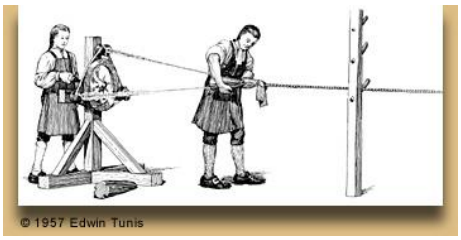


While one man cranks the spinner, the one holding the "top" walks backwards as the rope is twisted. From Edwin Tunis, *The Young United States, 1783 to 1830* (New York: World Publishing Co., 1969). Used by permission of the estate of Edwin Tunis.

Ropewalk

The Newsletter for
Shipwrights of Ohio – February 2023

Next Meeting: March 18, 2023;
"Getting Started with RC Boats" by Alan Phelps

Table of Contents

February

First, a thank you for all your good thoughts and prayers during my heart procedures. I now am in the post-operative stage and have enrolled in cardiac rehab, plus getting out walking for about a mile and a half, three time a week. Who would have thought that February in Ohio would have temperatures as high as 70. Plus, my hearing was restored, still depended upon hearing aids, but the possible need for a cochlear implant is no longer on the schedule.

Good turnout for our meeting Saturday. Great presentation on research by John Boeck. We tried a new approach where the presenter also ran the meeting. To me, it seemed to work out well. Any comments?

The surprise, was Bob Mains, our VP and Zoom Master. He now holds the record for joining our meeting from the furthest location. He dialed in from GMT+2 or seven time zones ahead of us. Bob is on a cruise in the Med and the ship was docked at the Port of Piraeus, Greece. He signed off early because the ship was undocking and, like all old sailors, he had to help steer the ship out of port. Good to see you, Bob. Safe trip home.

With that, we received a note through the NRG, Model Ship World, about a possible restoration project on a model of a 70+ year old, three masted "Xebec". It looks like a clean/re-rig project, and yours truly has volunteered to take it on. Initial photos can be found in "Ship on Deck"

Take care of yourself and your families, look to those you know who may need help, are lonely and may need human contact. Till next month.

Your editor.

Business

2023 Notice for Dues Payment

With the By-Laws approval, your 2023 dues are due. Send a check made out to "Shipwrights of Ohio" for the amount of $20, to:

Shipwrights of Ohio – Treasurer
5298 Timberlake Circle
Orient, OH 43146-9249

Lee can also handle payments via Venmo to our Chase account: kimmins@shipbuilder Shipwright 22!

Contact Lee at the phone number found on page 8 of this newsletter.

Hybrid Meeting Planning

If you remember from our discussion during the 2023 presentation scheduling, we are attempting to have at least three hybrid meetings this year. Our location for in-person meetings in the past has been the Westerville Public Library. They are still on restricted scheduling and we have a 30-day window to reserve a room. We will be trying to register for the conference room to be used for the March meeting when the library opens this coming week.

We may have an alternative. Steve Putka has shared that at his church, Amlin United Methodist Church, there is a large room with tables, chairs and coffee that we may use. I will be checking it out by the end of the month.

Midwestern Model Ships & Boats Contest

Ever wonder how good of a shipwright you are? The *46th Midwestern Model Ships & Boats Competition* is your chance to find out. Held at the Wisconsin Maritime Museum, Manitowoc, WI, located at the mouth of the Manitowoc River where it empties into Lake Michigan, on May 19 – 21, 2023.

Three builder level of entry: Novice, Intermediate, Advanced; Six categories of model: Scratch, Kit, Paper, Operational, Diorama, Nautical Craft. Competition is against a set of standards, with every entry starting at 100 points. Awards are: Bronze, Silver, Gold.

If you are interested, go to: https://www.wisconsinmaritime.org/programs-and-events/midwestern-model-ship-contest/ Information, registration, schedule, and hotels are all listed. It is 531 miles from Columbus to the museum and can be driven, transporting your model, in 10 hours.

The Shipwrights of Ohio have had multiple winners in past competitions:

2022, Lee Kimmins, Intermediate Class, Silver - sidewheel steamer *Mary Powell;*
2021, Bob Mains, Novice Class, Bronze - 2 masted *Swift;*
2021, Bill Nyberg, Advance Class - Gold, Oyster Dredge Skipjack
2017, Lee Kimmins, Novice Class, Gold - sidewheel steamer *Robt. R Lee:*
2013, Bill Nyberg, Advanced Class, Silver - Topsail Schooner *Hannah*
2008, Henry Rumm - Novice Class, Gold - steamer *Portland* and "Best of Show.

2023 Presentation Schedule

The presentation schedule and presenters, at this time, are:

01/21 - ~~The Principles of Rigging - Nyberg~~
02/18 - ~~Research: Internet, Historical Info - Boeck~~
03/18 - Getting Started with RC Boats - Phelps
04/15 - Fixtures: Rudders - Nyberg
05/20 - Masts, Yards, & Spar Making - Markijohn
06/17 - Standing Rigging & deadeyes - Keller
07/15 - Running: Block & Tackle, Belaying - Mains
08/19 - Making Sails - Nyberg
09/16 - Fixtures: Capstans & Windlasses - Nyberg
10/21 - Finishing: Natural & Paint - Mitchell
11/18 - Displaying & mounting ship models - Ross
12/16 - Soldering - Phelps

Presentation

Did you know that in 1861, the Confederates built a steam ram named *Manassas*? She was protected by 11 inches of bar iron and mounted a 68-pounder gun. Six months after the war was declared, the *Manassas* drove the Union blockading squadron out of the Mississippi River. (The Battle of Hampton Roads, also referred to as the Battle of the *Monitor* and *Merrimack* was not held until March 8, 1862 – March 9, 1862.)

Have you heard of the *Intelligent Whale* that was built in 1872 and is preserved as a relic at the Brooklyn Navy Yard? She was a submersible, 26 feet long & 9 feet deep and could hold a crew of 13. She had a hand-driven propeller and two doors fitted in her bottom to allow divers to exit and enter to affix torpedoes to an enemy ship at anchor.

With that, John started his presentation on "Research for Modeling Ships". He shared that research is most effective when planning the building phase and when the builder needs to add details or has questions while building the model. There are multiple sources to use in research, such as: libraries, museums, CD/VHS/Videos, internet searches, and web sites, such as NRG Model Ship World, modeling club web sites like ours, and marine historic societies. First start with your local ship modeling club members. A ship modeling club is a modeler's most valuable tool.

John then shared his knowledge on the E-research process and how to tailor search keywords, such as: Vary your search engines; use specific keywords, simplify your search terms, use quotation marks to narrow to particular words or phrases, and how to remove unhelpful words searches using the minus operator

Ships on Deck

Polacca

John Boeck

John is building a model of the *Polacca* that will be displayed in a bottle.

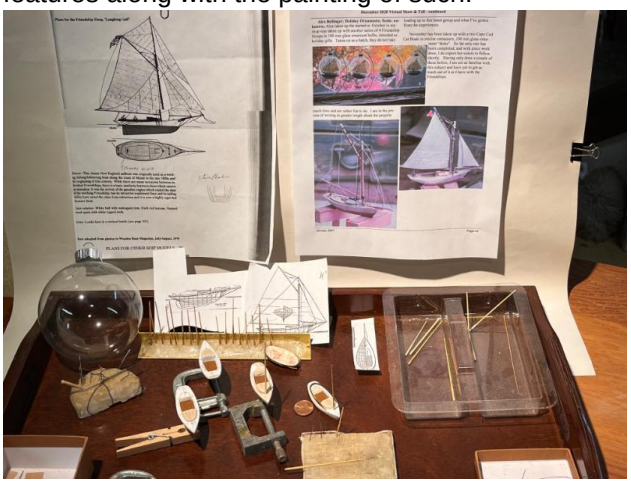
Friendship Sloop

Doug Hoyt

When Doug completed a ship in a bottle community class (Gloucester fishing schooner - Ingomar 1904 pic below) taught by Alex Bellinger, he gave all attendees the *Friendship Sloop* plan and a 4-inch glass ornament as their graduation gift. Doug did not get around to it until he moved back to Ohio.

