It's Where Big Lakers Find Help

INSIDE Fraser Shipyards

Story by Patrick Lapinski,
photos by Hannah Stonehouse Hudson

Bumping into something, that's one way – could be on rocks, walls, docks, bridges or even other vessels. Or grounding might seem benign, but any time there isn't water beneath the hull, it's serious. ...

Great Lakes freighters can come to harm in all sorts of ways without actually sinking, but what generally lays up these powerful workhorses that ply the inland seas nearly 24/7 during the nine to 10 months of each maritime season is more likely a problematic breakdown of something critical, but rather mundane.

On Lake Superior, the call for help to fix any mechanical, structural or electrical woes often goes to the sole U.S. site on the Lake that can handle repairs, maintenance and modifications to the giant "lakers" – Fraser Shipyards in Superior.

An emergency need will get someone to the vessel – night or day, holiday, weekend or workday, by water or road – or it will get workers ready to roll in the yard. Sometimes a Fraser technician will even ride along

across the Lake, making repairs as the freighter and its crew keep working.

These days, Fraser Shipyards is also at the forefront of outfitting vessels for the future, such as converting their systems to use liquid natural gas – LNG – for fuel.

It is a future built on a long past. For nearly 125 years, the shipyard on the city waterfront has constructed or repaired vessels. It has had multiple owners, including two colorful, hard-working Danes, Henry and Eigel Knudsen, known as "Heine" and "Ike."

The shipyard was founded by Alexander McDougall, a lad of Scottish descent, who ran away to sea at age 15. And then there's the legendary Robert M. Fraser himself, or "Old Bob" as he came to be known.

In its infancy in 1890 as the American Steel Barge Company, the shipyard turned out the uniquely shaped whaleback barges and steamships tied to Alexander McDougall and best known today by the S.S. *Meteor* museum ship in Superior not far from the shipyards.

By 1900, known then as the Superior Shipbuilding Company, the yard was turning out freighters in the "classic" laker design – pilothouse and cabins forward and engine room and galley structures aft. Between 1900 and 1910, more than 20 lakers were built before the yard turned to construction of cargo vessels for service in World War I.

Superior Shipbuilding was owned by the American Shipbuilding Company, but operated independently until the mid-1930s, when Am Ship took active control of the shipyard.

Most residents do not know that the yard did not participate in any new boat work for the World War II effort. However, two other Twin Ports companies – Walter Butler

Fraser Shipyards can accommodate up to six large "lakers" – Great Lakes freighters – within its 60-acre facility. Bottom: Northern Engineering's Jeff Lowney works on repairs to the *Indiana Harbor*. He retired this year.

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Good to Know

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Fraser offers services to freighters, cement vessels, tugs and barges that include underwater and topside repairs; floating repairs; vessel lengthening; boiler reconstruction or repair; repowering; hull work; propulsion-system repairs; Coast Guard certifications; insurance inspections; marine surveys; conversions to self-unloading or to LNG fuel; automation; new construction and general fit outs.

Shipbuilders (Superior and Duluth) and Globe Shipbuilding Company (Superior) constructed more than 100 ships under an emergency program for that war.

Following World War II, Superior Shipbuilding was put up for sale. This is when the Knudsens took over, beginning what is considered the modern era at the shipyard. A decade later Henry Knudsen sold the shipyard to Robert M. Fraser and Byron Nelson. Under the Fraser-Nelson banner and later under the Fraser name alone, the shipyard was an extremely busy place. In addition to general repair and maintenance, the shipyard installed self-unloading systems on 10 vessels, added bow and stern thrusters to dozens, lengthened 12 vessels, re-powered five from steam to diesel and converted nine more from coal-fired to oil-burning fuels.

The shipyard continues to do such major work, along with regular maintenance of vessels. The bulk of work is done during a short 60-day period, generally mid-January when the Soo Locks close for the season to mid-March when they reopen.

Until winter layup begins, it's hard to know exactly which ships will make Fraser their winter docking. A rough average for the number of ships spending the winter in the Twin Ports is a baker's dozen, and projections for this winter are at or above average.

