

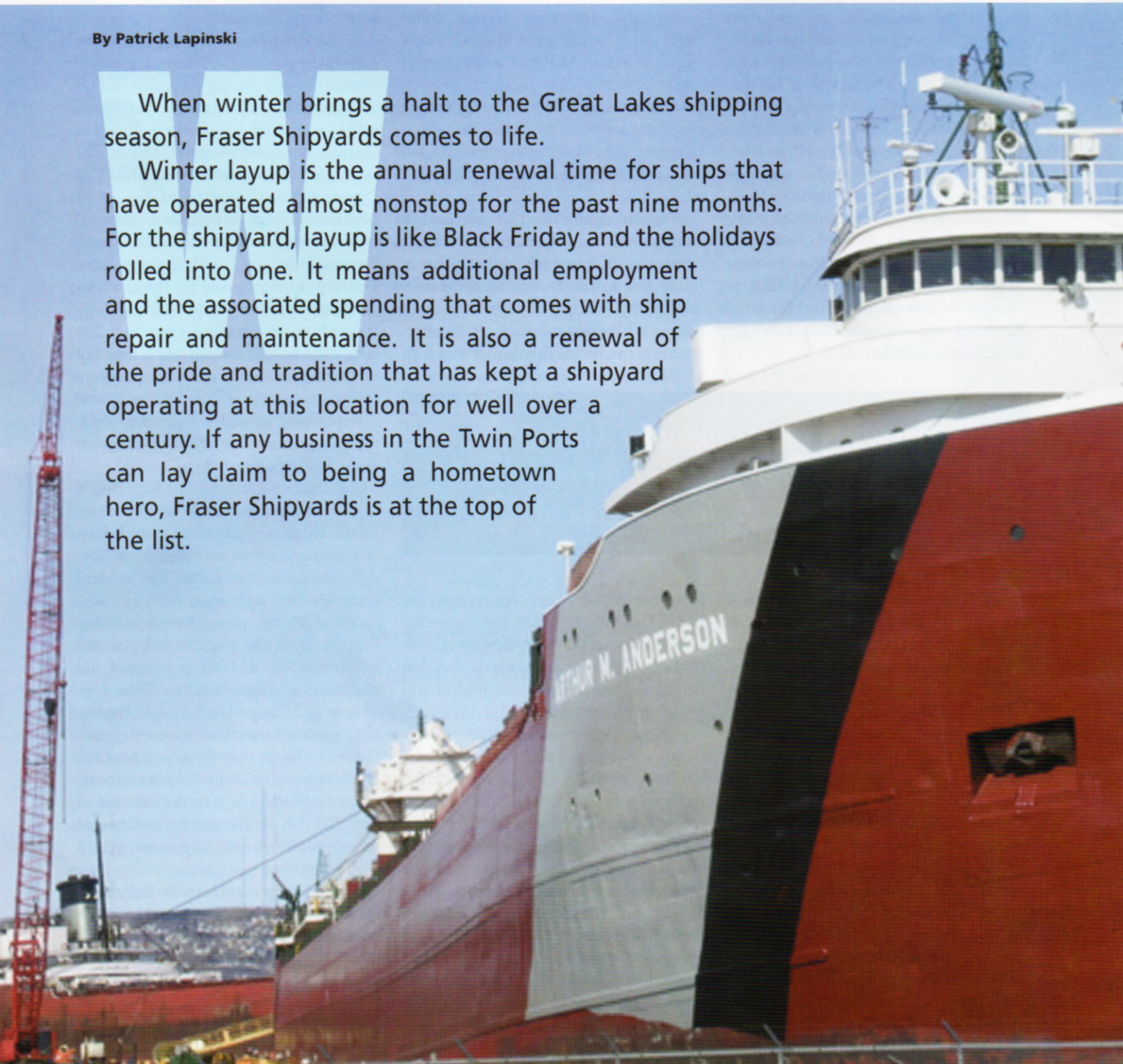
# Hometown Hero

For More than a Century, Fraser Shipyards' Service to the Maritime Industry Has Powered Vessels, As Well As the Twin Ports Economy

By Patrick Lapinski

When winter brings a halt to the Great Lakes shipping season, Fraser Shipyards comes to life.

