FREIGHTERS

Bi-Monthly Periodical on the Latest Great Lakes Shipping News
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Port City Tug's Latest Vessel Makes Her Debut

- $123M appropriated for new lock construction
- Ship allisions and collisions
- Putting on the finishing touches: William Richard nears completion
- In the Design: Inside the cargo hold

Editor's Pick

Short Articles on various happenings around the lakes

$123M appropriated for new lock construction

July 17, 2020

The U.S. House of Representatives House Appropriations Committee approved $123 Million towards the ongoing construction of the new Poe-sized lock at Sault Ste. Marie, Michigan. These funding appropriations will help the U.S. Army Corps of Engineers maintain their current construction timeline, with hope that the new lock will be completed in about seven years.

"It's difficult to overstate just how vital the Soo Locks at Sault Ste. Marie are to the Great Lakes region, our people, and our economies," said Representative Kaptur of Ohio, chairwoman of the house Appropriations Subcommittee on Energy and Water Development.

Atlantic Huron on the St. Marys River a few days before her possibly career-ending accident, July 2, 2020. Photo by Isaac Pennock

Ship allisions and collisions

July 14, 2020

Multiple shipping accidents have occurred over the past two months. Though no crewmembers were injured, several of the ships were severely damaged.

First, on July 5, 2020, at about 3:30 AM, the *Atlantic Huron* lost power and rammed the north approach wall to the Soo Locks. She was traveling downbound, headed to Meldrum bay, Ontario, to load stone, when she experienced a power failure near the International Bridge. The *Atlantic Huron* dropped her stern anchor, but it was too late, and she struck the pier. Tugs moved the ship over to the Algoma Steel export dock in the Canadian Soo for an inspection, and she was towed to Thunder Bay, Ontario, a few days later. She has since been drydocked for further inspection.

On July 11, 2020, the Canadian-flagged *Florence Spirit* collided with the saltwater vessel *Alanis* while transiting the Welland Canal. ➲

➲ The *Florence Spirit*, downbound with a load of coal, lost control, with her bow swinging to port and into the channel in front of the *Alanis*, which was upbound with a cargo of wind turbine parts. The ships collided, and the *Florence Spirit* was sent aground on the side of the canal. Both vessels were later inspected, and both ships have been repaired and returned to service.

Then, on July 13, the 1,000 ITB *Presque Isle* struck an underwater portion of the north pier of the Duluth Ship Canal. She did not make the turn in time, scraping underwater rocks with her port bow. She proceeded outbound, anchoring for inspection, and later to the Duluth Port Terminal to receive minor repairs.

Out with the old, in with the new

August 19, 2020

Canada Steamship Lines announced recently that they have retired their 41-year old self-unloader *Salarium*. The *Salarium* was chartered to haul salt in recent years, and has been worked hard. She will be scrapped in an environmentally-friendly scrapyard.

Another Canadian company, Algoma Central Corporation, announced the new name for their latest Equinox class construction. The new 740' gearless bulk carrier that is under construction in China will be named *Captain Henry Jackman*. ◘

