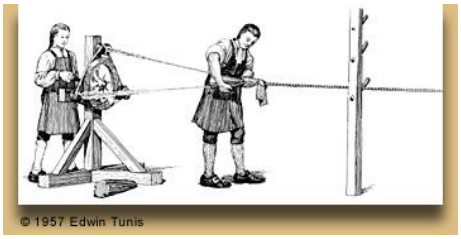


While one man cranks the spinner, the one holding the "top" walks backwards as the rope is twisted. From Edwin Tunis, *The Young United States, 1783 to 1830* (New York: World Publishing Co., 1969). Used by permission of the estate of Edwin Tunis.

Ropewalk

The Newsletter for
Shipwrights of Ohio – April 2024

Next Meeting: May 18, 2024;
"Adhesives" by Alan Phelps

Table of Contents

April

A very good turnout. Eighteen total with six in-person and twelve on Zoom. Join us next month.

Bob Mains shared the highlights of his trip to Paris and Normandy. He was suffering from time delays issues, since only returning home Thursday evening.

Planning continues for our ship model display at the Westerville Public Library in June. If you are willing to share one of your ship models with the library visitors, contact Bob.

We will be holding a "intro to Ship Modeling" workshop at the Westerville Library, Saturday, June 22 in classroom B, from noon to 4 PM. We plan to have five tables setup by subject: Radio Control; 3D printing; Intro to ship modeling, featuring the three intro kits from Model Shipways; Wood ship modeling; & plastic ship modeling.

If you are planning to attend the "46th Annual Midwestern Model Ships and Boats Contest" at the Wisconsin Maritime Museum scheduled for May 17-19, 2024. Note that the hotel room block registration period expired on April 17th. If you have not made your hotel reservation, see the notice below for hotels in the area..

As always, take care of yourself and your families, look to those you know who may need help or are lonely and may be in need of human contact. Till next month.

Your editor.

Shipwrights of Ohio - Announcements

Westerville Public Library Model Display

The club has reserved the display cases in the main hallway at the Westerville Public Library for the month of June to showcase our ship models. Our last display, was held there in 2018.

As you review your models, keep in mind the following case dimensions:

Long Case: 72" x 12.75" x 12.75" (length x height x depth x length), qty – 2: Each case will hold two or three models depending upon length. The critical dimension is height, so plan for a 12": - bottom of base to top of model

Tall Case: 57.5" x 19" x 76.5" (length x depth x height: The case contains a three shelf stand that we had made by a past member of the club. The critical dimension is the space between shelves, which is 25".

Westerville Public Library Workshop

In addition to displaying our models, we will be holding a one-day event, to introduce ship modeling to library patrons, and to talk to those who join us about how to get started.

Bob Mains rmains1@columbus.rr.com will be the primary coordinator for both events at the

library and he will accept all volunteers. If this works out well, we may replicate the event and display at other libraries around Ohio.

We have three primary objectives: display our completed ship models; introduce ship modeling to the general public; and grow our club membership.

Wisconsin Maritime Museum

. Mark your calendars: May 17-19, 2024: 46th Annual Midwestern Model Ships & Boats Contest & Display.

- April 17th – Cut-off date for hotel room block registration. – Expired. Information for hotels nearby can be found below.
- May 1 – Closing date for Competition Registration
- May 17–19 - Model Ships & Boats Contest & Display.

As a refresh, the club 2023 award winners were:

John Boeck
- Novice Dioramas - Silver, *San Marco Venezia*
- Kit Models: Novice - Wood: Silver, *Puddle Jumper*
- Kit Models: Novice – Wood: Gold, *Picket Boat No. 1*

Darrell Markijohn
- Kit Models: Novice - Wood: Gold, *Brig Niagara*
- Best Novice Builder Award, sponsored by North Shore Deadeyes, *Brig Niagara*

For additional information, competition categories & rules can be found at: https://www.wisconsinmaritime.org/programs-and-events/midwestern-model-ship-contest/

Up Coming Events

If you are traveling this spring or summer and in the area for these NRG sponsored events. Plan to include one or more of the following:

41st Annual Northeast Joint Clubs Ship Model Conference:
Saturday, April 27, 2024
Port 'n' Starboard Convention Center
9 AM to 3 PM
Ocean Beach Park, New London, CT

IPMS National Convention
July 17-20, 2024
Madison, WI

ModelCon 6
Battleship New Jersey
August 3, 2024
Canden, NJ

Web Hosting Issue

Late March, we, Shipwrights of Ohio, had an EFT withdrawal from the clubs checking account to pay for web hosting through 2026. Our web hosting company had been bought and our two year contract for web hosting our web site and the software we use for developing, doubled the price from the previous renewal in 2022.

The support of web site, plus the cost for using Zoom, and the NRG Charter put our yearly fixed expense, exceeding our yearly dues intake. We were in the red.

Meeting with the club officers, the decision was made to cancel our web hosting contract (now completed) and seek a new web host and a different software to build our web site. (This process is underway).

We are working with our bank to have the money withdrawn, returned to our account.

Our web master will be developing our new website and will be requesting new photos of your ship models. Respond, when he asks.

If you have experience building or maintaining a web site, contact John Boeck (boxlink@gmail.com) and volunteer your skills. It will be appreciated.

NRG Offerings

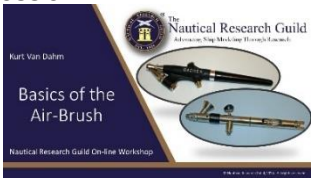
NRG Masting and Rigging Kit

The NRG will be offering a new kit to help you Improve your rigging skills. It will include all the hardware, and supplies needed to produce the model below.

No price or availability date yet. There is a build log on Model Ship World, composed by Toni Levine.

Basics of the Air Brush

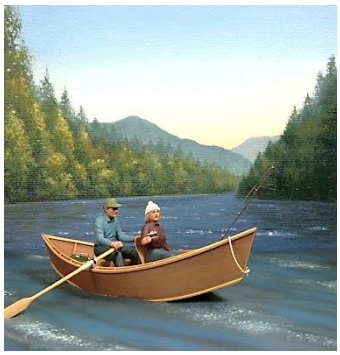
The NRG virtual workshop, for NRG members only, will present, Kurt Van Dahm, about how one chooses an airbrush depending on its attended use as well as the accessories. Scheduled for May 4th, with the zoom invite will be sent out a prior to the session.



Sailmaking with Silkspan

In addition to the above workshop, during the month of June there will be a 2-part Virtual Workshop presented by Ron Neilson and Tom Ruggiero on the subject of realistic sail making using Silkspan.

More details will follow as the time approaches!



A pleasant trip down a river on a sunny day!

Presentation

"Dioramas" by John Boeck

Adding context enriches the display of our models. Dioramas help to tell a ship's story. The photo above was entered at the Midwestern Model Ship and Boat Contest as a diorama. It looks like a photo, but it is not.

Dioramas can bring life to a model, providing: Context, activity and help focus or tell a story. They come in all sizes, and the key to a good diorama is planning. Building a diorama consists of three process stages: Planning, Engineering, and Construction.