Winter layup is the annual renewal time for ships that have operated almost nonstop for the past nine months. For the shipyard, layup is like Black Friday and the holidays rolled into one. It means additional employment and the associated spending that comes with ship repair and maintenance. It is also a renewal of the pride and tradition that has kept a shipyard operating at this location for well over a century. If any business in the Twin Ports can lay claim to being a hometown hero, Fraser Shipyards is at the top of the list.





Mike Peterson, Yard Superintendent

Tom Curelli, Director of Operations and Chief Naval Architect

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The origins of the modern-day shipyard can be traced back to Alexander McDougall, the legendary Scottish captain. It is on this location behind Connor's Point that McDougall moved his shipbuilding operation from Duluth in the early 1890s. McDougall is known best for his design and construction of the unique "whaleback" vessel. The rounded, cigar-shaped hulls were popular throughout the Great Lakes for a brief period at the turn of the 19th century and their legend has remained a part of lakes lore.

With room in Superior to expand his operation, McDougall wanted to do more than just build ships. Aside from his entrepreneurial nature, he was a practical businessman – and vessel repair and maintenance was a lucrative benefit to the shipyard. It was this bigger vision that led to McDougall's greatest contribution to the burgeoning port city – a dry dock.

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— FACILITIES MANAGER JIM SHARROW, DULUTH SEAWAY PORT AUTHORITY



Excavation of the first dry dock on Lake Superior began on Christmas Day, 1891. Dug entirely by hand, with a team of horses pulling out debris, the dock slowly took shape as the New Year progressed. The sides of the graving dock were terraced with wooden timbers and the dirt and clay floor was tamped to a solid, hardened surface. A timber gate was fitted at the water end before the final section of soil was removed to complete the dock. In late September 1892, the wooden steamer Neshoto was the first vessel to use the dry dock at Superior. The repair and maintenance of vessels that McDougall envisioned more than 100 years ago remains the staple of the shipyard's business today.

Today, Fraser Shipyards, Inc. is a subsidiary of Fraser Industries, LLC. Fraser Industries is owned by Capstan Corp., which is the new company name for the former Reuben Johnson & Son, Inc. (RJS). Fraser Industries, LLC also owns Northern Engineering Co. and the recently acquired Lake Assault Boats. RJS acquired the shipyard in September 1977, ending an era of ownership and management by the Fraser family that had begun in 1955, when Robert M. Fraser and Byron Nelson purchased the shipyard from Henry Knudsen. Northern Engineering, founded by Eigil "Ike" Knudsen in 1921, unofficially became part of the shipyard when the Knudsen brothers purchased the yard from the American Shipbuilding Co. in 1945.

Having a viable shipyard in the Twin Ports is not only good for the local economy; it is strategic for the Great Lakes fleets that regularly call on the port.

"It is highly desirable for owners and regulatory agencies alike that there be a shipyard on this side of the Soo Locks," said Jim Sharrow, facilities manager for the Duluth Seaway Port Authority. "It may not be possible to get a badly damaged ship through the St. Mary's River and to a shipyard that is on a lower lake." For example, following a collision between two vessels in the harbor last year, Fraser was able to make temporary repairs to one of the ships before it could safely proceed down the lakes to unload its cargo.

Not all ships need to enter the shipyard for repairs. Quite often, shipyard personnel simply meet the vessel at a dock and perform repairs during the

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– VICE PRESIDENT OF ENGINEERING  
MITCH KOSLOW, KEYSTONE SHIPPING CO.

time it is loading or discharging. Repairing vessels throughout the harbor is a major component of the shipyard’s operation. If minor work must be done on the outside of the hull or around the propeller, the shipyard sends workboats to the ship. Fraser operates a fleet of small craft as part of its “afloat” capabilities, noted Fraser Shipyards Director of Operations Tom Curelli. Fraser recently added a 26-foot, 550-horse-power push boat to pair with its work barges and is completing a 45-foot, 900-horse-power push boat for larger jobs. Last year the shipyard fabricated a 60-by-110-foot crane barge to augment its remote services. Work crews from the shipyard also assist in vessel repairs at loading ports along the North Shore and at unloading ports along the South Shore in addition to work done in the Twin Ports.