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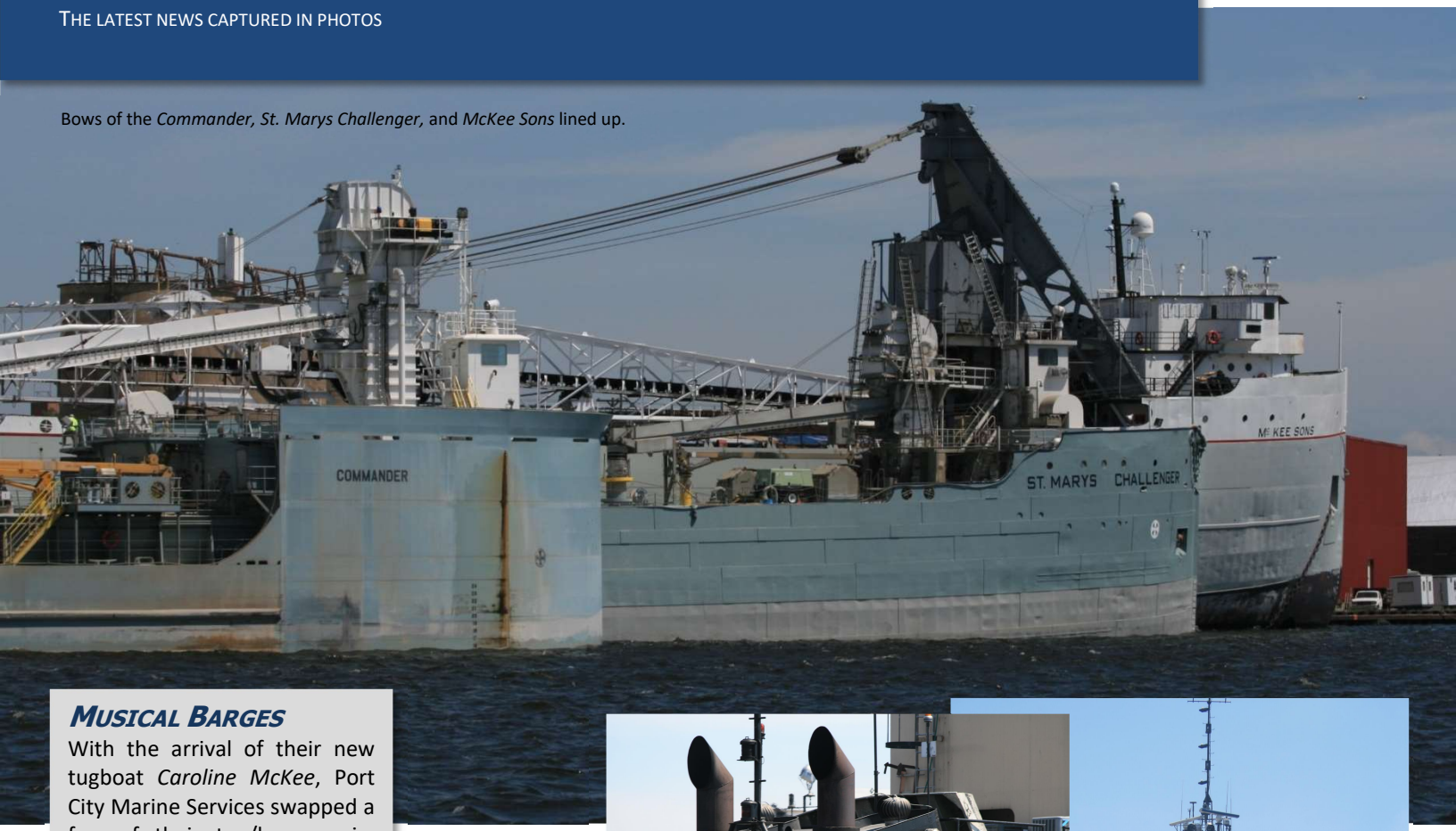
"Soo Locks receiving $123 million for construction for Poe Lock". Soo Evening News, 17 July 2020. Accessed 24 August 2020. < https://www.sooeveningnews.com/news/20200717/soo-locks-receiving-123-million-for-construction-for-poe-lock>

News in Photos

THE LATEST NEWS CAPTURED IN PHOTOS



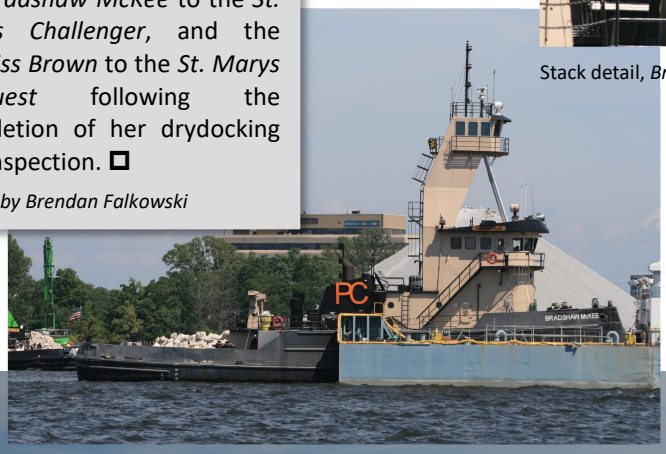
Bows of the *Commander, St. Marys Challenger,* and *McKee Sons* lined up.