In the planning phase, the builder needs to develop what is the image, or story, that the diorama is telling. What do you want the viewer to take away from viewing the diorama?
In the engineering phase, the builder is dealing with scale, how to display, mobility, target size.

Question: what will the viewers position be?

- Are you implying distance, close view of the vessel with island coast and mountains behind.
- What distance are you working with, front to back? Changing scale can imply distance.
- Are you transitioning the view the viewer will see.

In the photo above, the boat and people are close in, but there are mountains in the far distance, yet the diorama is less than 2 feet, front to back.

In the next photo below you see what implied distance can do by reducing scale as the scene moves away from the ship tied to the pier. The eyes perspective sees the house at a smaller scale than the boats. In the photo the horizon line is where the sky meets ground. The roof line of the warehouse on the left will meet the curving pier line somewhere to the right of the photo.

When you have drawn out, using the scales chosen, the view you intend the viewer to see, you are now ready for the construction phase.

In the construction phase, you put things together based upon your plan, then readjust as required. Try not to permanently attach things until you are comfortable with the scene you are building.

- Prepare for final assembly – consider this sequence:
  - Paint terrain and waterbody bottom
  - Finish paint, weathering and details on components
  - Place the portions of docks, sea walls or items that extend "below water" or float
  - If swampy, get your reeds and waterside vegetation in place
  - Install "water" features, surf, ocean waves, etc.,
  - Place trees and large foliage in terrain
  - Install structures, equipment, supporting components
  - Place landscape materials, grass, and debris Use these materials to establish the visual connection between components and their bases
  - "Floating" components can quickly ruin the veracity of a scene
- Review and correct imperfections
  - Weather, hide, re-make, eliminate avoiding impact on your masterpiece
- Mount your diorama.

<u>In Conclusion</u>:

- Choose an executable objective

- Choose elements of your vision critical to your objective
- Plan carefully, then engineer to that plan
- Test you plan by dry fitting and adjusting as needed
- Establish a smart sequence for finalizing the diorama.

For info on modeling terrain, structures, and other components of your diorama, there are many references in print and on-line

Ships on Deck

Halifax 1768 - 1775

Henry Martinez

Henry has added boats, cannons and anchors. Plus, he has completed most of the standing rigging.

There was a question about the size of the anchor cable (blue arrow). I have a book: ”Anchors”, an Illustrated History by Betty Curryer (Naval Institute Press), that contains a table listing bower size based upon ship tonnage and by size of the anchor..

H. Hahn, in “The Colonial Schooner 1763-1775” lists the anchor for the Halifax as 11’ 5” and the “ships burden in tons” = 83 4/94. The anchor cable should be: by Burden = 9 3/8” girth; by anchor size =12 ½” girth. (Girths are circumference measures).

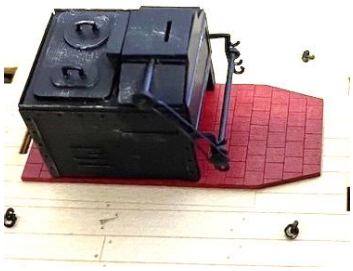
Depending on your scale and a “little” math, the converting girth to scale used, should provide the range of rope thickness for the anchor cable.

HMS Sphinx

Cliff Mitchell

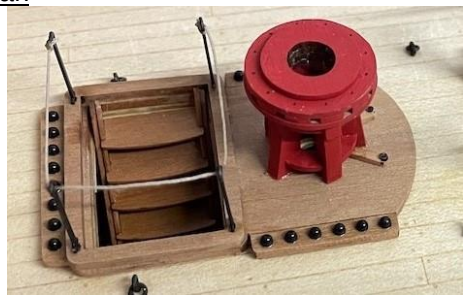
Cliff has been busy since his last report. He has built the ships stove, cannons, lower capstan, added the deck beams, and added the decking and gunwales. Here are the visuals”

Deck Stove



Ships Cannon

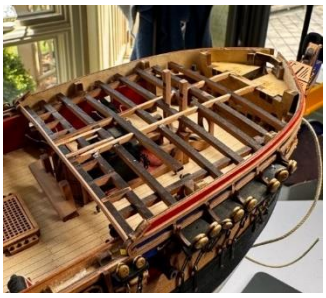
Lower Capstan



Deck Beams

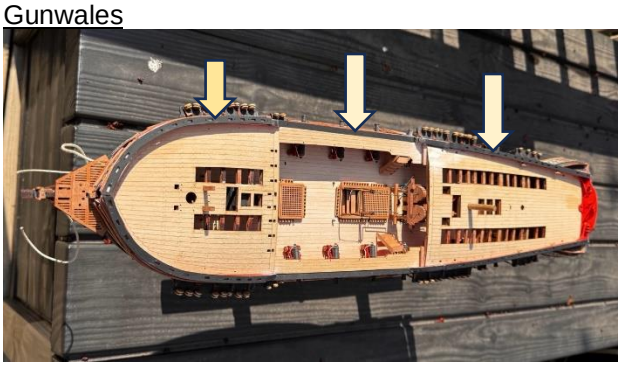
Quarter Deck

Forecastle



Decking

Gunwales



Next up, more deck details.

U.S.S. Ohio

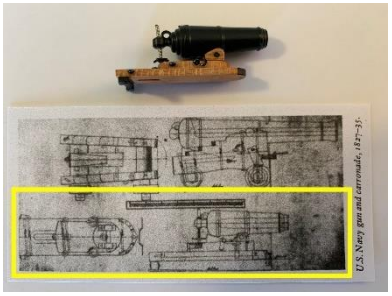
Ric Stratton

Are we all into the details?

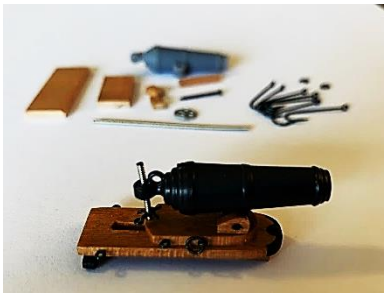
Ric built a prototype of his cannons, and documented the steps required for the build.

First a view of the parts:

The gun barrel is from "Model Monkey" www.model-monkey.com, cherry wood parts, fish hooks for eyebolts, bass string for the elevation screw, and HO railroad brake wheel for the elevation crank.



The basic plans were found in Chapelle's "History of the American Navy".



Building the prototype, above, Ric came up with a list of 40 steps to build a carronade as shown above. Only 23 more to build.

Chaperon

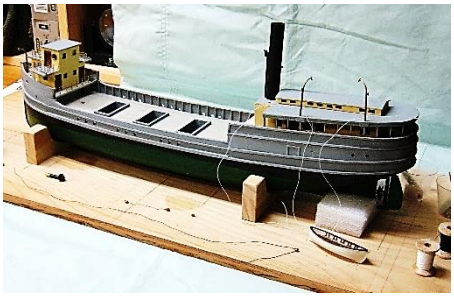
Rob Washburn

Rob, is working on the masts, spars and bowsprit for his *"Flirt".* So he shared photos of his first build, the sternwheeler

Chaperon.

Margaret Olwill – 1890
Bill Nyberg

Aft cabin complete, with stack installed. She has been set aside while I focus on the restoration project of the "Friendship Sloop" shown below.