January through March is the time known as winter layup season, annually the busiest three months of the year for the shipyard. On any given year, close to a dozen vessels will spend the winter at the Head of the Lakes, with three to five of those moored within the shipyard proper. Topside and hull repairs, along

with installation and maintenance, make up the bulk of the work. Vessel inspections and hull work below the water line usually require the use of the shipyard’s large dry dock. Dry Dock No. 2, the larger of the shipyard’s two dry docks (built in 1900 and enlarged in 1961), can accommodate vessels up to 800 feet in length and 80 feet in width.



In this era of super-sized vessels, many ships lay up at berthing spaces throughout the harbor, so Fraser dispatches work crews to these locations. Duluth’s Port Terminal is an ideal place during the winter. The Seaway Port Authority has well maintained mooring spaces, wide dock aprons and a secure, well-lit facility. The adjacent Garfield dock also has easily accessible berthing space for a number of vessels wintering in the harbor. In Superior, the American Steamship Co. maintains the old Lakehead Pipeline dock in East End as a layup and repair berth for its fleet, while the dock at Midwest Energy is usually home to a vessel that inevitably becomes the first ship to load at the start of the new season.

Domestic fleets that operate on the Great Lakes are the shipyard’s primary customers. During the summer this base

## “They speak our language.”

— LIEUTENANT COMMANDER TONY MAFFIA, U.S. COAST GUARD

also expands to a number of foreign vessels that arrive in the port in need of repairs. In winter months, owners and operators such as the Great Lakes Fleet, American Steamship Co., and Interlake Steamship rely upon the shipyard to complete maintenance and repairs on their vessels so they're ready to perform at the start of the next season.

For the Duluth-based Great Lakes Fleet operated by Keystone Shipping Co., having the shipyard available is “very significant” and Fraser Shipyard is “our most principal contractor” for repairs above the Soo, said Vice President of Engineering Mitch Koslow. “They're known to be very responsive,” he said, particularly to “down-river work” (repairs made during the shipping season).

Recent changes at the shipyard to what Koslow describes as a “new generation of management” are seen as a positive step toward maintaining and building upon Fraser's customer base. “They've done what they've said they're going to do,” noted Koslow in regard to recent upgrades in shipyard capabilities and infrastructure. These changes are viewed within the maritime community as a positive commitment by the shipyard to maintain its reputation as a top-notch ship repair facility.

Long-term relationships with the U.S. Army Corps of Engineers and Canadian vessel operators also draw work to the shipyard. An opportunity to work with the U.S. Coast Guard in 2009 brought the Mackinaw, the largest icebreaker the Coast Guard has on the Great Lakes, into the shipyard. The icebreaker

spent two weeks in dry dock undergoing repairs to its thrusters, an under-hull camera and miscellaneous repairs. To land the contract for the Mackinaw, Fraser Shipyards upgraded Dry Dock No. 2 to comply with stringent government regulations to dry dock Coast Guard vessels. Fraser Shipyard also has the only dry dock on the Great Lakes certified for the Coast Guard's 225-foot Juniper class buoy tender vessels – the Alder and Hollyhock. The next closest shipyard is in Baltimore, Maryland.

Lieutenant Commander Tony Maffia of the U.S. Coast Guard, commanding officer of the Duluth-based Alder, was impressed with work done last summer when the vessel underwent its scheduled four-year maintenance inspection. He praised shipyard personnel for their



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competence, their willingness to do what was needed and for completing the job ahead of schedule – a first in his experience with shipyards. Maffia also noted how a number of Fraser's management team are former Coast Guard members who understand the paperwork, regulations and requirements that come with Coast Guard contracts. “They speak our language,” he said.

The economic value of the repair and maintenance of these vessels is vital to the entire region. On average, each vessel in winter layup adds upwards of \$1 million to the local economy. And Fraser relies upon relationships with many local firms to complete its projects. The purchase of goods and services from Superior companies such as Benson Electric Co., Twin Ports Testing, Superior Glass, Inc., Central Sheet Metal, Fastenal and Total Tools is part of a web of interdependence that helps support the maritime industry.



