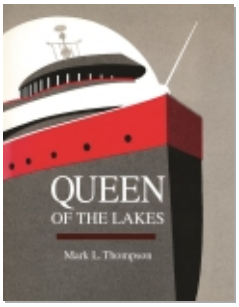
Queen of the Lakes

Mark L. Thompson



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Stern-Ender Queens

On November 19, 1973, officials of Pickands Mather rocked the Great Lakes shipping community with the announcement that they were entering into a contract with American Ship Building for construction of two 1,000-foot self-unloaders for their Interlake Steamship fleet. The $75 million price tag for the two ships made the contract the largest ever awarded in the long history of the industry on the lakes. The twin supercarriers were scheduled to be built in AmShip's massive drydock at Lorain, Ohio. They would be the first of the new generation of thousand-footers to be built totally on the Great Lakes. A few feet longer than Bethlehem's *Stewart J. Cort* or Litton's *Presque Isle,* the Interlake ships would also claim honors as Queens of the Lakes.

M/V JAMES R. BARKER

1,004'x105'x50'
Queen of the Lakes
August 7, 1976 to April 25, 1981

An artist's drawing released at the time of the announcement suggested that the two giant Interlake vessels would be modified versions of the trailblazing *Cort*. Like the *Cort,* they would follow the traditional Great Lakes practice of placing the pilothouse at the bow and the engine room at the stern. While all of the personnel aboard the *Cort* were housed in cabins located at the bow, the Interlake ships would follow the more traditional arrangement: housing deck personnel in cabins located below the pilothouse at the bow and engineering personnel in cabins over the engine room at the stern. The planned Interlake ships would also have cylindrical or rounded bows, instead of the more pointed bow used on the *Cort* and most other ships built on the lakes. The cylindrical bow had made its debut on the lakes in 1972 with the launching at Collingwood, Ontario, of Canada Steamship's 730-foot *J. W. McGiffin*. Tests had shown that rounded bows were stronger than pointed ones, especially when the vessel was operating in ice, and the design resulted in a slight increase in carrying capacity by reducing the length of the forepeak area. At the same time, the shift to a rounded bow was shown to have little effect on vessel speed. The artist's rendering of the planned Interlake freighters also showed that each would be built with a single smokestack (two stacks were necessary on the *Cort* because that vessel's two engine rooms were separated by its unique unloading system).

The planned thousand-footers would also have more conventional self-unloading systems than had been used on the *Cort*. While the *Cort* had only a short shuttle boom mounted transversely within its stern, the Interlake ships would have

Tugs help to maneuver the *James R. Barker* out of the Black River at Lorain, Ohio, on its maiden voyage. The giant Interlake Steamship freighter became the model for the ten thousand-footers that followed it into service on the lakes. Original plans called for the ship to be built in the century-old Great Lakes configuration, with pilothouse forward and engine room aft, but economic considerations subsequently led to a decision to locate the pilothouse and all accommodations over the engine room at the stern. (Institute for Great Lakes Research, Bowling Green State University)

longer, deck-mounted booms just forward of their engine rooms and aft cabins. Most self-unloaders on the Great Lakes at that time had booms at the forward end of their cargo holds, situated just aft of the forward cabins. The arrangement had been virtually standard on the lakes since the advent of the first self-unloaders during the early years of the twentieth century. The Interlake ships would not be the first self-unloaders with unloading booms at their sterns, however. In the months just prior to Interlake's announcement, five ships had come out with aft-mounted booms. They included Litton's tug-barge *Presque Isle,* Kinsman's *William R. Roesch* and *Paul Thayer,* and American's *Charles E. Wilson* and *Roger M. Kyes.* Unlike the planned Interlake vessels, all four of those self-unloaders had been built with their pilothouses and all crew accommodations located at the stern, atop their engine rooms, so their aft-mounted, self-unloading gear made abundant sense. The Interlake thousand-footers would be the first ships of the traditional fore-and-aft design to have their self-unloading booms located at their sterns.[1]

The first of the Interlake thousand-footers was completed at Lorain in August of 1976 and christened as the *James R. Barker.* The giant ship that emerged from the drydock at Lorain