Each wintering vessel represents in the neighborhood of $500,000 to $800,000 to the local economy, based on wages and materials for the kind of work being done. The shipyard will employ up to 150 workers – more than double its summer employment.

"Typically the winter layup is 12 weeks," says shipyard Superintendent Mike Peterson. "But if you actually count when the crew leaves and the crew comes back, we can't really do too much on their boat 'cause that's their home. So we're down to a nine-week window. Whereas 15 years ago, if you look back in the records, we had boats laying up for winter … in the end of October, first part of November."

The shipping season has indeed extended in recent decades, according to retired Duluth Seaway Port Authority Executive Director Adolph Ojard. He cites two major reasons for more weeks of Great Lakes maritime traffic – the iron ore industry changing from red ore to taconite pellets, which do not freeze together, and the shift in climate, leaving water free of ice later into winter.

But what kind of work does go on at Fraser during the winter? Most basically, whatever maintenance work can't be done while the ship is on the run. The majority is structural work – renewing steel in cargo holds and unloading gates as part of yearly maintenance, replacing piping, welding cracks, putting on new equipment, shell-plate renewal, propeller and shaft repair, painting, carpentry. Pack that into three months on 700- to 1,000-foot-long vessels, and the days of winter layup go by extremely fast.

Building boats & other ventures

One thing many people may not realize is that Fraser Shipyards is no longer a single entity – and its company is building boats once again.

Fraser Shipyards has joined Lake Assault Boats and Northern Engineering Company under the umbrella of Fraser Industries, operated by Capstan Corporation, a Midwest-based holding company headquartered in Duluth and led by Chairman and CEO Todd Johnson. (Capstan owns the building in which *Lake Superior Magazine* is located.)

Todd is the next-generation head of the shipyard. His father, Troy Johnson, purchased the yard from the Fraser family in 1977 and operated it until 2006. Tom Curelli is director of operations for Fraser Shipyards.

The shipyard is undergoing a conversion itself, becoming a "shipyard of the future," responding to new needs of its customers, like the LNG conversions.

At the forefront of the company's new vitality is Lake Assault Boats. Lake Assault was started in 2003 by Jerry Atherton and sold to Fraser in 2009. The operation services a rapidly growing niche in boatbuilding – small industrial boats not linked to commercial fishing, such as fireboats, rescue and dive boats or patrol boats used for law enforcement.

Lake Assault operates out of a 10,000-square-foot space at Fraser Shipyards, an area that used to be an old machine shop. The space has high ceilings, large windows and bay doors that open out onto the slip, where this summer on a tour I took with Operations Manager Jim Kubala, I saw half a dozen boats in the water or on trailers ready to go into service. The company manufactured 16 boats in 2013.

Lake Assault Boats is the newest branch of Fraser Shipyards, which has brought back its historic function of building boats. Nick Pirkola is one of the workers in the Lake Assault Boat section of the shipyard (top images). Facing page: It's a somewhat delicate business to dry dock a 704-foot vessel like the *H. Lee White* (top) for work. The fabrication shop (bottom), known as the Punch Shed, is where the steel plates for vessel repairs are cut, bent and rolled.

At Fraser Shipyards, the big and small(er) sit side by side. This summer *American Victory* (top) was docked near the building of *FSY-II*, a new 50-foot tug floated in July, and a completed Lake Assault boat (bottom) is ready for the St. Louis County Sheriff's office while behind is the coal freighter *John J. Boland*. Facing page: The *John G. Munson* was in dry dock for internal steel work on its cargo holds and conveyor gates.

"We're basically an all-aluminum, all-welded, heavy-construction aluminum boatbuilder," says Chad DuMars, director of operations at Lake Assault. "We don't necessarily consider ourselves just a fireboat company, or a police boat company. If it's aluminum and it's a boat product, then we will look at it and go for it."

Chad proudly explains that his team can design a vessel "from a blank sheet of paper all the way up to final outfit and assembly" – an ability showcased in work done with the Lake Vermilion Fire Brigade based in Cook, Minnesota. "One of our new product lines is airboats," says Chad. "They (the fire brigade) came to us and said, 'We need a way to respond during low ice conditions, shallow water,' and their concept is 'Let's develop an airboat together.' … We designed a boat specifically for their needs."