Musical Barges

With the arrival of their new tugboat *Caroline McKee*, Port City Marine Services swapped a few of their tug/barge pairs around at Muskegon, Michigan, on Sunday, July 26, 2020. The *Caroline McKee* was then paired with the *Commander*, the *Bradshaw McKee* to the *St. Marys Challenger*, and the *Prentiss Brown* to the *St. Marys Conquest* following the completion of her drydocking and inspection. ◘

Photos by Brendan Falkowski

Stack detail, *Bradshaw McKee*



Bradshaw McKee in the notch of Commander

Caroline McKee at the dock

Bradshaw McKee/Commander, Prentiss Brown/St. Marys Challenger, and *McKee Sons* rafted together in Muskegon

Port City Tug's latest vessel makes her debut

Port City Tug's *Caroline McKee* arrives on the Great Lakes

July 26, 2020

Caroline McKee on her way into the Great Lakes
Photo courtesy of Andrew MacDonald

Port City Marine's *Caroline McKee* arrived on the Great Lakes in late July, traveling up the Welland Canal bound for Chicago. After staying in Chicago for a few days, she sailed up to Muskegon on July 26, 2020. She was joined in Muskegon by her fleetmates *Bradshaw McKee / Commander* and *Prentiss Brown / St. Marys Challenger*. The *Caroline McKee* then switched with the *Bradshaw McKee* in the notch of the barge *Commander*, and the *Bradshaw* switched with *Prentiss Brown* in the notch of the *St. Marys Challenger*. Then, the vessels paraded out of the Muskegon channel.

The *Caroline McKee* was built in 1972 by Main Iron Works in Houma, Louisiana, as the ocean tugboat *David P. Guidry*. She was originally owned by American Offshore of Galliano, Louisiana, being sold to an unknown buyer in 1981. The *Guidry* was renamed *Thunder*. In 1990, she was sold to the Tampa Electric Company, being renamed *Sharon DeHart* and fitted with an upper pilothouse and a Bludworth Articulated Tug-Barge coupler system. The *DeHart* was operated by the Tampa Electric subsidiary Gulf Coast Transit, which was later restructured as TECO Shipping. She pushed the barge *Doris Guenther* during this time period. In 2013, she was sold again to United Ocean Services and renamed *Coastal 303*, and was laid up at some point that year. The *Coastal 300* was sold to Dawn Marine Services in 2018 and renamed *Southern Dawn*, remaining in layup. In early 2019, the *Southern Dawn* was acquired by Port City Marine Services of Muskegon, Michigan and taken to Bollinger Shipyards in New Orleans, Louisiana, where she underwent a major refit preparing her for Great Lakes service. The project was complete in mid-2020, and she departed New Orleans in early July under the name of *Caroline McKee*. She will be mated to the barge *Commander.* □

Caroline McKee, detail. Photo by Brendan Falkowski

Caroline McKee, stack detail. Photo by Brendan Falkowski

Pennock, Isaac. "Caroline McKee". Great Lakes Tugs & Workboats. N.d. Accessed 2 September 2020. https://gltugs.wordpress.com/caroline-

PUTTING ON THE FINISHING TOUCHES

SHEPLER'S MACKINAC ISLAND FERRY'S NEW VESSEL *WILLIAM RICHARD* IN FINAL STAGES OF FIT-OUT

AUGUST 20, 2020

William Richard at Shepler's Mackinaw City Dock
Photo by Brendan Falkowski

On July 14, 2020, Shepler's Mackinac Island Ferry launched their newest vessel, the *William Richard*, into the waters of Lake Huron at Calcite harbor near Rogers City, Michigan. The vessel was built by Moran Iron Works in Onaway, Michigan, and transported 26 miles by way of a semi-truck to the Calcite stone docks where she was launched. After final sign-off from all of the contractors, a crew from Shepler's sailed her up to the Mackinaw City dock.

Most of the ship's systems were installed by the time she was launched. The only things remaining is the installation of the passenger seating on the main and upper decks, and completing the interior of the pilothouse.

