

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 2025

Our Next Meeting: May 17, 2025;

Hybrid –

“Jigs & Fixtures used in Ship Modeling”

by Darrell Markijohn

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April

We welcome Barry Fagan and Jim Oberst, two new members, both from the central Ohio area. Sorry about the technical issues between Apple Computers and the Smart Screen hanging on the wall in the library conference room.

We had a good turnout Saturday morning. In addition to our two guests, we had an additional 5 in the conference room and 6 on-line, including Julie joining us from France and Jeff joining us from Idaho.

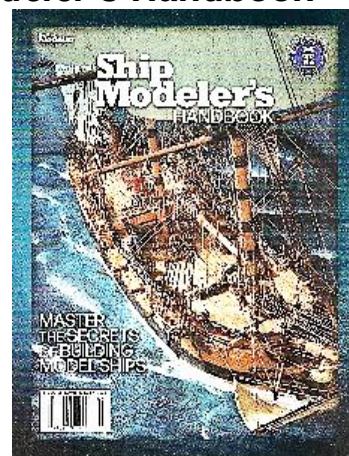
Be sure to check out the notice about the NRG “Ship Modelers Handbook” and the events and activities below.

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.

If you have not gotten your Covid, Flu, Measles or RSV shots, please do. Stay safe.

Till next month. Your editor.

Ship Modeler's Handbook



We are indebted to John Boeck for ordering a quantity of the handbooks for you, our members.

Leafing through the table of contents, I was impressed with the list of authors that I knew to be award winning ship modelers. Names, such as: David Antscherl, Gus Augustin, Toni Levine, Kurt Van Dahm, and Steve Wheeler.

The handbook is a joint venture between “Fine Scale Modeler & the Nautical Research Guild. To quote from the editor’s page: “you will find advise and step-by-step how-to articles on everything from choosing the proper tools to do a particular job to strategies for building ships from wood, plastic, and even paper.”

To receive a personal copy of the handbook, contact Bob Mains at rmains1@columbus.rr.com. All costs are being covered by your ship modeling club.

Reminders & Announcements

Modeling Events

42nd Annual Northeast Joint Clubs Conf.

This annual event of maritime craftsmanship, camaraderie, and inspiration will be held at the Pory 'n' Starboard Convention Center, New London, CT; April 26, 2025 from 9 am – 3 pm. They are expecting over 100 ship models for display.

For more information:

<https://www.shipmodelsocietyofnewjersey.org/>

48th Annual Midwestern Model Ships & Boat

The Wisconsin Maritime Museum will host, a Nautical Research Guild Associated Competition, May 16 – 18, 2025 at the museum located at Manitowoc, Wis, on the shores of Lake Michigan.

Model receipt and setup will be Friday May 16 and early Saturday morning. Models will be on display to the public on Saturday and Sunday, May 17 & 18.

Award presentation will be Sunday. Registration is open through May 1, 2025.

<https://www.wisconsinmaritime.org/explore/midwestern-model-ship-contest/>

If you are interested in attending, I suggest carpooling. It is an 8+ hour trip through Chicago and Milwaukee, unless you take the ferry, *Badger*, from Muskegon to Manitowoc, and then it is longer.

Bluejacket Rigging Class

Struggling with or new to rigging a ship model, here is a possible solution, and it is in beautiful Maine, on the shores of the Atlantic.

Bluejacket Ship Crafters: will be holding a rigging class, May 18-22, 2025. IT IS A CLASS FOR NOVICES. They don't assume you know anything about rigging a ship model. All tools and materials are provided with the class fee of \$500. You get a hull to work on, all the sticks and dowels, glue, blocks, deadeyes, threads, wire, beeswax, sandpaper and the following:



Classes will be at the Fireside Inn in Belfast, ME, 4 miles from BlueJacket on Route 1. For hotel reservations, phone (207)338-2090. You should ask for the BlueJacket corporate rate. There is a pool, sauna and Jacuzzi, plus all rooms have an excellent view of Penobscot Bay. If you are the camping type, Searsport Shores is nearby.

To register, contact BlueJacket at

<https://www.bluejacketinc.com/contact-us/>

2025 NRG Photographic Ship Model Comp.

The Nautical Research Guild has announced their *2025 Photographic Ship Model Competition*. The last NRG model photo competition was in 2021, where your editor won a Gold for his model of a skipjack.

All photos and supporting documentation requested will be submitted on-line. Entrants will also receive a written review of their model. Gold, Silver and Bronze medals will be awarded for the First, Second and Third place models in three categories: Novice, Apprentice and Master. A "Best of Show" will be awarded to the best "Gold" winner.

The competition is open to regular members in good standing of the Nautical Research Guild. If you are not currently a member, join the Guild and enter the Competition.

The entry fee will be \$30 per model entered.

Entries can be submitted starting on Monday June 16, 2025. Entries must be submitted before or by Thursday, July 31, 2025.

Winners will be announced at the Annual Member's Meeting. Details for how to enter will be available soon.

American River Roots Festival

Cincinnati – October 08-12, 2025

This festival is a signature event for America's 250th celebration. Celebrate with us as we host a unique fusion of Music, Cuisine, Culture and Cruises on the Cincinnati, Covington and Newport riverfronts.

www.americasriverroots.com

Sea History Activity

LST-325 Ship Memorial: The LST-325, commenced summer hours April 1, 2025. The LST is docked on the Ohio River at Evansville, Ind. Her annual cruise is scheduled for September 3 – October 2, 2025, where she will stop at Muscatine, IA, Alton, IL, Cape Girardeau, MO before returning to Evansville, IND, October 01.

2025 Art of the Sea: "Sea History" will hold an online juried exhibition & sale, June 1 to July 1, 2025. <https://www.seahistory.org/artofthesea2025>.

Historic Naval Ships Assoc: September 24-27, 2025, the 12th Maritime Heritage Conference will be held at Buffalo, NY. More info when it comes available.

Presentation Schedule Change

Heads up. The 2025 presentation schedule has been revised due to scheduling conflicts.

The schedule, as of the April meeting is:

May – History of ships WW II – C. Mitchell

June – Photo Etching brass parts – S. Keller

July – Jigs & Fixtures – D. Markijohn

Aug – Planking a wooden hull – D. Buchanan

Sep – Bending Wood – S. Keller

Oct – Lofting & Ships Plans – Nyberg

Nov – Power & hand tools in ship modeling – J. Northup

Dec – Card Modeling – Holloway & Nyberg

Mark those calendars

Presentation:

Ships in a Bottle

by John Boeck

Rule of Thumb: "Everything has to fit through the neck of the bottle."

John shared that you as a modeler, building a "Ship in a Bottle" should have a vision of what the end product could look like, whether you are building it from a kit or from scratch.



Above photo compliments of Lee Kimmins

There are some considerations that you need to think about. John took us through the steps before starting the build.

- Bottle interior measurements: from the top of the highest mast to the waterline of the hull add 1/8" above the mast and 3/8" – 1/4" for the sea the hull will sit on.
- Neck of the bottle: the main constraint – see rule of thumb above. Also take note of the thickness of the glass.
- Hull width: equal or less than half the inner diameter of the bottle neck to allow for sails/masts. If you did not know it before hand, you build the model outside the bottle and then it must fit through the neck of the bottle.
- Line length: your control of masts, yards, and sails will depend upon the lines that attach, and that can be controlled from outside of the bottle. Make them long.

Tools: here again, they have to be long handled.



