FREIGHTERS

THE GREAT LAKES SHIPPING INDUSTRY PERIODICAL

EDITION #70 – JULY-AUGUST 2023

OFFICIAL NEWSLETTER OF SHIPWATCHER NEWS – EDITED BY BRENDAN FALKOWSKI – WWW.SHIPWATCHER-NEWS.COM

VANENKEVORT TUG & BARGE MARKS 55 YEARS

- SS BADGER DOCK COLLAPSES, ENDS SEASON PREMATURELY
- TECUMSEH TOWED TO THE SCRAPYARD
- ECOSSE MOVES SHORT-SEA CARGOES ACROSS THE SYSTEM
- IN THE DESIGN: DESIGNED WITH THE CARGO IN MIND – CEMENT

Editor's Pick

Short articles on happenings around the lakes

SS Badger dock collapses, ends season prematurely

August 1, 2023

On the morning of July 21, 2023, the SS *Badger* experienced a mechanical failure with her dock loading apron system in Ludington, MI. The south support arm that adjusts the apron height collapsed and fell over, leaving it partially held up by the stern of the ship.

The apron system, which dates back to railroad ferry days, utilizes support arms on the sides to help raise and lower the apron – a large ramp for loading vehicles onboard. The support arm systems each have a counterweight to adjust the apron height. With one support arm disabled, the ship is not able to load or unload vehicles.

Lake Michigan Carferry announced on August 1 that they made the difficult decision to cancel the remainder of the sailing season for 2023.

"We have made the difficult, and unfortunately unavoidable, decision to suspend our daily crossings for the remainder this season. This is not how we hoped our 70th season would end but we are fully committed to making the extensive repairs – and doing it the right way – so that we will be back better and stronger in 2024 to serve our loyal passengers and port communities," Mark W. Barker, president of Lake Michigan Carferry parent company Interlake Maritime Services, said in a statement.

Based off contractor estimates it was realized that it would take much longer than initially expected to remove and reconstruct the dock apron support arm. In the meantime, Lake Michigan Carferry is giving full refunds to all customers with reservations.□

See photos in "News in Photos"

Leak leads to diesel spill in Lake Michigan

August 4, 2023

The *Manitowoc* reported a diesel spill after departing Manistee, MI, on August 2. She anchored off the port shortly after exiting the piers while the U.S. Coast ➲ Guard arrived on scene to assess and investigate the situation. A spill sorbent boom was also dispatched at this time.

The leak was in *Manitowoc*'s starboard diesel tank, and it was initially reported that approximately 1000 gallons were spilled. Later reports stated that the amount was much less than initially thought. *Manitowoc* was released to depart for Muskegon, MI, for repairs on August 4 and was ready for service 3 days later. The spilled fuel was fairly diluted and considered to have low impact on the environment.□

Manitowoc arrives at Muskegon, MI, for repairs, under escort of tug *George F. Bailey*, August 4, 2023. Photo: Jason Bhaskaran

Tecumseh towed to the scrapyard

August 29, 2023

The bulk carrier *Tecumseh* was sold for scrapping in late July 2023. She ➲was towed from her layup berth in Ashtabula, OH, to the Marine Recycling Corp. scrapyard in Port Colborne, ON, on August 29 by the tugboat *Ohio.*

The 50-year-old vessel was sidelined nearly four years ago following a catastrophic engine room fire. The fire broke out on December 15, 2019, while *Tecumseh* was downbound on the Detroit River with a cargo of canola from Thunder Bay, ON, for Windsor, ON. The fire was extinguished after the crew evacuated and the vessel laid up for the winter at Windsor. In the spring of 2020, she was unloaded and towed to Ashtabula, OH, where she has been moored since.

Tecumseh was built in 1973 by Lockheed Shipbuilding in Seattle, WA. She was acquired by Lower Lakes Towing in 2011 and entered service on the Great Lakes at the beginning of the 2012 season. □

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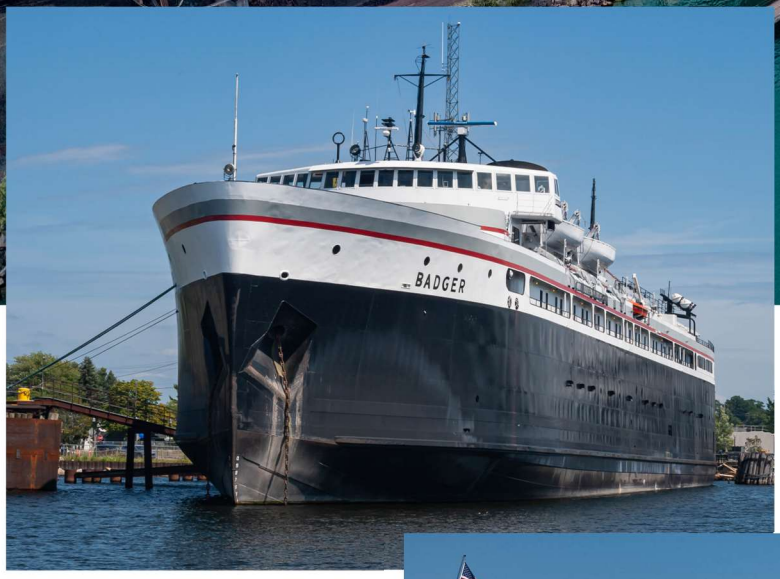
News in photos

Some of the latest news captured in photos

Stewart J. Cort, loading at Silver Bay, July 25, 2023. Photo: David Schauer

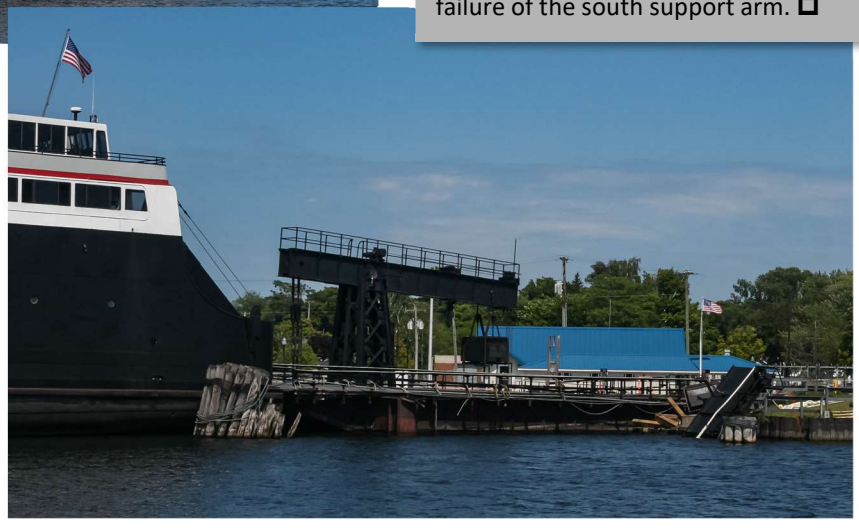
Changing it up

Stewart J. Cort has made two visits to Silver Bay, MN, to load iron ore. This is a rare trip for her as she does not often stray from her Superior, WI, to Burns Harbor, IN, run. ◘



Stuck at the dock

While the *Badger* appears ready for service, her dock is currently out of commission due to the failure of the south support arm. ◘