Brendan Falkowski from Shipwatcher News was offered a special opportunity to tour the vessel while she was docked in Mackinaw City. Pictures from that tour are included with this update.

After sailing on her sea trials in the Straits of Mackinac, the *William Richard* was pulled out of the water with Shepler's Marine's hoist, and taken inside their paint shop to be painted in Shepler's classic blue and white. After painting, her passenger seating will be installed, and she will undergo final fit-out.

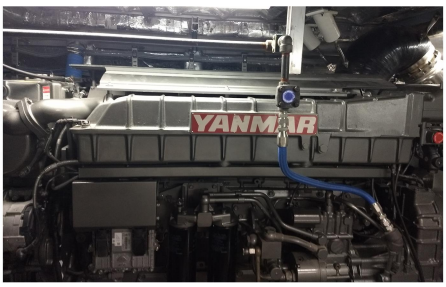
Shepler's hopes to have the *William Richard* ferrying passengers to Mackinac Island at some point this fall. A formal christening ceremony will be held in spring of 2021. ☐

Special thanks to Shepler's Mackinac Island Ferry and Chris and Billy Shepler for arranging for me to tour the *William Richard*. – Brendan Falkowski

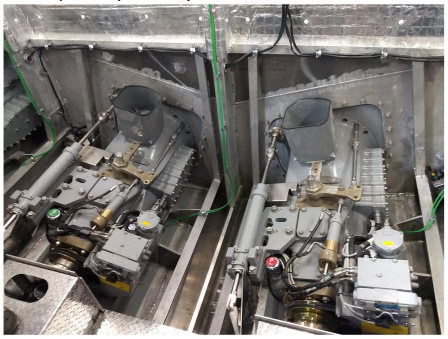
William Richard being pulled out of the water for painting, photo courtesy of Shepler's

William Richard in the paint shop, photo courtesy of Shepler's

One of the 900 gallon fuel tanks and the electrical panel, photo by Brendan Falkowski



One of four 803-HP diesel engines onboard, photo by Brendan Falkowski



Interior view of the Hamilton jet water jets, photo by Brendan Falkowski

View from inside the pilothouse, photo by Brendan Falkowski

In The Design: Inside the cargo hold

A look behind inside the cargo hold of the ships that sail the Great Lakes

Detail of the cargo hold of the *Wilfred Sykes*
Photo by Roger LeLievre

Background

Within the steel hulls of Great Lakes freighters, the cargo holds look largely the same. Even with this common design, there are several variations on how the cargo hold on a freighter is laid out. The layout and design of the cargo hold depends on several factors, such as the primary cargo to be carried or if the ship is a self-unloader converted from a gearless bulk carrier.

Self-Unloader Cargo Holds

With self-unloading ships, there are several variations on how the conveyor belts inside the hold can be laid out. This can also depend on how many belts in the hold are on a particular ship. Most self-unloaders have at least one conveyor belt running the length of the cargo hold, usually recessed into the tank top or sitting just above, about 30-34' from the bottom of the ship. A walking tunnel is usually located alongside the conveyor tunnel. Large sloped plates, at about 30-35 degree angle, allow the cargo to flow towards the conveyor belt, which is accessed by large mechanically-driven gates at the bottom of the slopes. Transverse slopes, called "hogbacks" or "razorbacks", are placed in between each gate in the hold. Some self-unloaders are equipped with vibrator systems, which are found on the inside of the sloped side tanks. The vibrators vibrate the slopes to help sticky or wet cargoes to flow. Ballast tanks are typically found underneath the slopes, or on the side of the hull.