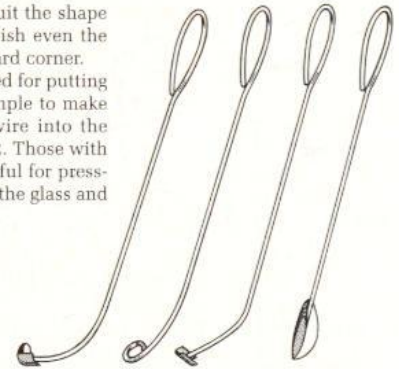
As a reference, the bottle, upper right, is 4 inches long. Most tools used will be an adaption (lengthened) of the tools used in building scale models. Like a 6" long, 3/16" thick dowel, with a sewing needle fitted on the end with the eye of the needle cut off for a "U" shape to move a line, or cut to make a hook to catch a line.

The following photo, are polishing tool made of wire to clean and polish the interior of the bottle.

By bending the wire to suit the shape of the bottle you can polish even the smallest and most awkward corner.

The instruments needed for putting in the putty are quite simple to make by bending lengths of wire into the shapes illustrated in Fig 2. Those with shaped ends are very useful for pressing the putty firmly onto the glass and

Fig 2 Instruments for moulding the sea.



Other materials are: fishing line or polyester tread for stays, halyards, etc.; tight grain woo or bamboo for masts, spars, 7 furniture; putty, epoxy or UV-resin for the sea; cork or other stopper, cleaning pads, cut rags.

Bottle considerations:

- Size: Interior shape and dimensions suitable for model; Square, rectangular, and triangular bottles can be displayed without stands.
- Neck: Inner diameter appropriate to allow hull to pass...watch out for pinches.
- Clarity of Glass & Clean: Ripples, seams or other imperfections can preclude seeing model details and affect overall presentation. Common in antique glass
- Get the interior as clean as possible. Look for residue in bottom seams

John recommended: *Old Rarity, Haig, Oval-shaped Rum bottles*

Let us build the model:

First the hull:

- Hull shouldn't be more than 1/2 width of the inner diameter of the bottle neck; Hull design should be built from the waterline; Take the length and angle of the bowsprit into model or bottle size; Drill shallow mast holes in the hull and the control line channels A (Blue dots) hot needle can sometimes be used but it is not as controlled as a bit; Hollow out the bottom of the hull for lines to travel freely; Shape, sand and paint before mounting in bottle; Install deck furniture to ensure they don't interfere with the masts; For very high hulls in a narrow-necked, large-body bottle, a "sandwich" construction approach can be used.



Note: The images from the rigging slides did not copy well.

Rigging:

Fixed stays don't allow masts to be laid down.

Backstays are used to hold the position of the masts when pulled up.

To represent mainstays while allowing masts to lay, the mainstays are passed through masts and hull.

A Continuous line gives opportunity to tighten and/or straighten a leaning mast.

Backstays can be fixed if the foremast line is behind the mast.

Keep lifts loose enough to allow yards to swing.

Rig spars, if limited to one mast; otherwise skip the halyard or resort to flexible line length.

Have lines allowing both forward and aft tension, whether fixed or not.

CRITICAL: Label: mast, spar, position, direction, note example:

Missen:spar2,port,aft=Ms,2,p,a

Fore:spar1,port,forward,halyard=F,1,f,p,halyd.

Develop a line map &

Label All Lines – Clearly. Develop a code for labeling that works for you.

Mast Stepping:

Masts should be able to fold down, unless they are being installed individually after mounting the hull in the bottle.

Stepped decks and/or furniture require the hinge to be raised.

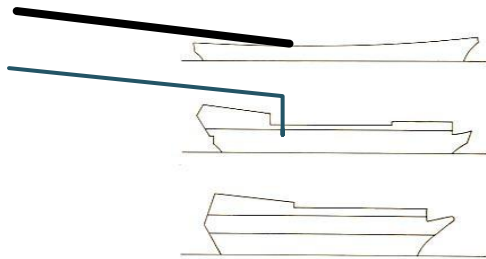
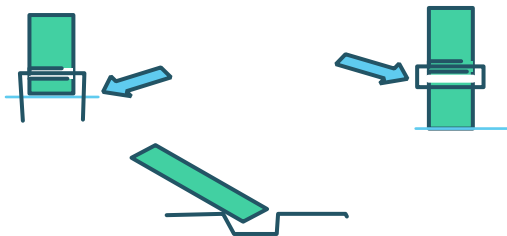


Figure 6 Not every hull shape can pass through the neck of the bottle in one piece. Taller hulls, such as those of the galleon and ship of the line below, can be introduced layer by layer.

The foot note, above: under the triple deck shape states:

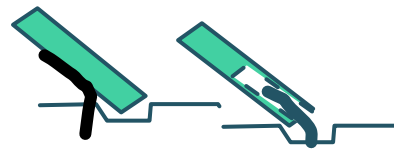
“Not every hull shape can pass through the neck of the bottle in one piece. Taller hulls, such as those of the galleon can be introduced layer by layer.”



Upper two mast stepping's are staple hinges.

The bottom is a notch mast stepping.

Below is an image of a wire hinge mast stepping.



The

Wire Hinge

base or sea:
Putty

Extremely workable

Opaque, paintable

Must be dried out to remove oil

Epoxy Resin

Good transparent colors

Must be mixed – messy

Easy to work during short curing time

UV Resin

Good transparent colors

Easy to pour, quick curing given UV

Difficult to work into waves inside the bottle

Application

Roll putty into balls, press flat and shape waves as desired.

Paint crests and wake

Pour resins in layers. Install model before the last pour but after cutting the lines. Use funnel to protect the neck. Beware of sloshing up the sides of the bottle

UV resins require a large source. Small flashlights are insufficient for the volume involved

With all the above complete, we are ready to install the model

Be calm, slow, deliberate and patient. This will be stressful

Set up good lighting, adequate space and magnification.

Have tools at hand.

Fold down the masts and rotate the yards sufficiently to clear the neck

Pass the model through the neck, adjusting the model as necessary to avoid breakage

Once in, anchor the model on a pre-set base or with a manufactured tool that will hold the model against the pressure of raising the masts

Having the line map available, draw on the lines to slowly, incrementally raise the masts

If encountering resistance, stop and attempt to mitigate the issue. It's easy to break the model and almost impossible to fix now.

Once positioned, tension the aft lines and fasten them

Tension the fore lines to complete the fore-aft alignment

If necessary, tighten the backstays and fasten them to maintain the mast's proper rake

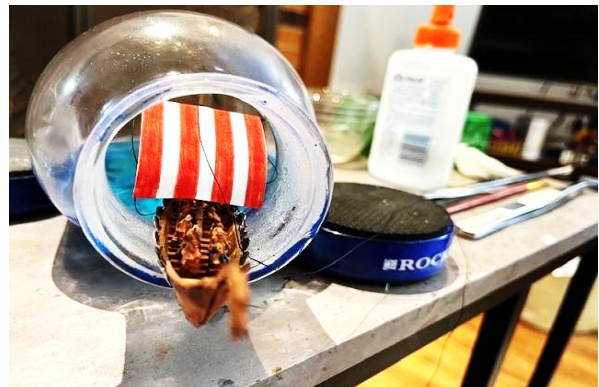
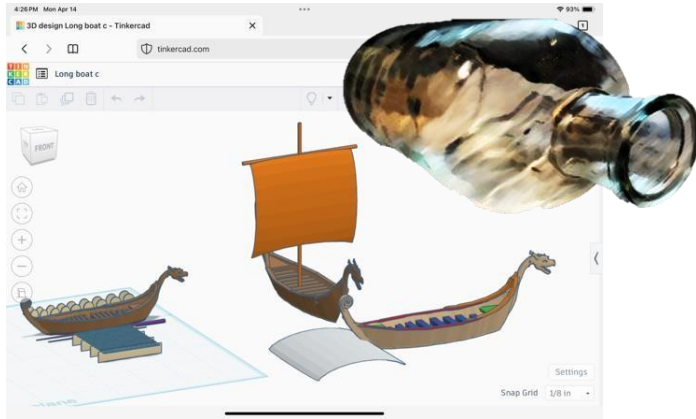
Pivot the yards individually. Lightly tension the lines and fasten in place

Cut excess lines with very sharp blade

Place model in putty or pour the final layer of epoxy. Work and paint sea

Working with the model in place is risky. If encountering resistance, stop and attempt to mitigate the issue. It's easy to break the model and almost impossible to fix now.