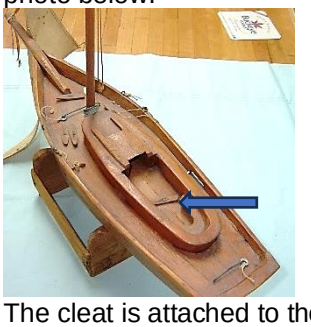


Friendship Sloop - Restoration
Bill Nyberg

The model, *Friendship Sloop*, was built in the early 1950's. Solid hull, and model was built around or near the Boston area. It was a gift to the boy in 1953 by his grandparents. The rigging is rotted, sails rotted and the boom broken.

After careful examination, I believe it to be "Folk Art" a model based upon either an actual boat or a photo.,

Look at the deck cleats (blue arrow) in the photo below.



The cleat is attached to the hull with a small nail.

The hull, mast and bowsprit are rough carved. Note in the next photo, the metal strip attached to the keel. She may have been able to sail.

Replacement cordage was purchased from "Ropes of Scala" a Canadian company. The hull and deck have been cleaned with a vinegar/water solution to remove 70+ years of grim and stain. The 6 mast hoops and 2 sheet horse travelers were all corroded, and looks like they are pot metal. I am replacing them with steel rings. The sails will be replaced - rotted and torn. Debating between cloth or silkspan.

Other Notes: "Stuff", Tugs & Things

Nautical Terms
Nautical Terms Wikipedia

Arc of visibility: The portion of the horizon over which a lighted aid to navigation is visible from seaward.
Archboard: A plank along the stem where the name of a ship is commonly painted.
Armory: Area on a warship for storage of small arms and ammunition.
Articles of War: Regulations governing the military and naval forces of the UK and US; read to every ship's company on commissioning and at specified intervals during the commission.
ASDIC: Purportedly an acronym for Allied Submarine Devices Investigation Committee, and a type of sonar used by the Allies for detecting submarine during the First and Second World Wars. The term has been generically applied to equipment for "under-water supersonic echo-ranging equipment" of submarines and other vessels.[16]
Ashore: On the beach, shore, or land (as opposed to aboard or *on board* a vessel); Towards the shore; "To run ashore": to collide with the shore (as opposed to "to run aground", which is to strike a submerged feature such as a reef or sandbar).
Astern: Toward the stern or rear of a vessel; Behind a vessel.
Asylum harbour: A harbour used to provide shelter from a storm.
Atlantic bow: A raised bow with noticeable sheer and flare introduced in German warships s in the late 1930s to improve seakeeping by keeping the forecastle drier and to allow easier operation of weapons.
Athwartships: At right angles to the fore and aft or centerline of a ship.

Tugs: Great Lakes

Cyclone 1866

Dovell & Cook, Vermilion, OH, built a wooden towboat for Captain E. Doville and she was enrolled at Milwaukee, WI. Her measures were: 55.1’ x 14’ x 5.6’; with tonnage 29.98 grt, 15 net. In 1868, her ownership was changed to a group of investors at Milwaukee. In 1871, her ownership was changed to a group of investors from Vermillion, Ohio and then to R. Casswell, Pentwater, MI. In 1876, her ownership was listed as Casswell, Ludington, MI. In 1896, the towboat *Cyclone* was abandoned, location unlisted.

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

,

***F.L. Danforth,* 1867**

The wooden tug *F.L. Danforth* was built by Van Slyke & Notter, Buffalo, in 1867, for Danforth et al, Buffalo. She was assigned official number 9155. In 1871, she was in service at Duluth, MN

Working with the towboat *Amethyst* (U1712), iIn May of that year she was controlled by the Buffalo, Tug Association.

In 1872, owned by D. Schutte, Superior, MN, the tug *F.L. Danforth* caught fire and burned. In February 1878 her tonnage was recorded at the Marquette District at: 29.05 grt, 14.53 net. She was rebuilt in 1883.

In July 1884, her ownership was changed to J.H. Upham & Ezra Williams, Duluth. In 1885, her measures were recorded as: 58.3’ x 14.6’ x 7’. In July 1889, she broke her pump and was repaired at Marquette. In November 1890 the tug *F.L. Danforth* caught fire and burned.

January of 1891, ownership of the tug was changed to F.B. Daugherty et al. In June, 1892 the tug burned and sank in 33 feet of water at Duluth, MN.

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

Presentation Schedule:

2024 – Schedule Tentative
~~Jan 20 CAD, 3D Printing~~
~~Feb 17 Display Case~~
~~Mar 16 CAD, 3D Printing, Advanced~~
~~Apr 20 Dioramas~~
May 18 Adhesives
June 22 Workshop
July 20 Scratch Building
Aug 17 Air Brushing
Sep 21 Planking
Oct 19 Weathering
Nov 16 Carving
Dec 21 Small Boats

Events & Dates to Note:

2024 Tentative Schedule
~~**Columbus Woodworking Show**~~
~~**Ohio Expo Center**~~
~~**January 19-21, 2024**~~

~~**IPMS Columbus**~~
~~**BLIZZCON 2024**~~
~~**Makoy Center, Hilliard, OH**~~
~~**Saturday, February 24, 2024**~~

~~**Miami Valley Woodcarving Show**~~
~~**Christ United Methodist Church**~~
~~**Middletown, OH**~~
~~**March 3-4, 2024**~~

46th Midwestern Model & Boat Show,
Wisconsin Maritime Museum, Manitowoc, WI
May 17-19, 2024

Westerville Library Display
June 1 – 28, 2024

Ship Modeling workshop
Westerville Public Library
June 22, 2024

Columbus Air Show
U.S. Air Force "Thunderbirds"
Columbus Rickenbacker International Airport
June 14-16. 2024

Lakeside Antique & Classic Wooden Boat
Lakeside Hotel, Lakeside, OH
July 14, 2024

Ohio River Sternwheel Festival
Riverfront Park, Marietta, OH
September 6-8, 2024

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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

Researched & Written
by William E. Nyberg

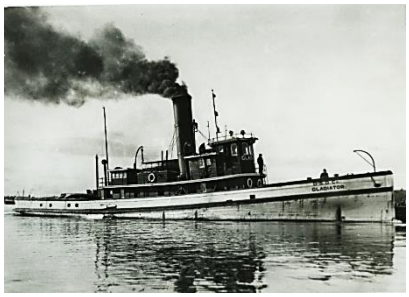
1871-B

Frankfort: The wooden steambarge *Frankford* was enrolled at Detroit, May 20, 1871. Built by James M. Jones, at Detroit, for J. M. Jones & N. C. Garrett, both from Detroit. Her measures recorded were: 104.0' x 24.0' x 8.0'; 155.75 grt. She was assigned official number (U9967). She was equipped with a high-pressure engine: 20' bore x 26' stroke, built by Riverside Iron Works, Detroit. The steambarge *Frankford* had been built for the bulk freight iron ore trade and ran between Frankfort, MI and Escanaba, MI. Her master for the 1871 season was Captain Shields.

In 1872, ownership of the steambarge *Frankfort* was changed to Frankfort Iron Co., Detroit, S. L. Fuller, secretary.