The variation typically found in how many cargo hold belts that the vessel has. Self-unloaders can have anywhere from one to three belts in the cargo hold. Currently, only two vessels on the Great Lakes are equipped with three cargo hold belts, those being the 1,000' *James R. Barker* and *Mesabi Miner*, ships designed to be involved in the iron ore and coal trades. ➲

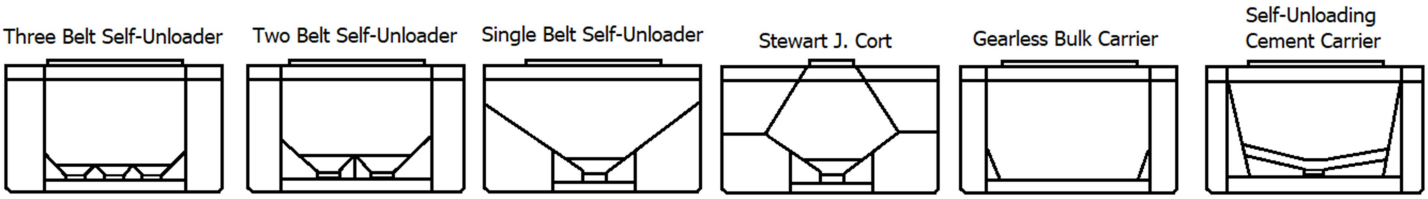
➲ The *Barker* and *Miner* have large side tanks, with three belts running the length of the cargo hold with small slopes between the side tanks and the belts. This layout offers large cubic dimensions, which allows for the efficient carriage of low-density cargoes such as coal.

Slightly more common on the Lakes is a two belt cargo hold layout, where two belts run the length of the hold with ballast tanks on the sides or below the slopes. A large slope runs down the length of the hold on the centerline, allowing cargo flow to the belts on each side. This layout option allows for large cubic dimensions, but can be more favorable when carrying high-density cargoes.

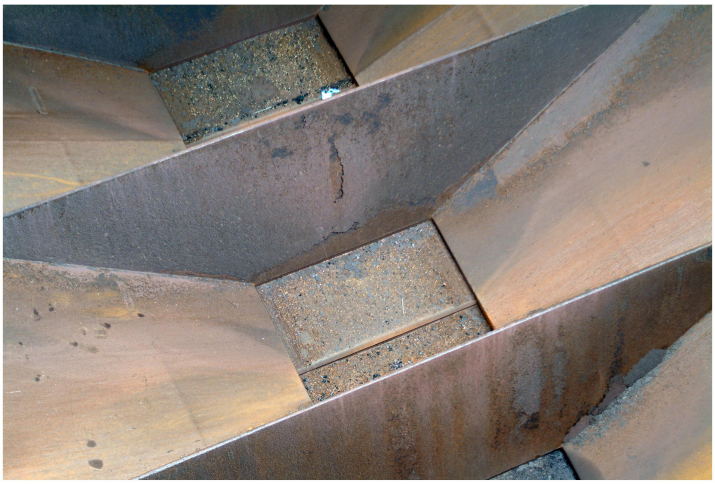
The most common layout for self-unloaders is the single belt layout, where a single conveyor belt runs the length of the hold and straight to the cargo elevator at the end of the ship. Large slopes run from each side of the ship down to the belt. Many vessels that were converted into self-unloaders from gearless bulk carriers are equipped with this layout, where slopes and a conveyor belt were installed into the box-shaped cargo hold. Single belt systems are more favorable to the iron ore trade, for which the cargo has a very high density and does not require large cubic dimensions. Some ships that were specifically designed for the ore trade, such as the *Stewart J. Cort*, have a very small cargo hold space surrounded by ballast and void tanks.

Gearless Bulk Carrier Cargo Holds

Gearless bulk carriers have the simplest design for their cargo holds, which are almost always a large box-shaped hold that allows for large cubic capacity. The holds are usually a U-shaped compartment nested inside ballast tanks on the bottom ➲



Cross section diagrams of different cargo hold layouts found aboard Great Lakes freighters. Diagram by Brendan Falkowski



Detail of hogbacks and conveyor tunnel gates on the *Wilfred Sykes*. Photo by Roger LeLievre

Detail inside the cargo hold of a gearless bulk freighter. Photo from Roger LeLievre Collection

➲ and sides. They have a flat bottom and steep slope over side tanks to allow the cargo to fall to the bottom of the hold. These ships were designed to be unloaded by shore side gantry cranes or Hulett unloaders.