For motivation the thought was to build as a gift to three couples back here in Ohio. Thus, the set would be near similar and noted under the glass as 1 of 4. The only major difference between the 4 would be the color of the water, reflecting the water near their homes.

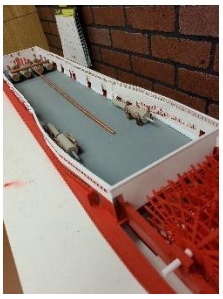
Doug can't remember when he started it after 2015, but articles in “Ropewalk” of Dec. & Jan. along with other newsletters motivated him to remove all the household renovation material burying the workshop and restart it. In the pic below, you will see an article he printed out, (from January 2021 Broadside newsletter written by Alex) on the build and have placed it with my other reference material. Previously numerous parts had already been built along with the shaping of the hulls. Most days now I strive to get an hour working on it, building all 4 simultaneously, and the enclosed picture shows the parts and work so far. The immediate focus is to finish the deck and cabin features along with the painting of such.

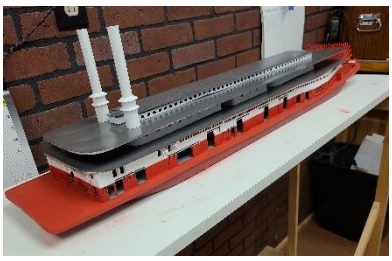


Sprague

Lee Kimmins

Lee, reports that the lower walls are installed and he is working on interior. He is looking for lights to be installed in the interior. He has also started work on level 2 and 3.



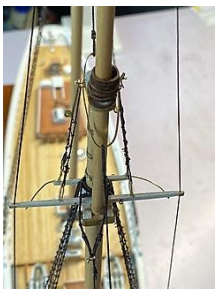


Bluenose

Cliff Mitchell

Cliff is been rigging the fore topmast of his *Bluenose* and the following show his progress:

The topmast shrouds are called spreader lifts.

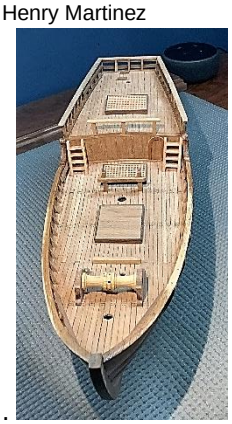


These lifts start at the cap and attached to lanyards on the wood spreaders both port and starboard. Ratlines finish these. Topmast shrouds (upper left photo) start at the top of the mast above the band, seized and then pass through the spreader tips: (upper right photo)

They then travel down and are laced to small deadeyes on the main rail:

Pinta

Henry Martinez



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This model is from an Amati kit and is 1:65 scale. This month Henry added most of the deck fixtures.

Henry shared that Columbus's *Pinta* was built in 1441 and was the faster of the three ships. She, in fact, sighted the new world before the other.

Pegasus

Jason Smith

Jason, shared that he was concerned with the spacing of his deadeyes. He found on You tube, a demo and rule-of-thumb that stated:

(2 x deadeye diameter + deadeye radius) + spacing between deadeyes.

His deadeye is 5mm, so spacing between the deadeyes is: (5+5) + 2.5 = 12.5 mm.

Red Jacket

Stan Ross

Stan's model of Bluejackets *Red Jacket* is mounted in its case.

He will be calling American Plastics to build a new acrylic case to protect the model. He tried to lift the glass case himself and had a "Uff Da" moment.

Note the cracked glass pane in the middle of the photo above.

U.S.S. Ohio

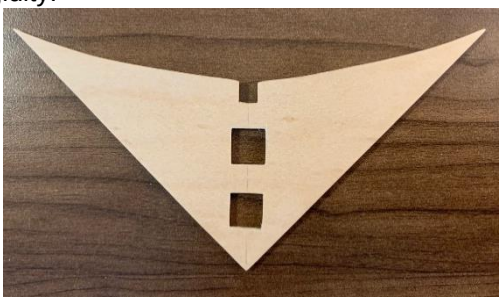
Rick Stratton

Rick needed to secure the heel of the bowsprit on the deck below. This required a set of bowsprit bitts secured to one of the spar deck beams. But before that, he needed to complete the "head".

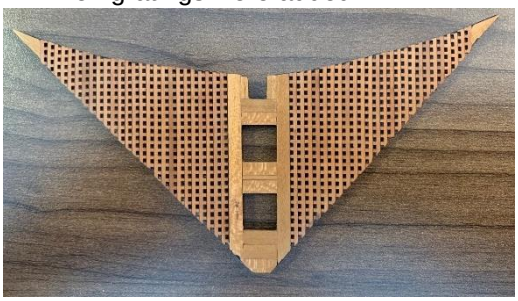
He states: "This was an especially fun task as I have no plans, only photos of the ship that gave an idea of the curvature of the head timbers. I

started by constructing the cheeks/rails that hid the head and sailors from visibility:

Once those were fitted to satisfaction and held in place with clamps, that gave guidance to the shape of the head platform. Getting that shape correct took multiple attempts with card stock and a knife. Some extra time was spent determining where the gammoning ropes would pass through the platform and cutting openings. The platform was then transferred from card stock to maple veneer for its rigidity.



Then gratings were added



A rigid platform template was used as guidance for the construction of the head timbers. Again, several attempts with card stock and a sharp knife produced the correct shape of the head timbers which were then transferred to maple.

The head timbers/bulkheads were then secured with the head platform and the bowsprit gammoning was completed plus:

Per Howard I. Chapelle (History of the American Sailing Navy), starting in the 1830s the head timbers were planked over for esthetics. Since my attempt at the model of the USS Ohio is circa 1840, and since the photos I have (roughly from 1870s) showed the planked over timbers, planking was added over the head timbers and then painted. I created a figurehead of Hercules using Sculpey clay. The original figurehead still exists and is on display in Stony Brook, New York. Despite having multiple photographs available, I did find that my skills as a sculptor are quite limited. Although I ended up with representation of the figurehead that I’m OK with. Bumkins were also added:

Seats of ease were also added.”

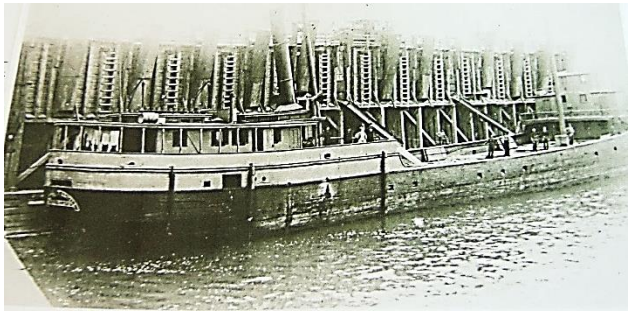
It was suggested that, when completed, the model could be donated to Ohio State Capital Building. That led to a short discussion of the location of other models of the *USS Ohio.* There is one at the museum located at the Brooklyn Navy Yard, where she was originally built. A second was in the lobby of the Ohio Theatre in downtown Columbus. The third, build by Robert Bruckshaw,

was located in the Great Lakes Historical Society's "Inland Seas Museum". When the museum was relocated to Toledo, the model did not fit what they were trying to accomplish and was donated to a board member and is now on loan to a Detroit restaurant.

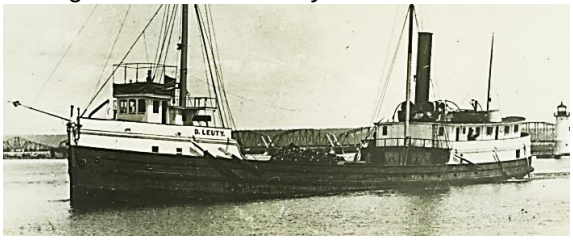
Margaret Olwill

William Nyberg

Her cargo deck is completed. I am starting on the stern deck cabin. This process will be somewhat like the bow deck. I will have to build a cardboard model of the deck house to determine how she will fit and that her deck house looks like the photo below. My plan for this build is the photo below, taken of the *Olwill,* at Kelly's Island the day before she sank.