These boats can travel on ice, water or a combination of the two.

A division of Fraser Industries is Northern Engineering, in business since 1916 and is located about three-quarters of a mile from the yard on Connor's Point. The main work floor at Northern is a large open bay filled with machining stations. Floor to ceiling riveted steel beams support second-story balconies open to the wooden rafters and host workspaces, locker rooms, inventory and parts storage.

As a machining shop, Northern handles the finer parts of the ships – pieces of equipment that need machining to precise tolerances to function properly. James Farkas is general manager and explains, in brief, what Northern handles: "Mechanical systems, mechanical power transmission systems – renewing, refurbishing those systems. Anything that is involved with the conversion of that engine power to propulsion power or electric motors driving the conveyor systems, we get involved with."

Converting systems for vessels, it turns out, is as complex and uncertain as remodeling an old house. James says the workers never quite know the condition of a part until it's opened.

"A lot of what we do here, when we put things back together, is to refurbish a mechanical system, refurbish a power transmission system and then try to put it back together so that it lasts a long time."

Back at the shipyard

Putting things back together is what Fraser Shipyards has been doing for more than a century in the Twin Ports.

The shipyard has been host to a who's who of the best-recognized freighters during their 100-plus years. One current initiative is an upgrade to the yard's infrastructure so it can accommodate the size of current lakers. Five decades ago, for example, the 729-foot *Edmund Fitzgerald* was the largest laker on the waters. Today's largest vessel is the 1,013-foot *Paul R. Tregurtha*.

"We're going to try and update it to match the needs of the industry. The days of smaller vessels being lined up and fleeted side by side are gone," says Tom. "There is not a need to be able to take 20 boats in our yard, but there is a need to do six or seven boats within the yard

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Fraser Shipyards, situated on the spit of land known as Connor's Point, can be seen from the Blatnik Bridge as people travel from Superior to Duluth. Here the 768-foot *John G. Munson* was in the dry dock for internal steel work on its cargo holds and conveyor gates.

facility. In order to do that, with the size of the vessels there are today, we have to have (adequate) linear square footage, or as I call them, 'parking spots,' for the vessels."

Last winter, the 858-foot *Roger Blough* used a new 860-foot parking spot. The long-term plan is to make a continuous wall from the entrance of the shipyard to the dry docks – a half-mile wharf of ships when filled. The first part of the vessel berthing upgrade is done.

"We are trying to be adaptive to their needs," Tom says, "providing everything from large-steel or small-steel repair, piping systems, to mechanical support from Northern Engineering, our sister company."

Another "upgrade" bringing work into the shipyard was the company's application to work on U.S. Coast Guard vessels, something it had not been approved for in the past.

"They have very, very strict rules on dry docking certifications, and we're very proud that our dry dock is certified for both the *Mackinaw* and the two 225-foot ice-breaking buoy tenders (*Alder* and *Hollyhock*)," says Tom, himself a former Coast Guardsman. "We've had quite a few dry dockings in the last three years and the Coast Guard really likes working with us. So we're proud of that, we're happy about that and we want to keep it going."

Summer 2013 saw construction begin on a new office building, part of a new future look, says Tom. "I see the shipyard in a much more modernized appearance. I see us with a facility that can handle six or seven vessels over the wintertime in good service berthing, where they have the electrical services they need, they have their water and their communication services, they have a secure place if the winds come up."

In the immediate future, what Tom foresees for the shipyard sounds a lot like work that might have happened any time during its 123-year history – the *Kaye E. Barker* is expected in for some steel work during winter layup and the *Great Republic*, spending its first winter in the yard, will leave by spring with a new paint job in the red-ore color of its owners, the Great Lakes Fleet. Not great repairs on wrecked vessels, but a good winter's work for a long-lived Lake Superior icon.

Patrick Lapinski, a freelance writer and maritime photographer from Minneapolis, is working on *In the Yard: The History of Fraser Shipyards* for the company.