Cement Carrier cargo holds

Inside the holds of a cement carrier, it looks very similar to that of a conventional self-unloader. There are many minor differences within, though, for handling this unique cargo. Cement, is a very fine powder, and when injected with compressed air, will behave like a liquid. Inside the hold, slightly sloped sides feed a single conveyor belt running the length of the hold at the centerline. The slopes only run at about a 10 degree angle, if the slope is too high, the cement powder will flow to the gates too quickly. Hogbacks run the full width of the cargo hold. Small side tanks and a deep double bottom surround the cargo hold. Many cement carriers also have a centerline bulkhead running the length of the cargo hold to prevent the sloshing of the cargo.

Cement carriers also have air slide systems installed within the hold, injecting compressed air into the hold to make the cement powder flow to the conveyor gates. Between each air slide, hogbacks separate the conveyor gates. All framing and support beams have shedder plates to keep cargo off of the frameworks, and in more modern vessels, the use of bulbed flat plates, beams reinforced with tubing on the bottom. Although found on conventional self-unloaders, cement carriers are fitted with dust collectors. Similar to a vacuum, these dust collectors create negative air pressure in the hold to keep cargo contained, and to collect airborne particles and place them back inside the hold.

Bulkheads and Hold Linings

Inside the cargo hold, bulkheads serve many purposes. They separate the cargo hold and ballast tanks, and also divide the cargo hold to allow multiple cargoes to be carried at the same time. Cargo hold bulkheads can be water tight in some instances, but often on self-unloaders they are not due to the tunnel conveyor running below the hold. Some vessels are equipped with a "guillotine" system to slice the belt and seal the tunnel, but have not been extensively tested. Often, bulkheads within the cargo hold are to separate cargoes to increase versatility as well as add transverse rigidity for to prevent torsion. Some vessels are fitted with corrugated bulkheads, but these act similar to accordions when it comes to transverse rigidity.

Cargo hold linings are another important concept, and can help protect the vessel's cargo hold while increasing efficiency by allowing cargo to flow more freely down slopes. Most vessels just have a bare steel cargo hold, which is unprotected from corrosion or damage from cargo movement. In some ships, Teflon sheet liners are fastened to the cargo hold slopes, which help cargo flow, but do not completely protect the hold from maladies such as corrosion. To solve problems such as that, spray on coatings like polyurethane can be applied to protect the hold.

While the basic design of the cargo hold aboard the Great Lakes freighter is largely the same, there are small differences that increase these ships' versatility and efficiency. ◻

Special thanks to the naval architects who provided their time and resources to help me write this article. Thank you to Travis Martin, Fred Koller, and Nicholas Posh from Bay Engineering, Eric Helder from Interlake Steamship Company, Nick Hunter from NETSCo., and Andrew MacDonald from Port City Marine Services. – Brendan Falkowski

OJIBWAY

Ojibway on the St. Marys River, September 13, 2016.
Photo by Roger LeLievre

HISTORY

On February 6, 1952, DeFoe Shipbuilding in Bay City launched their Hull #422 into the icy waters of the Saginaw River. This new ship would prove to be one of the last active U.S.-flag "straight-deckers" by the end of the century. The new vessel, named *Charles L. Hutchinson*, combined both classic and modern Great Lakes freighter design into a single unique ship. The plans for the *Hutchinson* were largely based on that of U. S. Steel's AA Class "Supers" of 1942. The vessel was 642'03'' long, 67' wide, and 35' from keel to spar deck and could carry up to 20,668 tons at her mid-summer draft. Her spacious cargo holds had a large cubic capacity, allowing for the efficient carriage of low-density cargoes such as coal and grain. Her power plant was originally constructed by Bethlehem Steel in 1941, being installed on the saltwater ship *Alcoa Prospector*. The large cross-compound steam turbine was salvaged after the *Prospector* was sunk in enemy action during WWII. The *Hutchinson* featured a high countered stern, with enclosed after cabins and a poop-deckhouse, topped with a small streamlined stack with her mast mounted on top. Her forward cabins featured four guest rooms, complimented with a lounge, small galley, and dining rooms.

The *Charles L. Hutchinson* was constructed for the Pioneer Steamship Company, a subsidiary of Hutchison & Co. of Cleveland, Ohio, entering service on September 24, 1952. Sailing for Pioneer, the *Hutchinson* often loaded iron ore from Duluth, Minnesota, for steel mills on the lower lakes, with occasional cargoes of coal. At the end of the 1961 season, Hutchinson decided to cease the Pioneer Steamship operations, putting the entire fleet up for sale.

