



Mackinaw, 1944

WAG-83
ex-*Manitowoc*

Named for Mackinaw City, Michigan.

Builder: Toledo Shipbuilding Company

Keel Laid: 20 March 1943

Launched: 4 March 1944

Commissioned: 20 December 1944

Decommissioned: 10 June 2006

Cost: \$8,830,198 (hull & machinery); reportedly over \$10 million total cost

Length: 290'

Beam: 74' 4"

Draft: 19' maximum

Displacement: 5,200 tons (1944)

Propulsion: 3 electric motors driven by 6 Westinghouse DC generators driven by 6 Fairbanks Morse, 10-cylinder, 2-cycle diesels; 12,000 SHP; two 14-foot diameter stern propellers; one 12-foot diameter bow propeller

Performance:

Max: 16 knots (1944); 18.5 knots (1975)

Economic:

Fluid Capacities (in gallons):

Diesel Oil: 346,910

Potable Water: 40,200

Heel & Trim Ballast Water: 345,828

Deck Gear: 2 x 12-ton cranes (removed & replaced with a Hiab Cargo Crane, 1,000-lbs. maximum load)

1 x Almon Johnson Constant Tension Towing Winch w/ 94,000 lbs.

maximum-rated pull

4 x Constant Tension Winches (2 forward; 2 stern)

Anchors: 2 x Dunn Bower 6,000-lbs anchors

Complement: 144 (1944); 75 (1975)

Armament: none (small arms only)

Small Boats: 25-foot MSB (1975)

Electronics: SL-1 radar (1944)

Class History:

During World War II the "Arsenal of Democracy" needed to keep its factories running year-round, especially the steel-making plants along the Great Lakes. Those plants needed iron ore. That meant keeping the shipping lanes on the Lakes open for as long as possible. The only way to accomplish that was to build an icebreaker. Congress authorized the funds to construct that icebreaker for the Great Lakes on 17 December 1941.

Mackinaw was based on the *Wind*-class icebreakers first designed during the early years of World War II for icebreaking and combat operations in Arctic waters. These icebreaker plans were developed and prepared by Gibbs & Cox of New York off of preliminary design work conducted by the Coast Guard's Naval Engineering Division. The Coast Guard's design work had been based on the research conducted by LCDR Edward Thiele, USCG, during a trip he made to Europe to study Scandinavian icebreaker design as well as on the design of the Soviet icebreaker *Krassin*. According to Admiral Thiele, the "*Mackinaw* was nothing but a *Wind*-class ship that was squashed down and pushed out and extended to meet the requirements of the [Great] Lakes." Her draft was considerably less than her *Wind*-Class sisters and she was also constructed of mild steel (1-5/8 inch hull plating), all in deference to her assignment on the fresh-water Great Lakes. Her breadth and length were greater than her sisters but consequently those dimensions meant she could not get through the Welland Canal and was therefore prevented from ever leaving the Great Lakes.

A Fairbanks-Morse article described the icebreaker's power plant: ". . .there are six 2000hp Fairbanks-Morse opposed piston diesels generating the electricity to drive her two stern screws and the one under her bow. There are also four 300hp Fairbanks-Morse O-P diesels for auxiliary services, and there are the Fairbanks-Morse heeling and trimming pumps to help the *Mackinaw* shake herself out of trouble when it is at its very worst."

The *Mackinaw* could break 2.5 feet of ice continuously and 11 feet by backing and ramming. Her hull strength derived from her design and construction. Along with the *Wind*-Class icebreakers, *Mackinaw*'s frames were spaced about 16-

inches apart, and they made up a truss similar to that found in an inverted hangar, and an inner shell was built inside that truss. The volume between the inner and outer hull plating was divided into many tanks, which were used to store fuel and carry seawater ballast for heeling operations. The heeling pumps were capable of transferring up to 160 tons of water from one side of the icebreaker to the other in about one-and-a-half minutes.

History:

Mackinaw's keel was laid on 20 March 1943 at the Toledo Shipbuilding Company's yard in Toledo, Ohio. She was launched and christened *Mackinaw* a year later, on 4 March 1944. She was to have been named *Manitowoc* but the Navy had already assigned that name to a PF (frigate). *Mackinaw* was commissioned on 20 December 1944 after undergoing trials on Lake Huron. Her first commanding officer was CDR E. J. Roland. Local newspapers heralded the new icebreaker's arrival on the Lakes, hoping that "with the assistance of the powerful new icebreaker. . .the Coast Guard hopes to keep Great Lakes shipping lanes open one month longer each year, and to enable newly-built naval and cargo craft to move from Great Lakes shipyards to the ocean during the winter months, averting long delays."