In April 1874, ownership of the steambarge *Frankfort* was changed to M. C. McCarthy, Bangor, MI. In August of that year, the steambarge damaged her wheel and hull while steaming on Lake Michigan. The following month, the steambarge *Frankfort* caught fire and burned to a total loss at Saugatuck, MI.

December 17, 1874, the enrollment documents for the steambarge *Frankford* were surrendered,



Gladiator: Fitzgerald & Leighton, Frank C. Leighton, master carpenter, built a wooden (oak construction) towboat at Port Huron, MI, to tow schooners through the rapids of the St. Clair River to the foot of Lake Huron. She was first enrolled August 11, 1871, at Port Huron, and her measures recorded: 115.66' x 22.25' x 12.0'; 220.88 grt, 153.19 net. She was powered by a steeple compound engine, 22", 40" bore x 30" stroke, 460 horsepower, built by Cuyahoga Steam Furnace, Cleveland. She was assigned official number (U85263) and her owners were George E. Brockway; A. K. Coleman both from Port Huron and her cost was $27,000.

In August of 1871, with a tow of vessels behind her, the tug *Gladiator* went ashore on the foot of Bois Blanc Island, Detroit River. She was released and repaired at Campbell, Owen & Co. shipyard, Detroit. In July 1874, the tug *Gladiator* collided with the wooden propeller *Lowell* (U14655) in the Saint Clair River. There was no damage to the tug. In September of that same year, the tug *Gladiator* broke her wheel on Lake Erie, near Buffalo, Property loss was set at $400. Her master for the 1876 season was Captain Robert Ballentine.

In 1879, ownership of the tug was changed to Messr. Murphy. In August 1882, the tug *Gladiator,* bound up, and the tug *Mocking Bird* (U90530), bound down, collided in the channel opposite Walkerville, ONT, on the Detroit River, Canadian side. The *Mocking Bird* sank and was later recovered. Later that same month, the *Gladiator* towed 3,000,000 pine logs down Lake Huron and into Lake Erie. In November 1883, while towing the barges *Mills* and *Sherman* from Georgian Bay to Buffalo, NY with cargos of lumber, the tug *Gladiator* broke her wheel and became disabled on Saginaw Bay, Lake Huron. She was dry docked for the damaged wheel.

Ownership of the tug *Gladiator* was changed in December 1884, to the Detroit Tug and Transportation Co. That same month she released the bulk freighter *Morley* (U91129), who had gone aground on Lonesome Point near Grand Marais, MI, Lake Superior. Master of the tug *Gladiator* for the 1886 season was Captain George Y. Dayton. In August 1886, she received the boiler of the wrecked towboat *Kate Moffat* (U14127); she will tow regularly at Milwaukee, WI. In 1887, she ran between AuTrain, MI, Lake Superior to Bay City, MI with timber stowed in bay booms. Her master for the 1890 season was Captain E. Tormey.

In 1892, ownership of the tug *Gladiator* was changed to Kelsey & King, Detroit. She received a new engine: 22", 40" bore x 30" stroke, 460 horsepower, built by S.F. Hodge CO., Detroit.

In 1895, her ownership changed to B.B. & C.B. Noiles, both of Saginaw, MI. In October of that year, the tug *Gladiator* caught fire and burned to the waterline while at her dock at Sault Ste. Marie, Lake Superior. In order to save a portion of her hull the tug was sunk. The hull of the *Gladiator* was raised during May 1896 by A. Stewart, Port Huron. He had her towed to Port Huron, where her hull was reinforced for working in ice: Her enrolled measures were updated to 121.5' x 22.6' x 11.3'; 177 grt. She was also re-engine with a 1892 built Steeple Compound engine constructed by S.F. Hodge & Co. and was a duplicate of her first engine. Plus she received a second boiler 10'3" x 16' @ 100 # steam from Detroit Dry Dock. The repair cost was

set at $8,000. In August 1886, the *Gladiator* was stationed at the Soo for wrecking services.

In 1901, her ownership of the was changed to Lake Superior Split Rock Lumber Co.

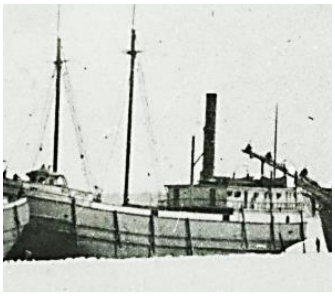
In 1904, her ownership was changed to Thomas D. Merrill, Duluth, MN.

In 1909, her ownership was changed to R.B. Knox, Duluth, MN.

In 1910, ownership of the tug *Gladiator* was changed to Duluth-Superior Dredging Co. During World War 1, the tug *Gladiator* did service in the United States Navy and was listed as ID# 2560; *Gladiator*, 1918. Masters of the *Gladiator* were Captain Albert Bourassa, 1922 – 25 season; Captain Henry Stapleton, 1926 season; Captain Albert Stapleton, 1927 & 1929 seasons; and Captain Jesse Pinney for the 1929 – 30 seasons. Her engineers were Archie Scott, 1920 to 26 plus the 1929-30 seasons; and J. Stapleton from 1927 & 1928 seasons. In 1934 the tug *Gladiator* was rebuilt at Duluth, MN; her engines refurbished and she received new boilers built by the Johnson Brothers, Ferrysburg, MI: her enrollment measures were updated to: 121.5' x 22.6' x 11.2'; 177 grt, 65 net. Her master for the 1935 & 36 seasons was Captain W.F. Booth with Archie Scott as engineer.

The tug *Gladiator* spent her last days on the lower end of the Detroit River towing mud scows and equipment up and down the river. She was laid up in 1955, at Stoney Island, Detroit. In 1959, she was removed from documentation and endorsed as "abandoned".

Dismantled at Stoney Island, Detroit, MI, by Dunbar & Sullivan Dredging Co. Her cabin remained at Stoney Island and was used as an office.

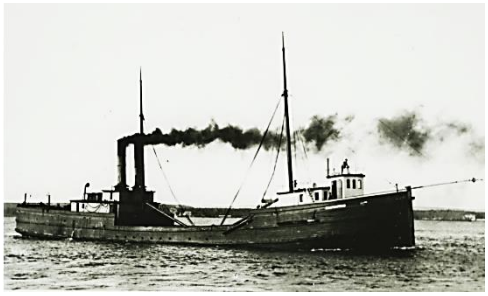


Mary Jarecki: The Bailey Brothers, Toledo, built a wooden bulk freighter for the Shepard, Henry & Company, Erie, PA to be used as a bulk freight "steam barge". She could also accommodate up to 40 passengers. Her initial enrollment, at Toledo, May 10, 1871, listed her measures as: 179.60' x 32.70' x 13.20'; 520.80 grt. She was issued official number (U90271), and was powered by a high-pressure non-condensing engine, 27" bore x 32" stroke, 65 horse power. Her engine builder is unknown. She was also equipped with a tubular boiler, 8' X 18', 72 pounds steam, built by T & J McGregor. In June 1871, the steambarge *Mary Jarecki* damaged her forefoot and sprang a leak on the St. Clair Flats, Lake St. Clair. October 1872, the *Mary Jarecki* went ashore, in fog, on Summer Island, Green Bay, WI. In May 1874, the *Mary Jarecki* collided with the schooner *Thomas Quayle* (U24989), near Malden, Detroit River. Damage loss was set at $1,000. In October of that year, the steambarge *Mary Jarecki* went ashore at Rock Falls, Lake Huron. She was released and her property loss was set at $1,500. In 1875, her master was Captain Henry W. Davis with William Clancy as chief engineer.