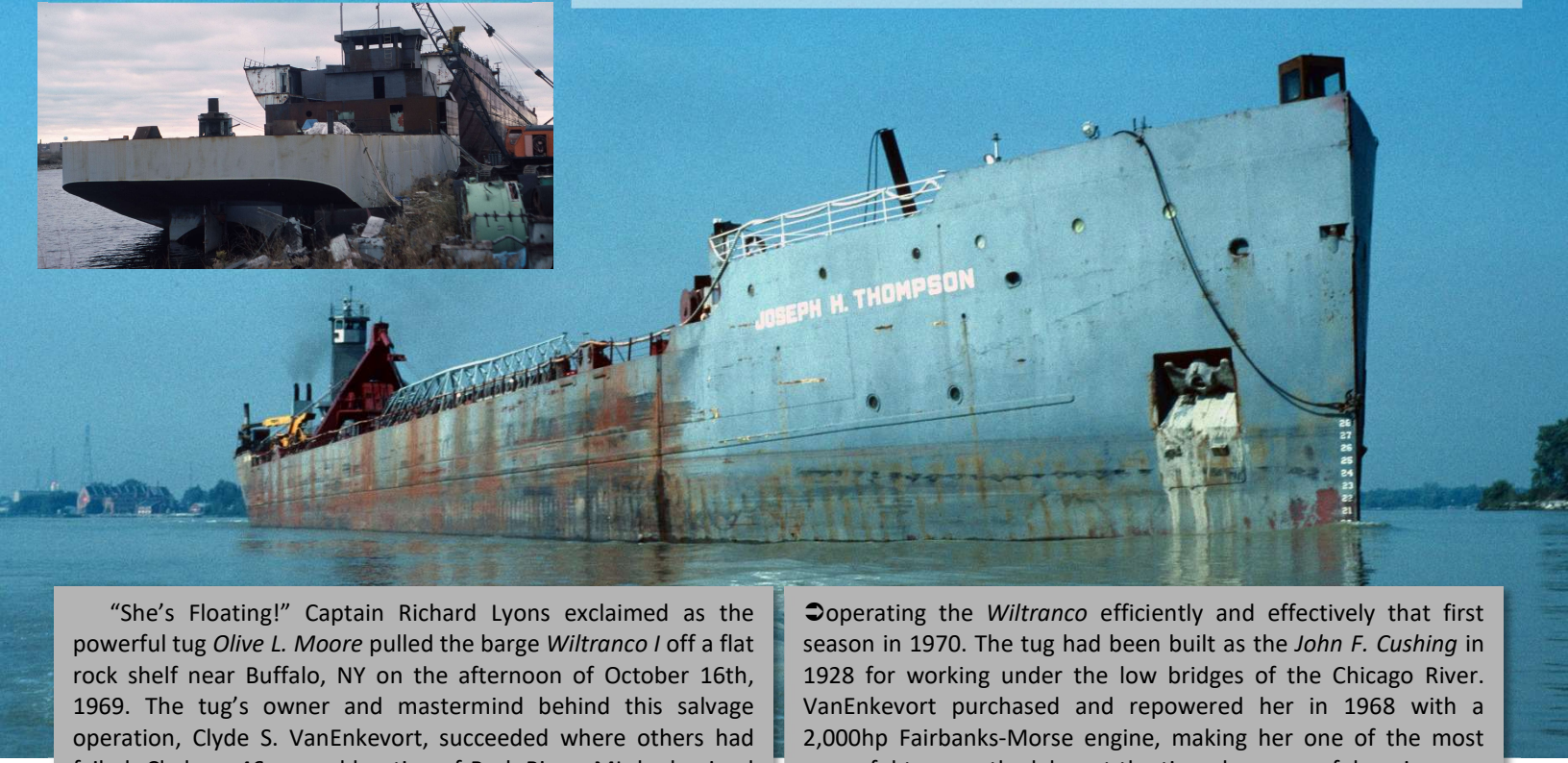
(Above): *Badger* sits at her dock awaiting repair to her loading apron. (Right): A view from the side shows the collapsed support arm. July 28, 2023. Photos: Brendan Falkowski

Articulating innovation with progress for 55 years

THE HISTORY OF VANENKEVORT TUG & BARGE

Written by Scott Bjorklund

(Main): *Joseph H. Thompson* departing Toledo, OH, shortly after barge conversion, *1991*. Photo: Jim Hoffman
(Inset): *Joseph H. Thompson Jr.* under construction in Menominee, 1988. Photo: John Vournakis, MHSD



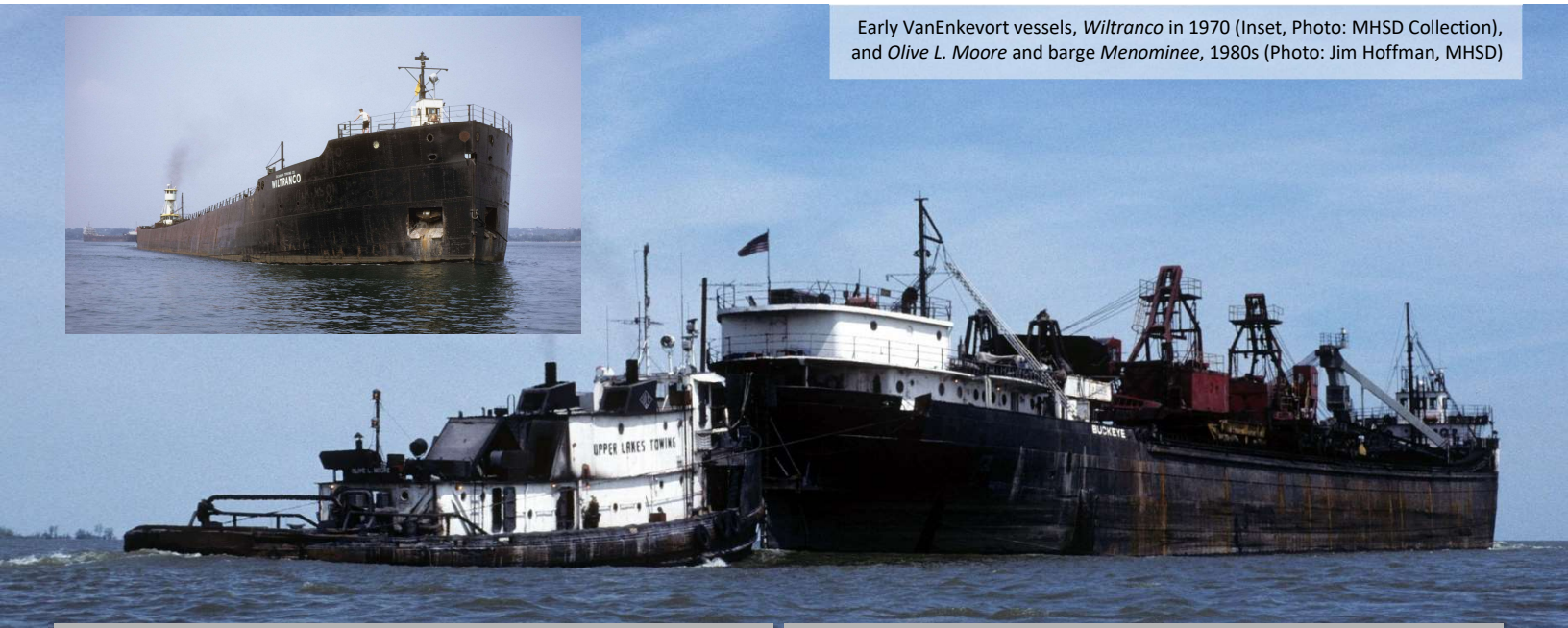
"She's Floating!" Captain Richard Lyons exclaimed as the powerful tug *Olive L. Moore* pulled the barge *Wiltranco I* off a flat rock shelf near Buffalo, NY on the afternoon of October 16th, 1969. The tug's owner and mastermind behind this salvage operation, Clyde S. VanEnkevort, succeeded where others had failed. Clyde, a 46-year-old native of Bark River, MI, had gained some notoriety in freeing the crane ship steamer *Buckeye (2)* off Port Colborne the year before, but now he would be known across the lakes for completing this near impossible task. He and his partner in the concrete business, 40-year-old John Stropich, would use the recovered barge to enter into the Great Lakes Shipping industry and establish a legacy that survives today through the hard-working, maroon-and-buff tug-barge units of the VanEnkevort Tug and Barge fleet.