She was assigned the home-port of Cheboygan, Michigan and was assigned to ice-breaking duties from 20 January to the close of the war. Her effectiveness in keeping the shipping lanes open longer than ever before was pointed out in an information bulletin which stated: "In the years previous to the MACKINAW, general navigation on the Great Lakes was closed to shipping due to ice on the average of about 4-1/2 months a year. The MACKINAW has reduced this closed season to an average of about three months a year." She also hosted 25 Soviet naval personnel who trained in ice breaking operations prior to their taking over one of the "Wind" class icebreakers under Lend Lease.

After the war, she conducted icebreaking duties as well as typical Coast Guard duties during the ice-free months, including law enforcement and search and rescue operations as well as patrolling regattas and steaming on resupply missions to various Coast Guard land stations around the Lakes.

A period public affairs release described *Mackinaw's* typical operations during the year.

Normally, lake ice begins thawing at the end of April, but "Big Mac" -- as the icebreaker is affectionately called in the lakes region -- has opened shipping lanes as early as the third week in March, thus facilitating the early movement of millions of tons of iron ore, grain, and other vital cargo. Usually the MACKINAW heads first for the strategic area of the Straits of Mackinac about the first week in March to begin ice operations. As conditions permit, she works up through the Soo Locks to White Fish Bay and areas of the St. Mary's River, then to the head of Lake Superior.

then eventually works into the lower lakes areas.

Though icebreaking is the MACKINAW's big function, she is not idle during the summer months. She spends many hours assisting vessels in distress, engages in law enforcement and boarding duties in the interests of safety on the waters, patrols sail and power boat regattas, and usually makes one or two annual cruises for training reserve forces. With the aid of her two 12-ton cranes, she can handle the heaviest buoys on the lakes, and carry fuel and supplies to Coast Guard stations.

From 9 to 13 May 1947, aided by the CGC *Tupelo*, *Mackinaw* "restored order" from the utter confusion in Buffalo Harbor which was ice-blocked, trapping dozens of vessels. The icebreakers freed 38 of the steamers and escorted them into the harbor and freed and escorted out another 49. The following year, from 17-18 March 1948, she repeated her rescue efforts and opened a passage that freed 12 ice-locked ships at Buffalo, activities that she conducted nearly every spring in the coming years.

During her Coast Guard career she also conducted numerous search-and-rescue operations. On 13 April 1960 she assisted the ice-damaged M/V *Henry Phipps*, a 585-foot ore carrier. After welding the cracks in the ore carrier's hull, *Mackinaw* towed the damaged freighter to safety through the ice. On 18 October 1960 she freed the grounded M/V *August Ziesing* off the upper Little Rapids Cut channel bank. On 10 May 1965 she served as the on-scene commander following a collision between the M/V *Cedarville* and Norwegian M/V *Topdalsfjord* one mile northeast of Mackinaw City, Michigan, in which the *Cedarville* sank. The German M/V *Weissenburg* rescued the survivors. On 30 October 1966 she stood by the grounded M/V *Halifax* 40 miles south of Sault Ste. Marie, Michigan. On 21 November 1966 she transported 29 crewmen from the grounded German M/V *Nordmeer* to Alpine, Michigan and on 29 November 1966 she evacuated the remaining crewmen. On 5 April 1968 she helped free the M/V *W. B. Schiller* from heavy ice in Lake Superior. On 1 April 1970 she helped free the grounded M/V *Stadacona* near the Mackinaw Bridge. In September of 1986 she served as the platform to survey the wreck of the sunken F/V *Razel Brothers*.