But if it works out:



Topics: Ship models in bottles, Model ships in bottles construction

The following resources were used in researching this topic:

- Ships in bottles: A modeler's guide
by: Leopard, John, Published: 1990
- Ships in bottles
by: Berchem, H. R., Published: 1988
- Modelling ships in bottles
by: Needham, Jack, 1916, Published: 1985
- Secrets of ships in bottles
by: Thorne, Peter, 1927, Published: 1999

"Ship Model in Bottles" Kits source.

Amati makes the Hannah ship in a bottle kit for \$70.

<https://www.bluejacketinc.com/shop/amati-kits/amati-model-ship-kits/hannah-ship-in-a-bottle-kit-amati/>

Amazon.com: Pirate Ship in a Bottle Kit - Includes All Parts ...

<https://www.amazon.com/Pirate-Ship-Bottle-Kit-Chall...>

\$15.40

The Ancient Mariner

<https://seagifts.com/shipinbotkit.html>

Hannah: \$72; Golden Yacht: \$75.

Ships on Deck

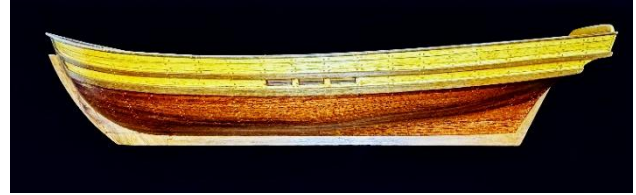
The intro photos for each ship shown after the title are for reference to what the model may look like when finished.



Swift

by Julie Holloway

I reconfigured the deck where the scuppers were, as it didn't really make sense to me to have the deck stringers block the scupper's drainage. I also replaced some plywood parts with walnut. The treenails are done and the deck and hull have been sealed with shellac sanding sealer. The photos show the first coat of Mini Wax warm Satin Wipe-on Poly after initial sanding.



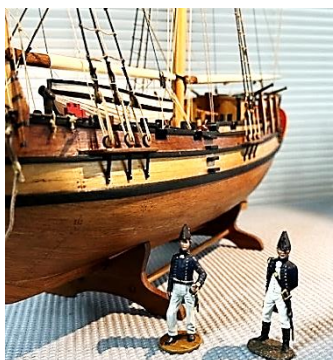
HMS Halifax – Schooner, British 1812

By Henry Martinez

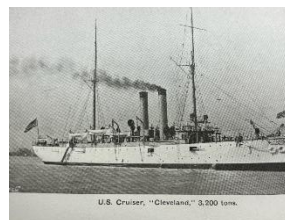
Doing a search on the internet, found the following:

Six ships of the [Royal Navy](#) have borne the name **HMS Halifax**, after the English town of [Halifax, West Yorkshire](#) and the city of [Halifax, Nova Scotia](#).

- HMS *Halifax* (1756) was a 22-gun [sloop](#) launched in 1756 and captured by the French in the same year at Oswego
- [HMS Halifax \(1768\)](#) was a 6-gun [schooner](#) built 1765, purchased in 1768 and wrecked in 1775
- HMS *Halifax* (1775) was a schooner purchased in 1775 and sold 1780. She may have been the previous *Halifax*, salvaged and returned to service.
- [HMS Halifax \(1780\)](#) was an 18-gun sloop, originally [USS Ranger](#), built 1777, renamed after the capture of *Ranger* on 11 May 1780; sold in 1781
- HMS *Halifax* (1782) was a 10-gun schooner purchased in 1782 and sold in 1784
- [HMS Halifax \(1797\)](#) was a 12-gun brig, the former French privateer *Marie* that the Royal Navy captured in 1797, commissioned in 1801, and sold that same year. She became the mercantile *Halifax*.
- [HMS Halifax \(1806\)](#) was an 18-gun sloop launched in 1806 at [Halifax, Nova Scotia](#) and broken up in 1814



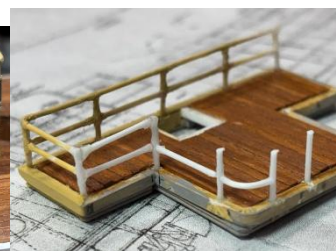
Great modeling Henry. For those who would like to build the schooner *Halifax*, Harold Hahn, in *"The Colonial Schooner, 1763-1775"* provides an excellent history of the ship, page 61-71. Also, in chapter 14, "Framing and Planking *Halifax*" are instructions and drawings to build the hull.



U.S.S. Cleveland

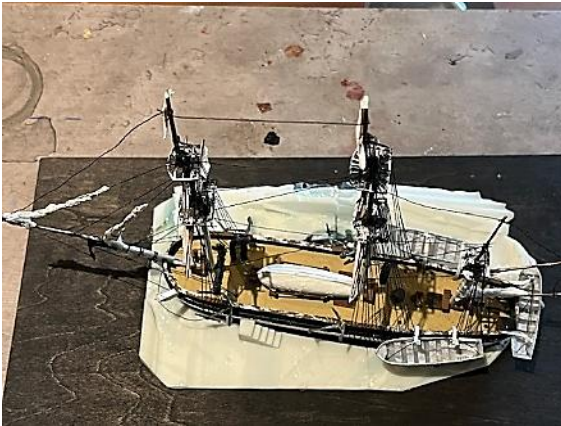
By Bill Schwartz

Gave up on my quest for brass railings and did them out of 1mm evergreen styrene stock. The only cement I could work with was JB Weld superglue. I tried regular superglue, 2 kinds of epoxy, dental cement, and flowable filling material, and UV plastic glue weld from Michael's with no success.

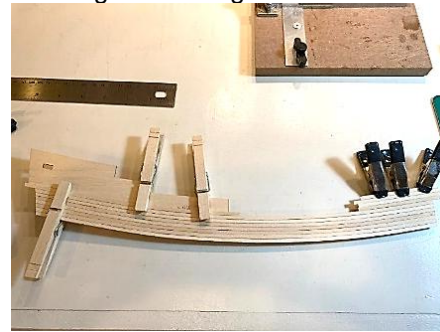




HMS Erebus
By John Boeck



Mayflower
by Doug Buchanan
Working on decking





Sprague - Towboat
by Lee Kimmins



Armed Virginia Sloop - 1768

by Bill Nyberg

The Armed Virginia sloop – 1768, is an 8-gun, single mast, fast sailing vessel, related to a Bermuda sloop.

Preparation for planking: Calibers, mini table saw, and mini sander. Planking material: Cherry, 1/16" thick = 2" @ 3/8 scale.



Hull, (above) with battens installed on port side.

Other Notes: "Stuff", Tugs & Things

Nautical Terms "B"

Boxing a Compass: To state all 32 points of the compass, starting at north and proceeding clockwise. Sometimes applied to a wind that is constantly shifting.

Brace: On square-rigged ships, a line attached to the end of a yard to rotate it around a vertical axis, for trimming the sail. Braces are fitted in pairs to each yard, one at each end.

