FREIGHTERS

THE GREAT LAKES SHIPPING INDUSTRY PERIODICAL | EDITION #77 – WINTER 2025

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Editor's Note

The 2024 shipping season wound down only a few months ago, and it's almost time for the boats to get back on the Lakes and begin moving cargo for the 2025 season. The final days of last season were marked by wintry weather, ice, and delays. Several ships required icebreaking assistance to deliver their final cargoes and head into port for their short winter's nap. After a few weeks of workers buzzing to get maintenance projects complete, ships are beginning to fit out and sail again. Meanwhile, winter time for me allows for a gear shift from the college football and marching band season for me to focus more time on academics, music, and the newsletter. Time is filled with studying hydrodynamics, marine propulsion design and marine structures, rehearsals for concert and chamber ensembles, and freshening up the newsletter and planning out stories for the upcoming season. As my junior year at University of Michigan starts to wrap up, I am looking ahead towards my full-time debut in the industry. But in the meantime, there is a season of history to write. Smooth sailing! ◻

LAKER REPORTS

UPDATES FROM THE LAKES

***Manitoulin* broken out after four days locked in ice** | JANUARY 26, 2025

The 2024 shipping season ended on an icy note. Manitoulin became stuck in ice on eastern Lake Erie on Wednesday, January 22, after unloading a cargo of wheat at Buffalo, NY. Consistent, harsh winter conditions contributed to significant ice cover on the Lakes. The cold temperatures across the region kept the US and Canadian Coast Guard icebreakers busy aiding vessels in transit on Lake Erie and the St. Clair and Detroit River systems. The USCGC Bristol Bay arrived on scene to assist the Manitoulin on Thursday, but was unable to free her. The USCGC Neah Bay and CCGS Samuel Risely came to aid the operation on Saturday January 25. All three vessels escorted Manitoulin through over 20 miles of lake ice, reaching open water on Sunday. Manitoulin was able to continue her journey to Sarnia, ON, for winter layup. ***Manitoulin upbound on the Detroit River, January 27, 2025. Photo: Sam Hankinson*** ◻

Aluminum and steel import tariffs could affect Great Lakes trade | FEBRUARY 10, 2025

The United States announced new aluminum and steel import tariffs on February 10, 2025, to go into effect on March 12. The U.S. produces about 75% of its steel demands and just over 50% of its aluminum demands, the remainders being supplied by imports from countries such as Canada, Mexico, and others from around the world. Trade routes to monitor include imports from Alouette aluminum in Sept-Iles, QC, to Toledo, Windsor, and Oswego. Steel imports primarily come from Algoma Steel in Sault Ste. Marie, ON, and Tata Steel in Ijmuiden, Netherlands, bound for Cleveland, Detroit, Milwaukee, Burns Harbor, and Chicago. In the past, steel has been imported from STELCO in Nanticoke, ON, to Detroit and Monroe in the past. It should be noted that STELCO was recently purchased by U.S. minerals and steel producer Cleveland-Cliffs. Many of these imports are specialty grades and products that are not produced in the U.S. ***Steel coils from Nanticoke onboard the Huron Spirit, 2021. Photo: Sam Hankinson*** ◻

PEYTON'S PLACE

MODERN CONTAINER SHIPPING AND THE GREAT LAKES

Written by Sam Hankinson

Peyton Lynn C unloading containers at Duluth Port Terminal in Duluth, MN, November 29, 2024. Photo: David Schauer

On a cold Tuesday night last November, I ventured down to the Detroit River to watch a ship go by. I am hopeless at night photography so I don't often venture out after dark unless it's for a rare occurrence, typically for ships on their first or last voyage. Regardless of the time of day or weather conditions, these events are important for me not because of the ship but what they represent.

On the Great Lakes, our wildest ideas manifest themselves in the form of giant ships, becoming a reality when individuals breathe life into a steel hull to execute a vision. Ships link our communities together. The complexion of the Great Lakes fleet continues to change, each retired ship represents a bygone era that continues to fade away. But each new ship should represent optimism and hope.

My target on this night was the container ship *Peyton Lynn C.*, upbound from Cleveland and bound for Duluth. The *Peyton Lynn C.* was purchased by Doornekamp Shipping Services with the intention of stimulating containerized trade on the Great Lakes. She was chartered to Spliethoff and made trips into the Great Lakes in 2022, but only went as far as Cleveland. Up until this trip, she was involved in short sea trade in Europe.