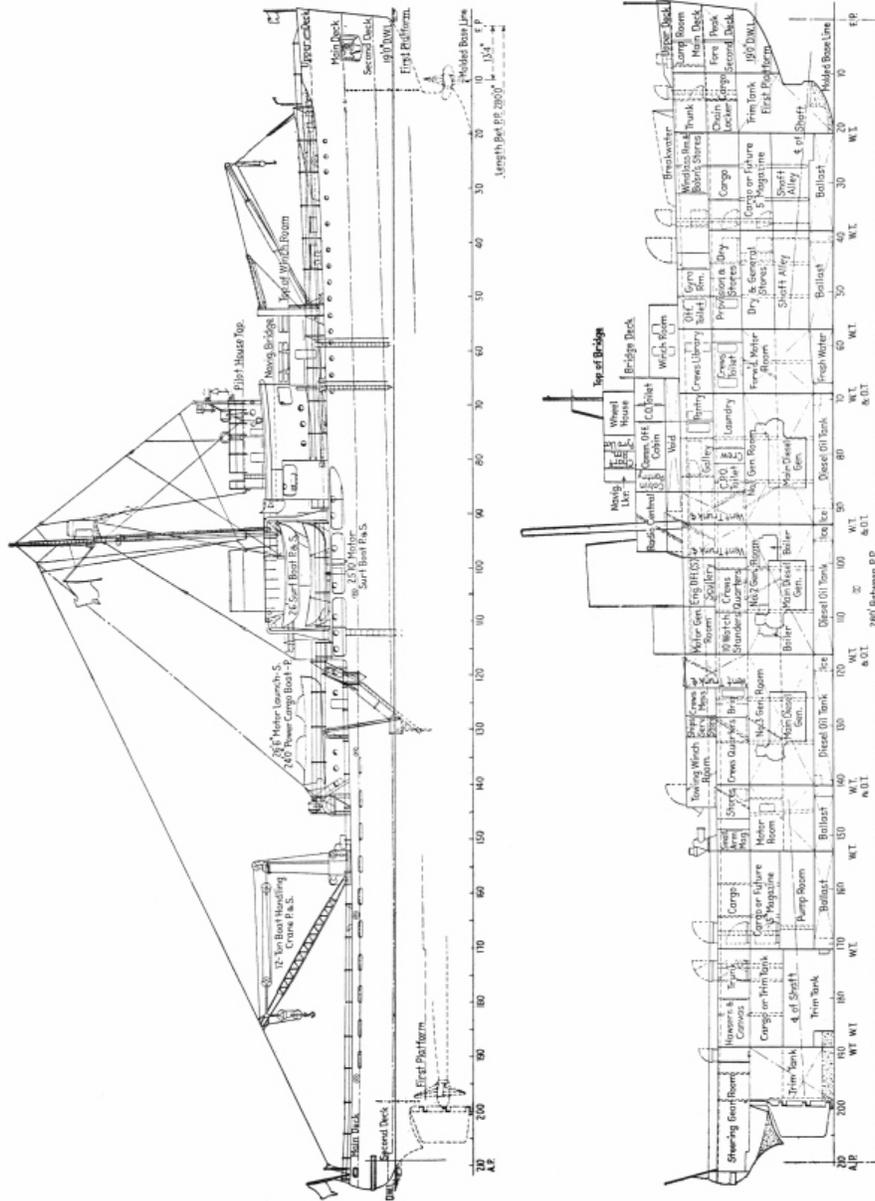
Mackinaw was decommissioned on 10 June 2006 in Cheboygan, the same day that the "new" *Mackinaw*, WLBB-30, was commissioned.

Sources:

Cutter History File. USCG Historian's Office, USCG HQ, Washington, D.C.

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

Robert Scheina. *U.S. Coast Guard Cutters & Craft, 1946-1990*. Annapolis, MD: Naval Institute Press, 1990.



Line drawing of the *Mackinaw* originally published in *SNAME Transactions* LIV [1946], p. 8.

Historic Photo Gallery



"Pronouncement of Blessing By Rev. Dr. Quinton' [;] Cutter MACKINAW"; 20 March 1943;
Photo No. 52; photographer unknown.



"NEW WOMEN WORKERS REPORTING FOR WORK.' Cutter MACKINAW";
2 June 1943; Photo No. 183; photographer unknown.



