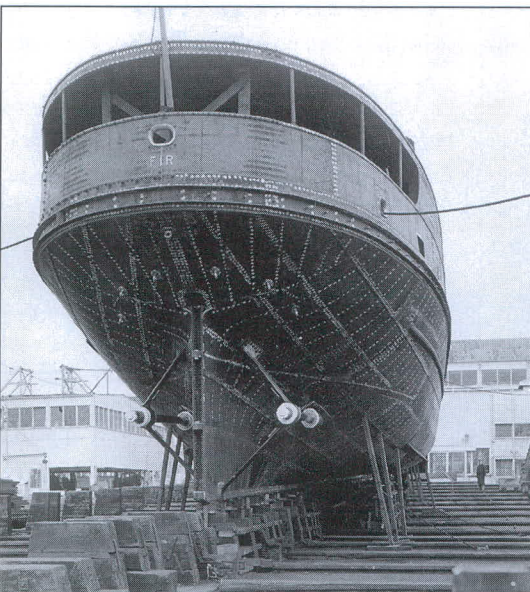
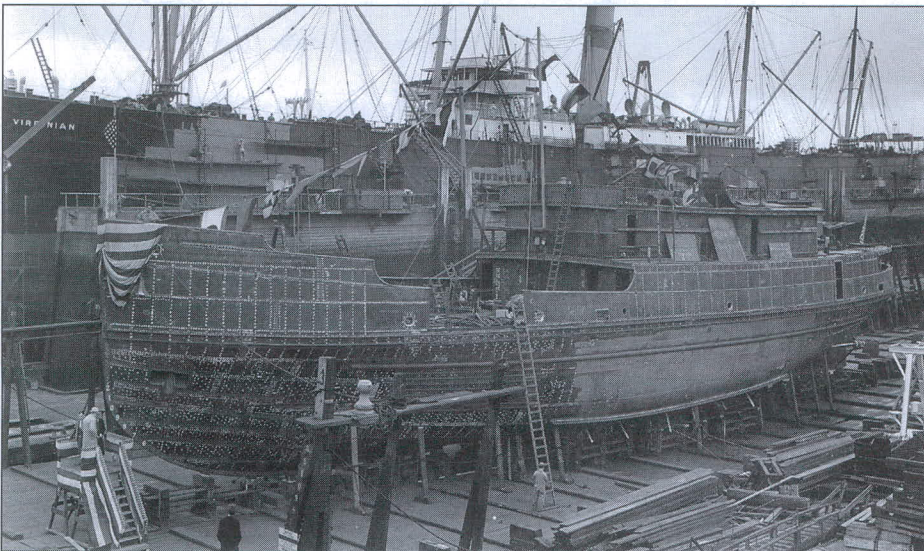
Top left – *Fir*'s keel was laid on January 7, 1939. The progress report for January 1939 indicates that there were 788 workers on the payroll, logging 31,332 hours. The stem was set in place with the cant framing and decks completed. The upper deckhouse, pilothouse and radio room were being fabricated at a separate location. Photo taken January 6, 1939.

Middle left – *Fir* ready for her launch on March 18, 1939. Note PWA sign in the foreground indicating that a Public Works Administration project was in progress. During the month *Fir* was launched, the number of workers was 836, logging 37,206 hours. The boilers and steering engine, chain lockers and tanks were installed. Note the launching platform at the bow. The gentleman standing by it may well be the District Inspector, Harry Rhodes.

Below left – The completed hull without the screws (propellers) installed on the shafts.

Below – *Fir* at the fitting out pier on June 30, 1939. Using 162 workers, logging 23,767 hours, furniture was being installed as well as interior communication equipment, including a telegraph system, bells and pulls, electric bells, alarm and ship's bell. Cementing of tanks and bilges was completed and the piping system close to completion. Skylights were complete. Derrick mast and boom, standing and running rigging, main mast, ensign and jack staff were complete. Red lead paint was used on the machinery and radio room, galley and engine room. Anchors, cleats, chocks, railings and ladders were complete or nearly so.