The Wiltranco I was created by the Wilson Marine Transit Co. in 1963 as a cost-saving experiment from one of their older, self-propelled freighters. Originally built as the steamer *Horace S. Wilkinson* in 1917, her cabins and engine were removed so that a notch could be added to accommodate a tug; these modifications extended the freighter's useful life, and money would be saved in operations with a smaller crew. She was operating in the coal trade under charter to Small Inc. when she broke loose from her consort tug *Francis Small* in heavy weather during the fall of 1967. The storm drove her hard aground just offshore southwest of Buffalo, and there she became a near-permanent fixture for two years, daring salvagers to try their hand at moving her. Nearby residents were so tired of seeing the hulk just off-shore that a letter was sent to President Nixon asking for something to be done about its removal. Clyde won more than just the salvage bid- he got to keep the barge! After it was freed, the *Wiltranco* was inspected and repaired before entering service under the Escanaba Towing Co., a VanEnkevort and Stropich enterprise.

The first years of the fleet saw a lot of success and rapid business growth. Clyde's tug *Olive L. Moore* was key to ➲ operating the *Wiltranco* efficiently and effectively that first season in 1970. The tug had been built as the *John F. Cushing* in 1928 for working under the low bridges of the Chicago River. VanEnkevort purchased and repowered her in 1968 with a 2,000hp Fairbanks-Morse engine, making her one of the most powerful tugs on the lakes at the time; her powerful engine was key to handling the unwieldy and massive barge. The *Moore* was fitted with an elevated pilothouse for better visibility over the barge before the pair loaded their first cargo, 14,000 tons of iron ore, at the Chicago & Northwestern ore dock for Inland Steel at Indiana Harbor in the Spring of 1970. The pair went on to complete around 30 trips that year for Escanaba Towing moving coal, stone, and iron ore.

Because of the first season's success, two barges and one tug were added to the Escanaba Towing fleet to take on more business in 1971. The tug *Lee Reuben* was purchased and brought up to the Great Lakes from New Orleans late the previous season so that a new barge could be acquired. The barge turned out to be Wilson Transit's 1908-built steamer *A.E. Nettleton*, which was nearing retirement. Instead of removing the cabins and engine like the *Wiltranco*, the *Nettleton's* propeller was simply removed and a frame was attached at the stern for a pushing tug. Lastly, Columbia Transportation's idle crane ship *O.S. McFarland* was purchased mid-season to haul more coal cargoes. It seemed as if a new force was rising to take business from the traditional Great Lakes fleets of the time!

An unending series of disasters crushed the fast-growing company in a single season, much to the relief of long-time ship operators. Even before they began moving cargoes again in 1972, the US Coast Guard withdrew operating certificates for the *Wiltranco* and *McFarland* due to their poor condition. Although *Wiltranco* was eventually allowed to run, the *McFarland* was briefly used as an unloading dock before being scrapped in Duluth later in the season. Financial difficulties arose, and Great Lakes Towing placed a "do not tow" order on the company for ➲



Early VanEnkevort vessels, *Wiltranco* in 1970 (Inset, Photo: MHSD Collection), and *Olive L. Moore* and barge *Menominee*, 1980s (Photo: Jim Hoffman, MHSD)

➲unpaid bills. The *Wiltranco* ran into trouble three times during the season: colliding with a dock in Marine City and twice becoming ensnared by the wreck buoy of the sunken steamer *Sidney E. Smith Jr.* in the St. Clair River. The death of a crew member and engine failure on the *Lee Reuben* further complicated matters. Escanaba Towing's problems climaxed on November 2nd when the *A.E. Nettleton* broke away from the *Olive L. Moore* in high winds and heavy seas on Lake Superior; although the barge and her 5-man crew survived, she had taken a lot of water and damage during the storm. The company declared bankruptcy after the 1972 season, and the fleet was sold off at auction the next year.

Despite the early failures of Escanaba Towing, VanEnkevort and Stropich re-entered the Great Lakes shipping scene with the purchase of Columbia Transportation's retired crane ship *Buckeye (2)* in 1979. No other vessel on the lakes could compete with the versatility of the 1910-built crane ship. Its ability to load or unload everywhere and anywhere made it an even bigger success for the VanEnkevort fleet. Like the *Wiltranco*, its engine and stern cabins were removed to fit the pushing consort tug *Olive L. Moore*, which was bought back from the Bank of Escanaba. Painted white and blue and placed under a new operating company called Upper Lakes Towing, the ship's operation became a family affair with at least five of John Stropich's sons and three of VanEnkevort's working the rusty money-maker over the years. Their operation also became a significant threat to major fleets of the time. In fact, American Steamship Co. Vice President Jim Weger was quoted in 1987 saying the *Buckeye* "shouldn't be taken lightly" and that they have "taken business from us we've enjoyed in the past". For over ten years, the grimy operation hauled various traditional bulk cargoes like salt, stone, and coal plus unique loads of steel products. With the *Buckeye's* operational life coming to a close by the end of the 1980's, the VanEnkevort and Stropich families looked towards their next grand experiment.

The purchase and conversion of the former Hansand steamer *Joseph H. Thompson* revolutionized the Great Lakes shipping industry with the introduction of the articulated tug-barge system. The former super freighter was purchased through Upper Lakes Towing in 1984 and towed to Menominee for its conversion to a self-unloading barge. Besides the usual ➲

➲removal of its engine and cabins, VanEnkevort devised a new hydraulic tug-barge connector system called Hydraconn. The system consisted of hydraulic rams on each side of the tug that locked into racks inside the notch of the barge and allowed the tug and barge to pitch, or move up and down, independently while connected. Her traditional conveyor self-unloading system featured a custom bucket elevator made from chain links from bulldozer tracks with buckets welded to the outside of the treads. A pusher tug was partially created from the leftover steel following the conversion and was named *Joseph H. Thompson Jr.* The revolutionary pair entered service for the 1991 season and became a huge success for the fleet; the *Buckeye* was retired the previous year in anticipation of their debut. The conversion of the *Thompson* led a trend of converting older, outdated vessels into barges for over the next three decades.