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“A lot of people aren’t aware of the impact that Fraser has to the local community,” said Chuck Dembroski, marine superintendent at Benson Electric. “They see a ship sitting down there in the ice and think nothing is going on. They don’t always realize the variety of jobs that are associated with that ship.” Benson Electric, which celebrated its centennial last year, is a long-standing supplier to the marine industry. The shipyard provides a lot of work for Benson and the two firms work closely together. Dembroski describes it as a “hand-in-hand” relationship. “There are times where we provide support and times when we call upon the shipyard for welding and structural issues on our projects,” he explained. While the work can get very intense during winter months when projects must be completed in a relatively short time, Dembroski pointed out that the shipyard provides work and opportunities year-round. “Because of their subsidiary companies there’s an industry around that employs many beyond the shipyard. If it weren’t for Fraser, that aspect of the work would dry up,” he said.

At Fraser Shipyards it isn’t just the facilities that are important; it’s the workforce. Having skilled personnel is integral to maintaining a full-service operation. Throughout the year the shipyard maintains a dedicated core of workers – machinists, welders and engineering staff – to handle emergency repairs during the shipping season. “The yard requires all of our welders to be ABS [American Bureau of Shipping]-certified,” said Curelli. The yard also maintains a “cadre of ABS-certified high pressure piping welders for boiler and pressure vessel work,” he noted. To support the workforce and its customers, Fraser employs two naval



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– DIRECTOR OF SUSTAINABLE INFRASTRUCTURE PROGRAMS JIM WHITE, CLEVELAND PORT AUTHORITY

architects and two engineering draftsmen. An in-house ABS surveyor works with the Coast Guard Marine Safety Unit in Duluth to assist with the multitude of regulatory requirements that shipyard customers must meet.

Fraser Shipyard makes every effort to hire from the local workforce and employs welders, fitters, carpenters, laborers, machinists and crane operators. “Our workforce has many second generation employees, and our core group

of craftsmen has up to 34 years of continuous employment with the company,” said Curelli, citing a strong work ethic and skilled labor force as a key part of the shipyard’s heritage.

Maintaining the workforce now and in the future is a big responsibility. The many skills needed by the marine repair industry require a diversity of training that must be maintained in veteran employees, nurtured in younger workers and taught to new hires. Fraser invites



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the local high schools and community colleges to tour the shipyard to become acquainted with the type of work performed and learn about career opportunities. Reciprocally, the shipyard sends its welding foreman to the schools when they request hands-on training. "We are the only aluminum production facility in the area and provide a unique example of skill sets," noted Curelli. Shipyard officials are looking ahead to developing a mentoring program with local schools to promote development of competent skills ranging from administrative support to engineers and craftsmen.

In order to provide maintenance for the variety and size of vessels on the

Great Lakes, the shipyard has grown and adapted to meet maritime industry demands. Until the past several years, the basic infrastructure and inventory of shipyard buildings (which includes a main machining and fabricating shop, a joiner shop and mold loft, as well as two graving docks and several layup and fit-out berths) had remained mostly unchanged for several decades. While upgrades to the machining and fabrication operations have been consistent with changes in the industry, the outside berthing spaces and electrical systems lagged behind. Several years ago the shipyard was given an opportunity to make much needed upgrades and the results have been very positive.

In 2009 Fraser Shipyard was the recipient of \$3.7 million in funding through the Safe Harbor Assistance Program. The money, administered by the City of Superior, was designated to upgrade facilities. Curelli believes the shipyard has made big strides that keep it competitive with any operation on the lakes. "We have a full metal fabricating shop, along with a

machine and pipe shop," he said. "Fraser can prefabricate and install large steel modules up to 100 tons or lift machinery with some of the largest crawler cranes on the Great Lakes."

Improving its steel work capabilities is a high priority for the shipyard and its customers. Curelli noted that with the funding, the shipyard has recently added a high speed, high definition plasma cutting table capable of cutting plates up to 2 ½ inches thick by 12 feet by 40 feet in size. It also expanded its machining and fabrication capabilities to include nonmaritime customers. This additional capability is expected to help provide



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— MARINE SUPERINTENDENT CHUCK DEMBROSKI, BENSON ELECTRIC CO.

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– DIRECTOR OF OPERATIONS TOM CURELLI, FRASER SHIPYARDS

work throughout the year, particularly during the summer and fall when ship repair work is at a minimum.