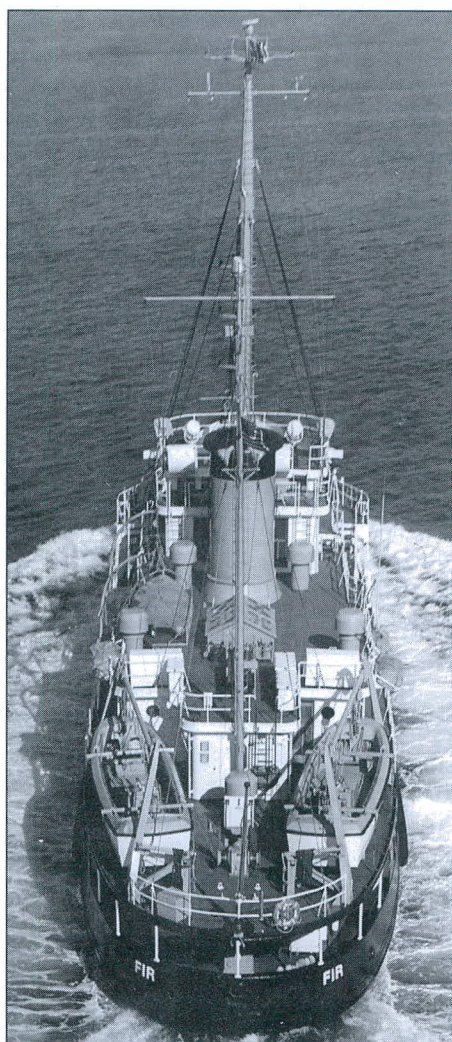
All photos courtesy of the Coast Guard.



and other vital provisions to lightships and light-houses in the Strait of Juan de Fuca and on the Washington coast. *Fir* also transported personnel on and off these remote stations and delivered mail and personal goods. In addition to servicing the manned aids, *Fir* maintained the automated acetylene buoys throughout the waters of northwest Washington.

Washington had several remote offshore light stations where the transfer of personnel was often a dangerous and time-consuming task. "At Cape Flattery, Washington, for instance, keepers had to be hoisted by derrick onto the island in an open box dangling from a hook. A small boat had to be worked in under the box as personnel were transferred, sometimes under rough sea conditions. *Fir*, like other tenders, had to routinely go into water where no other type of boat dared venture." *Fir* also served three lightship stations: SWIFT-SURE (Bank) at the entrance to the Strait of Juan de Fuca; UMATILLA (Reef) off La Push; and COLUMBIA at the mouth of the Columbia River on the Washington-Oregon border.

During World War II, *Fir* was placed under the director of the Navy and painted gray. Armament installed included 50-caliber machine guns, one 3-inch gun, and depth charges. Her war duties included standing picket duty, towing gunnery targets, and patrolling in and around Washington and Oregon waters.



USCGC *Fir* underway for sea trials. U.S. Coast Guard photo.

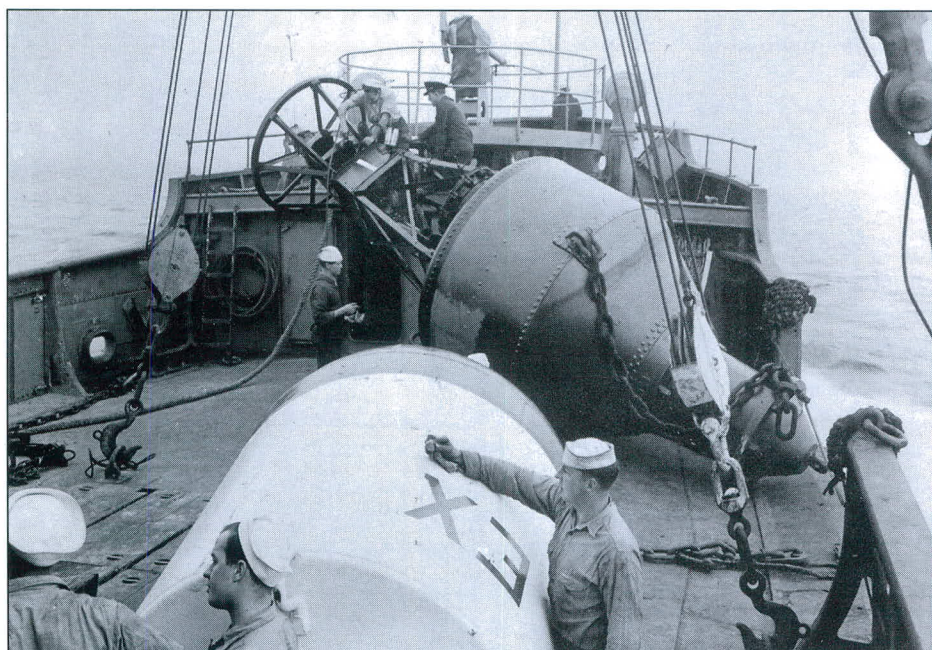
After the war, *Fir* returned to her regular routine tending the many buoys marking Washington's waterways.