The company moved on to more innovation and expansion after the success of the *Thompson*. In late 1990, Upper Lakes Towing took on the Amersand Steamship Co. self-unloader *McKee Sons* for another articulated tug-barge conversion; the tug *Olive L. Moore* was assigned pushing duties when the barge was ready for operations in 1992. Then in 1997 came the founding of Bark River Towing, a VanEnkevort family firm led by Clyde's son Dirk, to order a brand-new articulated pusher tug from Bay Shipbuilding. Fitted with their Hydraconn system, the 10,000hp tug was completed in 1998 and named after Clyde's wife, *Joyce L. VanEnkevort*; it was the most powerful tug then built on the Great Lakes, and it was specially constructed to accompany a new self-unloading barge being built in Mississippi. In 2000, the *Joyce L. VanEnkevort* went down to retrieve the new barge and brought it back to the lakes through the Seaway. The barge was named *Great Lakes Trader*, and the pair had a combined length of 845 feet with a 39,000-ton carrying capacity. The VanEnkevort Tug and Barge Co. we know today was created to run the *Joyce* and *Great Lakes Trader*; this company became the VanEnkevort family's share in their partnership with Stropich and his family, which held their share through Upper Lakes Towing.

As business continued to grow operating the *Joyce* and *Thompson*, the VanEnkevort interests decided to enter the shipbuilding business in 2005. VanEnkevort Tug and Barge President Dirk S. VanEnkevort announced late that year the➲

Laura L. VanEnkevort / Joseph H. Thompson at Fraser Shipyards in Superior, WI, for repairs, March 28, 2023. Photo: Scott Bjorklund

(L-R): *Michigan Trader* arriving in Toledo, 2022. Photo: Logan Vasicek; *Joyce L. VanEnkevort*, 2022. Photo: Scott Bjorklund; The VTB stack herald on the *Laura L. VanEnkevort*. Photo: Brendan Falkowski

➲creation of a new partnership with K&K Warehousing of Menominee, MI called Erie Shipbuilding LLC; they intended to re-open the idle shipyard in Erie, PA for business. It was here that the long-time fleet member *Olive L. Moore* was sold to K&K in 2006 for the conversion of the former steamer *Sparrows Point*, then *Buckeye (3),* to an articulated tug-barge unit at their shipyard in Erie. The shipyard began to build the future near-sister tug to the *Joyce*, today's *Clyde S. VanEnkevort*, in 2008 before the Recession hit later that year. As the shipping industry suffered through the next season, shipbuilding ground to a halt as 100 workers were laid off due to lack of funds. Finally in late 2009, Donjon Marine Co. out of New Jersey bought the bankrupt shipyard to eventually finish the tug-barge combination under construction in 2011.

The years during and after the Great Recession brought several endings and new beginnings to the company. Clyde retired from the business in 2008, and VanEnkevort Tug and Barge changed ownership in late 2009 to survive the depressed cargo demand; the bulk of the company was acquired by Mid Ocean Marine, which was invested in US Flag shipping concerns across the country. The original founders, John Stropich and Clyde S. VanEnkevort, passed away in 2012 and 2016 at the ages of 82 and 92. The *Joyce* and *Thompson* were consolidated under the VanEnkevort Tug and Barge in 2015, ending the Upper Lakes Towing name. Volckert and Nickel van Reesema, co-founders of Mid Ocean Marine in 2007, are the principal owners of the VanEnkevort fleet to this day.

The articulated tug-barge unit finished by Don Jon Shipbuilding, *Ken Boothe Sr.* and *Lakes Contender*, was bought by the company in 2017 and renamed in honor of the founder and the place it was built: *Clyde S. VanEnkevort* and *Erie Trader*. Then in 2018, the company announced it had signed a contract with➲Fincantieri Bay Shipbuilding to construct another self-unloading barge identical to the two *Trader*'s; the *Joseph H. Thompson Jr.* was rebuilt in anticipation of its construction and renamed for the President of the fleet, Dirk. Despite the downturn in business due to the COVID pandemic, the *Dirk S. VanEnkevort* and new self-unloading barge *Michigan Trader* made their debut in late 2020. The *Thompson* was given a new pusher tug brought up from Florida in 2019; the tug was renamed for the company President's wife, *Laura L. VanEnkevort*.

Today, you can hear the recognizable engine rumblings of VanEnkevort's pusher tugs and barges in nearly every major American port on the Great Lakes throughout the shipping season. They are unique in that they are large vessels, but they can also reach ports that thousand-footers cannot. Clyde VanEnkevort, John Stropich and their descendants truly took the shipping industry by storm with their innovations in articulated tug-barge design and operation. They had the guts to take on the big fleets of the time, and their work continues to thrive today despite the ever-changing industry. We'll see their maroon and buff vessels around the lakes for many years to come.□

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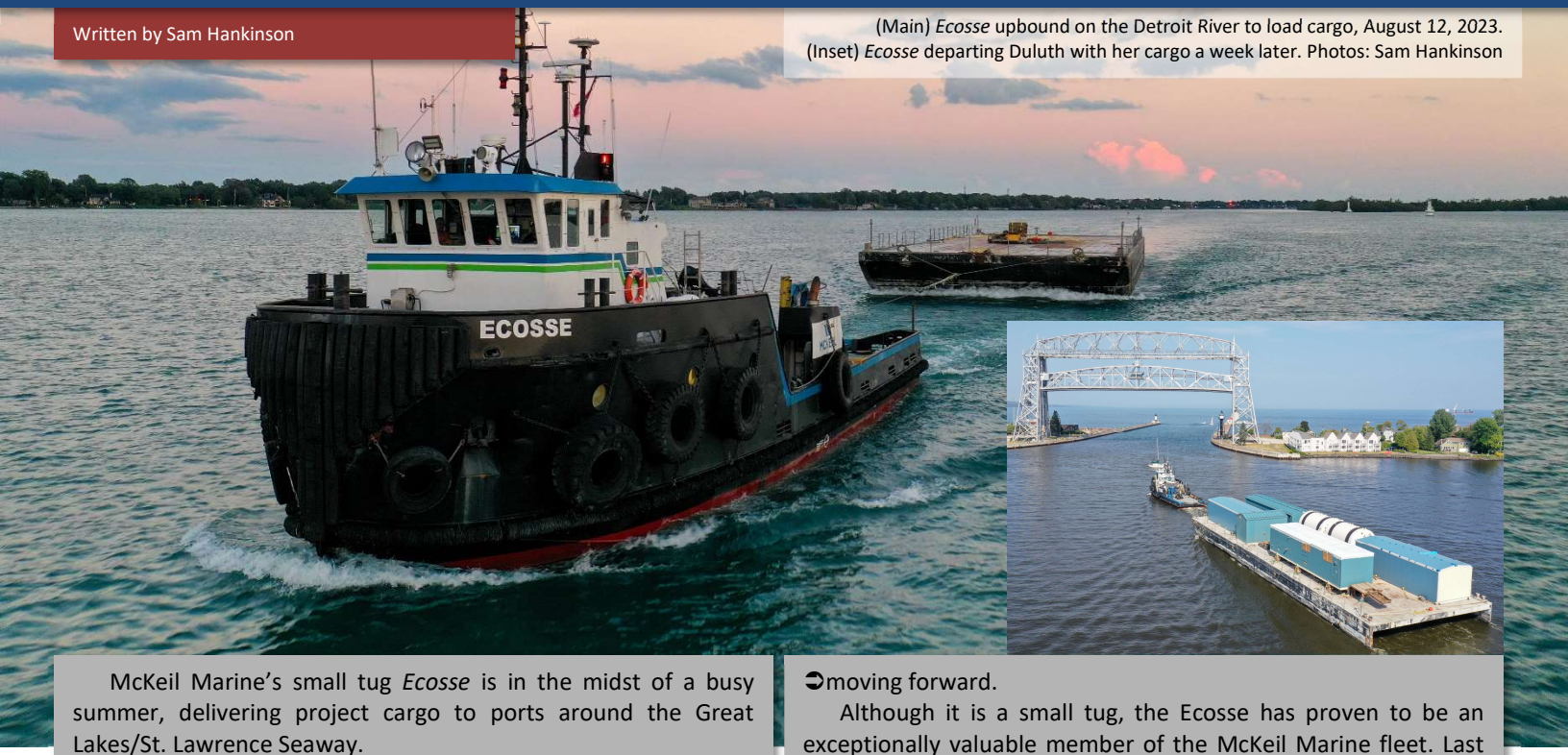
Ecosse moves short-sea cargoes across the system