Brail: 1. To furl a sail by pulling it in towards the mast and/or to the yard or gaff on which it is set. Where the brailing action is mostly moving towards the mast, it is termed "brailing in". If the sail is generally moving up to a spar, that is called "brailing up". 2. A line used to haul the edges or corners of a sail up or in, either preparatory to furling or as the act of furling the sail. Some brails do not have a more specific name, especially on a fore and aft sail. In other cases, clewlines, buntlines and leechlines may be considered types of brails.

Brass monkey, brass monkey weather: Used in the expression "it is cold enough to freeze the balls off a brass monkey". Apocryphally, it is often claimed that a brass monkey was a frame used to hold cannon balls, and low temperature would cause the frame to contract to a greater degree than the iron balls and thus allow them to roll off.

Brass pounder: Early 20th-century slang term for a vessel's radio operator, so-called because he repeatedly

struck a brass key on his transmitter to broadcast in Morse code.

Breakbulk cargo: Goods that must be loaded aboard a ship individually and not in intermodal containers or in bulk, carried by a general cargo ship.

Breaker: 1. A shallow portion of a reef over which waves break; 2. A breaking wave that breaks into foam against the shore, a shoal, a rock or a reef. Sailors use breakers to warn themselves of their vessel's proximity to an underwater hazard to navigation or, at night or during periods of poor visibility, of their vessel's proximity to shore. 3. A ship breaker, often used in the plural, e.g. "The old ship went to the breakers". 4. A small cask of liquid kept permanently in a ship's boat in case of becoming separated from the ship or if used as a lifeboat.

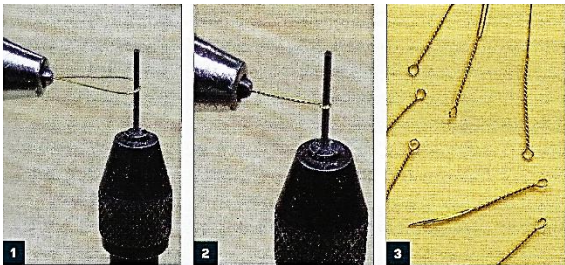
Breakwater: 1. A structure constructed on a coast as part of a coastal defense system or to protect an anchorage from the effects of weather; 2. A structure built on the forecastle of a ship intended to divert water away from the forward superstructure or gun mounts.

Breeches buoy: A ring lifebuoy fitted with canvas breeches, functionally similar to a zip line, used to transfer people from one ship to another or to rescue people from a wrecked or sinking ship by moving them to another ship or to the shore.

Tip of the Month

The following topic comes from the "Ship Modeler's Handbook" that I originally learned from Steve Wheeler many years ago. The subject is "Making Round Eyebolts". Tools required are two pin vises, a small drill set and wire.

- 1 – determine the size of the round eyebolt.
- 2 – choose a drill bit to match the eyebolt size
- 3 – fasten the ends of the wire into the second pin vise
- 4 – loop the wire over the drill bit
- 5 – twist the pin vise with the wire ends until the eyebolt is formed



This method lets you make any size eyebolts, from a size 70 drill bit for thread to slide through to an eyebolt large enough to fit over a mast trunk.

Tugs: Great Lakes

Fabian - 1894



Built at Buffalo by the Union Dry Dock Co. in 1894, for the Union Dry Dock. Her measures were: 70.7' x 19.4' x 9.4'; 71 grt, 35 net. She was powered by a High-Pressure engine: 23" x 28", 600 hp @ 110rpm built by King Iron Works, Buffalo. Enrolled at Buffalo. Her official number was 120969. In 1899, her ownership was changed to Maytham Tug Line, Buffalo. In 1914 her enrollment was surrendered and the *Fabian* was listed as "Abandoned".

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

Fashion - 1889



Built at St. Joseph, MI by George Ryan for Ida Bower and intended as a tugboat and an excursion vessel. Her measures were: 64.2' x 16.3' x 7.3'; 48 grt, 26 net. Enrolled at Chicago, August 9, 1889. Her official number was 120772. In April 1896, she sprang a leak and beached at Tobic Bay, near Bay City, MI. In November 1903, while dredging a reservoir for Bay City Dredging Co., she struck a sunken pile and sank. In 1920, she was rebuilt: 64' 2" x 16' 6" x 8' 2", 48 grt, 26 net. She received a Montague Iron Works, high pressure engine 14" x 17"; and a scotch boiler; 6' 6" x 9', 125 steam.

Ownership changed in 1930 to Marine Iron & Ship Building Co., Duluth, MN.

In 1940, her enrollment was closed and she was listed as "abandoned".

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

Presentation Schedule:

2025 – Schedule Tentative

Jan 18 ~~Scale Comparison Thread to Actual Rope Lines~~
Feb 15 (to be rescheduled)
Mar 15 ~~Fixtures: Anchors~~
Apr 19 ~~Ships in a Bottle~~
May 17 History of Ships WW 2
June 21 Photo Etching Brass Parts
July 19 Jigs & Fixtures – ship modeling
Aug 16 Planking a Wooden-hulled Ship
Sep 20 Bending Wood
Oct 18 Lofting & Reading Ships Plans
Nov 15 Power & Hand Tools in Ship Modeling
Dec 20 Card Modeling

Events & Dates to Note:

2025 Tentative Schedule

Columbus Woodworking Show
Ohio Expo Center
January 17-19, 2025

IPMS-Columbus
BLIZZCON 2025
Makoy Center, Hilliard, OH
Saturday, February 22, 2025

Miami Valley Woodcarving Show
Christ United Methodist Church
Middletown, OH
March 1-2, 2025

46th Midwestern Model & Boat Show,
Wisconsin Maritime Museum, Manitowoc, WI
May 16-18, 2025

Bluejacket Rigging Class
Fireside Inn, Belfast, ME
<https://www.bluejacketinc.com>
May 18-22, 2025

2025 Photographic Ship Model Competition
NRG Sponsored
Registration opens June 16, 2025
\$30 entry fee
Entries must be submitted by July 31, 2025
Winners will be announced at Annual Members Meeting

Great Lakes Tall Ship Festival,
Cleveland
July 4-7, 2025

Lakeside Antique & Classic Wooden Boat
Lakeside Hotel, Lakeside, OH
July 20, 2025

Columbus Air Show
U.S. Navy “Blue Angles”
Rickenbacker International Airport
August 22-24, 2025

Ohio River Sternwheel Festival
Riverfront Park, Marietta, OH
September 5-7, 2025

Shipwrights of Ohio 2025 Officers & Staff

President – Bob Mains.....614-306-6866
Vice Pres. – Cliff Mitchell614-890-6164
Communications – Bill Nyberg..614-370-5895
Recruitment – Jeff Northup740-585-0383
Treasurer – Lee Kimmins.....614-378-9344
Web Master – John Boeck..... 937-620-0258
Zoom Master – Steven Keller.. 513-280-2210
Web Site: www.shipwrightsofohio.com
Email: shipwright@breezelineohio.net

“The Art of Wood” – woodcarvers show

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October 24 & 25, 2025

Miniature Society Show & Sale

St. John's Evangelical Lutheran Church
Grove City, OH
November 15, 2025

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Wooden Steamers on the Great Lakes

Researched & Written
By William E. Nyberg

The Gilded Age was a period in the United States from 1873 to the early 1890s, and was marked by rapid economic growth, political corruption, and social inequality:

- Economic growth: The US became the world's leading producer of coal, oil, steel, and food, and saw a huge increase in the importance of the factory system, railroads, mining, and finance.
- Political corruption: The Gilded Age was marked by widespread political corruption, with wealthy industrialists and bankers holding the most political power. Tammany politicians in New York used fraud, violence, and intimidation to win elections.
- Social inequality: The Gilded Age saw the rise of two distinct classes, separated by a gulf of wealth and circumstance. Women faced a sexual double standard and inequalities in marriage, with limited access to divorce and few long-term career options.
- The Gilded Age name: The term comes from the 1873 novel "The Gilded Age" by Mark Twain and Charles Dudley Warner, which satirically depicted the era's corruption and political figures.
- The Panic of 1873 was blamed for setting off the economic depression that lasted from 1873 to 1879. This period was called the Great Depression, until the even greater depression of 1893 received that label, which it held until the even greater contraction in the 1930s—now known as the Great Depression.
- Other events during the period were: The US seized the Philippines, Puerto Rico, and Cuba after the Spanish-American War.