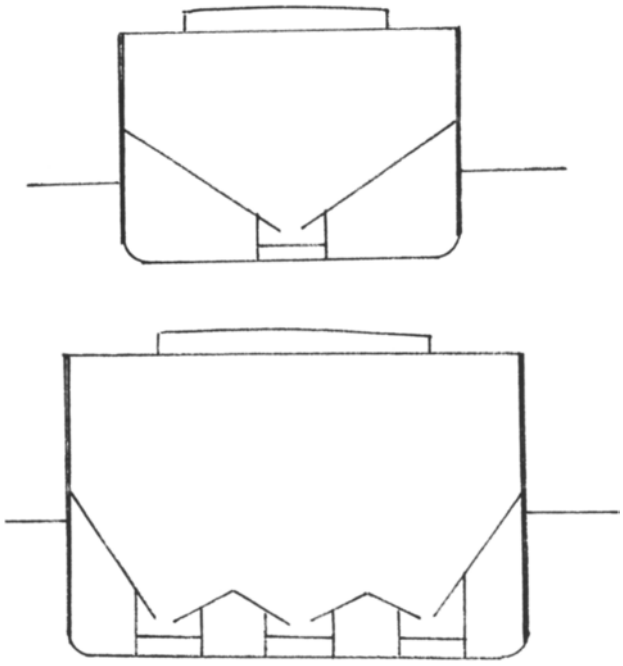
looked little like the artist's drawing unveiled almost three years earlier. During the process of actually developing prints to be followed in constructing the twin thousand-footers, officials from Interlake and AmShip had made dramatic changes in the design of the vessels.

After the construction in 1972-73 of Kinsman's *William R. Roesch,* the first modern ship built on the lakes that departed from the century-old fore-and-aft design pioneered in 1869 by the *R. J. Hackett,* Great Lakes shipbuilders never looked back. All of the ships that followed the *Roesch* off the ways, including the *Barker,* followed the more cost-efficient design of having their pilothouses and all crew accommodations on their sterns. After more than a hundred years, the separate evolution in ship design on the Great Lakes was finally merged with the evolutionary line that had previously emerged in ocean shipping. Almost overnight, the unique fore-and-aft design that had characterized ships on the Great Lakes was abandoned. Except for their self-unloading gear, vessels like the *Roesch* and *Barker* clearly belonged to the same family of ships as the salt-water freighters that were then being turned out at yards around the world. The *Barker,* not the *Cort,* became the prototype for the ten thousand-footers that were subsequently built on the lakes.

While the *Cort* was built with eighteen tiny hatches down the center of her deck, the *Barker* sports thirty-six hatches, each one 65 feet long and 11 feet wide. The *Cort* was designed to carry only iron ore pellets. As a result, the Bethlehem freighter's peculiar arrangement of hatches makes it impossible to fully fill her holds with cargoes like coal. The hatch arrangement on the *Barker* makes the Interlake vessel more versatile, and she has operated efficiently in both the taconite and coal trades.

Because of her stubby shuttle boom unloading system, the *Cort* can only unload at harbors that have dockside hoppers into which she can discharge her cargo into. The *Barker,* on the other hand, can unload at any dock on the lakes that is big enough to accommodate her. She can discharge cargo onto shoreside stockpiles or into a hopper.

The *Barker* features a conventional conveyor belt unloading system that feeds cargo to a loop belt elevator which carries the cargo up to the level of the deck-mounted unloading boom. While the *Cort* and most other self-unloaders use a single conveyor belt under their cargo holds, the *Barker* has three parallel belts. Use of three belts allowed builders to reduce the amount of slope built into the sides of the hold in order to get cargo to slide down to the belts. That resulted in an increase in the maximum carrying capacity of the ship. At the stern, cargo from the two outboard conveyor belts is carried to a center hopper by short crossover belts. The center hopper feeds the loop belt elevator. Cargo is sandwiched between the two belts of the elevator and carried up to a hopper at the top of the elevator casing that feeds cargo to the 250-foot self-unloading boom.