McKeil Marine's *Ecosse* moves project cargoes for Canadian Arctic projects

Written by Sam Hankinson



(Main) *Ecosse* upbound on the Detroit River to load cargo, August 12, 2023. (Inset) *Ecosse* departing Duluth with her cargo a week later. Photos: Sam Hankinson

McKeil Marine's small tug *Ecosse* is in the midst of a busy summer, delivering project cargo to ports around the Great Lakes/St. Lawrence Seaway.

In August, the tug sailed from Port Maitland, Ontario to Duluth, Minnesota with an empty barge. The *Ecosse* arrived at the Clure Public Terminal in Duluth where the Duluth Cargo Connect team loaded pre-fabricated buildings onto the barge. The *Ecosse* and barge departed Duluth in time to catch the 4pm raising of the Duluth Aerial Lift Bridge, and started the trek eastward to Valleyfield, Quebec. Upon arrival at Valleyfield, the barge was staged alongside the vessel *Zelada Desgagnes*, and the cargo was lifted from the barge to the larger ship, which eventually sailed for Iqaluit, Nunavut. When the *Desgagnes* arrives at its destination later in September, the components will be discharged at a new deep sea cargo terminal that opened earlier this year. The $84.9 million investment will provide transportation efficiencies for Nunavut and its communities. Although it is not confirmed, the cargo is likely destined for one of the many mines that is being developed in the Arctic.

Groupe Desgagnes, through its subsidiary Desgagnes Transarctic Inc, supplies communities in the Arctic during the ice-free summer. This service, in partnership Nunavut Sealink and Supply Inc., sees Desgagnes general cargo and tanker ships serve as the lifeline to the most remote communities in the world.

Valleyfield is located south of Montreal and has become a transshipment and staging point for Arctic cargo. Maritime activities are concentrated at the Société du Port de Valleyfield. Valleyfield's proximity to Montreal allows the port to consolidate containers exiting or entering the Seaway.

Desgagnes will have an increased role in the operations at Valleyfield moving forward. In May 2023, the shipping company acquired the activities of Valport Maritime Services, the cargo handling and warehousing company located at the Port of Valleyfield. Desgagnes and the Société du Port de Valleyfield will collaborate on future projects and development initiatives ➲

➲moving forward.

Although it is a small tug, the Ecosse has proven to be an exceptionally valuable member of the McKeil Marine fleet. Last season, it hauled components for a project on the Slate Islands in Lake Superior. This season it brought cargo to the Canadian Soo, likely in support of the electric arc furnace conversion project at Algoma Steel. The Ecosse also came to the aid of the motor vessel Cuyahoga in May after the freighter experienced a fire on Lake Erie. Along with the tug Stormont, the Ecosse towed the disabled freighter into Kingsville, Ontario.

These cargo movements demonstrate how even the smallest tug can contribute to short sea shipping in the Great Lakes. Short-sea-shipping is typically an alternative to land-based routes, but is also the only way to deliver these components to the Arctic.

The Ecosse was built in 1979 as the R&L No. 1 by Hike Metal Products of Wheatley, Ontario for Wakeham & Sons of Hamilton, Ontario. The tug had a near sister ship, the Elmore M. Misener. Both vessels resembled compact supply ships that are more common on the ocean. The ships were likely designed to service oil and gas wells on Lake Erie.

In 1996, the tug was acquired by Nadro Marine Services of Port Dover, Ontario and renamed Ecosse. The namesake is the French-language word for Scotland. With Nadro, the tug performed a variety of tasks, from ship assistance, scrap tows, and project cargo moves.

In 2018, the Nadro fleet was absorbed into the McKeil Marine fleet, and the Ecosse was eventually repainted from the red Nadro scheme to the blue and green McKeil scheme. The twin screw tug is powered by 2 Detroit 16V-92-N diesel engines. It is 91 feet long, 26 feet wide, and 8 feet 6 inches deep.

Although it is a small tug, featuring the Ecosse not only places the spotlight on the importance of short sea shipping, but the steady flow of commerce from Quebec to the Nunavut regions of Canada.◘

DESIGNED WITH THE CARGO IN MIND – CEMENT

HIGHLIGHTING CARGOES THAT HAVE INFLUENCED GREAT LAKES SHIP DESIGN

Prentiss Brown / St. Marys Challenger downbound on the St. Clair River, September 28, 2021. Photo: Isaac Pennock

BACKGROUND

The Great Lakes region is a prime location for the manufacturing of cement due to the abundance of the raw materials necessary for its production. The network of manufacturing plants and distribution terminals is complemented by Great Lakes shipping. Limestone is mined, ground and combined with special cementitious additives, and heated in a large kiln to make cement clinker. These small "rocks" of cement can be handled as such or are ground down into cement powder and shipped. Both forms of cement have very different personalities when handling, except for the shared characteristic of being quite dusty. Cement and clinker come in different grades, each for unique applications. Type I is the most general variety used in construction, though Portland Limestone Cement (PLC) is also fairly common. Type III is used for masonry and aesthetic purposes and is handled in lesser amounts. Supplementary Cementitious Materials (SCM) – various materials such as slag, calcinated steel runoff, bottom ash, and gypsum, added to cement mix – are shipped as a backhaul, or return trip, cargo for use in making cement product. Demand for SCMs is based off commodity prices and market trends, there are many different materials that can be used in cement making. It is easier to source these materials as they are typically byproducts or industrial waste, making them less expensive to purchase and transport than virgin stone.

Cement clinker handles very much like other stones with the additional feature of being dusty. This dust is why some standard self-unloading vessels that are intended to carry clinker are outfitted with dust collection systems. Powdered cement is a bit trickier to deal with, as it is a very fine, dusty material. It can easily pack together and stick to really anything in the cargo hold, and takes additional aeration to get it to flow.