CONTAINER SHIPPING

To understand why this shipment was so significant, you have to understand the current era of Great Lakes container shipping, which began in November 2013. The Port of Cleveland announced plans to charter a vessel from the Dutch carrier Spliethoff to haul containers and other cargo between Antwerp and Cleveland on a monthly basis, which would become the Cleveland-Europe Express.

The Cleveland-Europe Express is a success story in the long list of container shipping false starts. The Port of Cleveland proved the viability of container shipping on the Great Lakes, proving to shippers through their own investment that the new model was reliable. It has spurred new investment in Cleveland's waterfront, including new warehousing space and cranes.

Spliethoff's multi-purpose vessels (MPV) are perfect for the Great Lakes. With Cleveland as the hub port, Spliethoff also loaded non-containerized cargo in Europe for delivery to other Great Lakes ports, including major population hubs like Chicago and Detroit but also smaller communities like Manitowoc and Manistee. Duluth became a regular port of call for Spliethoff vessels in 2023, having gained approval to handle maritime containers in 2021.

Unloading containers from the *Peyton Lynn C*, Duluth, MN, November 29, 2024. Photo: Scott Bjorklund

So, why was this visit such a big deal? The *Peyton Lynn C.* is not an MPV, she is a pure container vessel, and it was rare to see one passing Detroit.

Bay Shipbuilding in Sturgeon Bay built a trio of American-flagged container ships in the 1980s, but these ships did not remain on the lakes and sailed for the ocean following completion.

Container ships call on a series of ports and can do so because each stop on their itinerary is container capable. Although they are container-capable, Spliethoff's MPVs are not limited to any Great Lakes port. The Peyton's visit proves that momentum behind a Great Lakes container network is real.

POTENTIAL

This story is about a success, something that would not be possible to understand without the knowledge of previous attempts at container and short sea services. These past projects are not failures, they're part of a playbook that can inform new and existing Great Lakes stakeholders on how to execute new concepts in our system.

Watching the *Peyton Lynn C.* sail by was not just about photographing a rare visitor to our area, it was my way of celebrating this historic shipment and the stakeholders that made it happen.

At Monroe, we have been working to bring container handling capability online for nearly a decade. Ports of Indiana is just beginning the process to add capacity at Burns Harbor. Doornekamp, is working to add container handling capacity at its private terminal in Picton, Ontario. HOPA Ports has developed the Hamilton Container Terminal, an intermodal rail terminal.

There is no question that Great Lakes shipping needs to diversify. We are dependent on raw materials like coal, iron ore, and stone. We have fought to realize a container network on the Great Lakes, and the presence of the *Peyton Lynn C.* represents the next phase in our container shipping era. If we are going to diversify, we need to tell stories about what goes in them and explain the value of our trade lane.

The Great Lakes lacks a symbol of our vision in other parts of the world, a vision of binational collaboration and diversification. The *Peyton Lynn C.* can be that ship.

(Main) *Peyton Lynn C* downbound on the Detroit River, December 2, 2024. Photo: Sam Hankinson; (Inset) *Peyton Lynn C* assisted into Duluth Port

Container shipping is making a lot of noise on the Great Lakes right now. But when it is fully adopted, ships like the *Peyton Lynn C.* will still sail through the dead night while the world sleeps. And the people that worked the hardest to realize this future will sleep the soundest of all. ☐

The last true container ships to sail on the Great Lakes were all the way back in the 1980s, when Sea-Land Corp. ordered three newbuilds from Bay Shipbuilding (BayShip). Sea-Land signed for the order of D-7 container ships in November 1984 for $180 Million. The construction of the vessels was financed by Sea-Land's Capital Construction Fund administered by the Maritime Administration, from funds received after Sea-Land sold its eight SL-7 class container ships for the Military Sealift Command fleet. The D-7 class vessels were 710' long with a capacity of over 700 TEUs and powered by a single Mitsui-Burmeister & Wain 7L7OMC slow-speed diesel to propel them at 20 knots. They were designed to operate in Sea-Land's Alaskan service between Puget Sound, WA and Anchorage and Kodiak, AK. The three D-7 ships were originally named *Sea-Land Anchorage*, *Sea-Land Tacoma*, and *Sea-Land Kodiak*, and all were delivered in 1987. All three vessels were sold in 2000 to CSX, and the *Sea-Land* prefix to their names replaced with *CSX*. They were sold again in 2003, and the prefix *CSX* was replaced with *Horizon*. They were purchased by *Matson* in 2016 and renamed *Matson Anchorage, Matson Tacoma*, and *Matson Kodiak*, respectively. They remain in