Maintaining and servicing buoys means long hours of hard, often dangerous work. The buoy's anchor, tons of cement with chain attached, hangs suspended alongside her low buoy deck. Taking continuous bearings, the ship maneuvers into the exact position matching the buoy's charted location. On command, the huge anchor is released and plunges to the bottom of the sea, pulling row after row of heavy chain, clattering off the steel decks after it. The freshly painted and serviced buoy, laying on its side on deck, is then hoisted aloft with the boom, swung over the side and released. The ship backs away and another aid to navigation is back on the job.

Initially the bearings were taken with lead line and sightings from the bridge deck. Now Global Position System satellites provide much more accurate, and quicker fixes. The buoys, once lighted with acetylene, were updated to storage batteries and then to solar power. FIR lived long enough to witness these transitions over the years.

In addition to servicing aids to navigation, *Fir* performed search and rescue, marine environmental protection, and law enforcement duties.

Fir began her career equipped with two triple-expansion horizontal steam engines (1,000 combined steam horsepower) and two oil-fired Babcock and Wilcox watertube boilers. Her steel boom with hydraulic hoist had a 20-ton capacity. During an overhaul and conversion at the Todd Shipyard, Seattle, Washington, in 1951, *Fir* was re-engined from steam to diesel with twin 1,350-horsepower Fairbanks-Morse diesel engines coupled with reduction gears. She was the last American steam-powered tender to be dieselized. In 1974, two maneuvering rudders were added to improve her handling and in 1982, a new hydraulic boom and A-frame system replaced the old electrically powered one, giving her the 30,000-pound hoisting capacity needed to work the nine-foot buoys and nine-ton sinkers found off the coast. Her electronics package was modernized during her career so that by the time of her decommissioning, she had five computer work stations, two radar, a variety of receivers and transmitters, a thermal imaging scope for damage control, and a computerized telephone system. The living spaces were modified in the late 1980s



Crewmembers working on buoys on the *Fir*'s buoy deck. Servicing round buoys, weighing up to ten tons, on a pitching deck is a dangerous occupation. Photo courtesy of the Coast Guard.

to provide a four-rack berthing area for female crew.

Despite the modifications that were necessary for continued operation, *Fir* retains her original character and many of her original features, making her a unique legacy to the Lighthouse Service.

Oak banisters adorn the ladders, polished brass is throughout the bridge, many staterooms have the original wooden racks, desks, and wardrobes, and screen doors still open onto the weather decks. She has a classic lighthouse tender design, including a white pine "rib" rail 2 feet above the waterline, a spacious bridge with curved windows which roll down, outboard passageways on the main deck, skylights in the engine room, and windows in the staterooms and engineroom looking out into the passageway.

When USCGC *Ingham* was decommissioned on May 27, 1988, *Fir* became the Coast Guard's oldest cutter and was designated "Queen of the Fleet." She received gold hull numbers on May 30, 1988, for this distinction. Her durability may have in part been due to the fact that she served in a freshwater environment with limited exposure to heavy seas; the loving care provided by her captain and crew no doubt also played a role.

Before decommissioning in 1991, *Fir* was responsible for 138 lighted and unlighted buoys in the Strait of Juan de Fuca and the Puget Sound area. In the spirit of her original mission, *Fir*'s last active-duty assignment was assisting in the rehabilitation of Cape Flattery Lighthouse on Tatoosh Island at the entrance of the Strait of Juan de Fuca.

Fir was decommissioned on October 1, 1991, one year after her 50th birthday. Over 600 attendees were on hand to honor the last surviving lighthouse tender in the United States. The oldest commissioned cutter award was presented by *Fir*'s commanding officer, LCDR Nutting, to CDR Philip E. Sherer, Commanding Officer of the USCGC *Storis*. A decommissioning booklet was prepared to pay tribute to *Fir*. In describing her career, the booklet states,

Through her 51 years, FIR's primary responsibilities of maintaining aids to navigation have remained the same. She has adapted to the major technological advances of the past five decades while still retaining the heritage of her Lighthouse Service days. During her career, she saw the power used to light buoys change from acetylene to solar while the hulls [of tenders] changed from riveted construction to