While most self-unloaders on the Great Lakes have a single conveyor belt running beneath their cargo holds, as at the top, the *Barker* features a three-belt system. The use of three belts allowed builders to maximize the size of the cargo hold, important when carrying cargoes with low weight-to-volume ratios, such as coal. At the after end of the *Barker*'s hold the three belts flow into a hopper feeding cargo to the loop belt elevator. (Author's collection)

While all crewmembers on the *Cort* are housed in the forward cabin structure, everyone aboard the *Barker* lives in the five-story aft cabin, located atop the engine room. The ship's galley, separate dining rooms for licensed and unlicensed personnel, and accommodations for the chief cook, second cook, and porter are located on the spar deck—or main deck—level. The next deck up is the poop deck, housing rooms mainly for unlicensed personnel from the deck, engine, and conveyor departments. Most of the unlicensed personnel live in two-person rooms—fairly cramped quarters, given the size of the *Barker.* Atop the poop deck is the accommodation deck, with private rooms for licensed deck and engine officers and a suite for the chief engineer that includes both an office and bedroom. The next deck up is referred to as the officers' deck, although the only officer with quarters there is the captain. Like the chief, he

has a two-room suite. The officers' deck also includes passenger quarters, a bedroom with two twin beds that adjoins an observation lounge with a broad expanse of picture windows overlooking the deck of the ship. The pilothouse is located above the officers' deck.

Below the spar deck cabins are the four levels of the *Barker*'s massive engine room. The four powerful diesel generators that provide electricity for the ship are located on the main deck of the engine room, one deck below the spar deck. One deck down is the operating deck, where the ship's steering gear and state-of-the-art engine control room are located. The *Barker*'s two 8,000-horsepower diesel engines are located yet another deck down in segregated rooms above the bilge. The operating, main, spar, poop, accommodation, and officers' decks are served by an elevator that is very popular with most crewmembers.

The elevator, in fact, is probably the second most appreciated feature of the big ship: the most popular being the central air conditioning. The engine control room, galley, dining rooms, pilothouse, and all crew accommodations are air conditioned. Comfortable temperatures are maintained even on the hottest summer days, a dramatic departure from the situation on steamboats built only a generation earlier. Lacking air conditioning, and with roaring boilers generating heat that permeates the cabin areas above them, steamboats regularly have temperatures in the 100-degree range. In the engine rooms, cooled only by fans that draw air—often hot air—from outside the ship, temperatures often exceed the 100-degree mark, and engine personnel swelter in a stifling inferno. Little respite from the heat can be found in the galley or crew quarters located over the engine room. The deck in the galley has been known to get so hot that it melts the rubber soles on the shoes of galley personnel. There'll be no such horror stories told by crewmembers aboard the *Barker,* who found no trouble in adapting to the refreshingly cool temperatures.

One change that was less readily accepted by personnel aboard the *Barker* was the shift to cafeteria-style galley service. Until the 1970s, crewmembers aboard ships on the lakes were waited on by galley personnel. Generally, a porter waited on unlicensed crewmembers in the mess room, while the second cook waited on officers in the dining room. On the *Barker* and most of the ships built since, licensed and unlicensed crewmembers go through a serving line and place their own orders with the cook, then carry their own trays to the dining room or mess room. Although the story is disputed, some of those who were aboard the *Barker* in its initial season say that the captain refused to stand in line with deckhands and other unlicensed personnel. For three days he went in and sat down at his reserved seat in the dining room and waited to be served. For three days he was duly ignored by galley personnel. On the fourth day, the captain capitulated and stood in the serving line like everyone else on the ship. Since then, crewmembers have grown accustomed to the cafeteria-style service, and few complaints are heard anymore.

The changes made to the *Barker* between the artist's drawing of 1973 and her launch in 1976 pushed construction costs upward. Instead of costing $37.5 million, the final price tag for the big freighter topped $40 million. She quickly proved her worth, however. Shortly after going into service, the *Barker* established a new iron ore record when she loaded 58,293 tons, the first of numerous ore and coal records she would achieve. While she set a number of tonnage records, she'll claim no records for speed. It was expected that her two 8,000-horsepower diesels, driving two 17.5-foot diameter propellers would push the ship along at a speed of sixteen miles an hour when loaded. Actual performance fell far short of that mark, however, and the *Barker* can only do about fourteen miles an hour when loaded.