February 1879, ownership of the steambarge *Mary Jarecki* was transferred to A. E. Shepard, Erie, PA. During winter layup of 1879/80, the steambarge *Mary Jarecki* was enlarged at Erie, PA: 179' x 33' x 13'; 645.64 grt, 511.76 net. In October 1880, while siphoning liquids, the steambarge *Mary Jarecki* exploded at Washington Island, Lake Michigan. Two of her crew were badly injured.

March 1882, ownership of the steambarge *Mary Jarecki* was changed to Barker & Co., Chicago. In July 1883, the steambarge *Mary Jarecki,* in heavy fog, went ashore on the west side of Au Sable Point, West of Grand Marais, MI. The vessel was a total loss. No lives lost. Her machinery was removed by S.A. Murphy, Detroit in August 1883. The hull was broken up in September 1883.

Final enrollment for the steambarge *Mary Jarecki* was surrendered at Milwaukee, March 3, 1884.



Fred Kelly: Built as a wooden schooner barge by the Bailey Brothers, Toledo, and first enrolled at that port, July 15, 1871. She was owned by a consortium of investors: R.H. Henry, 3/16, John Dodge, 3/16, both from Erie, PA; and A.E. Shepard, 3/16, Geneva, OH.; et al. The schooner barge was operated by Henry Shepherd & Co., Erie, PA. The schooner barge *Fred Kelly* was issued official number (U120074). Her measures were: 212.16' x 32.66' x 14.16'; 665.88 grt. She was built as a barge consort for the steamer *Mary Jarecki* (U90271) to be used in the bulk freight trade.

In April 1873, her ownership shares were transferred to: R.H. Henry, 1/4; John Dodge, 1/4; and M. Griswold, ¼; all from Erie; plus A.E. Shepard, 1/4, Geneva, OH. During winter layup of 1873/74, the schooner barge *Fred Kelly* was converted to a steambarge at Bailey Brothers, Toledo, OH. Her enrollment was updated in April 1873 to: 2 decks, 3 masts, 926.54 grt, 731.51 net. She was equipped with a steeple compound engine, 24", 44" bore x 38" stroke, 680 horsepower, built by Globe Iron Works, Cleveland, in 1872. She also received two firebox boilers: 7' 6" x 18', 70 pounds steam, built by McGregor, Detroit.

In November 1873, the steambarge *Fred Kelly* lost her consort barge off Beaver Island, Lake Michigan. April 1874, she went aground at St. Clair Flats, Lake St. Clair. Later that month she was damaged in a collision with the iron propeller *Merchant* (U16332) at the Straits of Mackinac. In May 1875, the steambarge *Fred Kelly* collided with the steam barge *Swallow* (U115184) in Toledo harbor. Neither vessel was severely damaged. The following month, while going through the Sault, *Fred Kelly* was blown on the rocks and lost 2 blades on her wheel. She was towed to Marquette, MI where she was loaded with ore. Underway, running slowly, she made it to Cleveland to unload and receive her new wheel.

In April 1879, ownership of the steam barge *Fred Kelly* was changed to: George Stone, 3/8; Henry J. Johnson, ¼; Alexander Campbell, ¼; and J.H. Palmer, 1/8; all from Cleveland. In May 1881, the steambarge *Fred Kelly* went ashore on Presque Isle, Lake Huron. During winter layup, the steambarge *Fred Kelly* was rebuilt; receiving a high-pressure non-condensing engine, 37" bore x 38" stroke and tubular boilers (2) 7.5' x 18', 76 pounds steam.

April 1889, ownership of the steambarge *Fred Kelly* was changed to Bradley Transportation Co.; Morris A. Bradley, Cleveland, et. al. Master of the steambarge *Fred Kelly* during the 1892 season was Captain Henry Peterson with James W. Baker in 1888, Bernard Doyle in 1891, and R.S. Hannah in 1892 as chief engineers. In May 1894, after being rebuilt, and her topside slightly altered, the steambarge *Fred Kelly* had her register tonnage changed at Cleveland: 770.12 grt, 575.09 net. Masters of the steambarge *Fred Kelly* were Captain Charles S. Welch in 1895; Captain Chauncey Ney for the 1899-1900 season and Captain Frank Moore in 1903 with chief engineers: C.H. Diem in 1900 and J.A. Breckley during the 1902-03 seasons.

In 1910, the steam barge *Fred Kelly* was abandoned inside the breakwater at Cleveland due to her condition and age.

Kincardine: Stebbens Andrews & Son, Port Dalhousie, Ontario, built a wooden steambarge for F. A. Robertson & Co. Goderich, Ont. to be used in the lumber trade. Her initial enrollment was issued at Goderich, Ont. June 26, 1871. She received her official number (C71147) and her measures recorded as: 107' x 20' x 8.75'; 176.0- unit tons. Her master for the 1871 season was Captain McPherson.

In 1872, her ownership was changed to David Andrews & Downey, Napanee, Ont. Her master for the 1874 season was Captain G. M. Read.

In 1875, ownership of the steambarge *Kincardine* was changed to Bay of Quinte & Oswego Navigation Co. Her masters for the steambarge *Kincardine* were: Captain Allen in 1875; Captain John Pinder for the 1877-78 seasons; and Captain Blanchard in 1879. In May 1876, the steambarge *Kincardine* stranded on Brothers Shoal, in dense fog, nine miles southwest of Kingston, Ont., Lake Ontario. During winter layup 1878, the steambarge *Kincardine* was rebuilt with dimensions recorded during readmeasured: 107' x 21'; 342.84 grt, 220.74 net.

In December 1878, ownership of the steambarge *Kincardine* was changed to James F. Allen, Kingston, Ont.

In January 1881, ownership of the steambarge *Kincardine* was changed to Martha R. Jones et al, Detroit. Enrollment remained Canadian. Master of the steambarge *Kincardine* for the 1881 season was Captain Peters. In September of that year, bound down with a cargo of cedar ties, the *Kincardine* went aground on the head of Fighting Island, Detroit River. In 1882, most of her passenger accommodations were removed during her second rebuilt. Measures were recorded as: 107.0' x 21.0'; 357.53 grt. In November of that year, the steambarge *Kincardine,* laden with a cargo of supplies for Algoma Mills, struck a rock and filled with water just above Little Current, Georgian Bay.