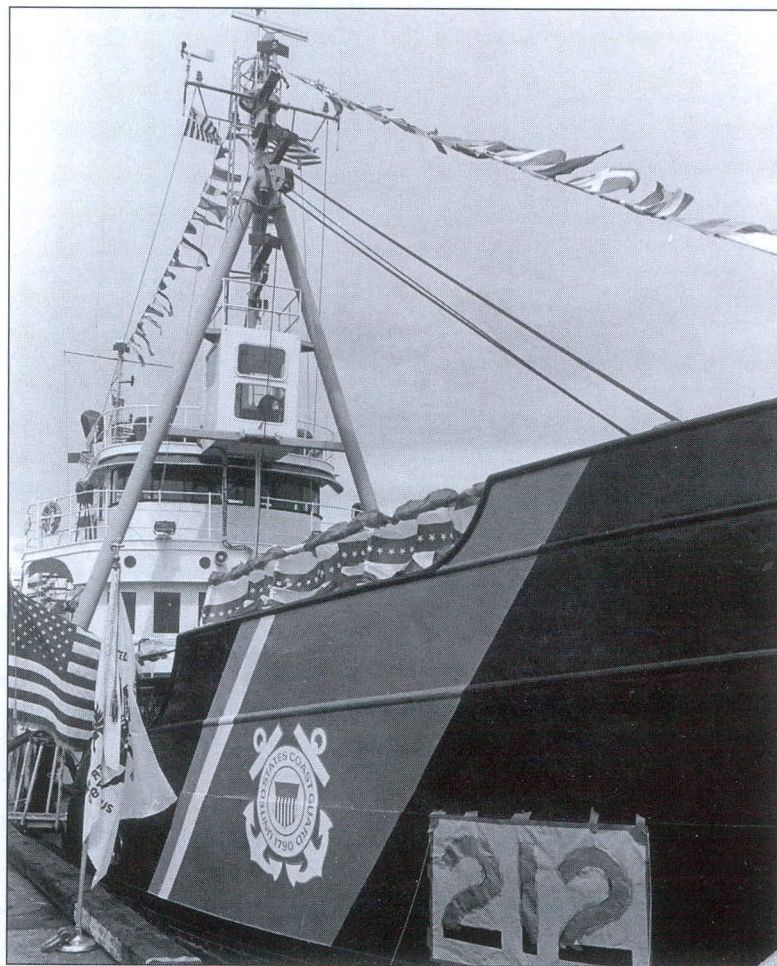
steel or foam. She saw the art of positioning buoys advance from lead line and seaman's eye to computerized plotting and satellite positioning. She has also seen the replacement of lightships with large navigational buoys and light keepers by automated lighthouses.

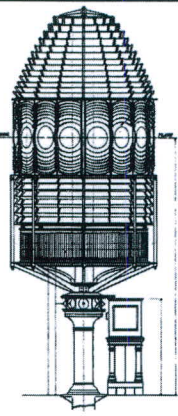
Fir's exceptional national significance was recognized when she was designated a National Historic Landmark by the Secretary of the Interior on April 27, 1992.

After decommissioning, *Fir* remained in Seattle for many years while efforts were made to turn her into a floating museum. When these efforts failed, she was transferred to the Maritime Administration (MARAD) facility, Suisun Bay, California, in 1997. Her shafts and rudder locked, she was towed 930 miles from Seattle by USCGC *Mariposa* to San Francisco's Golden Gate, where she was met by a commercial tug that towed her the rest of the way to Suisun Bay. Declared surplus property by the U.S. Coast Guard in 2001, the General Services Administration recently found a new steward for *Fir*, the Liberty Maritime Museum, who operate and display PTF-26, the last Vietnam-Conflict fast patrol

boat. Plans are for *Fir* to be moored at Sacramento, California, on the Sacramento River, where she will eventually be open to the public as a static display. The museum also intends to put *Fir* back into operation with the goal of cruising the Pacific Northwest by the summer of 2004 or 2005.

Candace Clifford, historian and author of several lighthouses titles, based this article on a history she prepared for the Historic American Engineering Record (HAER) at the National Park Service. It was part of a documentation project on *Fir* before her disposal by the U.S. Coast Guard. Endnotes are available upon request.