Sea-Land Anchorage on sea trials on Lake Michigan. Photo courtesy MHSD Collection

Algoma takes delivery of three vessels | MARCH 4, 2025

Algoma Central Corp. took delivery of three new vessels in the closing weeks of February and first weeks of March through its domestic fleet and operating partnerships. FureBear, joint venture between Algoma and Furetank, took delivery of the product tanker *Fure Vesborg* on February 25, 2025, and is the seventh of twelve dual-fuel tankers being constructed in China for the joint operation. The twelfth and final Equinox self-unloader *Algoma Endeavour* was delivered on February 26, 2025, from 3 Maj Shipyard in Rijeka, Croatia. She is full Seaway sized at 740' long and equipped with a forward unloading boom. The tanker *Algoma East Coast* was delivered on March 4, 2025, from HD Hyundai's Mipo Shipyard in South Korea for Algoma's domestic tanker segment. The *East Coast* is methanol-ready and built to ice-class. She will be joined by sister ship *Algoma Acadian* in late March. ***Algoma East Coast departing South Korea. Photo courtesy of Algoma Central Corp.*** ☐

IN THE DESIGN—NAVAL ARCHITECTURE AND MARINE ENGINEERING DEPARTMENT

VESSEL STABILITY

A LOOK AT INTACT AND DAMAGE STABILITY AND REGULATIONS

Roger Blough unloads into fleetmate *Philip R. Clarke* after running aground on the St. Marys River, June 3, 2016. Photo: Roger LeLievre

Stability – both intact and in cases of damage – is critical to the safe sailing of any ship. Naval architects conduct several checks on a vessel's characteristics to ensure the vessel will operate in a safe and stable manner, and analyze cases of damage and subsequent flooding to ensure the crew has adequate knowledge, and time to evacuate the ship safely in cases of emergency.

In order to understand damage stability, one must have a general understanding of intact stability: the stability of a vessel in normal, intact conditions without flooding and in stable equilibrium. A ship's ability to float is explained by the Archimedes Principle, which states that vessels submerged or partially submerged will experience a buoyant force equal in magnitude to the weight of the water displaced. The buoyant force of the vessel acts in opposition to gravitational forces and is located at the volumetric center of the submerged portion of the vessel. While a vessel's longitudinal (lengthwise) stability is important, it is much more prone to stability issues in the transverse (sideways) direction.

A vessel's transverse metacentric height (GM_T) – the measure between the vertical center of gravity (VCG/KG) and the transverse metacenter – is of primary concern when it comes to stability. When a vessel heels to the side, the center of buoyancy – where the buoyant force acts – will shift to the new center of displaced volume. For small angles of heel, up to 10 degrees, the new center of buoyancy will point upwards and converge on a defined point on the centerline of the vessel. This defined point is known as the metacenter, and can be considered an imaginary point where the vessel is suspended, similar to a pendulum.