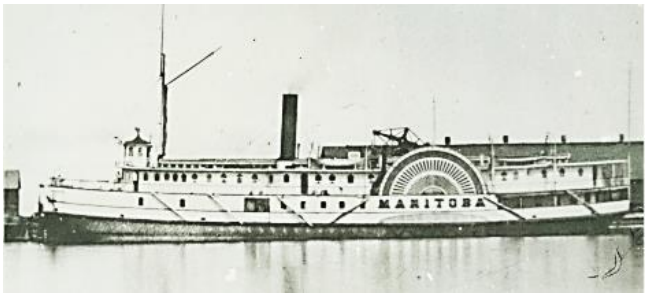
In October 1883, ownership of the steambarge *Kincardine* was changed to T. Marks et al., Port Arthur, Ont. In December, the steambarge *Kincardine,* trying to force her way through ice on Jackfish Bay, Lake Superior, was holed in her bow, filled rapidly with water and sank. She was raised

by LeMay & Sons, and towed to Duluth for rebuilding. Her tonnage was reduced to 176 grt and the main cabin amidships was removed. In 1886, the steambarge *Kincardine* was licensed to carry up to 20 passengers. She was rebuilt a third time in December 1886, and her measures recorded as: 198.67 grt.

In 1888, ownership of the steambarge *Kincardine* was changed to John Pearson & Sons, Owen Sound, Ont. Bound up in September 1888, from Owen Sound for Midland, Ont, the steambarge struck a rock and stranded near French River Harbor, Georgian Bay. Repaired. Loss set: hull $2,000, cargo $200.

In December 1889, ownership of the steambarge *Kincardine* was changed to Charles Richardson, Owen Sound, Ont. In June 1892, bound for Collingwood, the steambarge *Kincardine*, laden with barrels of salt, stranded on the rocky shore of Cabot Head, Ont. Georgian Bay. Declared a total loss.

Enrollment of the steambarge *Kincardine* was surrendered November 1892 and endorsed "total wreck".



Manitoba: Port Robinson, a small community in the southernmost part of Thorold, Ontario, is divided in half by the Welland Canal. At this location, Melancthon Simpson of Port Robinson, built a wooden sidewheel steamer for J. & H. Beatty & Co., Thorold. Built for the passenger, package freight trade between Sarnia, at the southern tip of Lake Huron and Collingwood, at the bottom of Georgian Bay, to Fort Williams, Ont. and Duluth, MN, on the western end of Lake Superior. Her measures were: 173' x 25' x 11'. She was equipped with a Vertical Beam (Walking Beam), low pressure engine, 45" bore x 108" stroke, 700 horsepower, built by George N. Oille, St. Catharines, Ont. in 1871 and a firebox boiler, 12' x 18', also built in 1871. Her master for the 1871 – 79 seasons was Captain James B. Symes.

In August 1871, bound up from Thorold, for Collingwood, the steamer *Manitoba* went on the rocks, in heavy fog, near the Isle of Coves, Lake Huron, at the entrance to Georgian Bay. She was released with very slight damage. In July 1872, cautiously steaming in heavy fog on Lake Superior, the steamer *Manitoba* went on the rocks off Michipicoten Island. She was released, four days later, by the steamer *Cumberland* (C-1871) and towed to Detroit, for repairs. In August 1875, bound up from Sarnia for Duluth, the steamer *Manitoba* struck and sank the propeller *Comet* (U5683) above Whitefish Point, Lake Superior. The steamer *Manitoba* rescued as many of the crew of the *Comet* and returned them to the Soo. Eleven of twenty-one lives were lost including Captain Francis Duget, from the *Comet.*

In April 1877, the James H. & Henry Beatty & Co., incorporated as the North West Transportation Co. of Sarnia, with the steamer *Manitoba* as part of the Windsor and Lake Superior Steamship Line. In June of 1878, the steamer *Manitoba,* while attempting to enter the Kaministiquia River at Thunder Bay, the terminus of the Pacific Railroad, got badly stuck. She was released with the help of a tug. Master for the 1882 season of the steamer *Manitoba* was Captain McGregor. In September 1882, on Lake Huron, the steamer *Manitoba,* caught in a hurricane strength gale from the southwest, sought shelter, when her Captain, fearing that the vessel would not obey the helm, had sails set and then headed her into "Pitch Channel" to gain the protection of Tobermory Harbour. She made the entry safely and rode out the storm. In November 1883, while attempting to make Southampton Harbour, Ont. on Lake Huron, the steamer *Manitoba,* went ashore. She remained there all winter, in a bed of sand full of water, with seven feet of water at her bow and six feet two inches of water amidships. In June 1884, she was released by the wrecker tug *Charles Kellogg* (U12771) with the aid of pontoons. She was towed, with the aid of one steam pump to keep her afloat, to Detroit where she was dry docked for repairs. The steamer *Manitoba,* after being repaired by Detroit Dry Dock, was laid up while the owners and the three insurance companies come to terms on coverage. In February 1885, with no settlement pending to release the steamer by the insurance companies, the owners stated that they would abandon her.

In April 1885, the steamer *Manitoba* was disposed of by the U.S. Marshall on a libel for the Detroit Drydock Co., for the billed amount of $1,425. The vessel was bought by T. A. Murphy, Detroit, for $7,000.

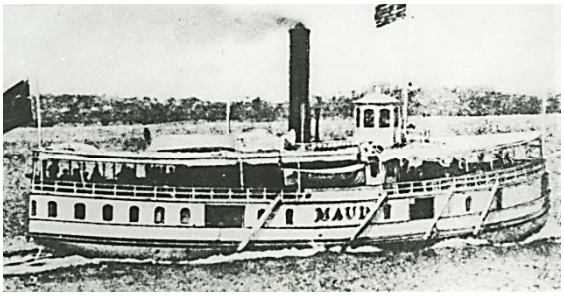
In May 1887, ownership of the steamer *Manitoba* was bought from the underwriters by C. G. Lincoln, Chicago, on the condition that the U.S. government would consent to enroll her as an American bottom. No record that it happened.

In May of the following year (1888), ownership of the steamer *Manitoba* was changed to Smith & Kieghley, St. Catharines, Ont., (Canada

Lake Superior Transit Co., Ltd.). She was rebuilt during the winter months and would run on the Lake Superior Line. The steamer was renamed *Carmona* and registered at St. Catharines, receiving official number C92653, with measures; 980 grt, 574 net. For the 1888 season, the steamer *Carmona* was chartered by Canadian Pacific Rail Road to run supplies and personal from Sarnia to Fort Williams. June 1890, down bound on the St. Clair River in fog, the steamer *Carmona* and the up bound American steambarge *Shenandoah* (U116623) with tows, collided, damaging the *Carmona.* An Admiralty Court in Toronto (June 12, 1902) found for the *Carmona* due to a conflict of rules. Damages was set at $2,182.

In March 1895, ownership of the steamer *Carmona* was changed to G. W. Brown, (Port Arthur & Duluth Steam Navigation Co.) and was placed on a run between Windsor, Ont. and the Sault. During winter layup, 1899/1900, the steamer *Carmona* was rebuilt and lengthened at Collingwood. She was renamed *Pittsburg* with measures: 221' x 28' x 12'; 1,349 grt, 842 net. In 1903, her owners declared for bankrupt and the vessels note was held by the Detroit Savings Bank. She was operated by Georgian Bay Navigation Co.