Supporting the economic growth was the change from wooden vessels on the Great Lakes to larger iron and then steel vessels. To transfer the growing needs of the steel mills and the transfer of grain crops to populated areas, Great Lakes ships needed to be structurally stronger to support the increase cargo weight. Longer vessels were required to support the larger cargos and this required stronger hulls to prevent "hogging" which impacted wooden ships structural keels.

The first two iron hulled vessels were built on the Great Lakes in 1844, The *Colonel Albert* for the U.S. Army, at Buffalo, NY; and the *USS Michigan*, for the U.S. Navy, at Erie, PA. The first steel vessel was the propeller, *William Chisholm* built by Globe Iron Works at Cleveland, OH in 1884.

1875-A



City of Owen Sound: John Simpson, at Owen Sound, Ont., built a wooden, steambarge for A. M. Smith et al, also from Owen Sound, to be used in the bulk freight trade. She was enrolled at Owen Sound, June 1875 and her measures recorded were: 172.0' x 31.0' x 13.0'; 898.0 grt. She was powered by a low-pressure engine, 34" bore x 30" stroke, 280 horsepower, built by G. N. Oille, St. Catharines, Ont. The engine was originally installed in the *City of London* C-1865. Steam was generated by a firebox boiler, 9' x 15.8'. The *City of Owen Sound* was assigned official number C71181. The steambarge had a carrying capacity of 30,000 bushels of wheat and she ran between Collingwood and Chicago. Master of the steambarge *City of Owen Sound*, for the 1875 season was Captain Taylor with Trevanion William Hugo as chief engineer. In October 1875, bound for the Air-Line Elevator on the Chicago River, the steambarge *City of Owen Sound* was struck by the, under tow, schooner barge *Emma C. Hutchinson* (US8900). Both received some damage. During winter layup, 1876-77, the steambarge *City of Owen Sound* was rebuilt and passenger accommodations added at Owen Sound, Ont. Her enrollment measures were changed to: 172' x 31'; 1093 grt. In May 1877, the "Collingwood and Lake Superior Royal Mail Line" was formed and consisted of the three steamers *Cumberland*, *Frances Smith* (92310), and *City of Owen Sound*. The steamers left Collingwood, Ont. every Tuesday and Friday, and run through to Duluth, MN, Lake Superior.

Masters of the propeller *City of Owen Sound* were; for the 1879 season - Captain Samuel Ashman; for the 1881-83 seasons - Captain John McNabb (1881 - 83), with T. W. Hugo as chief engineer. In October 1881, down bound, laden with 80,000 bushels of wheat, the propeller *City of Owen Sound* ran on a rock some ten miles off Gore Bay, Manitoulin Island, Georgian Bay. 6,000 bushels of grain were trans-shipped to the propeller *Manitoulin* (C71189) and another 2,000 bushels were jettisoned before the *Manitoulin* could release the *City of Owen Sound* and tow her into Gore Bay. During winter layup, 1882/83, the propeller *City of Owen Sound* was converted from wood fired to coal fire at Owen Sound, Ont. and arches were added to strengthen the hull. Her master for the 1884 season was Captain Neil Campbell. In November of that year, laden with merchandise, the *City of Owen Sound*, went ashore at the Michipicoten River, Ont. Lake Superior. Her passengers and crew were saved. In January 1885, Captain J. & T. Donnelly examined the wrecked steamer *City of Owen Sound*, had her released and towed to Owen Sound for repairs.

In 1887, the propeller *City of Owen Sound* was owned by Collingwood Transportation Co., previously

the "Collingwood and Lake Superior Royal Mail Line" and she ran from Georgian Bay to the Lake Superior ports, Port Arthur & Duluth. Her master for the 1887 season was Captain Lafrance with A. C. Maitland as chief engineer. In October of 1887, down bound from Duluth, MN, laden with 24,500 bushels of corn and 411 packages of fish, and no passengers, *The City of Owen Sound* encountered a heavy snow storm with a terrific gale wind through which she struggled. She struck on Robertson's rock, North Channel, Georgian Bay, a sunken reef east of Clapperton light, and went down in about half an hour. All the crew was saved.

The propeller *City of Owen Sound* stayed "as is" in 103 feet of water, until salvaged by Captain Leslie of the Collins Bay Rafting & Forwarding Co., Kingston, Ont. in 1891. She was towed into Collingwood, Ont. in 1892 and rebuilt as a steambarge. Registration ownership was changed to Collins Bay Rafting & Forwarding Co. and her new measurements in 1893 were: 172' x 31', 732 grt, 497 net. In the fall of 1895, the steambarge *City of Owen Sound* with her consort schooner *James G. Worts* (C71245), both laden with grain were struck by a squall while attempting to enter Georgian Bay and were driven ashore "on a shoal near Devil Island". All hands took to the lifeboats and eventually reached the safety of Tobermory. The wrecking tug *Martin Swain* (US91308) pumped the wheat out of the *City of Owen Sound* and was able to pull her off and take her into Tobermory. In 1896, the *City of Owen Sound* was rebuilt and re-engine with a low-pressure condensing engine, 32" bore x 36" stroke, built by G. W. Oglivie, St. Catharines, Ont. Her enrollment was transferred to Kingston, Ont. and she was renamed, in 1896, *Saturn* with measures: 172.0' x 29.2' x 12.6'; 883.09 grt, 570.59 net. Her master for the 1901 season was Captain W. Alanson. In September of 1901, bound up from Cleveland to Owen Sound, laden with coal, the propeller *Saturn* foundered in a westerly gale, 30 miles northwest of Southampton, Ont., Lake Huron. No lives lost.

Enrollment of the propeller *Saturn* was surrendered at Kingston, Ont. November 20, 1901 and endorsed "foundered".



Commodore: Thomas Quayle & Sons, at Cleveland, OH, built a wooden propeller for the Western Transportation Co., of Buffalo, NY. She was launched July 22, 1875 and her first enrollment was issued at Cleveland, OH, August 14, 1875. Her measures recorded were: 265.33' x 42.16' x 15.33'; 2082.02 grt, 1927.0 net. She was powered by a Steeple Double compound engine; 22", 44" bore x 36" stroke, built by

Farrar & Treffts, Buffalo, NY. Steam was generated by two firebox boilers, 8'6" x 18', 90 pounds steam, built by Farrar & Treffts, Buffalo. Her official number was 145452. She had been built for the package freight trade. In June 1881, bound up the Chicago River, the propeller *Commodore* collided with the schooner *C.K. Nims* (4271) under tow of a tug. The *Nims* lost her jib boom and the *Commodore* was uninjured. Master of the propeller *Commodore* for the 1883 – 85 seasons was Captain Cyrus Sinclair with Thomas Eagan, in 1878, and Henry Hess in 1884, as chief engineers.