Ford Motor Company purchased the *Hutchinson* and her fleetmate *W. H. McGean* (Later *Robert S. McNamara*) in early 1962. The *Hutchinson* was then drydocked at Toledo for a hull survey and painting into Ford's fleet colors. She was rechristened *Ernest R. Breech* in a ceremony at Cobo Hall in Detroit on April 10, 1962. She soon settled into her usual route, hauling ore from Duluth, Marquette, or Escanaba to Ford's steel complex on the Rouge River in Dearborn. With the economic crash of 1982, the *Breech* was used in the grain trade, typically loading at the Cargill elevator in Duluth bound for Buffalo, New York. ➲

Charles L. Hutchinson, 1950's, photo by Tom Manse

Ernest R. Breech, 1973, photo by Roger LeLievre

Kinsman Independent, 1988, photo by Jim Hoffman

Kinsman Independent on the St. Marys River, 1990's
Photo by Roger LeLievre

➲By 1985, the *Ernest R. Breech* became excess tonnage in the Ford Fleet, and was sold in early 1988 to Great Lakes Associates of Rocky River, Ohio (Kinsman Lines). She was repainted in bright red and renamed *Kinsman Independent*, sailing on her maiden voyage for Kinsman on June 24, 1988. On November 24, 1990, the *Kinsman Independent* wound up 25 miles off course, and grounded on the rocks near the entrance of Siskiwit Bay on Isle Royale. She was bound for Thunder Bay, Ontario, to load grain. The *Independent* was severely damaged, but was freed from the rocks and escorted to Thunder Bay where she received nearly $2 Million in repairs at the Port Arthur Shipbuilding yard. She returned to service in the spring of 1991.

The *Kinsman Independent* continued the Buffalo grain run throughout the 1990's with an uncertain future. When an unloading hopper was installed at the General mills Frontier Grain elevator in Buffalo in 2002, it spelled the end for her as a U.S. flagged straight-decker. She laid up at Buffalo on December 16, 2002.

During the summer of 2004, McKeil Work Boats of Hamilton, Ontario, purchased the *Independent*, towing her out of Buffalo on September 1, 2004, bound for Hamilton, Ontario. While in Hamilton, she was repowered with a new General Electric 7FDM EFI diesel engine, rated at 4100 BHP. As part of the project, a new propeller shaft was installed with a new controllable pitch propeller, along with two new Caterpillar generator sets. She was repainted bright royal blue and renamed *Voyageur Independent*. She returned to service for Voyageur marine Transports of Ridgeville, Ontario, on November 14, 2005, sailing in the Seaway grain trade.

On August 28, 2007, Rand Logistics announced that their Canadian subsidiary, Lower Lakes Towing, purchased the *Voyageur Independent* and her fleetmate *Voyageur Pioneer* for $25 Million. She would continue to serve her usual Seaway grain trade routes. She was registered under the name *Ojibway* on February 29, 2008, and entered service for Lower Lakes on March 27, 2008.

In 2009, Lower Lakes explored converting the *Ojibway* into a self-unloader, but has opted to keep her as a gearless freighter for the time being. The *Ojibway* continues to be an active carrier in the Lower Lakes Towing fleet, fitting out season after season. ◘

Voyageur Independent, 2006, photo by Roger LeLievre

Ojibway, 2020, Photo by Daniel Lindner

Ojibway, 2020, photo by Isaac Pennock

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Brendan Falkowski

Is a Great Lakes ship enthusiast who shares his passion for the freighters through his newsletter and his artwork. He is currently pursuing his high school education in mid-Michigan before graduating and moving on to college, where he plans to attend to the University of Michigan to study Naval Architecture and Mechanical Engineering. Brendan is an avid musician, and is a drum major in his high school marching band. He enjoys sailing and spending time with his friends and family.

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Shepler's Mackinac Island Ferry

Cover Photo: *Caroline McKee* on the Detroit River, July 20, 2020. Photo courtesy of Andrew MacDonald

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