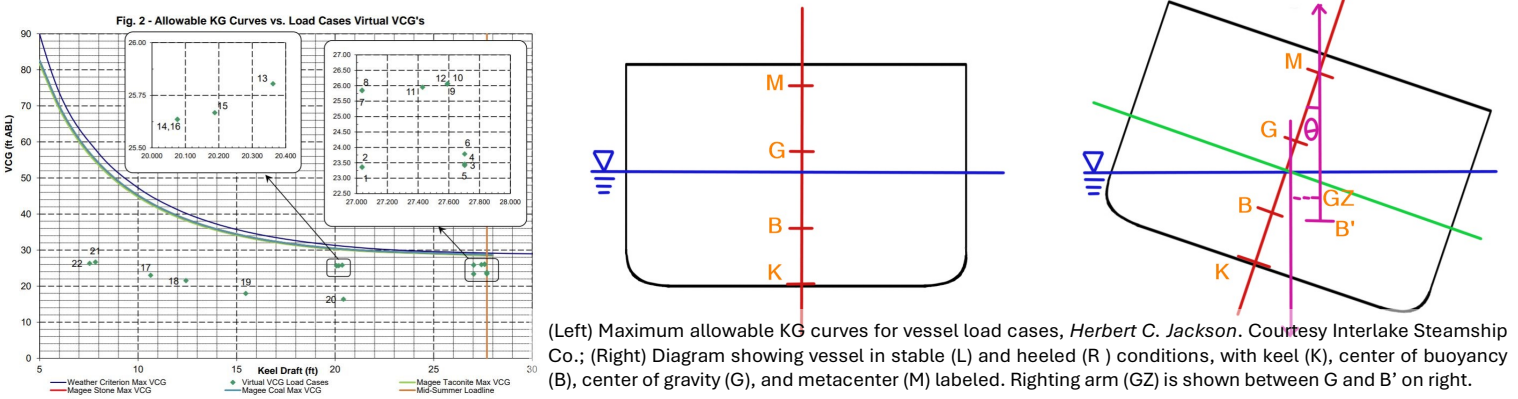
Stable equilibrium occurs when the VCG is lower than the metacenter. In this case the GM_T will be positive. If the VCG is at the same point as the metacenter, the GM_T is equal to zero and the vessel is in neutral equilibrium, and if it is higher, the GM_T is negative and the vessel is unstable. When a vessel heels, a moment (force times distance) is created between the centers of buoyancy and gravity, which creates a righting moment to return the ship to equilibrium. Recall the comparison of the metacenter to a pendulum: this is exactly how the righting moment works. With small heel angles the forces acting on the vessel act similar to a pendulum and help right the vessel back to equilibrium. Forces acting on the beam of the vessel can induce moments, such as environmental forces, as well as anything which affects the transverse center of gravity, such as shifting weights on deck, using deck equipment like cranes or unloading booms, high-speed turns, and interior weight movements. Free surface moments of slack tanks can also contribute significantly – if a tank is not completely full, the fluid "sloshing" will shift the center of gravity outboard and induce a moment on the vessel. The righting moment counteracts the moment induced by outside forces, returning the vessel to equilibrium. Note that this is why a negative GM_T is dangerous, as the moment acts to overturn the vessel, rather than right it. Neutral equilibrium is also problematic, as no righting moment is created when a perturbation occurs. This is why a cylindrical body (such as a log), will continue to spin: it cannot find an equilibrium position.

The distance between the lines of action of the buoyant force and the gravitational force is known as the righting arm, or GZ, and is the distance used in finding the righting moment. Regulations prescribe the angle of heel where the maximum GZ should occur, which varies by vessel type, but is typically at angles no less 30 degrees.

The ship's VCG will vary depending on loading conditions. The maximum allowable KG is set for different loaded drafts with common cargoes and plotted against draft for owner and crew reference. Other visual aids for stability measurements include the cross curves of stability which show the vessel's righting arm plotted against heel angle, and the curves of form which show a variety of the vessel's stability characteristics such as centers of buoyancy against draft.

Damage stability, on the other hand, is the analysis of the ability of a vessel to stay afloat and stable after the flooding of one or more compartments. All oceangoing vessels are subject to International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) regulations, and are subject to damage stability. Non-self-propelled vessels, with the exception of tanker barges, are exempt from damage stability requirements.

On the Great Lakes, damage stability requirements are outlined for vessels of 1600 Gross Registered Tons (GRT) or



(Left) Maximum allowable KG curves for vessel load cases, *Herbert C. Jackson*. Courtesy Interlake Steamship Co.; (Right) Diagram showing vessel in stable (L) and heeled (R) conditions, with keel (K), center of buoyancy (B), center of gravity (G), and metacenter (M) labeled. Righting arm (GZ) is shown between G and B' on right.

more in the Code of Federal Regulations (CFR) and enforced by the U.S. Coast Guard (USCG). Regulations currently do not distinguish between manned propelled and unmanned non-self -propelled vessels.

Criteria for damage stability has been developed over time, based on empirical data gathered from real-world vessel failures. The USCG developed damage stability for Great Lakes vessels in 1986. The intent was to prevent vessels from sinking, or at least allow adequate time for safe evacuations.

