



## *U.S. Coast Guard History Program*

# Acacia, 1944

WLB-406



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Acacia: A tropical American thorny shrub or small tree; fragrant yellow flowers used in making perfumery

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Builder: Zenith Dredge Company, Duluth, MN.

Launched: September 1, 1944

Decommissioned:

Length: 180 feet

Navigation draft: 12 feet 8 inches

Beam: 37 feet

Displacement: 1, 025 tons

Propulsion: Two Cooper-Bessemer diesel electric engines; Model EMD-645/GM8E6A

Shaft horsepower: 750 hp for each engine

Maximum speed: 13 knots

Economical speed: 12 knots

Screw: 8' 6" stainless steel five-blade single screw propellers

Fuel capacity: 72,056 gallons

Water capacity: 13,155 gallons

Endurance (@ 8 knots): Unknown

Complement: 48 crewmen (6 officers, 42 enlisted)

Armament:

Electronics:

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### **Class History:**

When the US Coast Guard absorbed the Bureau of Lighthouses on 1 July 1939, *Juniper*, a 177-foot all welded steel buoy tender, was under construction and plans for a successor were on the drawing board. Plans initiated by the Bureau of Lighthouses called for the construction of several identical buoy tenders to replace existing coastal buoy tenders. The preliminary designs generated by the Bureau were for a vessel similar to *Juniper*. When the Aids to Navigation (ATON) system transferred to Coast Guard control, USCG planners reviewed the preliminary plans for the new class of buoy tenders and modified them to meet the service's multi-mission role. To be an effective part of the Coast Guard, the new buoy tenders needed to be multi-purpose platforms. They had to be capable of conducting Search and Rescue (SAR) and Law Enforcement (LE) missions, as well as their primary mission tending ATON. On 20 January 1941 the US Coast Guard contracted Marine Iron and Shipbuilding Company of Duluth, Minnesota to build the design based on *Juniper* and modified to meet the service's requirements. On 31 March 1941 Marine Iron and Shipbuilding laid the keel for the first vessel of the new buoy tender class. The new vessel measured 180 feet overall and had a beam of 37 feet at the extreme. She had a displacement of 935 tons and drew 12 feet. The new design was similar to *Juniper* in appearance but did exhibit some important differences. Gone was the turtle back forecastle. A notched forefoot, ice-belt at the waterline, and reinforced bow gave the vessel icebreaking capabilities. Extending the superstructure to the ship's sides increased interior volume above the main deck. A single propeller, turned by an electric motor powered by twin diesel generators, replaced the twin-screw arrangement. The 30,000-gallon fuel capacity gave the new design a range of

12,000 miles at a 12-knot cruising speed; at 8.3 knots the cruising range increased to 17,000 miles. Finer lines at the bow and stern increased the new tender's sea keeping ability in rough weather; an increase in draft also promoted seaworthiness. Numerous minor alterations increased the vessel's utility as a SAR platform while deck-mounted guns and depth charge racks supported military duties. Marine Iron and Shipbuilding launched the prototype vessel on 25 November 1941, even as three more took shape. Preparations also went forward to begin a fifth vessel. By the time they commissioned the first 180, *Cactus*, on 1 September 1942 twelve vessels were under construction at the Marine Iron shipyard and at the Zenith Dredge Company shipyard, also in Duluth . The initial designation for the new buoy tenders was WAGL, which was a US Navy designation denoting an auxiliary vessel, lighthouse tender. The designation changed from WAGL to WLB in 1965. A few of the 180s have been designated as other types of vessels over the years; three became WMECs (medium endurance cutters), one of those, *Evergreen*, was a WAGO (oceanographic research vessel) before it became a WMEC. *Gentian* was a WMEC for a time and was then designated a WIX (Training Cutter) in 1999. Though designations have changed over time, each vessel's hull number has remained the same since commissioning.