The builder, Henry D. Root, Lorain, Ohio, built over 50 vessels, including seven wooden propellers. Beside the *Margaret Olwill* he built the *D. Leuty*, both steam barges were intended for the lumber trade. They were of comparable length, width and gross tonnage. Where there is only one photo of the *Olwill*, the *Leuty* has 10. One of which provides a clear view of the stern deck which I will use for my modeling. This is the *D. Leuty.*



Restoration Project

Bill Nyberg

The club received a note from the owner of the Xebec model below. She was looking for someone to clean and rerig the model that her father had purchased in 1970, while in Venice, from an old Venetian ship builder who had built the model by hand.

She looks like she has been sitting out in a barn for too many years. I have found two good sets of rigging plans. Weather permitting, I should pick up the model on Friday, February 24th.

Other Notes: "Stuff", Tugs & Things

Nautical Terms

Whaleback: A type of cargo steamship of unusual design formerly built and used on the Great Lakes, notably for carrying grain or ore. The hull continuously curved above the waterline from vertical to horizontal, and when the ship was fully loaded, only the rounded portion of her hull (the "whaleback" proper) was visible above the waterline. With sides curved in towards the ends, whalebacks had a spoon shaped bow and a very convex upper deck.

Whaleboat: A type of open boat that is relatively narrow and pointed at both ends, enabling it to move either forwards or backwards equally well.

Whaler: A specialized vessel designed for the catching and processing whales of whale oil.

Wharf: A structure on the shore of a harbor or on the bank of a river or canal where ships may dock to load and unload cargo or passengers.

Wharfage: A collective term for docks, piers, quays and wharfs.
Wheel: The usual steering device on larger vessels: a wheel with a horizontal axis, connected by cables to the rudder.
Wheelhouse: (a*lso* ***pilothouse*** *and often synonymous with bridge).* The location on a ship where the wheel is located.
Wherry: A type of boat traditionally used for carrying cargo or passengers on rivers and canals in England, particularly on the River Thames and the Norfolk and Suffolk Broads.
Whip: A small single block tackle, used to raise light loads from a hold.
Whip upon whip: Connecting two whips together. This runs more smoothly than using a double block with single block tackle, which would have the equivalent purchase. Can be used for topsail and top-gallant halliards.
Whipping: The binding with twine of the loose end of a rope to prevent it unravelling.
Whipstaff: A vertical lever connected to a tiller, used for steering on larger ships before the development of the ship's wheel.
Whiskers: Spreaders from the bow to spread the bowsprit shrouds.
Whiskerstay: One of the pair of stays that stabilize the bowsprit, horizontally affixed to the forward end of the bowsprit and just aft the stem.

Tugs: Great Lakes

George E. Brockway (Towboat) 1867

The *George E. Brockway,* a wooden, propeller was built in 1867, by F. C. Leighton, Port Huron, MI for James Meffat & John Botsford also from Port Huron, The towboat was intended for towing sailing vessel between Lake Huron and Lake Erie on the St. Clair and Detroit rivers. She was enrolled at Port Huron with measures: 112.4' x 20.8' x 10.2' and a tonnage of 164 grt. She was powered by a high-pressures, non-condensing engine, 27' x 30', 440hp @ 85 rpm. The engine was built by Cuyahoga Furnace, Cleveland in 1867. She towboat was issued official number 10666.

In 1868 she was outfitted for wrecking operations out of Port Huron. November 1870, she went ashore on the Canadian shore of Lake Huron. In April she went ashore at St. Clair Flats. In July of that same year, she collided with the *John Martin* (12793) at Point aux Pelee, Lake Erie. In 1873, she was owned by G. E. Brockway, Port Huron, and in 1879 by Moore, et al, Detroit. June 1881 her ownership was changed to Ludington Lumber Co. and she was used for towing lumber rafts, Ludington to Chicago. She was laid up in 1883, and her ownership was changed to C. D. Thompson, Port Huron in 1889 and to the Great Lakes Towing Co., Cleveland in 1906. She was abandoned in 1911.

BGSU University Libraries; Historical Collections of the Lakes & Alpena County George N. Fletcher Public Library; C. Patrick Labadie Collection

Bruce (Towboat) 1882

The towboat *Bruce* was built by Alfred White at Thorold, Ont. for James Munroe and John Cloy of Thorold. She was enrolled at St. Catharines, Ont. May 26, 1882 and her measures recorded as; 44' x 12' x 5.2', 15.88 grt. She was powered by a 30hp engine with a 12 ¾" x 14" bore & stroke. The Bruce was issued official Canadian number 83145. She was intended for local towing in and around St. Catharines. Her ownership was changed in 1899 to W. Lemoine, St. Catharines. She was abandoned in February 1906 and her engine and boiler were removed.

BGSU University Libraries; Historical Collections of the Great Lakes & Alpena County George N. Fletcher: Public Library; C. Patrick Labadie Collection

Presentation Schedule:

2023- Tentative
Jan 21 – ~~Principles of Rigging~~
Feb 18 – ~~Research: internet, Historical~~
Mar 18 – Getting Started with RC Boats
Apr 15 – Fixtures: Rudders
May 20 – Mast, yard & Spar Making
Jun 17 – Standing Rigging & Deadeyes
Jul 15 – Running Rigging, Blocks, Belaying
Aug 19 – Making Sails
Sep 16 – Capstans & Windlasses
Oct 21 - Finishing: Natural & Paint
Nov 18 – Displaying & Mounting ship models
Dec 16 - Soldering

Events & Dates to Note:

2023 Tentative Schedule

Columbus Woodworking Show
Ohio Expo Center
January 20-23, 2023

IPMS Columbus
BLIZZCON 2023
Makoy Center, Hilliard, OH
Saturday, February 18, 2023

Miami Valley Woodcarving Show
Christ United Methodist Church
Middletown, OH
March 4 & 5, 2023

46th Midwestern Model & Boat Show,
Wisconsin Maritime Museum, Manitowoc, WI
May 19 - 21, 2023

Lakeside Antique & Classic Wooden Boat
Lakeside Hotel, Lakeside, OH
July 16, 2023

NRG Conference
?
Oct. 2023

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Cargo Hold

www.shipwrightsofohio.com/cargo hold/

Here you will find how to order Challenge Coins, as shown above, on left, that have been used historically for Identification within an organization, Recognition of achievements, Appreciation of services and Trading/Collecting. Our Shipwrights of Ohio coin contains both the Club Logo and the Club Coat-of-Arms.

You can also order Logo shirts from "Lands End". They offer an on-line link for direct, personal purchases of many of their products without Shipwrights of Ohio logo.

There are currently two logo styles available**:**

- **Full Club logo – with Motto, for digital print use on the backside of T-shirts. 10" or 12" round.**
- **Small Club logo – without Motto for embroidered or digital print on the front of items. 4" round.**

Wooden Steamers on the Great Lakes

Written by William E. Nyberg

1861-65, the War Years

1865

George N. Brady: Built by Jno. P. Doyle, Detroit, for M. B. Kean & Edward Kean, Detroit & Cottrellville, MI, the wooden towboat was intended for timber raft towing on Lake St. Clair. Her measures were 102.4' x 20' x 10.8' with a tonnage: 131.3 grt. She was powered by a high pressure, non-condensing engine with a 24" bore x 36" stroke, builder unknown. She was first enrolled at Detroit on September 25, 1872 and assigned official number 10244.

