Queen of the Lakes

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Published by Wayne State University Press

Thompson, Mark L.
Queen of the Lakes.

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Testifying before the U.S. Congress in 1904, William Livingstone, president of the powerful Lake Carriers’ Association, declared: “Fifteen years ago a 2,000-ton ship was considered large. Today, I would not take a 2,000-ton ship as a gift, provided I had to keep her in condition and run her.” Quite literally, small ships constituted an endangered species. While there were still hundreds of small vessels operating on the lakes, they had been on the road toward extinction since the 1882 launching of the Onoko. The shift to the use of iron and then steel in ship construction had removed the inherent size constraints limiting shipbuilders during the long era of wooden ships. It also had the effect of reducing the amount of variation in the size of ships in the Great Lakes bulk fleet.

Although the trailblazing Onoko was the longest ship on the lakes when it was launched in 1882, less than two decades later she had been dwarfed by the Gates and her sisters that were two hundred feet longer, with almost triple the gross tonnage. As ships grew larger, with greater carrying capacities, economies of scale gradually pushed freight rates downward. Simply put, big ships could carry cargo cheaper than small ones. At the same time, the higher costs incurred in constructing large, steam-powered iron and steel ships made it impossible for many owners of wooden ships to make the transition to iron or steel vessels. Wooden ships had commonly been owned by individuals, many by the captains that sailed them, but the big iron and steel freighters generally operated under the corporate flags of the relatively few firms that dominated the iron mining and shipping industries.

From the launching of the iron-hulled Onoko in 1882 until the end of the 1903 shipping season, 239 iron, steel, and composite-hull bulk freighters were launched by shipyards on the Great Lakes. Only 38 of them had gross tonnages of 2,000 or less, and most of those were built during the decade immediately following the debut of the Onoko. Of the 169 ships built in the eleven years between 1893 and 1903, only 8 were under 2,000 gross tons; 161 were over 2,000 gross tons. 145 were over 3,000 gross tons, 95 were over 4,000 gross tons, and 19 of the newest freighters were over 5,000 gross tons.

In the years following William Livingstone’s Congressional testimony in 1904, only one steel-hulled bulk freighter of less than 4,000 gross tons was launched by U.S. shipyards on the lakes, and that was the Str. Calcite, a self-unloader of 3,996 gross tons. By 1904, owners of ships in the 2,000 gross ton range were finding that their little vessels were no longer economically viable. Big steel freighters were dominating the major bulk cargo trades on the Great Lakes, and the small freighters were left to try and eke out an existence on the fringes of what had become the world’s premier bulk industry.

Even large corporate fleets found it difficult to keep pace with the rapid growth in the size of ships. Vessels that were on
the cutting edge of shipbuilding technology when they were launched were often found to be too small to compete efficiently only a few years later. Most of the ships had hulls and machinery that would be serviceable for several more decades, but their small size made them economically obsolete. To prolong the lives of many of these vessels, shipping companies often had them lengthened, or “stretched,” to increase their carrying capacities. Typical was the lengthening of M. A. Hanna Company’s Str. Republic, which was lengthened at American Ship Building’s Cleveland yard during the winter of 1903–04. The 310-foot freighter had been launched in 1890 and was measured at 2,316 gross tons. By lengthening the Republic’s cargo hold by 72 feet, the vessel’s carrying capacity was increased by 1,300 tons per trip; the cost was only about $70,000, far less than her owners would have paid to build a new ship. During an average season, the lengthened vessel’s earning power was increased by about $13,000, representing a significant return on their investment. With increased carrying capacity, the Republic was able to avoid the shipbreaker’s torches, and she continued operating on the lakes until 1917.

While the Republic was undergoing lengthening at American Ship Building’s Cleveland yard, workers at the AmShip yard in nearby Lorain were putting the finishing touches on an innovative new ship that would forever alter the techniques used to construct Great Lakes bulk freighters. At 560 feet in length, the Str. Augustus B. Wolvin would also wrest the title Queen of the Lakes from the Gates and her three sisters. Launched on April 9, 1904, and celebrated with a chicken salad and champagne luncheon in the yard’s mould loft, the new ship was built for A. B. Wolvin’s Acme Steamship of Duluth.