#### DIFFERENCES WITHIN THE 180' CLASS

Six "B" or *Mesquite* class tenders followed the initial production run of thirteen vessels in the "A" or *Cactus*-class. The first *Mesquite*-class tender hit the water on 14 November 1942. Marine Iron and Shipbuilding built all except one of the *Mesquite*-class. The USCG built the lone exception, *Ironwood*, at the service's shipyard in Curtis Bay, Maryland. Twenty *Iris* or "C" class vessels followed the *Mesquite*-class tenders. The first launch of an *Iris* class vessel took place on 18 June 1943, and the final addition to the class slipped off the ways on 18 May 1944. Differences among the three classes were minimal. Their basic dimensions, length and beam were the same and draft varied based on loading. All were built of welded steel along the same framing pattern and with very similar internal and external layouts. All three classes could steam 8,000 miles at 13 knots, 12,000 miles at 12 knots, and 17,000 miles at 8.3 knots; though the "B" and "C" class vessels had engines with 20 percent more power than the "A" class. The "A" class vessels could carry the most fuel with a tank capacity of 30,000 gallons. The "C" class carried 29,335 gallons and the "B" class about 700 gallons less. The layout of the Commanding Officer's cabin and the radio room was slightly different in the "A" class vessels. The bridge wing door on the "B" and "C" vessels opened to the side while the doors on the "A" vessels opened forward. The cargo holds as originally laid out in the "C" were larger, by a nominal amount, than those in the other vessels. To hoist buoys and cargo, the "A" vessels carried an A-frame structure that straddled the superstructure and supported the cargo boom. The other two classes were fitted with power vangs that attached to the bridge wings and manipulated the cargo boom. The "A" vessels were originally fitted with manilla line as part of the cargo handling

system while the second and third generation vessels used wire rope. From the outside, other than the A-frame used in the first production run, the three classes were almost indistinguishable. Over the years their internal differences and variation in equipment were minimized by successive overhauls and improvements. Moreover, it does not appear that any one of the three classes was superior to the other two in the eyes of the US Coast Guard administration or the men who manned the buoy tender fleet. Tenders from each of the three classes remained in use past the turn of the 21<sup>st</sup> century. It usually took from two to four months between the time shipyard workers laid a keel and the day the vessel slipped off the ways. Once launched, however, the tenders were far from ready for service. The practice was to build the superstructure, finish the interior, and complete the machinery installation while the vessel was floating. Hence, on launch day the tenders were little more than finished hulls. As the shipyard workers neared the end of the building process, the Coast Guard would begin assigning officers and men to the vessels. Once each vessel was complete and ready to enter active service, the US Coast Guard commissioned her as part of the fleet. Often the commissioning ceremonies took place after the tender had departed from Duluth and arrived at an initial duty station. For the 180s as a whole, it took an average period of 308 days to go from the beginning of construction to commissioning. Divided according to sub-class, the elapsed time from keel laying to commissioning averaged 360 days for the *Cactus*-class; 323 days for the *Mesquite*-class; and 269 days for the *Iris*-class. The building process averaged 192,018 man-hours of labor per vessel. In keeping with the Lighthouse Service practice of naming tenders after foliage, all of the 180s were named after trees, shrubs, or flowers.

## A GREAT DESIGN

The 180-foot buoy-tending cutters built for the US Coast Guard during the early 1940s are remarkable in terms of their longevity. Except the US Coast Guard's *Storis*, no other military vessels on active duty today served in World War II. The 180s longevity is not a case of superior construction, though they were undoubtedly built quite solidly. The service performed by the class for over sixty years is a function of their design. The 180s were extremely versatile and perfectly suited for their multifaceted role. They could break ice, replace a buoy, and save a sinking ship all in the course of a day's work. Moreover, they could complete these missions within sight of their homeport or steam across thousands of miles of ocean to complete an assigned task. They did not become outmoded until computers, satellites, and automation changed the way ships are built and equipped. The US Coast Guard spent time and money keeping the 180s in service long beyond their projected life span because that remained the best option. These ships that fought U-boats in World War II have spent millions of hours since making the world's waterways a safer place for science, commerce, and recreation. This was possible due to the design's versatility and reliability. Obsolescence crept up on the 180s very slowly, producing a tenure unmatched in twentieth-century American maritime history. The 180-foot buoy

tenders proved to be extremely versatile vessels during their long careers. Though all spent some portion of their time afloat servicing buoys, they served in many other pursuits as well. Many of these alternate activities revolved around the vessel's intended secondary missions, search and rescue, law enforcement, and icebreaking. Often, however, the tenders carried out missions never envisioned by their designers, ranging from transporting rare tropical fish to landing scientific parties on drifting icebergs. This plethora of pursuits when combined with the wide geographic distribution of the 180s makes it difficult to describe a typical or generic career for a 180. The oceangoing buoy tenders built for the US Coast Guard in the early 1940s served around the world and fulfilled the service's requirement for a true multi-mission capable platform.

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### **Cutter History:**

*USCGC Acacia* (WLB 406) was homeported in Grand Haven, MI. The tender's primary duty was maintaining more than 210 buoys, lighthouses, and other navigational aids. Its area of operation ranges from as far south as Calumet Harbor, south Chicago, to as far north as Little Bay DeNoc, including Green Bay, WI; Sturgeon Bay, WI; and Wisconsin's Door Peninsula.