CARGO CHARACTERISTICS & SHIP DESIGN

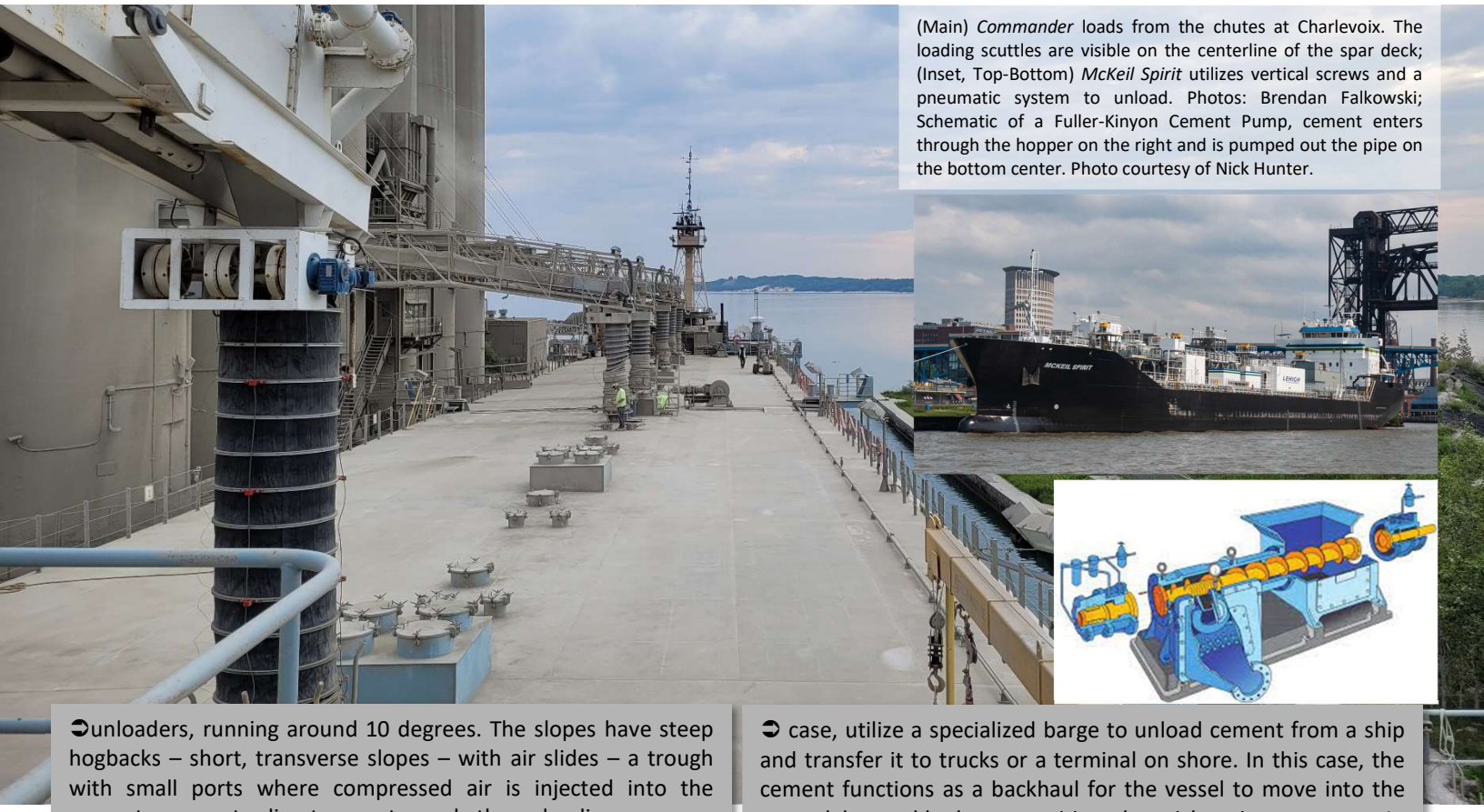
All powdered cement carriers are typically equipped with dust collector systems onboard which help create a negative➲ negative pressure in the cargo hold and unloading tunnel to keep dust at bay. Inside the cargo hold shedder plates will be welded to standard stiffeners or alternative stiffeners such as bulk flats – a stiffener with the cross sectional-appearance of a half-circle – are used so that cement does not pack in nooks in the hold.

While clinker can be handled on conventional self-unloaders, powdered cement product is typically transported by gearless bulk carriers or specialized cement carrier ships. Some variations of cement carriers work very similar to standard self-unloaders, though powdered cement can be handled by either mechanical or pneumatic means. Mechanical methods include using conveyor belts, screw conveyors, or bucket elevators, while pneumatic includes air conveyors and pumps.

LOADING AND UNLOADING

Loading cement clinker is done using a conventional conveyor. Clinker is typically hot when it is loaded as it is usually coming fresh from the kiln. The heat can sometimes cause issues such as warping of the steel in the cargo hold if not cooled down enough. Powdered cement is loaded from silos through conveyor arms that dump into spouts. The spouts connect to scuttles – small hatches – on the deck of the cement carrier for loading. This creates a mostly closed-loop system that when paired with dust collection systems in the loading rig and on the boat, keeps dust to a minimum.

Cement is unloaded from ships in several different ways, whether by onboard equipment, shoreside equipment, or even by another vessel. Most cement carriers on the US side of the Great Lakes utilize hold conveyor belt systems with either a bucket elevator or a cement pump system for discharging on shore. The cargo hold on these types of cement carriers are divided along the length of the hold like standard bulk carriers, but also have a bulkhead running the length of the cargo down the centerline of the vessel. This helps prevent cargo shifting onboard since cement can flow so easily. Hold slopes are typically much lower angles than on conventional self- ➲



(Main) *Commander* loads from the chutes at Charlevoix. The loading scuttles are visible on the centerline of the spar deck; (Inset, Top-Bottom) *McKeil Spirit* utilizes vertical screws and a pneumatic system to unload. Photos: Brendan Falkowski; Schematic of a Fuller-Kinyon Cement Pump, cement enters through the hopper on the right and is pumped out the pipe on the bottom center. Photo courtesy of Nick Hunter.

➲unloaders, running around 10 degrees. The slopes have steep hogbacks – short, transverse slopes – with air slides – a trough with small ports where compressed air is injected into the cement cargo – to direct cargo towards the unloading conveyor belt in the middle of the vessel. A similar setup can be used with a screw conveyor rather than a conveyor belt as well.

At the end of the hold conveyor belt will either be a bucket elevator or a cement pump, or even a combination. Which system the vessel has onboard is determined by the terminals and trade routes it is intended to serve. The bucket elevator system runs vertically, picking up its cargo from a sump at the end of the hold conveyor. Cargo is then transferred to a short boom that unloads into the shoreside terminal. Cement pumps still collect their cargo from the sump at the end of the hold conveyor but use compressed air to push the product up a pipe that is connected to the terminal.

Cement pumps use a combination of mechanical and pneumatic means to move product. Cement powder falls into a hopper where it is moved horizontally using a screw. The product is moved to the wind box, where it meets compressed air that is directed upwards, forcing the cement into a discharge line. The pump is also equipped with a "flapper" that ensures that cement that has entered the wind box does not flow backwards. Cement pumps are not as fast as bucket elevators, and can only unload the vessel at around 400-600 tons per hour rather than upwards of 1000 tons per hour.