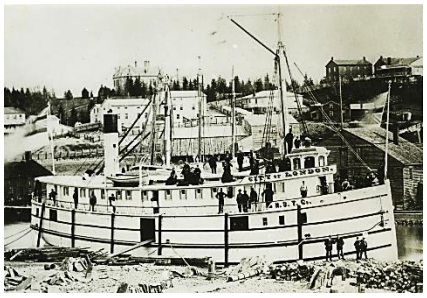
In May 1874, her ownership was changed to J. M. Jones, Detroit, who had the *George N. Brady* rebuilt, installing a 7' 2", 80 psi tubular boiler built by Buchanan & Carroll in 1871. Her enrollment measures were updated, May 1874, to: 102.4' x 20.1' x 10.8'; 2 decks; 165 grt, 122.83 net. In August 1876, the tug *George N. Brady* sank off the Sandwich Street dock, Windsor, Ont. She was raised in October of that year and dry docked for repairs. In that same year, her ownership was changed to Daniel McDole, Marine City, MI. In 1877 her ownership shares were changed to Alva Bradley, George Stone, & C. Revell, Cleveland, OH. In May 1883, the Alva Bradley shares in the tug *George N. Brady* were transferred to Bradley Transportation Co., East Cleveland, OH, with the remaining staying with George Stone, & C. Revell, Cleveland, OH.

In November 1886, the ownership of the tug *George N. Brady* was changed to Fisher & Wilson Lumber Co., Cleveland, OH.

In March 1889, her ownership was changed to Thomas Currie, Port Huron, MI. Fourteen days later, the enrollment record was updated, identifying Elizabeth Currie, Port Huron as the owner. In May of that same year, the enrollment record identified Elizabeth Currie, and Henry Howard, both of Port Huron, as shared owners of the *George N. Brady.* In June of that year, the tug *George N. Brady* was transferred to Howard Towing Association, Port Huron and with Elizabeth Currie still listed as part owner.

In 1892, ownership of the tug *George N. Brady* was changed to A. D. Bennett, Port Huron. In August 1892, while towing a log raft across Lake St. Clair, the *George N. Brady* caught fire around her stack and burned to her waterline. No lives lost.

The enrollment certificate for the *George N. Brady* was surrendered on June 30, 1893, at Port Huron, and endorsed "burned".



City of London: Louis Shickluna, St. Catharines, Ont., built a wooden propeller for the Northern Transportation Co. to be used for passenger, package freight trade in the Georgian Bay lumber trade. Canadian built, her measures were: 145.0' x 27.0' x 11.6', with a tonnage of 361.0 grt. She was powered by a high-pressure engine, 30" bore x 36" stroke, built by G. N. Oille, St. Catharines. Her master for the 1866 season was Captain Pollock.

Ownership of the *City of London* was transferred to North Shore Transportation Co. in 1869.

In 1873, her ownership of the *City of London* was changed to Canadian Lake Superior Transit Co. In August 1874, while laying at her dock at Collins Inlet, Georgian Bay, the *City of London* caught fire somewhere in the engine room and quickly was a mass of flames. Her thirty passengers were in bed when the fire broke out and had to abandoned ship. She burned to the water's edge along with the 100,000 feet of lumber on her deck.

Later in 1874, the burned-out wreck of the *City of London* was sold to Smith & Wyatt, Toronto, Ont. They had the hull of the *City of London* raised and towed to Owen Sound to be rebuilt in November 1874. The engine and boiler from the *City of London* were removed and placed in the new steamer *City of Owen Sound* (C71181), completed in 1875. No record could be found what the hull was used for.

City of Toledo: John F. Squires, Toledo, built in 1865 a wooden side-wheel steamer for the Toledo & Saginaw Navigation Co., Detroit, to be used in the passenger, package freight trade from Toledo, to Saginaw, MI with stops at Sandusky, OH and Detroit. She was enrolled at Toledo in October 1865 and her measures recorded as: 161.0' x 24.75' x 8.50'; tonnage: 315.88 grt. Issued official number: 4548. She was powered by a low pressure, vertical beam engine with a 46" bore x 108" stroke, 400 horsepower. The engine had been built by Cuyahoga Works, Buffalo in 1848. Her side-wheel was 28- foot radial. Her engine was rated at 230 HP and came from the side-wheel steamer *Arrow* that was scrapped in 1865. Steam was generated by a firebox boiler, 8' x 19' 10", at 50 pounds steam pressure. In May 1866, the steamer went aground in Saginaw Bay. Her crew jettisoned some cargo to release her. Damage was set at: hull - $500, cargo loss - $1,100. John N. Phillips as chief engineer during the 1867, 68 seasons.

In 1869, ownership of the steamer *City of Toledo* was changed to William A. Moore and C.H. Buhl of Detroit. Her master for the 1869 season was Captain Robert Richardson. In 1870 her ownership shares were held be William A. Moore and James P. Mansfield, both from Detroit.

In 1871, her ownership was changed to Engelman Transportation Co. Milwaukee, and she was assigned a run from Milwaukee to ports on northern Wisconsin and the Michigan Peninsula. In August of that year, the steamer broke her machinery on Lake Michigan. Repaired. In November 1873, bound from Manistee for Frankford in fair weather, the steamer *City of Toledo,* was struck by a gale and was forced to turn back. While re-entering Manistee harbor, the winds drove the steamer *City of Toledo* unto the beach. All passengers were removed safely and the vessel was found to be resting on sandy bottom. She was later released without damage. In August of the following year, the *City of Toledo,* while at dock at Manistee, caught fire and burned to the waterline. She was declared a loss, valued at $10,000. No lives lost.

The Engelman Transportation Co., after examination, turned the hull of the *City of Toledo* over to Wolf & Davidson, Milwaukee, as a partial payment for the steamer *Flora* (U120210) which they were building for them in 1874. They rebuilt the vessel as a three masted schooner with measurements recorded at enrollment in November 1875: 160.4' x 25.0' x 8.6'; 245.26 grt - 233 net.

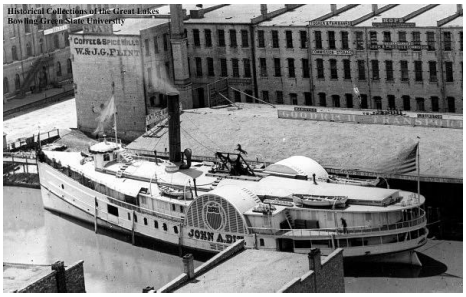
In 1880, ownership of the schooner *City of Toledo* was changed to John Densey & Co., Milwaukee. They had her converted to a schooner-barge. In May 1885, the *City of Toledo*, with a cargo of lumber, was in a mid-lake collision, on Lake Michigan. The schooner-barge was repaired, with her hull damage estimated at $1,000.

In 1892. ownership of the schooner-barge *City of Toledo* was changed to Manistee Lumber Co., Manistee, MI. Her master for the 1892 season was Captain John McMillan. In August 1892, the schooner barge with a cargo of lumber, capsized off Manistee, during a northwesterly gale on Lake Michigan. The hull drifted to a half mile off the beach. Nine lives were lost including the captain, crew and the captain's two eldest daughters.

The wrecked schooner-barge, *City of Toledo,* was towed to Ludington by the tugs *Irma L. Wheeler* (U100210) and *Barnes* (U120894), bottom side up with her hold still full of lumber. The vessel was righted at Ludington and towed to dry dock for a rebuild as a two-masted tow barge. Ownership of the schooner barge was changed to Captain Neff in September 1892. July 1906, the tow barge *City of Toledo*, laden with coal and under tow of the propeller *James Fisk* (U75387), while passing through the Belle Isle drawbridge, Detroit, when the drawbridge closed, breaking off spars and opening her seams. The tow-barge *City of Toledo* sank off Owen Park, on the American side of the Detroit River.

Enrollment for the tow barge *City of Toledo* was surrendered February 19, 1907, at Toledo, and endorsed as "vessel lost".