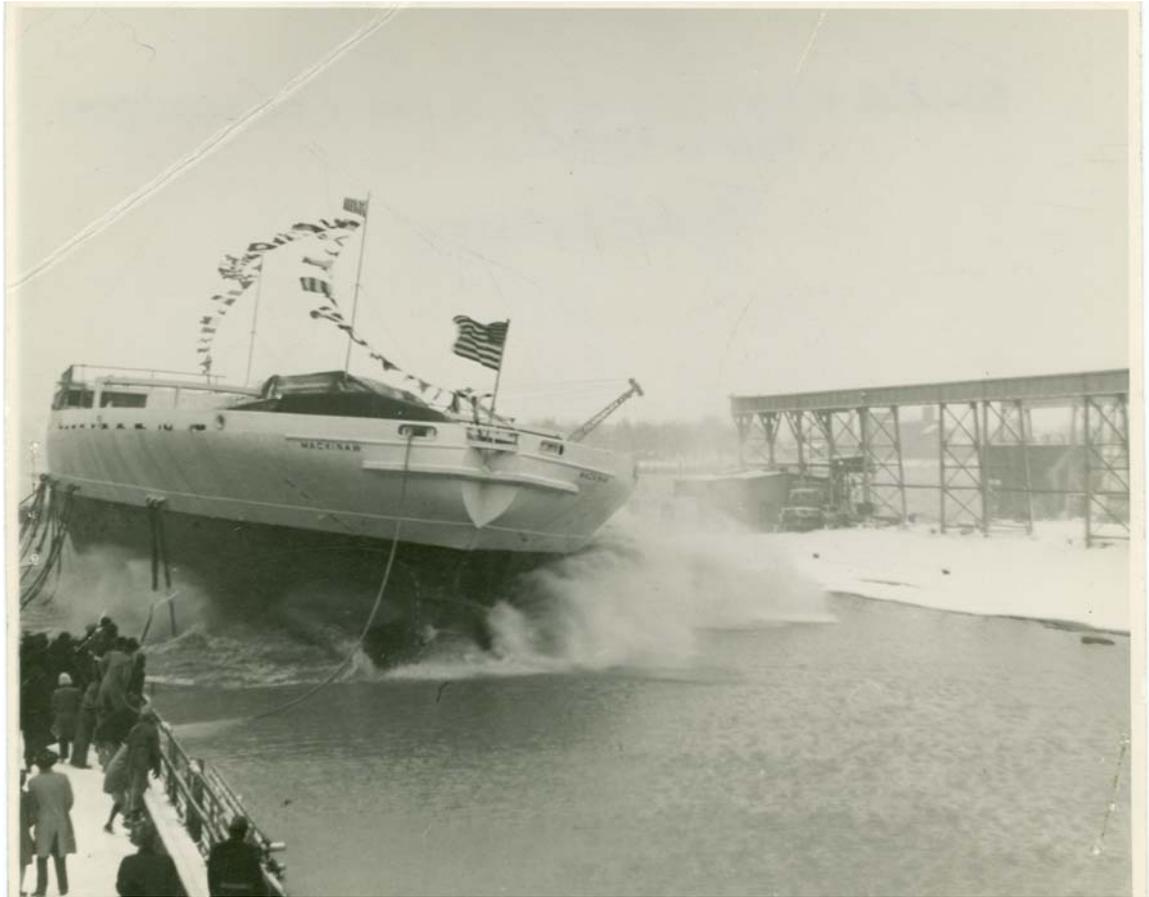
"GROUP OF WOMEN WORKERS AT TOL. SHIPBLDG. CO., INC.' Cutter MACKINAW."; 1 June 1943; Photo No. 179; photographer unknown.



No caption/date; Photo No. 32-36-68; photo by "Dick" Whittington, Los Angeles.
The *Mackinaw* being christened on 4 March 1944?



"A VIEW OF FOWD [sic] SCREW. NOT THE SIZE AS COMPARED TO A MAN."
17 June 1944; Photo No. 792; photographer unknown.



No caption/date/photo number; photographer unknown.
The *Mackinaw* being launched on 4 March 1944.