In April 1903, ownership of the steamer *Pittsburg was* changed to Huron Navigation Co., Ltd, Toronto. in August 1903, business being very poor, the steamer *Pittsburg was* tied up at her dock at Sandwich (Windsor), Ont. while her crew was laying her up for winter layup. The steamer caught fire from an unknown source and burned to a total loss at her layup dock. In 1904, the remains of the steamer *Pittsburg* was dismantled at Port Dalhousie, Ont.



Maude: George Thurston, Kingston, with C. F. Gildersleeve as master carpenter, built a composite hull, sidewheel steamer for Charles Fuller Gildersleeve, Kingston. The technique of composite ship construction (wooden planking over a wrought iron frame) emerged in the mid-19th century as the final stage in the evolution from wooden hull construction to steel hulls. The *Maude* was built at Glasgow, Scotland, taken apart and shipped to Kingston, where the parts were re-assembled. Enrolled at Kingston in July 1872, her measures were: 114' 6" x 19' 9" x 6' 3"; 127.79 - unit tons. She was powered by a incline tandem compound engine, 20", 36" bore x 36" stroke, 400 horsepower, built by C. Gildersleeve, Kingston, Ont. in 1870 with a firebox boiler, 7.5' x 13', to generate steam. The steamer *Maude* was built for passenger, package freight trade and ran Kingston to Bay of Quinte. Her official number was (C100662). Her master for the 1871 season was Captain W. Swales with G. Mackenzie as chief engineer. In July 1872, bound for Napanee, Ont, near Kingston, the steamer *Maude,* broke her big cylinder back cover and had to be towed to port for repairs. Her master for the start of the 1873 season was Captain Morden with Captain C. Hinckley, Jr. as master from 1873 to 1890, with W. H. Derry as chief engineer from 1872 to 1887.

In January 1873, the steamer *Maude* was found to be too slow for the Kingston to Bay of Quinte run. Her ownership was changed to Messrs. Folger, Nichol & Co., Kingston, and she became part of the ferry service between Kingston and Cape Vincent, NY. In April 1873, the steamer *Maude* had her engine removed and replaced by an engine from Davidson and Doran's Foundry and her feather-paddles replaced with ordinary buckets. In September 1877, while returning to Kingston, after dropping her excursion party at Clayton, NY, the steamer *Maude,* broke her crank pin, causing some problems in getting into port. She was repaired at Kingston Foundry. In August 1878, bound for Brockville, on the St. Lawrence River, the steamer *Maude,* with a large number of passengers, broke her crank pin and was set adrift. The captain took a small boat and rowed to Gananoque, Ont to fetch the steamer *Clara Louis* (C72573), who towed her to safety. In April 1880, the steamer *Maude,* bound from Cape Vincent, NY for Kingston, ran aground upon Horseshoe Island. She was pulled off with minimum damage. In August 1882, the steamer *Maude,* lying on the upper side of the Thousand Island Park dock was struck by the sidewheel steamer *Magnet* (C103337), crushing her stern bulwarks and rudder post.

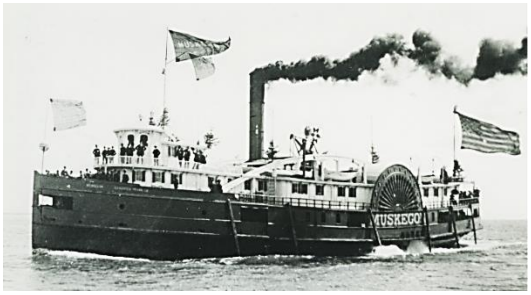
In 1886, the ownership of the steamer *Maude* was changed to the St. Lawrence Steamboat Co., Kingston, Ont. They had her rebuilt by the Davis Shipyard at Kingston. Her enrollment register was updated to: 153.2' x 33.2' x 6.4', 521 grt, 266 net. In 1894, she was renamed *America* and assigned official number C100662; with a 600-passenger capacity. She would run from Clayton to Montreal on the American Line. Masters of the steamer *America* for the 1897 season was Captain Robert J. Gibson, followed by Captain James F. Allen during the 1906-08 seasons and Captain R. H. Carnegie as master for the 1908-12 seasons with Michael Tetro and William Hartley as chief

engineer, Captain Coleman J. Hinckley in 1914 and Captain H. H. Carnegie in 1917, and James Gillie as chief engineer from 1911-12 and in 1914.

In 1921, ownership of the steamer *America* was changed to Georgian Bay Tourist Co., Midland, Ont. and renamed *City of Midland.* The following year the *City of Midland* was renamed *Midland City*. Her masters were:1922 – 23, Captain J. Ouellette with Samuel Beatty as chief engineer; from 1924 – 27, Captain Frederick W. Wallace with George Dennison in 1926, and William Carefoot in 1928 as chief engineers; in 1929, Captain Malcolmson with J. MacMillan as chief engineer; and Captain E. Mackie for the 1933 season with Samuel Beatty in 1931 and A. Werner in 1933 as chief engineers. In 1934, the steamer *Midland City* was converted into a propeller by the Midland Shipyard and fitted with twin propellers powered by two Canadian built Fairbanks-Morse Diesel engines. Her enrollment was update to: 149.2' x 33.2' x 6.4'; 580 grt, 476 net. In August 1934, the propeller *Midland City* damaged her bottom on a shoal near Present Island, Georgian Bay. She was released by Burke Towing and Salvage Co. and towed to Midland for repairs. Her masters from 1934 through 1954 were Captain E. Mackie from 1933-39, with A. Warner as chief engineer; Captain Wilfred Martin from 1941 through 1954 with, A. Lees and A. Packwood as chief engineers.

In 1949, ownership of the propeller *Midland City* was transferred to Georgian Bay Tourist and Steamships Ltd. The *Midland City* was laid up in 1954 due to the inability to be altered to comply with stringent new fire regulations.

Her ownership was changed to Murray N. Wagg, who stripped the *Midland City* of her machinery and fittings. Towed out into the bay off Tiffin, just outside of Midland Harbor, she was intentionally burned and her hull remains were towed to the mouth of the Wye River where it was abandoned.



Muskegon: George S. Rand, Manitowoc, built a wooden sidewheel steamer for the Goodrich Transportation Line. She was built for the passenger, package freight trade and in the Lake Michigan coasting trade. She was enrolled at Milwaukee on August 23, 1871. Her measures were recorded as: 193.7' x 29.0' x 12.0'; 618.21 grt, 485.65 net. She was powered by a Vertical Beam engine, originally installed in the steamer *Orion* wrecked in 1870. She was assigned official number (U90466). She would run a route: Chicago, Muskegon & Grand Haven. Her master was Captain Edward Carus from 1888 to 1894, with Nicholas Larson, 1875-77; and Thomas C. Dorey, 1890-96 as chief engineer. The steamer *Muskego* ran on a series of different routes on Lake Michigan between 1881 through 1891: Chicago, Green Bay & Escanaba; Chicago, Milwaukee & West Shore; Green Bay, Escanaba, Menominee & Manistique. In 1892 the steamer ran on the Manitowoc to Chicago route during the World's Fair held at Chicago. In June 1893, up bound from Chicago with 30 passengers, the steamer *Muskegon,* broke her walking beam and the subsequent collapse of the rest of her machinery 5 miles off Evanston, IL and required a tow into Chicago. In February 1895, her enrollment tonnage was changed at Milwaukee to: 662.20 grt, 485.65 net. In September 1896, while in drydock in south dock, Milwaukee Dry Dock Co. the steamer *Muskegon* fell three feet when her supporting blocks gave away. The hull broke in two and was damaged beyond repair. She was declared a total loss and was auctioned off to H.B. Burger, Manitowoc in December 1896.