In April 1884, ownership of the propeller *Commodore* was transferred to Western Transit Co. Her masters of the *Commodore* in 1890 were Captain D. R. Garner, and for the 1892-1902 seasons, Captain Charles K. Pederson; with James William Brooks as chief engineer for the 1896 – 1901 seasons. In 1898, the propeller *Commodore* was damaged by ice at the head of Lake Erie. She was dry docked for repairs. Her master for the 1903-06 seasons was Captain Knud Pedersen with John Metke as chief engineer for the 1902-08 seasons. In November 1903, in thick weather, the propeller *Commodore*, with a valuable cargo of package freight from Milwaukee for Buffalo, went aground on Simmons Reef, near the west entrance of the Straits of Mackinac, Lake Michigan. The crew threw the cargo overboard to lighten the vessel so that she could be released. Her masters for the 1907-09 seasons was Captain Frank Desot, and Captain John J. Wulke for the 1910-11 seasons, with W.H. Varey as chief engineer for the 1909 & 1910 seasons. In 1912

In 1912, laid up at the New York Central slip and lying on the bottom, the two propellers *Commodore* and *Auburn* (U3076) were converted into tow barges by Captain William H. Baker, Detroit, MI.

In April 1912, ownership of the barge *Commodore* was changed to Edward A. Evers, Chicago, of the Illinois Naval Militia. The vessel was to be used as a training ship for the naval militia at Chicago. Master of the barge *Commodore* was Captain George Huber in 1912, and Captain Frank Desot in 1913.

In September 1918, ownership of the training ship *Commodore* had been transferred to the U.S. Navy, at Chicago to be used as a receiving ship. Her new designation was IX-7 (Unclassified miscellaneous vessel). In March 1930, the training ship *Commodore* (IX-7) was decommissioned, by the U.S. Navy, Chicago, IL

In January 1931, the *Commodore* was dismantled and demolished by U.S. Navy Reserves, Chicago, IL (



Cuba: William Powers & Co., at Kingston, Ont. built composite (wood planking with iron frame) hull propeller, to be used for the passenger, package freight trade. She was enrolled at Hamilton, Ont, June 09, 1875 and her measures recorded as: 141.2' x 26.0' x 11.7'; 647.39 grt, 434.11 net. She was powered by a low-pressure engine, 28" bore x 30" stroke, 200 horsepower, built by Davidson & Doran, Kingston, Ont. The propeller *Cuba* was issued official number C71153.

In 1875, ownership of the propeller *Cuba* changed to J. Proctor, Hamilton, Ont and she ran on the Western Express Line, Hamilton, Ont to Chicago, IL.

In 1877, ownership of the propeller *Cuba* changed to S. Crangle, Hamilton, Ont. The propellers *Cuba* and *Armenia* (C74388) run from Toronto, running directly to Kingston, thence down the St. Lawrence River to Gananoque, Brockville, Prescott and Ogdensburg, connecting for the east with the Lake Champlain Railway. On the western end of the route they connect with the Northern Railway, and at Collingwood with steamers running to Chicago, Duluth and Prince Arthur's Landing. It is one of the most pleasant and cheapest routes for all persons going from Central Canada to Manitoba, while to the American going from the New England states to the west it offers facilities which are seldom equaled and could not be surpassed. Masters of the propeller *Cuba* were Captain S. Crangle for the 1878-79 season and Captain John Melgord for the 1880 season. In August 1878, the propeller *Cuba* struck on a shoal near Thousand Island Park. She was able to released herself. The following month, bound from Toronto, Ont. approaching Kingston, the propeller *Cuba* blew a safety valve on her engine, scalding a fireman.

Ownership of the propeller *Cuba* changed, in 1882, to Hagerty & Grassett, et al, Hamilton, Ont. Masters of the propeller *Cuba* were Captain McCorquodale, 1882 & 83 seasons; and Captain J. Ewart for the 1885 season, with Robert McColl as chief engineer in 1883. In August 1882, bound up for Chicago, laden with general merchandise valued at between \$35 – 40,000, the propeller *Cuba* sprang a leak, damaging her cargo, while on Lake Ontario and was run aground at Charlotte, NY. She was later released and taken to Toronto for repairs. During winter, 1883-84, layup, the propeller *Cuba* was rebuilt and lengthened: 177.0' x 26.0' x 11.5'; 931.13 grt, 598.65 net. Her engine was Steeple Compound, 18", 34" bore x 30" stroke, 280 horse power, built by Davidson & Doran, Kingston, Ont. In November 1884, bound from Toronto for Ogdensburg, the propeller *Cuba*, laden with 28,000 bushels of barley, 300 bags of flour 40 barrels of whiskey and general merchandise, sprang a leak and sank in Alexandria Bay, NY, St. Lawrence River. She was raised and repaired.

In 1886, ownership of the propeller *Cuba* was changed to Captain J. Ewart. In September of that year, she was placed in the Lake Superior trade.

In 1888, ownership of the propeller *Cuba* was changed to Montreal & Chicago Merchants Shipping Co. Her chief engineer for the 1889 season was William M. Cavanaugh. In July 1890, bound for Montreal, P.Q., the propeller *Cuba*, laden with grain, ran onto Gray's Reef, Lake Michigan, in heavy fog. She was released and

towed to Port Huron, MI for repairs at Wolverine Drydock. The drydock found that she had lost her forefoot and 30 feet of her keel and her bottom was badly broken up. Repaired. In October of that same year, the propeller *Cuba* failed to slow enough when entering Kingston harbor and crashed into Swift's dock breaking the wharf badly. Her masters during the 1896 to 1906 seasons were: Captain Robert Chestnut (1896-98), Captain Henry Chestnut (1899-1900), Captain John Towers (1901-02), Captain Antoine Monpetite (1903-04), Captain Antoine Monpetite (1905-06) with her chief engineers: Charles W. Wall (1891), Richard Mahoney (1896), William Kennedy (1898-1902), A. L. Marchand (1903), Eugene Hamelin (1904-05) and Joseph Belanger (1906).

In 1907, ownership of the propeller *Cuba* was changed to Battle Island Pulp Co. They had her reduced a barge: 168.7' x 25.6' x 11'; 386 grt. In 1910. Her master for the barge *Cuba* was J. Leboeuf in 1920. In June 1920, the barge *Cuba* foundered 2 miles below Berthier, P.Q., St. Lawrence River. Total loss.

Dolphin: At Clayton NY, A. Cook & Co. built a wooden steambarge for her original owners, John & Ashbel Cook, also from Clayton, NY. The steambarge was originally enrolled at Cape Vincent, NY in May 1875, and her measures recorded as: 81.0' x 21.0' x 7.0'; 79.53 grt. She was equipped with a high-pressure engine, 14" bore x 14" stroke, builder unknown. Steam was generated by a tubular boiler 5' x 8' 4". She was assigned official number 6887. The steambarge *Dolphin* was built for the bulk freight trade.

Ownership of the steambarge *Dolphin* was changed to C.C. Clute et al. Clayton, NY, in September 1875.

The following month, ownership of the steambarge *Dolphin* was changed to James Johnson et al, Clayton, NY. The steambarge *Dolphin* was rebuilt and lengthened to in May 1876, and her measures recorded as: 106.5' x 21.5' x 8.1'; 128.78 grt.

In May 1878, her ownership shares were changed to Leander H. Colt, James & Lucy Johnson, both from Cape Vincent, NY and 'her name was changed to *Solon H. Johnson*. In December 1879, the steambarge *Solon H. Johnson* went ashore on Point Edward, Ont., Saint Clair River. The steambarge *Solon H. Johnson* started 1881 chartered to the Cleveland Rolling Mill Co. for the stone trade and ran Toledo & Kelly Island. She ended the year running Port Huron, MI & Cleveland, O: n the lumber trade.