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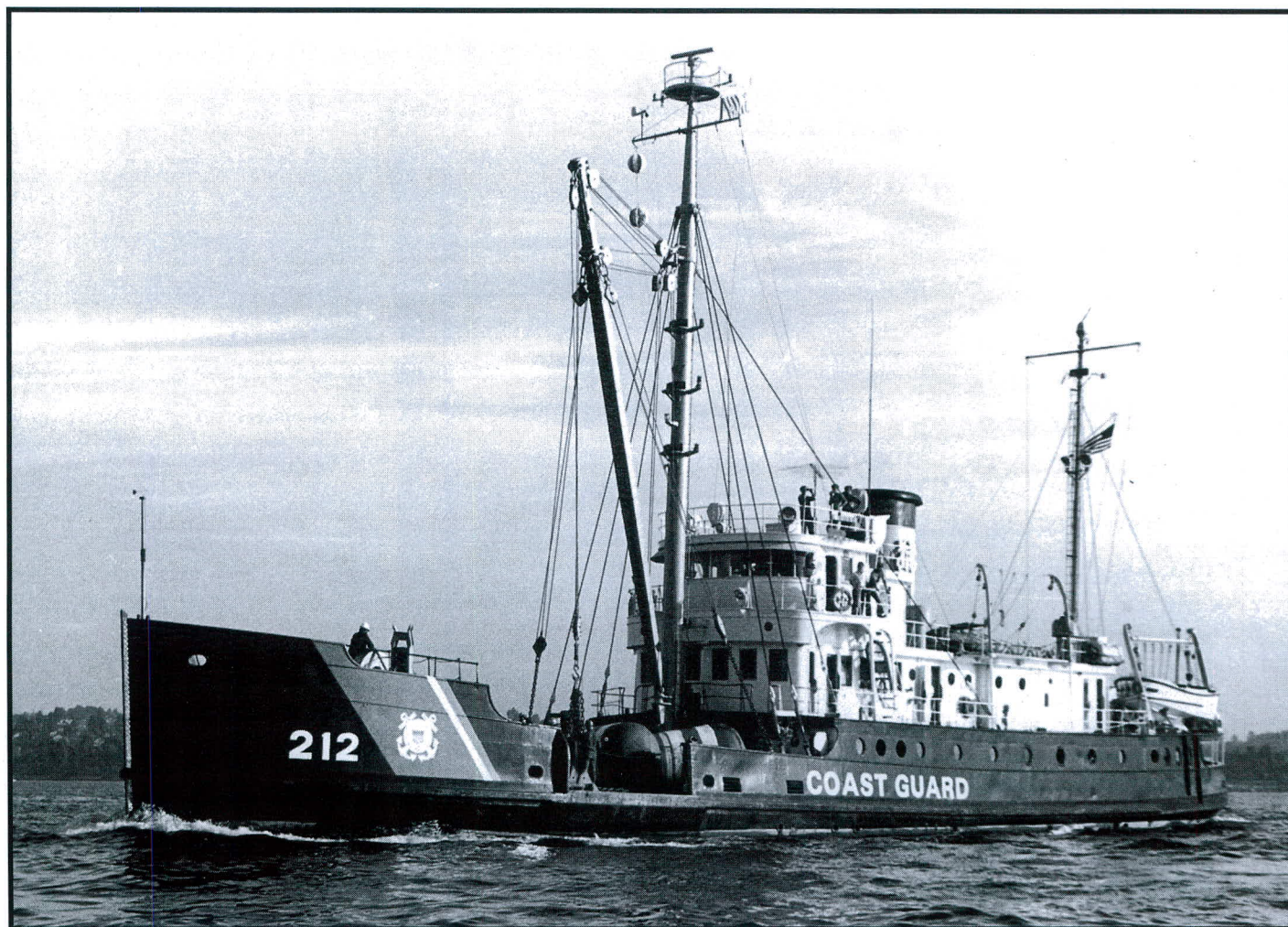
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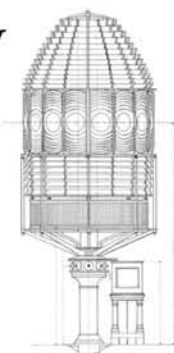


Above – USCGC *Fir* under way when she still had her original boom.

Opposite page – *Fir* at the dock on May 27, 1988. She is about to have her designation number painted in gold, marking her “Queen of the Fleet,” the oldest active cutter in the Coast Guard. In this photo the *Fir* has an “A-frame”-type of boom and a small control room installed near the top of the “A-frame.” Photo courtesy of the Coast Guard.



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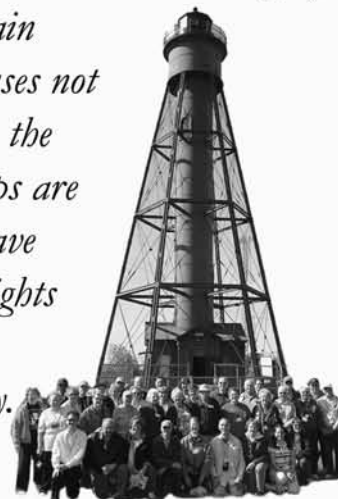
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