The shipyard’s outside work areas are also getting a facelift. A number of the exterior layup berths had never been fully defined as dock spaces and over the years had deteriorated to the point that they needed repair. In 2011-12, also a result of

the funding, the first phase of refurbishment commenced with the driving and capping of a 680-foot wall of sheet piling, removal and backfill of an old floating dry dock space and the addition of a concrete dock apron capable of supporting heavy lift equipment. This summer, an additional 550-foot section of sheet piling and dock facing will be added.

An additional \$2 million in federal funding administered by the U.S. Department of Transportation was awarded in early 2010. This money, earmarked for repair to shipyard infrastructure, is being applied to the installation of high-efficiency electrical transformers. New power lines are replacing worn out underground cabling that services the layup berths. The upgraded berthing spaces and electrical service make the shipyard more appealing for vessel owners bringing their ships directly into the yard for repair, rather than relying on the availability of berthing space throughout the harbor. As a result of these improvements, the Great Lakes Fleet has decided to utilize the improved Lamborn Avenue dock to berth its super carrier, the Roger Blough, for this winter’s layup period. The Blough, at 858 feet in length and with a beam of 105 feet, is the largest vessel to winter in the shipyard.

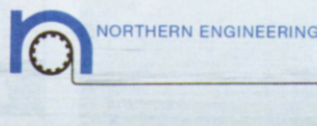
Tradition doesn’t necessarily assure survival. With upgrades to its bread and butter work, the shipyard is looking for other ways to diversify its work base. Fraser Shipyards’ commitment to continue as a leader in the marine community was strengthened in December 2009 with the acquisition of Lake Assault Boats. The Minnesota-based firm specializes in the construction of “mission-specific” aluminum boats for commercial usage (patrol, fire and rescue boats ranging from 19 to 34 feet in length), as well as recreational craft for hunting and

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Last year, Lake Assault Boats was awarded a contract from the Cleveland-Cuyahoga County Port Authority to build two specialized work boats designed to clean debris from the Cleveland waterfront and the 85-mile-long Cuyahoga River, one of Lake Erie's largest tributaries. Large rain events, such as the recent Hurricane Sandy, flush organic debris down the river to Lake Erie. The final 6.5 miles of river – as it snakes through Cleveland and the immediate Lake Erie shoreline adjacent to the river mouth – are the focus of restoration initiatives. It's estimated that 80 percent of the debris is logs, trees and branches, while the remaining 15-to-20 percent is street trash runoff.

The two workboats, christened Flotsam and Jetsam, were funded by a grant from the U.S. Environmental Protection Agency and built to remove organic debris (flotsam), as well as man-made refuse and trash (jetsam) from the water.

Both craft are equipped with mobile deck cranes for removing debris from the water, with Flotsam built to do the heavy lifting. The 11-by-26-foot platforms can also be pinned together in several configurations and can tow a 250-foot spill boom between them. Jim White, director of sustainable infrastructure programs for the Cleveland Port Authority, is extremely proud of Flotsam and Jetsam. "Lake Assault is very skilled at building with aluminum and were quick to respond to our needs," he said. "The vessels have outperformed the specifications of their naval architects."

It didn't take long to put the new boats to the test. "We hardly had our crew trained and then the hurricane hit," White explained. Nearly 800 miles inland from the epicenter, Cleveland was buffeted by winds in excess of 70 miles per hour for 36 hours as well as large wave action on Lake Erie. The result was extensive erosion debris flushed down the Cuyahoga and the devastation of the Edgewater Marina, with the loss of more than 30 small craft. Flotsam and

Jetsam were immediately dispatched to clear the shipping channel and assist in marina cleanup. In three days, they collected more than 20 tons of debris and in their first eight weeks of operation removed an estimated 40 tons from the water. White is happy to sing the praises of Lake Assault Boats. "We encourage other people to look at Flotsam and Jetsam and to have Lake Assault assist anyone in their building plans," he said.

Fraser Shipyards has weathered many seasons of change. In an industry that has seen storied and successful shipyards come and go, or be swallowed by competitors, Fraser Shipyards stands tall at the Head of the Lakes. Continually striving to improve, providing quality leadership, skilled professionals and a customer-winning attitude, the shipyard has honored the intent and vision of its founding father. Curelli thinks old Alexander McDougall would be proud of how the shipyard has evolved. 

Patrick Lapinski is a freelance writer and a native of Superior.

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