In April 1882, ownership of the steambarge *Solon H. Johnson* was changed to Gilbert LaCroix et al, Mt Clemens, MI. Her enrollment tonnage was changed to: 128.78 grt, 100.03 net.

In March 1884, ownership of the steambarge *Solon H. Johnson* was transferred to Captain Thomas Pringle et al, Marine City, MI. Her master for the 1884 season was Captain Thomas Pringle..

In April 1886, ownership of the steambarge *Solon H. Johnson* was changed to Charles Mears, Grand Haven, MI. In November 1887, the steambarge

Solon H. Johnson, laden with lumber and with a barge in tow, had her machinery disabled during a storm and was blown ashore eight miles south of Kenosha, WI, Lake Huron. No lives lost.

November 27, 1888, her enrollment was surrendered.



Flora: In 1875, Wolf & Davidson, at Milwaukee, WI, built a wooden sidewheel steamer for the Englemann Transportation Co., Milwaukee. She was initially enrolled at Detroit, June 1875 and her measures recorded as: 174.25' x 27.58' x 10.5'; 531.73 grt. She was issued official number 120210. The steamer *Flora* was powered by a Vertical Beam, Non-Condensing engine, 40' bore x 108" stroke, 400 horse power, originally built by Johnston, Wayne & Co., Detroit, MI for *Dart* in 1853. Removed from *Dart* in 1865 & rebuilt by Detroit Locomotive Works, Detroit for *City of Toledo* in 1865; engine was installed in *Flora* in 1875 by Wolf & Davidson at Milwaukee, WI after *City of Toledo* was rebuilt there. Steam was generated by a firebox boiler, 8' x 19 5/6', 50 pounds steam, built by Reiland & Davis, Milwaukee, WI in 1875. The sidewheel steamer *Flora* was built for passenger and package freight trade between the east and west shore of Lake Michigan. In May 1877, the sidewheel steamer *Flora* went ashore at Ludington, MI, Lake Michigan in dense fog. Released. Her master for the 1880 to 1886 seasons was Captain W. E. Comer with William J. McClure as chief engineer.

Ownership of the sidewheel steamer *Flora* was changed in April 1881, to S. B. Grummond, Detroit, MI. Her enrollment with tonnage measures were updated to: 561.63 grt, 455.95 net. In September 1883, the sidewheel steamer *Flora* broke her machinery, while on the Detroit River on her run between Toledo, OH and Detroit, MI. The cause was due to her piston running through the cylinder. Her master for the 1889-1891 season was Captain Thomas Meikleham with Captain John J. Pearson in 1892; George Bannerman Milne was chief engineer.

In September 1896, ownership of the sidewheel steamer *Flora* was changed to Hirman S. Brown and Rosa D. Brown, Detroit, MI.

In May of 1898, her ownership was changed to E. L. Williams, Detroit, MI.

The sidewheel steamer was in-turn sold Canadian to the Lake Erie Navigation Co. in 1898. The steamer *Flora* was rebuilt at Sandwich, Ont. and registered as *Urania* (C100303); 180' x 27.4' x 11'; 898 grt, 424 net. In June 1899, she was placed on a route, running between Cleveland, OH, Port Stanley, and Rondeau, Ont.

In 1901, ownership of the sidewheel steamer *Urania* was changed to W. Woolatt, Walkerville, ONT.

In 1904, ownership of the sidewheel steamer *Urania* was changed to the Windsor Navigation Co.

In March 1905, ownership of the sidewheel steamer *Urania* was changed to James McLain, Detroit, MI. She was renamed and redocumented in United States, as *Flora*, (U120210) with measures: 174.3' x 27.7' x 10.6'; 455 grt. Her owners had her rebuilt at Chicago for the excursion trade, running between Erie, PA & Buffalo, NY.

In 1907, ownership of the sidewheel steamer *Flora* was changed to John Grix, Duluth, MN.

The following year, 1908, her enrollment ownership shows that the steamer *Flora* was changed to Martin O'Toole, Detroit, MI. She was laid up at Kocher's docks at Detroit with several legal suits filed against her.

In 1911, ownership of the sidewheel steamer *Flora* was changed to Miles E. Barry, Chicago, IL. In July of the following year, the sidewheel steamer *Flora* sank at her dock south of the Genesee Ave. bridge, Saginaw, MI due to lack of care. She was raised and towed to Chicago. In November 1912, while awaiting dismantlement at the ship breaker's yard at Chicago, IL, the sidewheel steamer *Flora* was destroyed by fire.



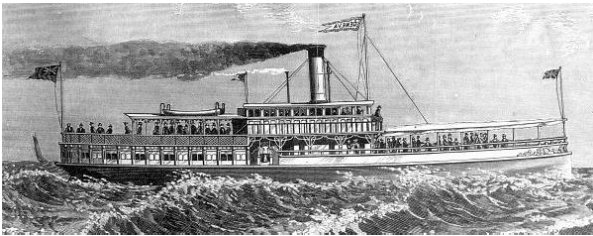
Fortune: In Late 1874, the Detroit Dry Dock Co. built a wooden propeller, hull # 00029, for the passenger ferry trade between Detroit, MI and Windsor, ONT, crossing the Detroit River. Initial enrollment at Detroit, on March 27, 1875, her measures were recorded as: 104.42' x 29.0' x 11.0': 199.77 grt, 108.58 net. Her official number was 120202. The *Fortune* was equipped with two, high pressure, non-condensing (HPNC) engine, 20 1/2" bore x 24" stroke, built by Frontier Iron Works, Detroit, in 1875. Steam was generated by a firebox boiler, 8' 6" x 15', 110 pounds steam.

In June 1881, ownership of the ferry *Fortune* was changed to John Pridgeon & Albert Schinenberg, Detroit. In August 1898, the ferry *Fortune* was struck by the Grand Trunk Railway car ferry *Lansdowne* (C88629) and badly damaged on the Detroit River. Her masters and chief engineers through 1910 were: Captain A.P. Clinton -1899); Captain Demise J. Jacques - 1900-02; and Captain H. Pocock - 1903-10; with George Bannerman Milne -1895, William McKittrick - 1896; Fredrick Wolff - 1900; F. William Cornish - 1903-07; D.B. Smith -1908-09; and J. Sutherland - 1910 as engineers.

In 1910, the ferry *Fortune* was sold Canadian to International Transit Co., Sault Ste, Marie, Ont, and renamed and registered as *Bawating*, C126867, 110' x 29' x 11'; 246 grt. Her master for the 1911 season was

Captain H. Pocock; Captain H. B. Hunt with H. Hindmarch as engineer in 1912; and for the 1913 season, Captain H. Glass with W. Hindmarch as engineer.

In 1914, the enrollment register the ferry *Bawating* was closed as "Condemned". Reportedly ownership changed to United States buyers and she was dismantled in 1915 and the hull converted to a tug. Transferred to the coast, she foundered in February 1920 in the Atlantic Ocean.