Among its various other duties were search and rescue of lost or disabled vessels and icebreaking assistance during the cold winter months. During the ice season, *Acacia* was one of several Coast Guard ice breakers engaged in Operation Coal Shovel, which kept the channels between Toledo, Ohio and Detroit, MI open for the coal ships supplying power plants and industries in Detroit.

The ship also worked with NOAA in their efforts to acquire accurate weather information and with the National Fish and wildlife Service as they stock Lake Michigan with hundreds of thousands of yearling trout.

In 1975 she was remodeled and modernized at the Coast Guard Yard whereby her main engines were overhauled, new generators were installed, her boom was switched from electric to hydraulic power and her crew spaces were rehabilitated.

During the winter of 1987-88 she transferred briefly to the Caribbean to conduct law enforcement patrols before returning to duty on the Great Lakes. While on a LE patrol she intercepted a 50-foot boat carrying Haitian migrants and transferred them to the CGC *Vigorous* which repatriated them to Haiti.

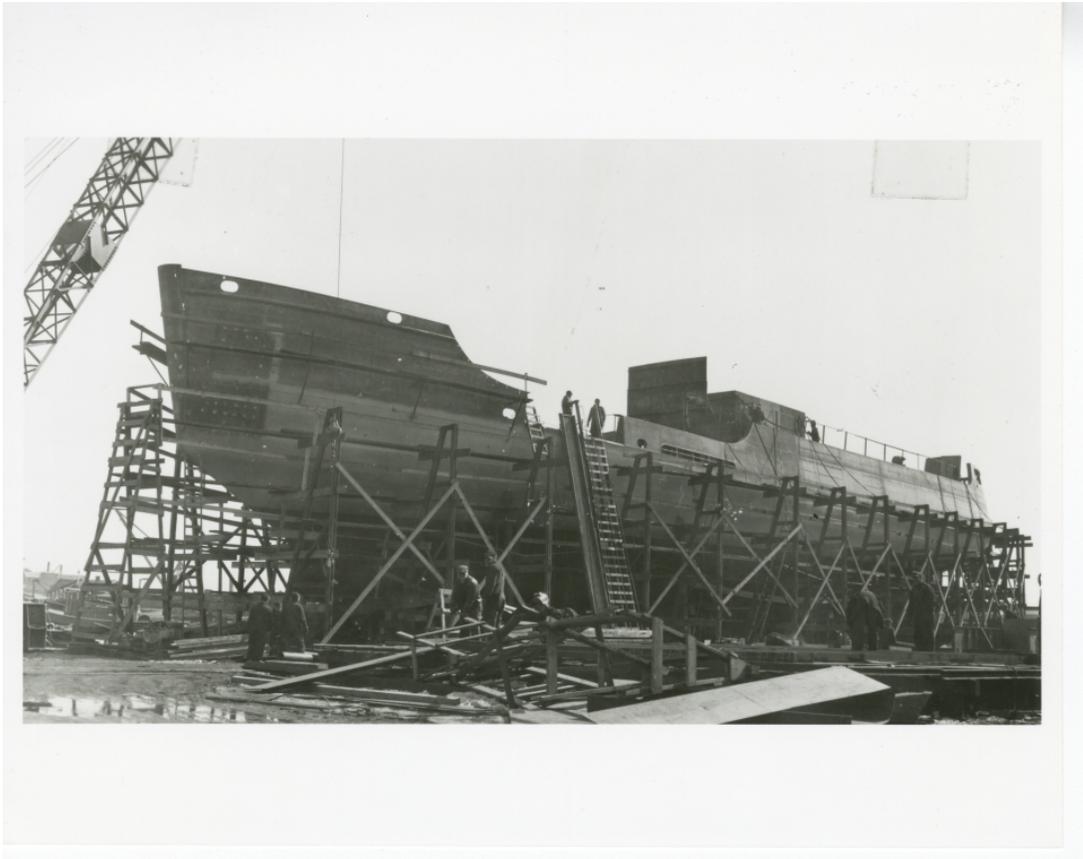
She transferred to Charlevoix in 1990 after the sinking of the tender *Mesquite* left a shortage of tenders on the Great Lakes. Here she was responsible for tending more than 210 buoys, lighthouses and other aids to navigation as well as icebreaking duties during the winter months. Her area of operations included

areas as far south as Calumet Harbor and South Chicago and as far north as Little Bay DeNoc, including Green Bay and Wisconsin's Door Peninsula.