On the Canadian side of the lakes, several cement carriers are equipped with slightly different unloading systems. Several cement carriers under the Canadian flag utilize vertical screw conveyors that feed from a hopper at the bottom of the cargo hold. They use a pneumatic system to move the cargo from the top of the screw conveyor to the discharge boom onboard. Other unloading setups may use a combination of scrapers, bucket elevators, screw conveyors, or pumps.

Cement is even handled by gearless bulk carriers, though this is more often done on the oceans. The product can be unloaded from the vessel utilizing shoreside equipment or in one such➲ ➲ case, utilize a specialized barge to unload cement from a ship and transfer it to trucks or a terminal on shore. In this case, the cement functions as a backhaul for the vessel to move into the upper lakes and be better positioned to pick up its next cargo. In recent years, cement has been imported into the lakes on saltwater vessels in bags.

DUST PREVENTION

Dust collectors are a critical part of any cement handling vessel. Cement is very fine and dusty in nature, and can cause harm to humans if inhaled in large quantities. Dust collector systems run through the cargo holds and unloading tunnel beneath the hold to minimize dust in these spaces. The dust collection systems evacuate air from the empty parts of the space using high-power fans to create a negative pressure. The air then goes through a filtration system that removes particulate matter. The material collected from the air is often dumped back into the cargo hold or the unloading conveyor when the air from the system is released.

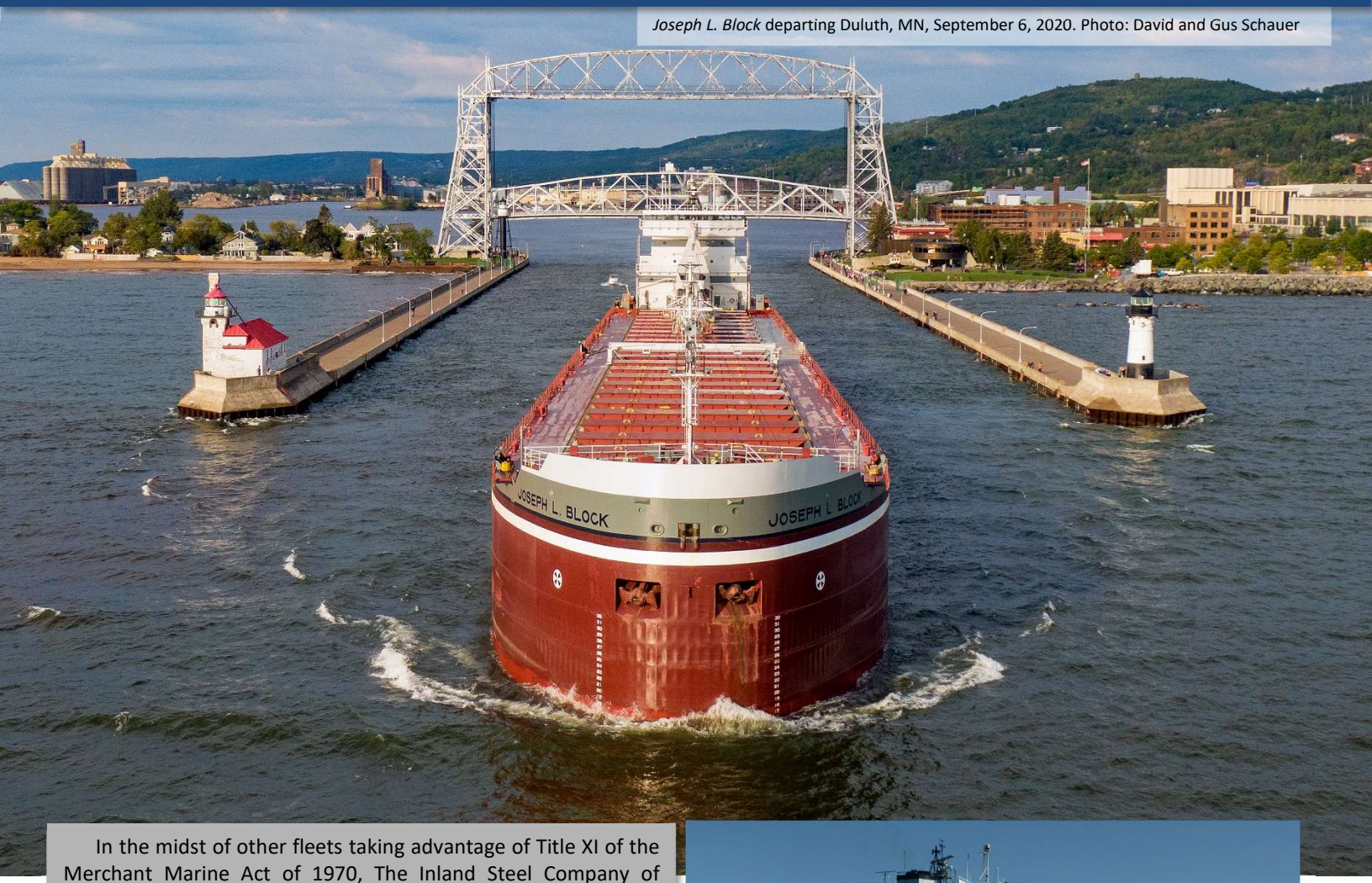
Cargo hold conveyors will also have skirting and a dust cover to create a seal over the unloading conveyor to help minimize dust. While these methods are very effective, they are not able to remove all the dust from these spaces so crew members wear masks, goggles, and other personal protection equipment when working in dusty environments in order to protect themselves.

In more recent years, cement demand has increased that the supply chain relies on foreign cement imports brought in on ocean-going bulk carriers. Cement will continue to be a strong cargo for shipping on the Great Lakes, as the need for renewal of infrastructure and new construction in the region will be consistent. So will the abundance of materials, both mined and manufactured, that go into cement mix. ☐

Special thanks to the naval architects who provided their time and resources to assist in the writing of this article. Thank you to Travis Martin, Fred Koller, and Nicholas Posh from Bay Engineering, Nick Hunter from NETSCo., and Andrew Macdonald from Port City Marine Services.

VESSEL FEATURE

JOSEPH L. BLOCK



Joseph L. Block departing Duluth, MN, September 6, 2020. Photo: David and Gus Schauer

In the midst of other fleets taking advantage of Title XI of the Merchant Marine Act of 1970, The Inland Steel Company of Chicago capitalized on this opportunity to modernize their fleet. Title XI of the Merchant Marine Act of 1970, the Federal Ship Financing Program, made it possible for U.S. shipping companies and specifically those on the Great Lakes to modernize their fleets by upgrading existing tonnage or building new tonnage with government guaranteed low-interest financing and tax benefits.