On a single trip from the loading ports on Lake Superior to the unloading ports on Lake Erie or Lake Michigan, the *Barker*'s powerful diesels will suck up about 70,000 gallons of blended fuel. On the same trip, a steamboat would burn about 50,000 gallons of heavier oil. An observer could easily conclude that the new thousand-footers are not fuel efficient, but fuel consumed is only part of the equation. On a single trip, a thousand-footer like the *Barker* will carry close to 60,000 tons. The 600-foot freighters that were replaced by the thousand-footers could carry only about 15,000 tons in a single trip, so it would take four of them to move as much tonnage as a ship like the *Barker.* Together, four 600-footers would burn 200,000 gallons of fuel to move as much cargo as one thousand-footer that burns only 70,000 gallons. In a season, the four steamboats would consume close to seven million gallons of heavy oil, compared to only about three million gallons for a ship like the *Barker.* Even though the blended fuel used by ships like the *Barker* is slightly more expensive then the heavier oil used by the steamboats, the vessel's fuel cost would still be only about half that of the four steamboats needed to move the same amount of cargo.[2] That is only one of the efficiencies that can be generated by a thousand-footer.

By replacing steamboats with thousand-footers, the shipping companies also dramatically reduced their crew costs. It takes about the same number of people to crew a thousand-footer as it did to crew the 600-foot steamboats they replaced. Since it would take four steamboats to carry as much cargo as can be moved by a single thousand-footer, the shift to use of a ship like the *Barker* allowed her owners to eliminate three full crews—about twenty-seven officers and fifty-four unlicensed

crewmembers. At today's costs for wages and fringe benefits, the resulting savings amount to about $5 million per year. While construction of a thousand-footer represents a major outlay of capital for a shipping company, the efficiencies that result from replacing smaller vessels with a ship like the *Barker* make them a sound—almost mandatory—investment for fleets interested in competing in the iron ore and coal trades on the lakes. Other shipping companies rapidly followed the lead of Bethlehem, Litton, and Interlake and placed orders for thousand-footers.

M/V MESABI MINER

1,004'x105'x50'
Queen of the Lakes
February 14, 1977 to April 25, 1981

The second Interlake thousand-footer was launched at Lorain on February 14, 1977. Virtually identical to the *Barker,* the big freighter was christened at ceremonies held at the Port Terminal in Duluth, Minnesota, at 11:30 a.m. on Saturday, June 11, 1977. The traditional bottle of champagne was broken across the bow of the new ship by Muriel Humphrey, wife of Minnesota Senator Hubert H. Humphrey. As the bottle of champagne shattered against the rust-red hull of the newest thousand-footer, one hatch cover was lifted off, allowing thousands of red, white, and blue balloons to rise into the air. The big freighter was named *Mesabi Miner,* honoring the men and women of Minnesota's Mesabi iron range. Following remarks by Senator Humphrey, the *Miner* was open to the public that afternoon and the following morning, and thousands of people from the twin ports of Duluth and Superior toured the new Interlake vessel.[3] On Sunday afternoon, the ship shifted over to the Burlington Northern shuttle dock at Superior, which had opened just the week before, and took on its first load of taconite pellets.[4]

M/V GEORGE A. STINSON

1,004'x105'x50
Queen of the Lakes
July 15, 1978 to April 25, 1981

Two more thousand-footers were launched within days of each other in 1978. On July 15, 1978, the *George A. Stinson* was launched at Lorain for National Steel, to be operated as part of the Hanna fleet. It was followed on July 19, 1978, by the *Edwin H. Gott,* built at Bay Ship Building in Sturgeon Bay, Wisconsin,