In October 1908, the wreck was raised and rebuilt as a lighter by Harris W. Baker. She was re-documented as schooner and enrolled at Detroit. Her final enrollment was surrendered on March 31. 1909, at Detroit, and endorsed "Abandoned".



John A. Dix: Built for the enforcement of the internal revenue laws along the lake shores, the wooden sidewheel steamer *John A. Dix* was built along with *Andy Johnson*, *Sherman*, and the *Fessenden* for the United States Revenue Costal Service, all in 1865 at Tonawanda, NY. Her measures were: 176.0' x 27.6'

x 10.9’: 253.0 grt. Her original owner was the United States Revenue Coastal Service (U.S.R.C.S.) and she was powered by a vertical beam engine, 48’ bore x 108" stroke, built by J. Murphy Iron Works, NY

The sidewheel steamer *John A. Dix* was sold to Northwestern Transportation Co. and first enrollment was issued at Detroit, as *John A. Dix*, U75440, 172.66’ x 27.5’ x 10.75’; 253.64 grt, in September 1872. In September 1873, the steamer, towing the barge *Herschel* (U42525), laden with 14,568 bu. of wheat from Chicago, collided with the steamer *Russia* (U110063) on Lake Erie. The *Herschel* broke loose from the tow and sailed for Buffalo where she was run ashore.

In December 1875, ownership of the steamer *John A. Dix* was changed to Michael Engelmann, Milwaukee. The steamer received a thorough rebuild at Milwaukee under the supervision of Mr. Waterbury, master mechanic of the Northwestern Transportation Co. She would run the Milwaukee to Ludington, MI route. Her master for the 1876 season was Captain H. Henry with Jeremiah Havelick as chief engineer. She was readmeasured at Milwaukee: 529 grt, 310 net; in June 1876. In April 1878, bound from Ludington for Milwaukee, the steamer *John A. Dix* collided with the brig *Express* in a heavy fog, in the middle of Lake Michigan, with the brig a total loss. No lives lost. In September 1878, while laying alongside the Goodrich dock at Milwaukee after loading feed groceries and 25 passengers, she caught fire in her hold and partially burned before the fire was extinguished. The loss was estimated at $5,000 to $10,000 on the boat and $2,000 to $3,000 on the cargo. Repaired.

In 1881, ownership of the steamer *John A. Dix* was changed to Captain David Mitchell Cochrane. Her master for the 1881-83 season was Captain John W. Cochrane, Captain David M. Cochrane for the 1883 – 85 seasons and Captain John W. Cochrane 1886 – 1896.

Final enrollment for the sidewheel steamer *John A. Dix* was surrendered at Chicago, on June 23, 1896, and endorsed "laid up".

General Sherman: John E. Monk, built a wooden sidewheel steamer “pollywog” for the lake freighting business and had her enrolled at Sandusky on April 21, 1865. Her measures were: 104’3” x 23’4” x 5’6”, with a tonnage of 110.95 grt. She was powered by a 15” bore x 60” stroke engine, builder unknown. He original owners were L. Luce; et al., Sandusky. A “pollywog” steamer has her sidewheels on her stern quarter. This allows her to maneuver in narrow waterways and canals where regular sidewheel steamer are restricted. The engine is located also in the stern, which allows for an open cargo deck area.

Her ownership was changed in July 1865 to Samuel J. Catherman et al, Sandusky. During the 1867 season, she ran Saginaw to Toledo in the lumber trade. She was assigned official number 10630 in 1868.

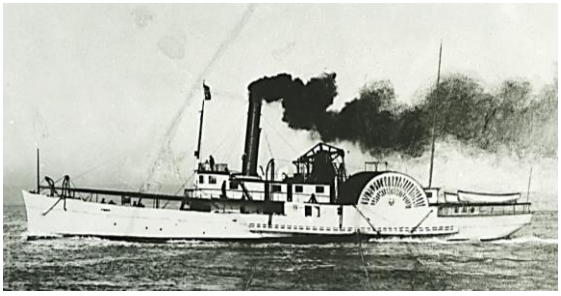
In March 1869, ownership of the *General Sherman* was changed to Wesley Hawkins et al, E. Saginaw, MI.

In April 1870, she was owned by Joseph A. Jenkins et al, Detroit. In July of the same year, her ownership was changed to Charles H. Jenkins et al, Detroit. The steamer *General Sherman* was converted to and fitted out as a wrecker in August 1870.

In February 1873, she was sold Canadian and enrolled as *Alexander,* C61160; 104 x 23 x 6; 129 grt, 104 net.

In the fall of 1876, the steamer *Alexander* sank at Bear Creek, Wallaceburg, Ont. She was raised and repaired in March 1877. Also in 1877, her owner was listed as Peter E. McKerrol, Chatham, Ont

In 1879, her ownership was changed to Joseph Roberts, Chatham, Ont. October 1879, bound from Chatham, Ont. to Detroit, the steamer *Alexander* burned to a total loss after fire broke out around her stack. She went aground and burned to the water’s edge, broke in two and sank, four miles from Belle River, Ont. No lives lost.



Andrew Johnson: In 1865, Bidwell & Mason, Buffalo, with Thomas M. Lawlor as master carpenter, built for the United States Revenue Cutter Service, at the Henry Williams Yard, what would become the last sidewheel revenue cutter on the Great Lakes. Made of wood, she had measures of: 176.0’ x 50.0’ x 8.8’ and had a tonnage (old style) of 499. She was powered by a vertical beam, low pressure engine with a 48” bore x 108” stroke, built by Phoenix Works, New York, NY. She was equipped with a return tube boiler, 9’ 3” x 33’, generating 30 pounds steam. Master of the *U.S.R.C. Andrew Johnson* in

1866 was Commander Francis Martin with Eugene Vallett as chief engineer.

In October 1869, her upper works were damaged in a collision with the wooden propeller *Ironsides* (U12091) at Milwaukee, WI. In 1870, she was stationed at Milwaukee, WI and covered Lake Michigan and Lake Superior. She received repairs at Milwaukee in July 1873. In 1874, the *U.S.R.C. Andrew Johnson* was stationed at Chicago.

After 16 years of service on the Great Lakes, in 1881, the *U.S.R.C. Andrew Johnson* was rebuilt by Hanson & Scove, Manitowoc, WI. Her registered tonnage was changed to 310 grt, 195 net; and she received a new boiler 36' x 9'. Her master from 1881 to 1897 was Captain A. B. Davie. In September of that year, she recovered bodies from the Canadian wrecked bulk propeller *Columbia* (1873). In 1883, she rescued the steambarge *J. E. Rumbell* (76419) and the schooner *H.D. Moore* (95266). In July 1890, she located the wreck of the schooner *Gladiator* (1854) near Chicago.

In 1893, she was overhauled at Milwaukee Dry Dock. Two years later, in May 1895, the *U.S.R.C. Andrew Johnson* went ashore during a storm below Black River near Alpena, MI. In August of the following year, she opened the new 1,800' Soo Lock, and was stationed on the St. Mary's River.

In 1897, the old revenue cutter *Andrew Johnson* was transferred to the Cleveland Naval Reserve.

In 1898, ownership of the sidewheel steamer *Andrew Johnson* was changed to Captain Andrew Hackett, Amherstburg, Ont. He had her machinery dismantled and the hull converted to a lighter. The hull was lain up at Walkerville, Ont. and in June 1899, she sank on Bois Blanc Island beach at the mouth of the Detroit River.

In November 1899, ownership of the *Andrew Johnson* was changed to McMorran Wrecking Co. In September 1901, she sank at her dock. Raised, the hull was used as a dry dock at Amherstburg, Ont.