Damage stability criteria are set in two ways, deterministic, and probabilistic. The deterministic approach is set by fixed damage criteria, while the probabilistic approach utilizes probabilities of damage occurrence and flooding. Regulations for lakers follow the deterministic approach, while IMO follows probabilistic. Survival criteria for lakers are outlined in the CFR and are as follows in cases of flooding of compartments:

- *The final waterline after flooding (new equilibrium) must be below a downflooding point (location where water can flood interior spaces of the vessel), including weathertight openings.*
- *Heel angle must not exceed 15 degrees, 17 degrees if deck edge is not immersed in this condition*
- *For the range of positive stability through angle of 20 degrees beyond new equilibrium:*
- *Righting arm curve must be positive*
- *Maximum righting arm (GZ) must be at least 4"*
- *Each downflooding point beyond 20 degrees must be weathertight*
- *Minimum GM must be at least 2" at new equilibrium*

Passenger vessels have slightly different regulations laid out, broken down into categories for small passenger vessels under 49' in length (Subchapter T), and those carrying 12 or more passengers on international voyages built before and after 2009. Subchapter T passenger vessels have to undergo a simplified stability test, simplified subdivision test, or standard inclining. Larger passenger vessels follow similar regulations to Lakers but with additional margins, and those built after 2009 also account for heeling moments induced by passengers standing at the rails on upper decks and lifeboat deployment.

When subdividing the ship during the design process, naval architects will look at prescribed extents of damage, double hulls, and the purpose of each tank and compartment. For example, ballast tanks and voids are often positioned adjacent to the side shell and made sufficiently large, relative to the prescribed damage extents, to form a protective layer around cargo tanks and machinery spaces. Damage extents are set by the length and beam of the vessel. For example, for a 627' long ship, the longitudinal extent of damage is 36'. In the case of a single compartment flooding standard, the aforementioned protective ballast tank/void space lengths are often set to be longer than the longitudinal extent of damage, but not too much longer. When the tanks are shorter, there are multiple flooded space but when they are longer, there is a single large flooded compartment. Compartments that run lengthwise, such as walking and unloading tunnels, are also often protected by a buffer of ballast tanks and/or void spaces. It is difficult to subdivide cargo tunnels due to the unloading system, and is thus important to protect them from potential of flooding.

Damage criteria are set in two types of extents of damage – grounding penetration and collision penetration. For grounding penetration, there are two cases, the forward end case, and aft of forward end. The forward end is typically more prone to a greater extent of damage in grounding scenarios, so a special set of structure and compartment size specifications are set for a specific length from the bow. This is due to the likelihood of the vessel being operated at design speed when the vessel runs aground, incurring "raking" damage, i.e. the ship continues forward after running aground and thereby tears a larger hole in the hull. Longitudinal, vertical, and transverse extents of damage are set by prescriptions for each vessel. Piping that falls within the extent of damage for any case is subject to calculations for progressive flooding . For this reason, interior piping is usually located outside of extents of damage. For collision penetrations a longitudinal and transverse extents of damage are calculated , and the vertical extent of damage runs from the baseline to deck level.

Another way to manipulate how a vessel handles when damaged is compartment permeability – the percentage of a space's volume that is subject to flooding based on its classification (e.g. machinery, space, ballast, cargo, accommodations, etc.). Engineers will rearrange how some spaces are designated when necessary and able if needed to achieve the desired damage stability results.

Damage stability is primarily used to verify the safety of a design and ensure it meets regulatory requirements, and is rarely used by operators in the case of real-world damage scenarios. It is not uncommon for the crew to utilize the loading computer to simulate loading and the flooding due to damage. A naval architect will often be called upon to verify whether the vessel is safe to proceed to the nearest repair facility. Stability analysis is vital to ensure safe designs to prevent loss of life and pollution, and its impact can be seen in both how a ship is regulated by the governing rules and how it is designed. ☐

Special thanks to the naval architects who provided their time and resources to assist in the writing of this article. Thank you Nick Posh from Bay Engineering and Joe Dolder from NETSCo.