Born in Cleveland in 1857, Wolvin had started his marine career as a ten-year-old cabin boy on the Great Lakes, and by the time he was twenty-one he had worked his way up to captain. After a brief detour into the produce business, Wolvin went to Duluth in 1888 to work in the general vessel commission business. He remained in that position until 1895, when he left to start the five-boat Zenith Transit Company and manage other vessels, including American Steamship’s “City Line.” When U.S. Steel’s Pittsburgh Steamship fleet was formed in 1901, it absorbed the fleets managed by Wolvin, and he played a major role in the creation and management of what became the largest fleet on the lakes. By 1904 he was vice president and general manager of Pittsburgh Steamship, which then operated 116 vessels, and the latest addition to the fleet was christened in his honor.

While the size of ships generally tends to inch upward incrementally, with each new generation of vessels being only modestly larger than the preceding generation, the Wolvin represented a major stride forward in size. The Wolvin was so long, in fact, that the drydock and building berth at the Lorain shipyard had to be lengthened before she could be built. Designed under the leadership of James C. Wallace, vice president of American Ship Building, the new freighter was fully sixty-three feet longer than the Gates, Hill, Ellwood, and Edenborn launched just four years earlier. She was also four feet wider and two feet deeper, and her gross tonnage was ten percent higher. Even more importantly, the Wolvin’s net tonnage was almost twenty percent higher than the Gates and her sisters. Net tonnage is the key determinant in how much cargo a ship will be able to carry.

On the outside, the Wolvin looked much like the flush-decked Gates and the earlier Zenith City designed by Washington Babcock. There was no raised forecastle deck forward, and at the bow the main deck held only the pilothouse and a small cabin for the captain. At her stern, the galley and all cabins were located below the spar deck. The clean lines of her deck were broken only by thirty-three hatches, coamings around the various engine and boiler openings, the smokestack, and a skylight above the dining room. Most steamboat aficionados agreed that she was nowhere near as pleasing to the eye as ships like the Morse or Houghton.

While her exterior design may have been a throwback to an earlier era, it was beneath her steel skin that James Wallace and his staff had worked their magic. The Wolvin was the first freighter built without main deck beams and hold stanchions. Until the Wolvin, construction techniques for iron and steel ships differed little from those used for wooden ships. The timbers that supported the decks of wooden ships were not strong enough to span the width of the vessel without support, so the middle of each timber rested on a vertical hold stanchion running from the keel of the ship up to the timber beam supporting the deck planking. The hold stanchions were spaced every twelve or twenty-four feet down the center of the cargo hold, and they were an obstacle to the rapid unloading of ships by means of Huletts or other automated unloading systems. Not only did the stanchions get in the way of the unloading operators, they were often damaged by the unloading buckets.
Framing on steel freighters built before the *Wolvin* was almost identical to that on wooden ships, except that I-beams had been substituted for timbers and steel plates replaced wooden deck planking. On the *Wolvin*, however, a heavy arched deck support replaced the traditional deck beams; it bore the weight of the deck without being supported by hold stanchions. The cargo hold of the *Wolvin* was a great, open cavern—409 feet long, 43 feet wide at the top, and 24 feet wide at the bottom—perfectly suited to being unloaded by the automated systems then in use. After touring the freighter, one writer remarked that “When you stand at the bow of this ship and look aft through her unobstructed hold, gracefully arched over by its steel girders at the hatches, you feel as though you were in the Detroit-Windsor tunnel, and that at any minute an automobile may come whirring out of the dunnage deck and race down the vast tube into the darkness at the engine room bulkhead.”

The *Wolvin* was also one of the first ships built with her hatches on twelve-foot centers, instead of the more common twenty-four-foot spacing. Because chutes on the upper lakes ore loading docks were spaced twelve feet apart, when a ship with hatches on twenty-four-foot centers was being loaded every other chute would be lowered, and ore held in the pockets would slide down into the cargo hold. Then the boat would move twelve feet down the dock and the remaining chutes would dump their cargo. The shift to twelve-foot hatch spacing allowed ships like the *Wolvin* to load without shifting at the dock. Although this saved some time, it created other problems. Hatch openings had to be narrower when spaced on twelve-foot centers, making it more difficult to negotiate the buckets of unloading rigs into or out of the hatches. It also left little room on deck between the hatches for deckhands to work, creating both an inconvenience and a safety hazard.