Lowell: Ira Lafrinier, Cleveland, built for the Northern Transportation Company, Cleveland, a wooden, propeller that was enrolled at Cleveland, OH September 13, 1865 and issued official number 14655. Her recorded measures were: 136.3' x 26.0' x 11.2', with a tonnage of 460.12 grt. She was powered by a low-pressure engine, 24" bore x 36" stroke, builder unknown. She was built for the passenger, package freight trade and ran Ogdensburg, NY, Detroit & Lake Michigan ports. Her master for the 1865 season was Captain A. Shaver. In May 1866, she and the bark *Indiana* (US12986) collided in Milwaukee harbor. There was no damage to the propeller, but $70 damage to the bark. In September 1870, the *Lowell* went ashore above Oswego, NY, and the passengers were removed before the vessel sank. She was raised and repaired. In January of 1871, the *Lowell* went ashore on Long Point, in Lake Erie. The crew had to jettisoned over 500 barrels of flour and 104 barrels of oil to release the vessel. Masters of the propeller *Lowell* were Captain Russell Smith in 1873, Captain L. W. Bailey in 1874, and Captain Dallas Ryder in 1875. In May of 1874, the *Lowell* collided with the tug *Gladiator* (US85263) in the Clair River, north of Lake St. Clair. In September of the same year, she received damaged during a gale on Lake Michigan.

March 1876, ownership of the propeller *Lowell* was changed to Philo Chamberlain for $6,000 in a liquidation sale of the Northern Transportation Line assets. Her ownership was then transferred to Northern Transit Company thirteen days later. Master of the propeller *Lowell* was Captain J. H. Berow for the 1876 – 78 seasons.

In May 1881, ownership of the propeller *Lowell* was changed to E. C. Recor et al, St Clair, MI. He had the vessel cut down and converted into a steambarge for the lumber trade. Her master for the 1882 season was Captain William Rollo.

In April 1884, ownership of the steambarge *Lowell* was changed to Frank Hart et al, Marine City, MI. Her master for the 1885 – 87 seasons was Captain C. H. Westcott with George Arnold as chief engineer in 1885. The steambarge was rebuilt & readmeasured May 12, 1885: One deck, one mast, 344.36 grt, 254.77 net. She towed barges in the Bay City & Buffalo lumber trade.

In April 1888, ownership of the steambarge *Lowell* was changed to C. H. Westcott et al, Detroit. Her master for the 1889 season was Captain C. H. Woodruff.

In April 1890, ownership of the steambarge *Lowell* was changed to Wagner Lake Ice Co, Sandusky, OH.

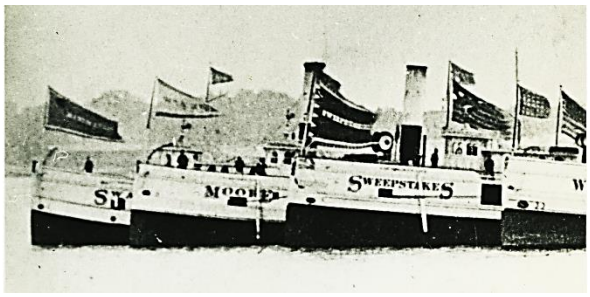
In April 1893, ownership of the steambarge *Lowell* was changed to William Dennis, Detroit. In November of that year, the *Lowell* caught fire while docked at St. Clair, and was cut loose, drifting

downriver on the St. Clair River until she burned to a total loss at Rouse's Point. No lives lost.

Final enrollment for the steambarge *Lowell* was surrendered, December 2, 1893, and endorsed "total loss of vessel".

Minnie: Kirby & Tripp, Saginaw, MI. built for the Peninsular Iron Company, Detroit a wooden sidewheel steamer, that was first enrolled at Detroit in 1865. Her measures were: 121.8' x 31.7' x 7.3' with a tonnage of 226.56 grt. She was issued official number 16464 and was powered by a high-pressure engine. The steamer *Minnie* was built for the bulk freight trade. In March 1868, she was arched and strengthened by Campbell & Owens Shipyard. Her master for the 1870 season was Captain William Firby. June of 1872, her enrollment was updated to reflect that she had been converted to a barge. In 1877, her chief engineer was Martin J. Fleming.

In April 1878, her ownership was changed to Hagen & English, Green Bay, WI. They had the barge converted to a propeller (steambarge) and her enrollment was updated in May 1879. In December 1883, the steambarge *Minnie,* while lying at Fowles Shipyard, Fort Howard, WI, caught fire and burned to a total loss. No lives lost.



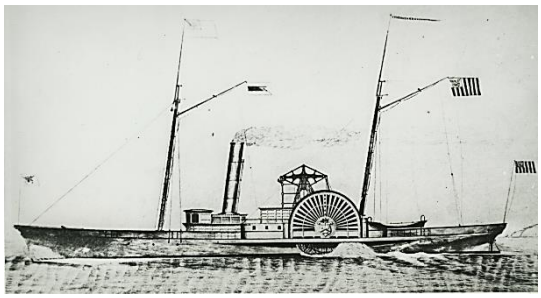
William A. Moore: James M. Jones, Detroit, built for Ballentine & Moore, Bay City a wooden towboat to be used in the lumber towing trade. When enrolled at Detroit on April 11 1867, her measures were recorded as: 119' x 21' x 11', with a tonnage of 153.24 grt. She was issued official number 26244. In December 1866, the tug *William A. Moore* with the barge *Paragon* and others in tow left Bay City, MI, laden with lumber. When off Lexington, MI, Lake Huron, the *William A. Moore*, while righting her tow line, ran afoul of the barge *Paragon*, causing her to leak and become waterlogged. No lives lost. In 1869, she received a new high-pressure engine, 36" bore x 40" stroke built by Murphy Iron Works, Detroit, MI.

Ownership of the tug *William A. Moore* was transferred to Ballentine & Co., Detroit in 1871. Her master for the 1871 season was Captain W. H. O'Neil. In June 1871, bound down, Bay City for Detroit, the tug *William A. Moore*, towing a raft, capsized and sank in 30 feet of water in Saginaw Bay. Raised. Her master for the 1872 season was Captain George A. Kimball with H. A. Hawgood as chief engineer In October 1872, the *William A. Moore* struggled in a gale with barges in tow losing two. Her master for the 1873 season was Captain M. Madden.

In 1875, ownership of the *William A. Moore* was changed to Detroit Tug & Transit Co., S. A. Murphy, president. Her master for the 1885 season was Captain John J. Johnston.

In February 1886, her enrollment was changed to reflect the S. B. Grummond of Detroit was the new owner. Her master for the 1888 season was Captain William H. Smith with J. C. Bennett as chief engineer in 1889. In July 1891, while lying at her dock near Willow Street Bridge, Cleveland, the *William A. Moore,* caught fire in her coal bunker and was moderately damaged. Later that year her engine was removed and installed in the propeller *DePere* (US6849).

Her owner had the *William A. Moore* dismantled and removed from service in February 1892. The remains of the *William A. Moore* were tipped over and sunk in the Rouge River at Detroit in May 1894.



John Sherman: Peck & Kirby, Cleveland, built in 1865, a wooden sidewheel steamer revenue cutter for the United States Rescue Costal Service. Her original measures were: 175.0' x 28.0' x 11.0'. She was powered by a vertical beam engine, 48" bore x 108" stroke, built by Fletcher & Harrison, Hoboken, NJ. She was equipped with a return flue boiler, 9' x 33' built by Locomotive Works, Detroit.

In June 1872, the revenue cutter *John Sherman* was sold under public auction at Cleveland, to David Gallagher, Detroit. She was converted into a passenger sidewheel steamer and enrolled at Detroit as *John Sherman* (U75408), July 18, 1872: 175' x 26' x 10'; 488 grt. Her chief

engineer for the 1874-75 seasons was Joseph R. Blanchette.

In March 1878, ownership of the steamer *John Sherman* was changed to J.P. Clark & W.O. Ashley, Detroit. They had her engine removed and she was converted into a schooner-barge for the lumber trade. In October 1879, her enrollment rig was changed to barge at Detroit: 175' x 24.25' x 10'; 322.13 grt.

In October 1881, the schooner-barge *John Sherman* was sold to C. H. Weeks, Bay City, MI. She continued as a schooner-barge in the lumber trade until May 1891, when she wrecked below Port Huron, on the St. Clair River.