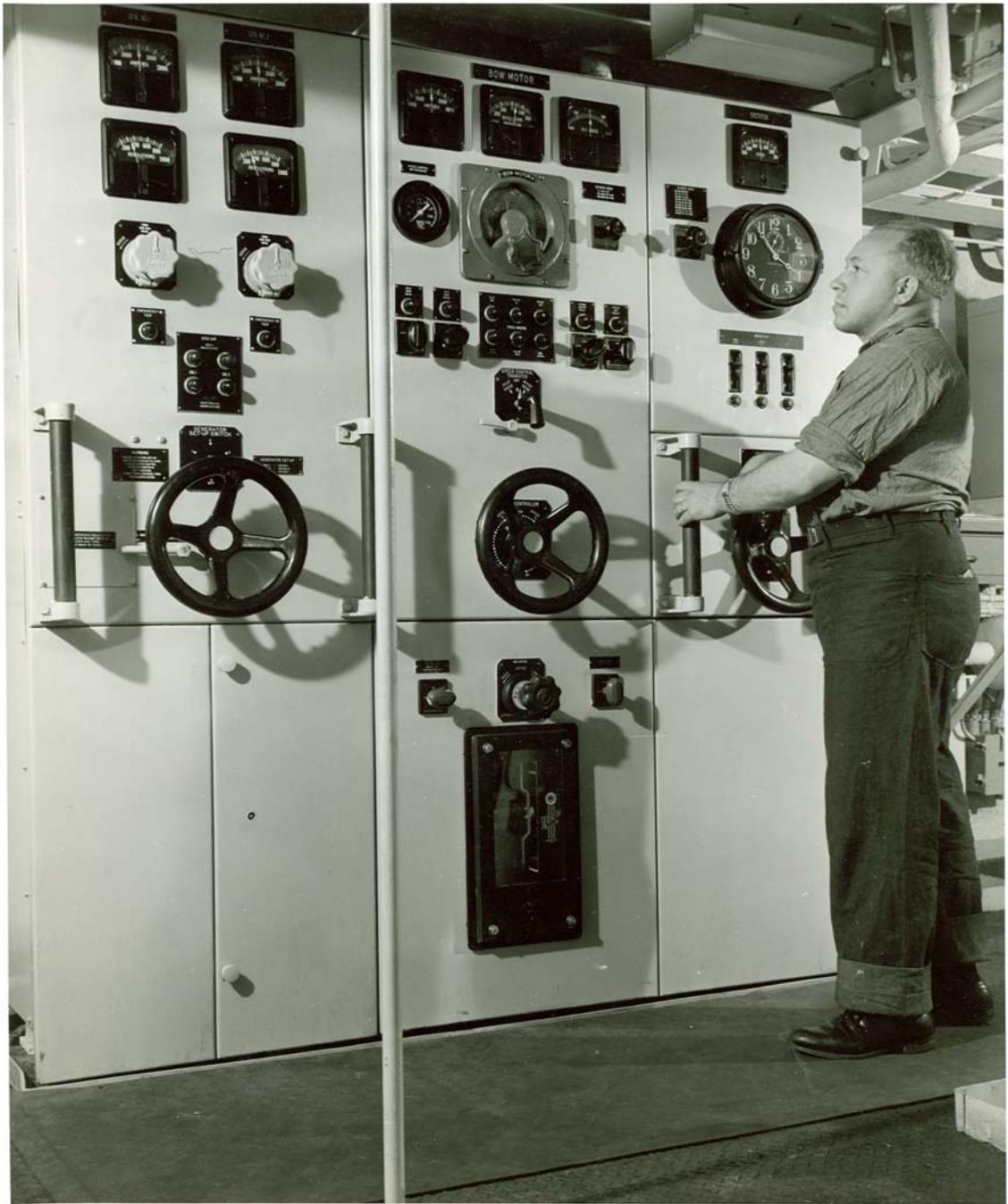


"UNITED STATES COAST GUARD ICEBREAKER MACKINAW";
no date; Photo No. 248; photographer unknown.



PLEASE CREDIT U. S. COAST GUARD OFFICIAL PHOTO

"SERVES ABOARD COAST GUARD ICEBREAKER MACKINAW [:] LOUIS C. LARSON, QM1c. of Brooklyn, N.Y., at the wheel of the Coast Guard's new 5090-ton icebreaker MACKINAW during trial runs on Lake Huron. Vessel was designed to keep lake shipping lanes open during the winter months. LARSON is a veteran of 18 years in the Coast Guard."; no date; Photo No. 3; photographer unknown.



PLEASE CREDIT U. S. COAST GUARD OFFICIAL PHOTO

"AT CONTROLS OF MOTOR ROOM PANEL ABOARD MACKINAW [:] ELTON REINHART, EM2c., of Watertown, Wis., stands at the controls of the forward motor room panel aboard Coast Guard's new icebreaker MACKINAW during trial runs on Lake Huron."; no date; Photo No. 4; photographer unknown.