She was decommissioned on 7 June 2006 and transferred to American Academy of Industry for use as a museum and educational ship. In November of 2009 the SS City of Milwaukee group acquired the tender and docked her in Manistee.

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**Photographs:**



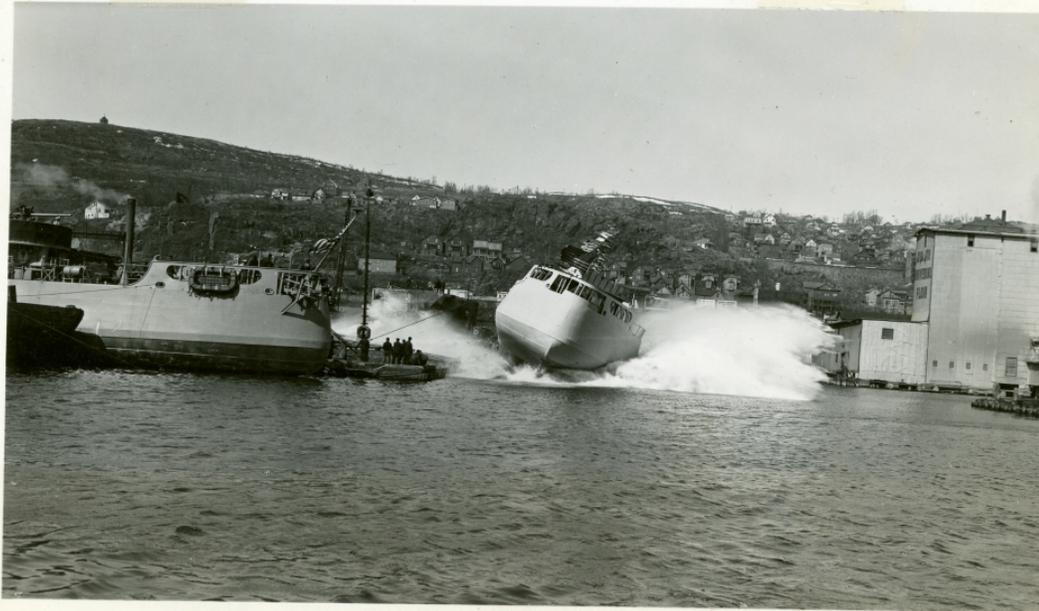
***Acacia* on the builder's ways, no official caption/date/photo number; photographer unknown.**



The official launching part, March, 1944. No official caption; photographer unknown.  
Photo No. 897.



Launching *Acacia*, March, 1944



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Launching of Acacia, 7 March 1944; no official caption; photographer unknown. Photo No. 895



No caption/date/photo number; photographer unknown.