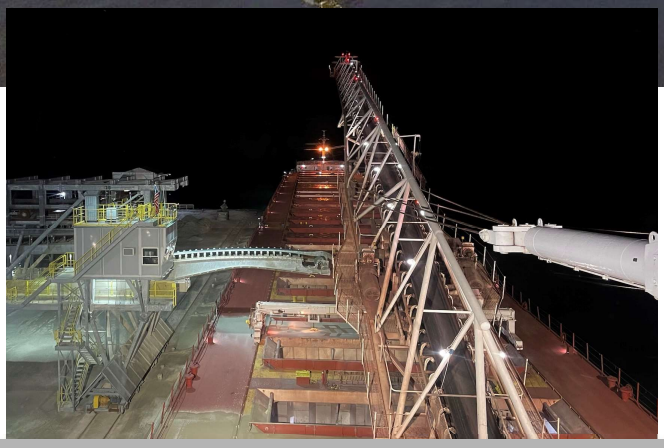
In late 1973 a contract was let to Bay Shipbuilding Co. (BayShip) of Sturgeon Bay, WI, for constructing the new ship for Inland. The vessel laid down as hull #715, later known as the *Joseph L. Block*, followed along the design of two previous BayShip products. She was built to be 728' long, 78' wide, and 45' deep with a capacity of 37,200 tons at a draft of 30'11''. She was fitted with a pair of General Motors EMD 20-645-E7 engines providing 7000 BHP and turning a single controllable pitch propeller. The *Block* represented several first for Inland. It was the company's first vessel built as a self-unloader, and featured a single cargo hold conveyor belt with an aft incline elevator that fed a 250' boom on her deck. Among other specialties and unique features in the Inland fleet, *Joseph L. Block* was the only Inland Steel freighter to have an aft pilothouse and had the largest capacity in the fleet.

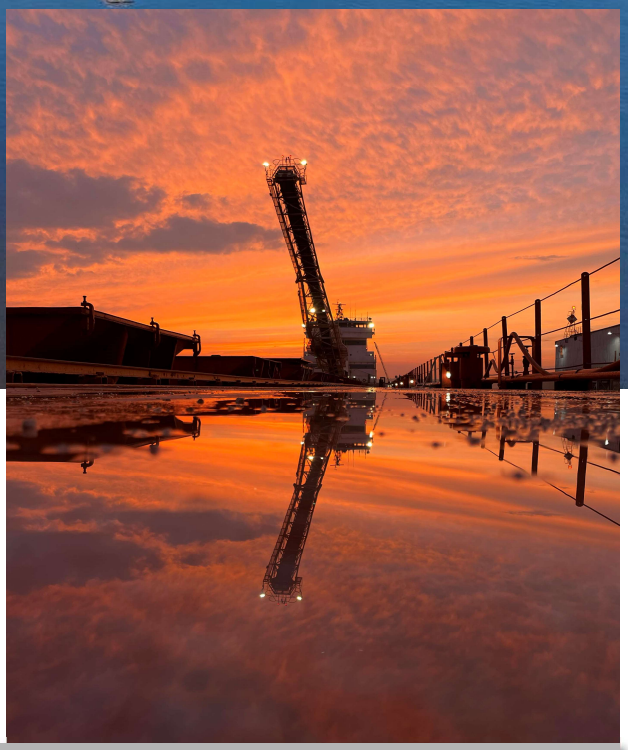
She was built to a nearly identical design to the *Charles E.* ➲*Wilson* and *H. Lee White*, and later the *American Mariner*. Each member of the class was slightly different and consecutively longer, with the *White* being 24' longer than the *Wilson*, and the *Block* 24' longer than the *White*. The *Mariner* is the closest of the four to be identical to the *Block*, her main differences are her larger raked focsle and that she does not possess the additional guest quarters that the *Block* does.

Joseph L. Block on the St. Marys River, September 12, 2008. Photo: Roger LeLievre

After being mostly completed, the *Joseph L. Block* was launched into the icy waters of Sturgeon Bay on February 26, 1976, and officially christened on June 29 of that year. She entered service on August 15, 1976, departing Sturgeon Bay light for Escanaba, MI, to load iron ore for the Inland Steel mill at Indiana Harbor. This route was quite common for the *Block* up until the Escanaba ore dock's closing in April of 2017. ➲

Joseph L. Block at Hallett #5 Dock in Duluth, MN, October 29, 2022. Photo: David Schauer





(Left): *Joseph L. Block* loading stone at Cedarville, MI. Photo: Jack Hurt; (Right): Reflections on the deck of the *Block,* August 14, 2023. Photo: Jarrett Dodge

➲ The self-unloading *Block*, along with the recently-converted *Sykes*, were able to unload much faster than their gearless fleetmates, vastly improving the efficiency of the fleet.

The *Joseph L. Block's* career has been relatively uneventful, though she has had a few moments worthy of noting. On January 6, 1990, the Block grounded in Escanaba and damaged her bottom plating. Later that year, on October 12, she hit the bottom on the St. Marys River which required drydocking for repairs at Fraser Shipyards in Superior, WI. The *Block* closed the 1997 shipping season at the Soo Locks when she passed through.

Beginning in 1998 the *Block* would go through a complex change of ownership and operational changes. These stemmed from July 15 when Inland Steel was purchased by Dutch steelmaker Ispat International. To remain Jones Act-compliant, the remaining Inland Steel vessels were sold to Indiana Harbor Steamship Co., with operations being managed by the newly-created entity Central Marine Logistics. The fleet was then chartered by Ispat to handle a portion of their tonnage needs for the Indiana Harbor mill.

In 2008 Ispat was involved in a European steel merger with the resulting company being ArcelorMittal. ArcelorMittal ➲picked up the charter of the fleet which they held until 2020 when it was transferred when Cleveland-Cliffs purchased the ArcelorMittal US assets. Each of these changes brought a stack markings change, and the Cliffs purchases brought more variety in routes.

For much of her life *Joseph L. Block* has transported taconite from the mines of Michigan and Minnesota to the steel mill in Indiana Harbor, often taking stone as a backhaul cargo back to the upper lakes. Following the change in management to Central Marine Logistics she became more and more involved in the Lake Michigan stone trade, and in more recent years has strayed from her traditional routes to serve other Cleveland-Cliffs facilities on Lake Erie. In addition to her taconite and stone trips she also often handles cargoes of blast furnace trim to further demonstrate her flexibility and efficiency in both long-haul and short runs.□

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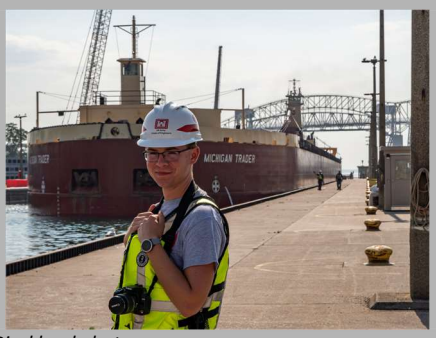

Scott Bjorklund photo

Brendan Falkowski is a Great Lakes ship enthusiast who shares his passion for the freighters through his newsletter and research. Hailing from Bath, MI, he is a student at University of Michigan studying Naval Architecture & Marine Engineering. He is an avid musician and is a member of the Michigan Marching Band. Brendan is also a competitive sailor, and is an assistant coach and photographer for the Bath High School Sailing Team. He enjoys sailing, chasing boats, and spending time with his friends and family. ◘

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Cover Photo: VanEnkevort Tug & Barge's first new ATB combo, *Joyce L. VanEnkevort / Great Lakes Trader*, upbound on the St. Marys River on their maiden voyage together, 2000. Photo: Roger LeLievre