PLEASE CREDIT U. S. COAST GUARD OFFICIAL PHOTO

"BRASS BAND, GREETING COMMITTEE and throngs of spectators were on hand with a hearty welcome at Cheboygan, Michigan, when the Coast Guard Ice-Breaker Mackinaw came into home port for the first time."; no date/photo number; photographer unknown.



"THE MACKINAW CLEARS THE WAY [:] The Coast Guard icebreaker MACKINAW, most powerful ship of its type in the world, runs interference for four seagoing freighters through the ice-covered St. Mary's River in an epochal mid-winter passage from the docks of Duluth to Chicago. The MACKINAW can break a path through sold ice at 10 knots. This picture was made as they convoy moved through St. Mary's River to enter Lake Michigan."; no date; Photo No. 4041; photographer unknown.



"MACKINAW [:] Coast Guard Icebreaker MACKINAW moored at the Coast Guard Dock Cheboygan, Michigan."; no date [1953?]; Photo No. 10275304; photographer unknown.



"'BIG MAC' USCG ICEBREAKER MACKINAW (WAGB-83) 'Big Mac' as sometimes the U.S. Coast Guard icebreaker MACKINAW is called, is shown here beginning early March icebreaking operations in the Straits of Mackinac, heralding the spring opening of Great Lakes shipping. An H04S-2G helicopter (from Coast Guard Air Station, Traverse City, Michigan) perched on the stern makes ice surveys for the icebreaker during its 6 to 8 weeks of icebreaking operations."; October, 1957; Photo No. 5772; photographer unknown.



"LENDING A HELPING HAND. . . . The 292-foot Coast Guard Icebreaker Mackinaw, right, comes to the aid of the car ferry Arthur K. Atkinson, of the Ann Arbor Railroad Company, stuck in the ice at the entrance to Frankfort (Mich.) Harbor. This was a common scene throughout Lower Lake Michigan, as six Coast Guard Cutters attempted to keep necessary traffic moving on the lake during one of the worst winters in history.

Lower Lake Michigan, normally relatively clear of heavy ice during the winter, is reported to be almost completely frozen from shore to shore.

The Mackinaw passed through field ice six to 24 inches thick, and reported ice windrows of up to 40 feet in the Frankfort area.

The car ferries run to Frankfort from Manitowoc and Kewaunee, Wisc.";
Release No. 125-63 dated 7 March 1963; Photo No. 030663-03; photographer unknown.



No caption; dated 15 March 1966; Photo No. 03-15-66 (20); photographer unknown.



No caption/date/photo number; photographer unknown.



No caption/date/photo number; photographer unknown.



"CHEBOYGAN, Mich. (Jan. 4)--The Coast Guard Cutter Mackinaw conducting an ice-breaking mission in the Great Lakes."; 4 January 1999; no photo number; photo by PA2 Christopher Grooms.



"CHEBOYGAN, Mich. (Jan. 4)--The Coast Guard Cutter Mackinaw prepares to tie up to a pier after conducting an ice-breaking mission in the Great Lakes."; 4 January 1999; no photo number; photo by PA2 Christopher Grooms.



"GRAND HAVEN, Mich. (July 30, 2003)--Coast Guard Cutter Mackinaw, the 270-foot Great Lake icebreaker, moored in the port of Grand Haven during the Coast Guard Festival Monday through Sunday."; 30 July 2003; Photo No. 231649; photo by PA3 Cindy Marshall.



"Sault Ste Marie, Mich. (Jan. 23, 2004) - The Coast Guard Cutter Mackinaw clears a shipping track through the ice of the St. Marys River Jan. 23, 2004."; Photo No. 241783; photo by PAC Jeff Hall.



"Sault Ste Marie, Mich. (Jan. 23, 2004) - The Coast Guard Cutter Mackinaw clears a shipping track through the ice of the St. Marys River Jan. 23, 2004.";
Photo No. 241786; photo by PAC Jeff Hall.



"CLEVELAND (June 21, 2006) - The Coast Guard Cutter Mackinaw (WAGB-83) sailed for a final voyage from her home port of decommissioning, Cheboygan, MI to a permanent berth at the SS Chief Wawatam dock in Mackinaw City."; Photo No. 252058; photographer unknown.