VESSEL FEATURE

CSL ASSINIBOINE

(Main): *CSL Assiniboine* on the St. Marys River, June 24, 2017. (Inset): *Jean Parisien* on the St. Marys, 1995. Both photos: Roger LeLievre

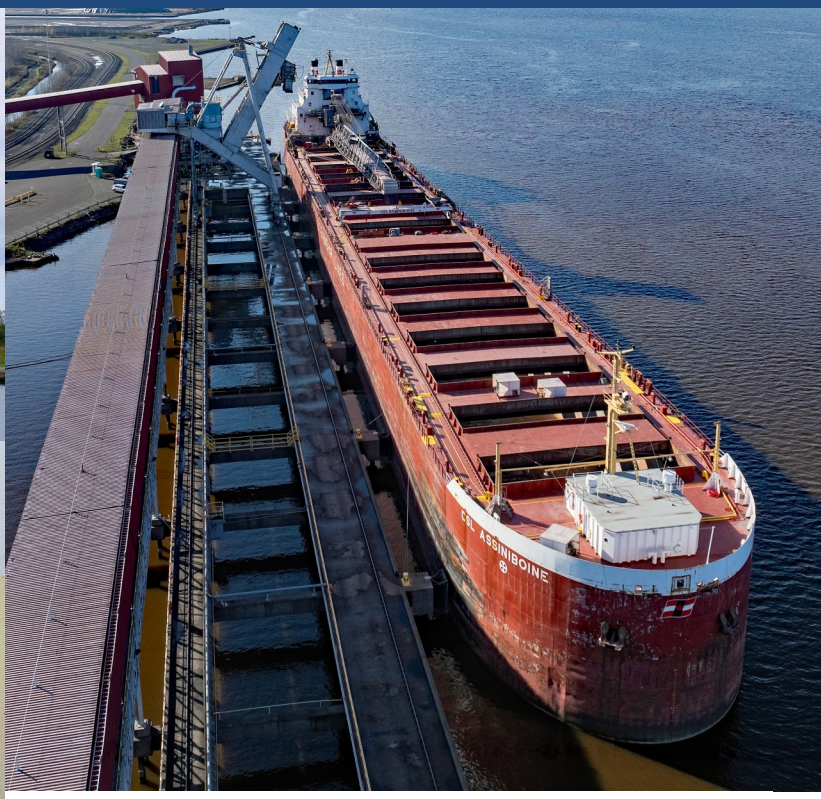
On July 7, 1977, hull #684 was launched at Davie Shipbuilding of Lauzon, QC. She was the Jean Parisien for Canada Steamship Lines. Power Corp. of Canada acquired CSL in the early 1970s, and helped provide the capital for the Canadian carrier to continue to invest in modern self-unloaders. CSL built the seaway self-unloaders *J.W. McGiffin* (1972) and *H.M. Griffith* (1973) at Collingwood Shipyards, while near sister ship *Louis R. Desmarais* was launched one day before the *Parisien* at CollShip. Interestingly enough, CSL owned both Collingwood Shipyards and Davie Shipbuilding at the time through their subsidiary Canadian Shipbuilding & Engineering LTD.

The *Parisien* was 730' long, 75' wide, and 46'06'' deep with a capacity of 28,250 tons at Seaway draft of 26'06". Her self-unloading equipment consisted of three cargo hold belts leading to an aft loop-belt elevator and 258' deck boom. *Jean Parisien* was originally powered by two Crossley-Pielstick 10PC2-2V-400 diesel engines, built by Crossley Premier Engines LTD. Of Manchester, England. The engines generated a combined 9000 BHP to turn a single controllable pitch propeller with a Kort Nozzle.

Her namesake was Mr. Jean Parisien, the former senior deputy chairman of Power Corp. of Canada. Mr. Parisien was the right-hand man of Paul Desmarais, the owner of Power Corp. and CEO of the company. Parisien was very important to Desmarais and the two men worked together for many years. Jean Parisien was humble and reserved but was described as a man of "great dedication". Parisien passed away unexpectedly due to a heart attack in the company offices in February 1976. Desmarais and Parisien's family were deeply saddened by his passing. Desmarais honored his friend in many ways, most notably by naming one of CSL's new vessels after him.

Jean Parisien entered service on December 9, 1977, sailing light from Quebec City to Sandusky, OH, to load coal for Hamilton, ON. A pointed bulb was fitted to her rounded bow in 1979 by Purvis Marine of Sault Ste. Marine, ON. The bulb was meant to assist with icebreaking abilities. The *Parisien* set a Seaway grain record on September 1, 1981, with a load of barley. A month later, the *Parisien* ran aground on the St. Lawrence River near Alexandria Bay, NY, on October 10th, sustaining damage and blocking the channel. She was freed two days later.