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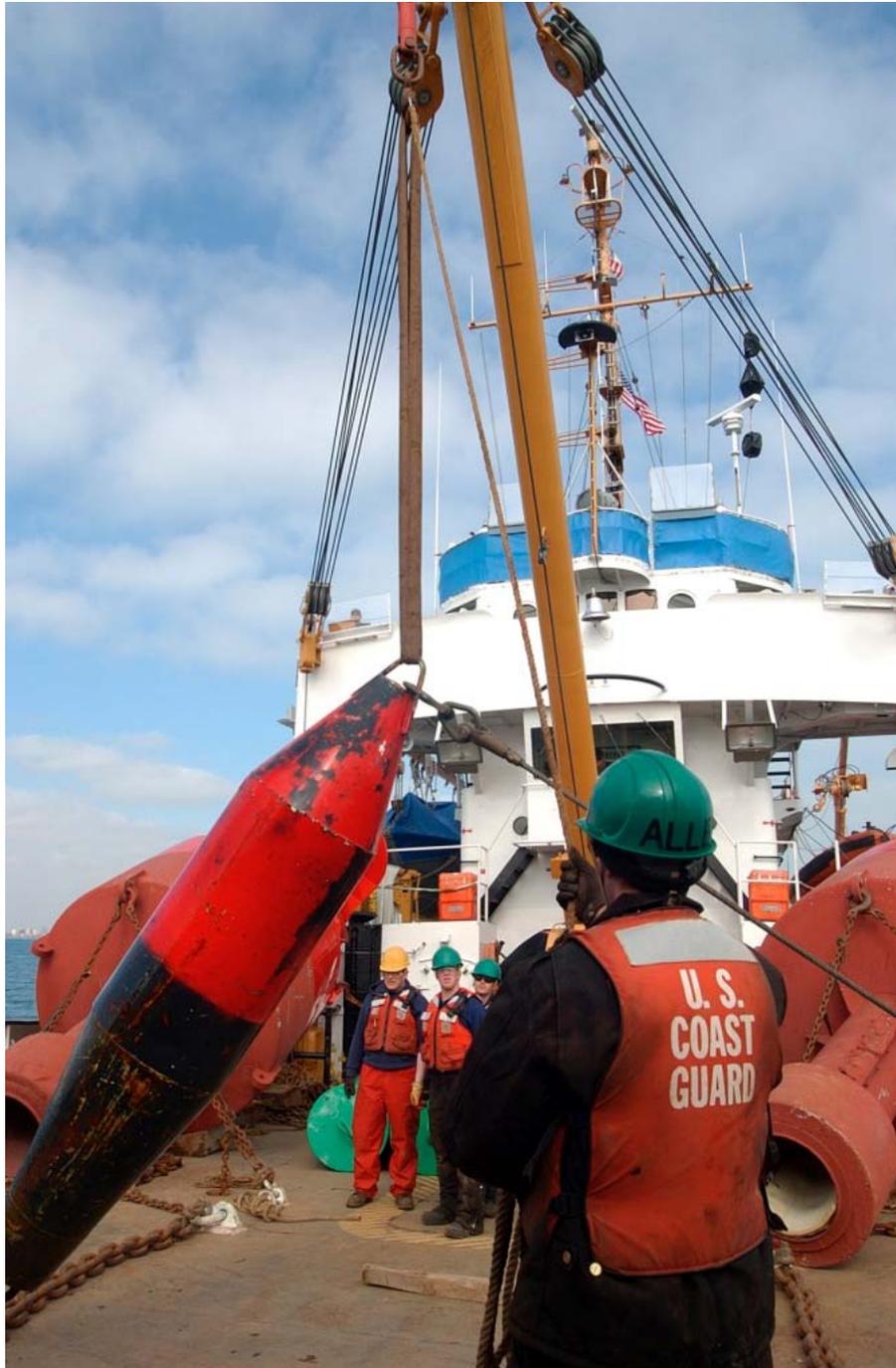
Original caption: “**CUTTER ACACIA (FOR RELEASE)** [:] CHARLEVOIX, Mich. (Sept. 16 [2001])-  
-Coast Guard Cutter Acacia sits at the pier at Station Charlevoix, Michigan.” USCG photo by PA1  
Harry C. Craft III.



Original caption: “**Engine Room** [;] ABOARD CGC ACACIA (March 19, 2004)—While at his post, Machinery Technician First Class Scott Brooks speaks into a microphone as he monitors the engines aboard the Coast Guard Cutter Acacia. Acacia was in the Chicago area to check and replace buoys for the 2004 Great Lakes shipping season. Acacia is a 180-foot sea going buoy tender built in 1944 home ported in Charlevoix, Mich.” Photo by PA1 Paul Roszkowski, USCG



Original caption: **"Hang the buoy"** [;] ABOARD CGC ACACIA (March 19, 2004); Seaman Lyam Shoup tends a tag line on the cross deck hook as a lighted buoy is placed over the side of the Coast Guard Cutter *Acacia*. *Acacia* was in the Chicago area to check and replace buoys for the 2004 Great Lakes shipping season. *Acacia* is a 180-foot sea going buoy tender built in 1944 home ported in Charlevoix, MI. Photo by PA1 Paul Roszkowski, USCG.



**“Hauling aboard the buoy [;] ABOARD CGC ACACIA (March 19, 2004)—** Coast Guard Seaman Jimmy Allen tends a tag line while a fifth class ice buoy is hauled aboard the Coast Guard Cutter Acacia for servicing. Once aboard the buoy will be unhooked from its mooring and a new buoy will be put in its place. Acacia was in the Chicago area to check and replace buoys for the 2004 Great Lakes shipping season. Acacia is a 180-foot sea going buoy tender built in 1944 home ported in Charlevoix, Mich.” Photo by PA1 Paul Roszkowski, USCG.

**Sources:**

*Acacia* Tender File, Coast Guard Historian's Office

Douglas Peterson. *United States Lighthouse Service Tenders, 1840-1939*. Annapolis: Eastwind Publishing, 2000.

Robert Scheina. *U.S. Coast Guard Cutters & Craft of World War II*. Annapolis: Naval Institute Proceedings, 1982.