In addition, the *Wolvin* was the first ship to be equipped with ballast tanks along her sides, sandwiched between the hull plating and the cargo hold below the deck arches. Ballast tanks allowed large ships to take on weight—water—so that they would float deep enough to get under the chutes at loading docks, virtually all of which had been designed to service smaller ships. Water ballast also helped stabilize a ship when she was running without cargo in heavy seas. Until the *Wolvin*, water ballast was always carried in what is referred to as the “double bottom,” the space between the outer hull of the ship and the bottom of the cargo hold, or “tank tops.” The first ships with double bottoms appeared at the time of the *Onoko*, but the practice of carrying water ballast did not become popular until about 1890. After that it was almost universal within the Great Lakes fleet. The side tanks on the *Wolvin* allowed the ship to carry much more water ballast, which was necessary to get the thirty-two-foot depth of the hull under the loading rigs.

The side tanks also made unloading easier. On ships built before the *Wolvin*, a portion of the cargo hold was located under the deck wing, the space between the hatch opening and the side of the ship. It was difficult for the buckets on the unloading rigs to reach cargo under the deck wing, and shovellers often had to be employed to clean cargo out of those recesses. On the *Wolvin*, however, the sidetanks forming the walls of the cargo
hold sloped inward so that the bottom edge was almost directly below the ends of the hatch openings. As a result of this design innovation, unloading rigs were able to remove almost all of the cargo from the hold, greatly reducing the need to use shovellers for cleanup.

Subsequent to the Wolvin, all bulk freighters were built with arched deck beams and sidetanks, although the configuration of the sidetanks varied somewhat based on the types of cargo that would be carried. Vessels built primarily to haul grain or coal—relatively lightweight cargoes—generally had smaller sidetanks that increased the volume of cargo they could haul. While the shape of sidetanks has changed over the years, those on today’s most modern freighters are very similar to those on the Wolvin, and they continue to perform the same functions.

The Wolvin was also the first ship equipped with telescoping steel hatch covers instead of the traditional wooden hatch covers. It was an innovation that would win high praise from every deckhand who sailed the lakes. Until the Wolvin, deckhands had to lift the heavy wooden hatch covers off at every loading and unloading dock, then replace them again before clearing port. This long, backbreaking task added greatly to turnaround time in port. By contrast, hatch covers on the Wolvin were composed of overlapping leaves of steel that could be slid back to the outboard ends of the hatch opening by using deck winches. As the winches took up slack on cables attached to pad eyes at the center of each hatch cover, the leaves would slide over the top of each other until they were neatly stacked and the hatch was open and ready for loading or unloading. The telescoping hatches caught on quickly and were used on almost all ships built after the Wolvin—until single-piece steel hatch covers were pioneered on the Str. William C. Atwater in 1925. A few ships continued to be built with wooden hatch covers until at least 1906, and vessels with wooden hatch covers could still be found on the lakes as late as the 1930s. Today, only a handful of older ships still employ telescoping hatch covers.

While the Wolvin embodied significant design innovations that would impact on the industry even after her long career on the lakes had ended, she was probably best known for her unique paint job. While the hulls of most lake freighters were painted utilitarian black, grey, or rust-red, the Wolvin was coated in vivid yellow above her waterline and bright green below it. She was almost immediately nicknamed “The Yellow Kid.”

There is always risk in innovation, and the Wolvin was the most innovative bulk freighter to enter service on the lakes since McDougall launched his first whaleback in 1888. But any concern that Augustus Wolvin or the shipbuilders might have had was quickly dispelled when the unique new vessel went into service. On her maiden voyage, the Wolvin established a Great Lakes cargo record by loading 10,694 net tons of ore at Two Harbors, Minnesota. The Wolvin also proved to be a stalwart ship, operating on the lakes for more than six decades.

Only a few months after the big freighter was launched, Augustus Wolvin left his position with Pittsburgh Steamship, ending a distinguished maritime career that had spanned thirty-seven years. Starting as a ten-year-old cabin boy, Wolvin had climbed his way up through the hawsepipe until he managed the largest fleet to ever sail on the Great Lakes. Wolvin left the Pittsburgh fleet to accept a position as president of Zenith Furnace Company of Duluth, a blast furnace operation largely controlled by Pickands Mather. Wolvin still held major interests in seven ships of what was generally referred to as the “Wolvin fleet,” even though the ships operated under flags of the Acme, Peavy, and Provident steamship companies. He played a role in the operation of the three fleets until Pickands Mather took over management responsibilities for all of the Wolvin vessels in 1906.