CSL used their Seaway size self-unloaders to directly load ocean ships at anchor on the Gulf of St. Lawrence during the early 1980s. *Jean Parisien* was an active participant in this program, loading 165,000 short tons of coal into the oceangoing bulker *Yemanja*, bound for Japan. The *Parisien* loaded the ship in conjunction with her fleetmates *Louis R.*



(Clockwise from Left): *CSL Assiniboine* in the Welland Canal, 8/21/24. Photo: Isaac Pennock. *CSL Assiniboine* loading at Superior, WI, 11/2/24. Photo: David Schauer; *Jean Parisien*, at left, unloading into *Yemanja*, 1982. Photo courtesy MHSD Collection.

Desmarais, *H.M. Griffith*, *Nanticoke*, *Saguenay*, and *Tadoussac*.

Jean Parisien opened the Welland Canal as both the first upbound and downbound vessel on March 30 and April 5, 1993, respectively. She assisted the *Edgar B. Speer* with unloading at Nanticoke, ON, on July 11, 1994. The *Speer* unloaded directly into the *Parisien*'s cargo holds which then unloaded into the dock hopper, since the *Speer*'s shuttle unloading boom could not reach. She suffered a fire while in winter layup at Port Colborne, ON, on February 3, 1996. The fire started in the accommodations just above the engine room, causing smoke and electrical damage in the immediate spaces. *Jean Parisien* was removed from regular sailing service and used as a topping -off vessel at Montreal, QC, in the fall of 2003. She took a load of ore to Hamilton, ON, at the end of the season and laid up at Canadian Shipbuilding & Engineering LTD. Port Weller Dry Docks in St. Catharines, ON, on December 14, 2003. Her name and Canada Steamship Lines billboard lettering were painted out in July 2004. Just over a month later on August 24, 2004, it was announced *Jean Parisien* would be subject of a $30 Million forebody replacement. The *Parisien* followed fleetmates *J.W. McGiffin*, *H.M. Griffith*, and *Louis R. Desmarais* as the fourth and final forebody replacement project for CSL.

She was placed in drydock shortly after the project announcement, and her old forebody was immediately removed from just ahead of the engine room and accommodations forward. The old forebody was floated out of drydock and towed to the scrapyard in Port Colborne in November. Shortly after, construction and erection of the new forebody to the stern took place in the graving dock. The mostly new vessel was floated from drydock on June 26, 2005. The rebuild made her 739'10" long, 78' wide, and 48'05" deep. She could carry 36,768 tons at a mid-summer draft of 30'04" or 30,824 tons at the Seaway draft of 26'06".

Unlike her three near sister ships, CSL designed the new forebody for the Parisien as a flat bottom single cargo hold, using a pair of front-end loaders to move cargo to the unloading belt at the centerline of the ship. She retained the aft loop-belt elevator with a new 253' unloading boom. *Jean Parisien* was rechristened *CSL Assiniboine* on June 29, 2005, and departed on her second maiden voyage on July 5. She sailed to Superior, WI, to load taconite pellets at the Burlington Northern dock for delivery to Hamilton, ON. She ran aground near Cardinal, ON in November 2009

CSL Assiniboine was repowered in 2014 with a pair of MaK 6M32C engines, giving a combined 6000 BHP. *CSL Assiniboine* continues to be an active member of the CSL fleet, her unique cargo hold configuration allows her to serve traditional bulk markets like iron ore, coal, stone, as well as more difficult cargoes like clinker and gypsum. ◘

Scott Bjorklund photo

BRENDAN FALKOWSKI is a Naval Architect/ Marine Engineer student at University of Michigan who shares his passion for the Great Lakes shipping industry through his newsletter, work, and photography. He hails from Bath, MI. 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, photography, chasing boats, and spending time with his friends and family.

SHIPWATCHER NEWS CREW: *Content:* Brendan Falkowski, Sam Hankinson, Jack Hurt, Scott Bjorklund; *Photo:* Daniel Lindner, Roger LeLievre, Isaac Pennock, David & Gus Schauer, Ethan Severson, Logan Vasicek

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Cover Photo: *Peyton Lynn C* downbound on the Detroit River, December 2, 2024. Photo: Sam Hankinson