M/V EDWIN H. GOTT

1,004'x105'x56'
Queen of the Lakes
July 19, 1978 to April 25, 1981

for the USS Great Lakes Fleet of U.S. Steel. After final fitting-out, the *Gott* went into service in February of 1979 as one of the ships participating in the winter navigation program. On her maiden voyage, the *Gott* damaged a side tank and lost one of her rudders while operating in the thick ice and had to go back to the shipyard for repairs. She came out of the shipyard two months later, but her luck hadn't improved much. On April 23 the giant ship lost her anchor and three hundred feet of stout anchor chain while attempting to take on supplies at Sault Ste. Marie. U.S. Steel added a second thousand-footer to its fleet on May 8, 1980, with the launching at Lorain of the *Edgar B. Speer.*[5]

M/V EDGAR B. SPEER

1,004'x105'x56'
Queen of the Lakes
May 8, 1980 to April 25, 1981

Like the *Cort,* the two U.S. Steel thousand-footers have shuttle-type self-unloading booms, instead of the more common deck booms like those used on the *Barker, Miner,* and *Stinson.* The shuttles on the *Gott* and *Speer* are located on the main deck, just forward of their cabins.

During the fall of 1986, officials in the Interlake Steamship offices in Cleveland were horrified when they received word that the *Barker,* the flagship of their fleet, was on fire on lower Lake Huron. The powerful diesel engines used in today's freighters vibrate constantly, and that vibrating had caused a fuel line to rupture in the *Barker*'s port engine room. Fuel pouring out of the ruptured line ignited, and by the time the personnel on watch discovered the fire it had spread throughout much of the engine room, filling the space with thick, black smoke. As engine room personnel prepared to battle the raging blaze, the captain ordered the balance of the crew to don their survival suits and prepare to abandon ship. Shipboard personnel managed to shut off the supply of fuel that was feeding the

blaze, and the vessel's fire extinguishing system was activated to flood the engine room with carbon dioxide and snuff out the fire.

The fire destroyed much of the machinery in the *Barker*'s sophisticated engine room. Unable to operate under its own power, the giant ship was lashed alongside the *William J. DeLancey,* the newest thousand-footer in the Interlake fleet. The *DeLancey* took the damaged *Barker* in side-by-side tow for the long, slow trip up the lake to the shipyard at Sturgeon Bay, Wisconsin. It stands as perhaps the most unusual towing job in the history of the lakes. Through the winter months of 1986–87, workers at the shipyard completed the multimillion dollar repair job on the *Barker,* and it was able to return to service during the 1987 season. Many of the thousand-footers have been involved in casualties of one sort or another during their careers, but most of the resulting damage has been relatively minor. None has come as close to being lost as the *James R. Barker.*

A broken fuel line aboard the *James R. Barker* resulted in a massive fire that destroyed much of the ship's propulsion machinery and control systems in the fall of 1986 while the vessel was on lower Lake Huron. The crippled *Barker* was lashed alongside the *William J. DeLancey,* another Interlake thousand-footer, for the four-hundred-mile trip to a shipyard at Sturgeon Bay, Wisconsin. That voyage ranks as the most unusual towing job in the long history of shipping on the lakes. The *Barker* returned to service the following year. (Author's collection)

The *Barker, Mesabi Miner, Stinson, Gott,* and *Speer,* all 1,004 feet long, shared Queen of the Lakes honors until an even longer ship was launched in 1981. Today, they and the eight other thousand-footers form the backbone of the shipping industry on the lakes, representing almost half of the total carrying capacity of the U.S. fleet.

Notes

1. Russell Parkinson, "The American Ship Building Company Announces $95,000,000 in New Shipbuilding Contracts," *Telescope* 23 no.1 (Jan.–Feb. 1974): 6.
2. Adapted from John O. Greenwood, "The Era of the Leviathans," paper presented at the 44th Annual International Joint Conference of the Dominion Marine Association and the Lake Carriers' Association, February 17, 1981, 4.
3. "Miner Launch Today," *Duluth News-Tribune,* June 11, 1977.
4. "Lakes Get New Giant," *Duluth News-Tribune,* June 12, 1977.
5. Ship Biographies, Institute for Great Lakes Research, Bowling Green State University.