Final enrollment for the steamer *Muskegon* was surrendered at Milwaukee, August 23, 1899. Her metal shafts and boiler were salvaged. In June 1900, the hull was towed to a beach and allowed to be destroyed by the waves.

NOTE:
The next two vessels, both named *Mystic*, the first (U90313) listed as an excursion vessel with a 15-passenger capacity, but by 1887 was being used as a towboat on Lake Superior towing timber rafts. The second (U90199) was built in Detroit as a towboat and ended at Lake Superior towing timber rafts.

The major difference between the vessels is their gross tonnage. The first is 63.52 grt, while the second was 121.24 grt.

Mystic: John E. Monk, at Sandusky, Ohio, built a wooden excursion vessel for George A. Marsh, also

from Sandusky. She was enrolled at Sandusky on October 16th, with measures: 76.5' x 18.0' x 8.8'; and a tonnage of 121.24 grt. She was powered by a fore & aft compound engine with 2 Cylinders: 9" x 16" x 12"; 225 hp, built by Klotz & Kramer Works, Sandusky. She had a 15-passenger capacity. She was assigned official number (U90313). In June 1872 the tug *Mystic* collided with and sank the schooner *Oddfellow* (US-1846). August 1877, the tug *Mystic* was inspected and her enrollment updated to: owned Marsh & Co., Sandusky; HPNC 20 x 22" engine; 1 tubular boiler 6.5 x 12' @ 90# steam by Philip Riter Boiler Works; 15 passenger capacity. November 1880, the tug *Mystic* was sent to Leamington, Ont. to assist in raising the hull of the excursion vessel *Lake Breeze* (C71259) which had caught fire and burned to her waterline

In 1887, ownership of the *Mystic* was changed to Eliza Cornwall, Port Huron District. In October of that year the *Mystic* struck the International Bridge at Sault Ste. Marie while towing raft of logs.

In August 1891, ownership was changed to J.C. Helms & A.F. Swanstrom, Duluth, MN.

In August 1893, ownership of the tug *Mystic* was changed to B.B. Inman Tug Line, Duluth. In March of 1895, the tugs ownership reverted back to J.C. Helm & A. F. Swanstrom.

June 1898, ownership of the *Mystic* was changed to D.E. Stevens, Duluth. In October 1899, the tug *Mystic* was blamed for the collision with the steamer *Peerless* (U24070) & schooner *A. Stewart* (U106644)

In 1906, ownership of the tug *Mystic* was changed to James Pryor, Houghton, MI.

In 1909, ownership of the tug *Mystic* was changed to A.S. McDonald, Duluth.

In 1910, the tug *Mystic* was owned by Zenith Dredge Co., Duluth, and A.S. McDonald. She was reboilered with a Brothers Co. firebox boiler. Master of the tug *Mystic* in 1926 was Captain Fred Winters. Due to the depression, the tug *Mystic* was laid up in 1930 at the Zenith Dredge Shipyard. She returned to service and her master for the 1930 – 35 seasons was Captain Eugene P. Kelleher with Sam Becker as chief engineer. The tug *Mystic* enroute to Portage Canal, was holed and sank at the Keweenaw Peninsula in August 1937. She was raised a week or 2 later and repaired at Houghton, MI. In 1940, the tug was dismantled and her hull sank as breakwater, Amnicon River, Lake Superior.

In 1942, her enrollment was surrendered and endorsed "Abandoned".

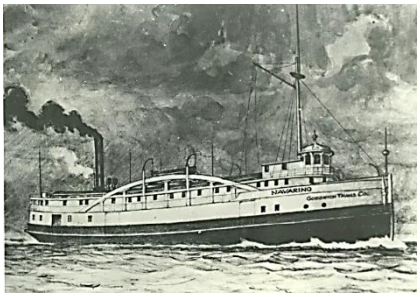
Mystic: James Madison Jones, Detroit, built a wooden towboat for Jones & Hodges, Detroit, to be used in the towing trade on Lake Michigan & Lake Superior. Enrolled, her measures were 81.0' x 18.5' x 6.2'; 121.24 grt. She was assigned official number (U90199). In May of 1871, near St. Joseph's Island, Ont., Sault Ste. Marie, the tug *Mystic* broke her wheel. She received repairs at Detroit.

In September 1873, ownership of the tug *Mystic* was changed to Louis Trempe, Sault Ste. Marie. In July 1874, the tug *Mystic* lost a lumber raft in Waiska Bay, MI, St. Mary's River. The cargo loss was set at $3,000. Chief engineer for the tug *Mystic* for the 1877 & 78 seasons was George M. Belloir. In November 1878, while steaming to the assistance of the propeller *Quebec* (C71212), both the tug *Mystic,* and the tug *E. M. Peck* (US8906) went ashore near Cockburn Island, Ont. Lake Huron. The tug *Mystic* sank in nine feet of water. In June 1879, her owner, L. P. Trempe let a contract, valued at $1,000, to raise the tug *Mystic* and deliver her to his dock at Sault Ste, Maria. Raised and restored, her master of the tug *Mystic* in 1885 was Captain C. H. Woodford with J. C. Bennett in 1885, Philip C. Mayer in 1886, Robert Cameron in 1888, and Andrew J. Wilson in 1889 as chief engineer.

In April 1890, ownership of the tug *Mystic* was changed to B. B. Moiles, Saginaw, MI.

In August of the following year, ownership of the tug *Mystic* was changed to D. N. Runnels, Port Huron. The tug *Mystic* was rebuilt sometime between 1879 and 1890 and her tonnage reduced from 121 grt to 63 grt, 31 net. In September 1893, with a party of surveyors on board, the tug *Mystic,* caught fire while offshore in Tahquamenon Bay, Whitefish Bay and ran to shore where she burned to the waterline. No lives lost.

Final enrollment for the tug *Mystic* was surrendered December 7, 1893.



Navarino: Greenfield S. Rand, built a wooden propeller at Manitowoc for the Goodrich Transportation Co., Manitowoc, WI. She was enrolled on April 8, 1871 at Milwaukee, and her measures were recorded as: 183.6’ x 35.0’ x 12.5’; 760.64 grt. Built for the passenger, package freight trade, she was assigned official number (U18703). The propeller was originally equipped with an “oscillating” engine that proved a failure and was removed after her first season. Her master for the 1871 season was Captain Alexander Clark. In October 1871, the *Navarino*, while lying alongside the Goodrich Transit Co. north pier at Chicago, caught fire and burned to a total loss in the Great Chicago Fire. No lives were lost. The value of the steamer was set at $75,000.

Her final enrollment was surrendered at Milwaukee, on December 31, 1871. The burned hulk of the *Navarino* was rebuilt as a barge at Green Bay in March 1881.

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.)