Final enrollment for the *John Sherman* was surrendered at Port Huron on December 06, 1893 and endorsed "wrecked May 8, 1891".

Trader: Phil Rice, Newport, MI built for Gallagher & Rice, Detroit, a wooden, propeller steambarge for the bulk freight trade. Her initial enrollment at Detroit, May 02, 1865, recorded her measures as: 115.0' x 22'6" x 8'6" with a tonnage 150.76 grt and issued official number 24158 to her. In May 1866, bound up from Cleveland for Detroit, the steambarge *Trader* went ashore on Kelly's Island in Lake Erie. She was released and towed to Detroit for repairs. The damage loss for the hull was $1,700 and for the cargo $780.

In October 1866, ownership of the steambarge *Trader* was changed to J. F. Green, Cleveland for use in the lumber trade. November of that year, bound down from Saginaw for Toledo, her boiler exploded on Lake Huron, killing three men aboard her. In September of 1867, she lost her deck load of lumber during a storm on Lake Erie.

In April 1868, the ownership of the steambarge *Trader* was changed to Richard Mason, Jr., Chicago.

In October 1869 her ownership was changed to John Gallagher, Saginaw. Her chief engineer for the 1870 season was Charles H. Phillips with William Brake as chief in 1871. In September 1871, laden with lumber, while attempting to enter the Detroit River from Lake St. Clair, during thick weather, ran hard aground on Peche Island Reef. She was lightered to be released.

In April, before the 1872 season, ownership of the steambarge *Trader* was changed to Robert Holland, Marine City, MI. In November of that same year, the steambarge *Trader* and the Canadian scow steamer *W. S. Ireland* (C85709) collided on the St. Clair Flats. Repaired. Master of the steambarge for the 1873 season was Captain William Dermond. During winter layup, 1873/74, the steambarge *Trader* was rebuilt and her enrollment at Detroit, updated: 115' x 23' x 10', 169.38 grt.

April 1875, her ownership was changed to Robert J. Hackett, Detroit. Her master for the 1875 season was Captain David B. Cadotte with Jeremiah Collins as chief engineer. In August of that year, the steambarge went aground on Stag Island, Lake Huron.

In June 1876, her ownership was changed to M. Engelman, Milwaukee and in July to Heber V. Squire et al, Grand Haven. She was employed in the fruit trade. In October 1876, the steambarge struck a pier at Grand Haven and sank in 8 feet of water.

July 1877, her ownership was changed to Ricaby, Williams & Preston, St. Joseph, MI.

In March 1878, her ownership was changed to Maranda Squire, Grand Haven, MI.

In March of 1879, her ownership was changed to Pentwater Lumber Co., Grand Haven. Her master for the 1880 season was Captain Frank Brown. During the 1883 season, laden with lumber and battered by a storm on Lake Michigan, the steambarge *Trader* became waterlogged and sank to her decks about 20 miles out of Grand Haven, MI. Her crew abandoned her and were picked up by a schooner. The *Trader* was later towed to shore and beached just outside the harbor where she was abandoned.

Final enrollment for the steambarge *Trader* was surrendered, August 18, 1883, endorsed as "abandoned".

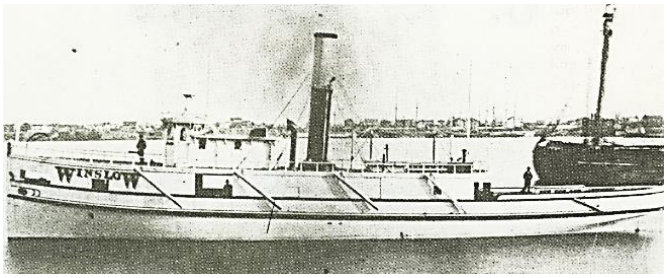
Waubuno: Melancthon Simpson at Thorold, Ont. built a wooden sidewheel steamer the Great Northern Transit Company, Thorold, Ont. Her measures were 135' x 18.3' x 7.0' with a tonnage (old style) 465. She was equipped with a vertical beam engine and was built for the passenger, package freight trade from the Northern Railway's railhead at Collingwood to places further north, including Parry Sound and Thunder Bay. Her master for the 1865 and 1866 seasons was Captain James B. Symes. In May 1867, bound up for Bruce Mines and the Sault, the steamer *Waubuno* broke an engine connecting rod off Cape Crocker, east of the

South Bruce Peninsula, and had to return to Owen Sound for repairs. In 1867, the steamer *Waubuno* was chartered by the Canadian Government, for an expedition to the head of Lake Superior to survey and open a land route to the Red River. This route became known as the Dawson Road. In September of 1867, she broke her shaft on Lake Superior and had to returned to Owen Sound for repairs. Her master for the 1870 – 75 seasons was Captain P. M. Campbell. In May 1870, with the transfer of the Hudson's Bay Co. Territory to Canada in 1870, the steamer *Waubuno* transported troops and stores to Sault Ste. Marie where they then continued on to Manitoba territory. Returning from the Sault, the steamer *Waubuno* ran aground in fog below Neebish Island, Ont., thirty miles south of the Sault. Released. While in winter (1872/73) quarters t Owen Sound, she was broken into and had plates and cutlery stolen.

In 1877, the steamer *Waubuno* was transferred to the Georgian Bay Transportation Co, Ltd., Collingwood, Ont. Her master for the 1879 season was Captain George Plumpton Burkitt with Charlie McQuade as chief engineer.

In November 1879, bound Collingwood, Ont. for Parry Sound, Ont., Georgian Sound, the steamer *Waubuno,* laden with supplies and 24 passengers and crew, likely the last voyage the ship could make before ice made future trips impossible until the following spring, sailed into a northwest gale. The vessel was last seen by the Christian Island light keeper. Wreckage from the steamer *Waubuno* was identified near the "Haystack" reef, five miles northeast of Moose Point, Ontario. In the spring-of-1880 an upturned hull identified as that of the lost ship was found on Moberly Island, and later that summer a tug was employed to turn it over to allow investigators to determine why the ship sank. Those at the scene found what timbers that remained to be sound, and there was no sign that the hull had been damaged by an internal explosion. No bodies were ever recovered.

The anchor, recovered in 1959, belonging to the steamer "Waubuno", now rests in Waubuno Park beside the parking lot at the foot of Prospect Street, Parry Sound, Ont.



Winslow: At Cleveland in 1865, Quayle & Martin, with John Drackett as master carpenter, built a wooden towboat for H.J. Winslow, and N.C. Winslow, Cleveland. At her initial enrollment at Cleveland, her measures were: 129’ 3” x 21’ 9” x 10’ 9”; with tonnage (old style): 292. She was powered by a low-pressure engine, 30” bore x 30" stroke, built by Cuyahoga Steam Furnace Company, Cleveland in 1862. The tug *Winslow* was built for the towing and wrecking trade. Her initial master in 1865 was Captain Kimball with Captain Robert Anderson as master for the remainder of 1865 through the 1867 seasons. In September 1866, the tug *Winslow* was struck by a schooner, below Maiden on the Detroit River.

In 1868, ownership of the tug *Winslow* was changed to Ballentine, Crawford & Company; James M. Ballentine, et al, Detroit. In April 1869, the *Winslow* went aground in the Detroit River. Her master for the 1872 season was Captain Allen Thomas.

May 1873, her ownership was changed to S.B. Grummond, Detroit. March 1874, the enrollment tonnage for the tug *Winslow* was changed to: 237.97 grt, 152.75 net, and she was issued official number 26243. In 1881, the tug received a firebox boiler, 9.5’ x 16', rated at 100 pounds steam, and built by the McGregor Works, Detroit. Her master for the 1884 season was Captain Grummond. In October of that year, the *Winslow* went ashore on Keweenaw Point, MI, Lake Superior, while attempting to rescue the propeller *Scotia* (US115271). Her hull received damage loss of $2,500. In November 1887, while laying at her dock on the Detroit River, the tug caught fire in her engine room and burned her superstructure and hold before it was extinguished. Hull damage loss set at $8,000.