In 1913, the Wolvin and the other ships in the Acme, Peavy, and Provident fleets, along with four vessels of the Mesaba Steamship Company, two from the Interlake Company, two from the Huron Barge Company, and seven ships of the Lackawanna Steamship Company, were organized under the umbrella of the new Interlake Steamship Company, a subsidiary of Pickands Mather. Shortly after Interlake was formed, it
also purchased seventeen ships from the Gilchrist Transportation Company. With a total of thirty-nine vessels flying the Pickands Mather house flag and sporting the familiar rust-red hulls with gleaming white superstructures, Interlake Steamship became the second largest fleet operating on the lakes.9

Sailors tend to be a little superstitious, and if any Pickands Mather officials were looking for some omen to indicate that they had made a wise decision in forming their new fleet, they got mixed messages during that 1913 season. On one hand, 1913 was an exceptionally busy year on the lakes. By the end of the season, bulk cargo shipments had exceeded the 100-million-ton mark for the first time ever. On the other hand, the industry was devastated by a horrible four-day storm of hurricane proportions that struck the lakes that November. Thirteen freighters were totally destroyed, including Interlake’s Argus and Hydrus. If their experiences during that initial season were to presage the future of the Interlake fleet, Pickands Mather officials would have had to conclude that they could expect a mixed bag in future seasons. Such a conclusion would have been accurate.10

Augustus Wolvin died in 1932, but the ship that bore his name operated as part of the Interlake fleet for a remarkable fifty-three years. On two separate occasions the Wolvin underwent major renovations. In 1938, the water tube boilers that supplied steam to her 2,000-horsepower, quadruple expansion engine were replaced. At the same time, her cargo hold was rebuilt and a cabin constructed on her deck just forward of the stern. Then, in 1946, her twelve-foot center hatches were replaced with new hatches built on twenty-four foot centers, which had become standard on the lakes. During that modernization, the bow of the Wolvin was also substantially rebuilt: she received a raised forecastle deck and a new forward cabin and pilothouse. To balance the changes made at the bow, an updated smokestack, shorter than the original, was installed at the stern. The stack bore the familiar Interlake markings, a horizontal band of orange on a background of black.11

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The *Augustus B. Wolvin* waiting to offload at Ashtabula, Ohio. The ship has been positioned under a battery of bridge cranes that will be used to unload the big freighter. Several Hulett unloaders can be seen in the background. The hull of the *Wolvin* is in the process of receiving a new coat of paint, which ends just aft of the bow section. (Institute for Great Lakes Research, Bowling Green State University)
After she lay idle at Erie, Pennsylvania, from 1961–65, ownership of the aging freighter was transferred in early 1966 to the Labrador Steamship Company, a Canadian subsidiary of Pickands Mather. During that season, the Wolvin operated in the grain and ore trades on the St. Lawrence Seaway, carrying grain out the seaway and backhauling ore from the iron ranges of Labrador to steel mills on the Great Lakes.

Her long career on the lakes finally came to an end in June of 1967, when she scraped a bank while rounding a bend in the Welland Canal and suffered extensive bottom damage. Following the grounding, the Wolvin was declared a constructive total loss, and a month after the incident she was sold to a Canadian salvage firm for scrapping. She was subsequently sold to Spanish shipbreakers, and on August 27, 1967, the Wolvin and the Str. Saskador departed Hamilton, Ontario, under tow. On September 24, 1967, they arrived in Santander, Spain, and went under the shipbreaker’s torches. The distinguished career of the former Queen of the lakes—one of the most innovative ships ever built on freshwater—was over.

Notes

2. These figures do not include canallers built for trade through the Welland Canal; these boats were restricted in size by the dimensions of the locks in the canal.
4. With the outbreak of World War I in 1917, the Republic was sold to a Canadian firm and put into service on the Atlantic as the North Pine. She was scrapped in 1924 at Danzig, Poland.
8. Rev. Peter Van Der Linden, ed., *Great Lakes Ships We Remember, II* (Cleveland: Freshwater Press, 1984), 419.
10. Ibid.
11. Van Der Linden.
12. Ibid.