Her ownership was changed in April 1892, to Benjamin Boutell, Bay City, MI, and she operated with the "Saginaw Bay Towing Co." The *Winslow* was rebuilt during the winter 1892-1893 layup, as a wrecker and her enrollment measures changed to: 129’ x 22’ x 17.33’; 290 grt - 186 net. She received new: steeple compound engine, 22", 40" bore x 30" stroke, 375 horse power, built by Marine Iron Works,

Bay City in 1892. Her master for the 1893 season was Captain Dan McCarthy.

In March 1902, ownership of the tug *Winslow* was changed to Reid Wrecking & Towing Co., Ltd, Sarnia, Ont. She was enrolled Canadian as *Winslow* C96855 with measurements 120’ x 19’ x 10', 353 grt - 193 net. Her master for the 1904-06 season was Captain Al Harris. Her final U.S. enrollment for the *Winslow* was surrendered at Port Huron, MI, June 30, 1902. In October 1905, the *Winslow* had her cabins and boiler house damaged in a collision with the steel propeller *William Henry Mack* (U81857) on the Detroit River.

In 1907, ownership of the tug *Winslow* was changed to F.F. Pardee, Sarnia, Ont. In August 1911, the tug caught fire and burned to a total loss at Meldrum Bay, Manitou Island, MI, North Island, Lake Huron. No lives lost. The wreck of the tug *Winslow* was removed from Meldrum Bay in 1938.

Some Notes:

Black River, Ohio: Drains Medina County, emptying into Lake Erie at Lorain, OH.

Cargo-carrying capacity in cubic feet, another method of volumetric measurement. The capacity in cubic feet is then divided by 100 cubic feet of capacity per gross ton, resulting in a tonnage expressed in tons.

Freshet: a great rise or overflowing of a stream caused by heavy rains or melted snow.

Mail Steamer: Chartered by the Canadian government to carry the mail between ports.

Navigation: The reader may wonder what, with so few vessels on the lakes, why steamers could not avoid each other. Two main reasons, the visibility during storms and the vessels did not carry any lights so you came upon a vessel you could not determine if the vessel was approaching or departing from you.

Old Style Tonnage: The formula is: Tonnage= ((length - (beam x 3/5)) x Beam x Beam/2)/94

where: *Length* is the length, in feet, from the stem to the sternpost; Beam is the maximum beam, in feet.

The Builder's Old Measurement formula remained in effect until the advent of steam propulsion. Steamships required a different method of estimating tonnage, because the ratio of length to beam was larger and a significant volume of internal space was used for boilers and machinery.

In 1849, the Moorsom System was created in Great Britain. The Moorsom system calculates the tonnage or cargo capacity of sailing ships as a basis for assessing harbour and other vessel fees.

Up to 1848, most freight was shipped, on steamers or propellers, as package freight. This meant that coal, grain, apples, and produce had been placed in a container or sack and carried aboard on the back of a laborer. Bulk freight in the form of lumber would have been loaded on barges and schooners and towed by a steam driven ship. In 1848, Joseph Arnold built at Port Huron, MI, a the steambarge *Petrel* (found in the third section) for the bulk freight trade answering a need to move bulk coal to the northern communities and iron ore, lumber, and grain south to the growing cities in the East.

By 1848, some ships built in that year, continued to operate beyond the "War of Rebellion" and may be listed with two different tonnage ratings. Most ships built on the Great Lakes were rated as Tonnage (Old Style). This dates back to the 1600's and comes to the U.S. from our cousins.

Tonnage (Old Style): The British took the length measurement from the outside of the stem to the outside of the sternpost; the Americans measured from inside the posts. The British measured breadth from outside the planks, whereas the American measured the breadth from inside the planks. Lastly, the British divided by 94, whereas the Americans divided by 95. The upshot was that American calculations gave a lower number than the British. For instance, when the British measured the captured *USS President* (a three-masted heavy frigate), their calculations gave her a burthen of $1533\frac{7}{94}$ tons, whereas the American calculations gave the burthen as 1444 tons. The British measure yields values about 6% greater than the American. The US system was in use from 1789 until 1864, when a modified version of the Moorsom System was adopted (see below).

Unit Ton - The unit of measure often used in specifying the size of a ship. There are three completely unrelated definitions for the word. One of them refers to weight, while the others refer to volume.

Measurement Ton (M/T) or ***Ship Ton*** Calculated as 40 cubic feet of cargo space. Example, a vessel having capacity of 10,000 M/T has a bale cubic of 400,000 cubic ft.

Register Ton - A measurement of cargo carrying capacity in cubic feet. One register ton is equivalent to 100 cubic feet of cargo space.

Weight Ton (W/T) - Calculated as a long ton (2,240 pounds)

In 1849, a Royal Commission was formed in England with the secretary of the commission as George Moorsom, and the resulting tonnage admeasurement system was called the "Moorsom System". The idea of this system is that the fees charged to vessels should be directly proportional to their potential earning capacity, i.e., the space occupied by passengers or cargo. A vessel is measured at a series of sections throughout its length, the transverse area determined at each section, and the areas integrated to determine the volume. The total internal volume was then divided by 100 to determine the vessel's "tonnage", since at that time, 100 cubic feet was determined to be the appropriate factor so that vessels would maintain approximately equal tonnages under the new and old regulations. There were two tonnages determined under the Moorsom System: "gross" and "net" tonnage. Gross tonnage reflected the entire measured volume of the vessel less certain "exempted" spaces, initially spaces used only for the crew or for navigation of the vessel, and spaces in the superstructure not used for cargo. Net tonnage was equal to gross tonnage less a deduction for the machinery space, reflecting the earning capability of the vessel.

A measurement of the cargo-carrying capacity of merchant vessels depends not on weight, but on the volume available for carrying cargo. The basic units of measure are the *Register Ton*, equivalent to 100 cubic feet, and the *Measurement Ton*, equivalent to 40 cubic feet. The calculation of tonnage is complicated by many technical factors.

The current system of measurement for ships includes:

Gross Tons (**GRT**) - The entire internal cubic capacity of the ship expressed in tons of 100 cubic feet to the ton, except certain spaces which are exempted such as: peak and other tanks for water ballast, open forecastle bridge and poop, access of hatchways, certain light and air spaces, domes of skylights, condenser, anchor gear, steering gear, wheel house, galley and cabin for passengers.

Net Tons (**NT**)- Obtained from the gross tonnage by deducting crew and navigating spaces and allowances for propulsion machinery.

P.Q.: Province of Quebec

Packet Freight: almost every imaginable item of merchandise – bags of onions, grain, etc., processed foods, bags of coal, stoves, furniture, which can be packed and moved by manpower from dock to hold and reverse.

Patriot War: A conflict along the Canada – U.S. border where bands of raiders attacked the British colony of Upper Canada more than a dozen times between December 1837 and December 1838. This so-called war was not a conflict between nations; it was a war of ideas fought by like-minded people against British forces

Ship Inventory: Will include the names of wooden steamers that will not be identified in the manuscript. The research project that the information was gathered for included all wooden steamers built on the Great Lakes or St. Lawrence River and operated on the Great Lakes with a gross tonnage at or over 100 tons.

Up-bound: Going against the current – St. Lawrence River to Lake Superior. (Lake Michigan – steaming north)

Down-bound: Going with the current – Lake Superior to the Saint Lawrence River. (Lake Michigan – steaming south)

(Original Source: "Wooden Steamers on the Great Lakes" – Great Lakes Historical Society; Bowling Green State University – Historical Collection; Thunder Bay National Marine Sanctuary Collection; Maritime History of the Great Lakes; and the scanned newspaper collection of the Marine Museum of the Great Lakes, Kingston, Ont. and 746 additional documented sources.)