Geneva: George Chaffey & Brothers, at Portsmouth, Ontario, built a wooden propeller for the passenger ferry and package freight trade. At her initial enrollment, June 1875, her owners were listed as: Folger & Hanley, Kingston & Cape Vincent Ferry Co. Her measures were recorded as: 93.0' x 20.0' x 5.4': 96.74 grt, 39.08 net. The *Geneva* was assigned official number C72558. She would be powered by a horizontal high-pressure engine, 14" bore x 14" stroke, 50 horsepower, built by George Chaffey & Brothers Iron Works, Portsmouth, Ont. in 1875. She contained a shallow-draft propeller system that had been developed by her builders. The propeller *Geneva* could accommodate 50 cattle on her forward deck and up to 400 passengers on her upper deck. In September 1876, while lying at her dock, the propeller *Geneva* was struck by the schooner *Flora Carveth* when she fouled her anchor and drifted into her side carrying away the steamers boat and causing \$50 damage.

Ownership of the propeller *Geneva* was changed to W. Nickle, Kingston, Ont. in 1877. In September of that year, she received a new wheel at the Kingston Foundry. July 1878, bound from Kingston, Ont. for Cape Vincent, the propeller *Geneva* went aground in the mud at the further end of the Wolfe Island canal. Her master for the 1879 season was Captain Miller. In July of that year, the propeller *Geneva* struck bottom at Simcoe Island, breaking her wheel. Repaired.

Ownership of the propeller *Geneva* was changed to Dr. Lewis Springer, Hamilton, Ont. in 1880. August 1880, bound from Oakland to Hamilton, the propeller *Geneva* caught up with the propeller *Eclipse* (C77692) at the bar and the vessels came together, with the bulwarks of the *Eclipse* being stove in. During the winter layup, 1880/81, the *Geneva* received new boiler tubes, a staircase forward from the main to upper deck and a complete painting. Her master for the 1881-83 seasons was Captain Angus G. Stanton. In May 1882, the *Geneva* was damaged in a collision with the steamer *Africa* (C92285) while moored at McKay's wharf, Hamilton, Ont.

Later in 1882, ownership of the propeller *Geneva* was changed to John Turner, Toronto, Ont. In

October, while awaiting her certificate renewal, due to previous limitations for only carrying passengers on Burlington Bay, she was engaged in the fruit trade between Toronto and Niagara Falls.

In 1888, ownership of the propeller *Geneva* was changed to Rathbun Company, Deseronto, Ont.

In March 1889, ownership of the *Geneva* was changed to The Rochester & Thousand Island Steamboat Co. Rochester, NY. and registered U.S. as the *Geneva* (US86005). Her master for 1889, was Captain Andrews.

In November 1890, ownership of the propeller *Geneva* was changed to Jas. A. Beckwith, et al., Oswego, NY, who planned to run her as an excursion steamer to Beach Oswego and other places along the lake. Her master for the 1891 season was Captain George Atkinson with Nelson Skinner as engineer. In September 1891, after discharging passengers at the Beach Oswego pier, the propeller *Geneva* caught fire amidships and burned to the waterline. No lives lost.



Germania: George King, at Marine City, MI, built a wooden propeller as a canal size steam barge for the bulk freight trade. She was enrolled at Port Huron, MI, listing her owner as Henry Buttironi et al, Marine City, MI, and her measures as: 36.1' x 28.0' x 11.16'; 263.1 grt, 175.74 net. She was powered by a: Steeple Compound engine, 19", 36" bore x 30" stroke, 320 horsepower, built by Dry Dock Engine Works, Detroit, MI in 1875. Steam was generated by a tubular boiler, 7 1/2' x 16', 50 pounds steam. She was assigned official number 85435.

In April 1881, ownership of the steam barge *Germania* was changed to Selah R. McLauren et al, Toledo, OH. her master was Captain C. A. Peltier for the 1887-91 seasons with J.O Snyder, 1881-82; and Robert Hannon, 1887-91 as chief engineer.

In January 1888, ownership of the steam barge *Germania* was changed to Edward E. Koch et al, Toledo, OH.

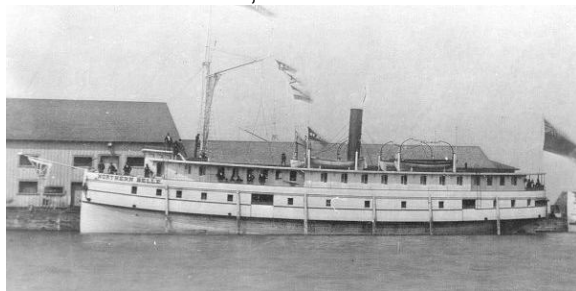
In April 1892, ownership of the steam barge *Germania* was changed to Robert Hannan et al, Bay City, MI. Master of the steam barge *Germania* was Captain Dorin Elliott in 1896; with Jeremiah Shampaign in 1892; George M. Milne in 1895; and William McKittrick in 1897 as chief engineer.

In May 1895, ownership of the steam barge *Germania* was changed to F. W. Wheeler Co., Port Huron, MI.

In March 1897, ownership of the steam barge *Germania* was changed to W.D. Smith, Ecorse, MI. January 1899, the steam barge *Germania* while in winter

lay-up at Ecorse, MI, behind her owners home, caught fire and burned to the water's edge.

Final enrollment for the steam barge *Germania* was surrendered at Detroit, MI, January 27, 1899, and endorsed "vessel burned, total loss".



Gladys: David Lester, at Marine City, MI, built a wooden propeller for the passenger and package freight trade. She was built by David Lester, as a private venture for his Toledo and Saginaw Transportation Co., Toledo, OH. Initial enrollment at Port Huron, MI, July 1875, her measures recorded as: 135.4' x 22.6' x 9.5', 513.0 grt, 337.0 net. She was powered by a fore & aft compound engine, 17", 28" bore x 21" stroke, 270 horsepower, built by Frontier Iron Works, Detroit, MI in 1867. Steam was generated by a boiler, 6' 11" x 14' 5", 68 pounds steam. The propeller *Gladys* was issued official number 85422.

Lester sold the propeller *Gladys*, later in 1875, to was sold Canadian to Thomas and John J. Long of Collingwood, ONT who had formed the Georgian Bay Transportation Co. In November 1876, she was renamed *Northern Belle*, C71111, 129' x 22.5' x 9.42'; 513 grt, 340 net. The propeller *Northern Belle* was operated by the Georgian Bay Navigation Co. from Collingwood, Ont to the lumbering villages and camps on the east and north shore of Georgian Bay. In October 1879, the propeller *Northern Belle* caught fire, damaging her hurricane deck.

In 1880, the Georgian Bay Navigation Co., reorganized into the Great Northern Transit Co. and this new concern absorbed the vessels and operations of the older firm. In 1893, her engine was replaced with two Fore & Aft Compound, 17", 28" bore X 21" stroke, built by Frontier Iron Works, Detroit, MI. In November 1898, the *Northern Belle* caught fire and burned to a total loss on the Maganettawan River, Bying Inlet, ONT, Georgian Bay. No lives lost.



P. L. Johnson: Louis Lafrinier, at Cleveland, OH, built for P.L. Johnson and Captain Solon Rummage, also from Cleveland, a wooden tug for towing barges on the Detroit River. She was enrolled at Cleveland in May 1875, and her measures recorded as: 98.42' x 22.0' x

8.66'; 159.33 grt, 79.67 net. She was powered by a low-pressure engine, 26" bore x 30" stroke, 343 horsepower, built by Cuyahoga Iron Works, Cleveland. Steam was generated by a firebox boiler, 8' x 17', 90 pounds steam. Her official number was 150033. Her master for the 1875 season was Captain Solon Rummage with Ed Dempsey in 1875 and William G. Fell in 1876 as engineers. Her master for the 1879 – 82 seasons was Captain Riley M. Burrington and Andrew J. Wilcox in 1884 as engineer.

Ownership of the tug *P.L. Johnson* was changed 1881, to Messrs. Groch & Mackey, Cleveland, OH.

Ownership of the tug *P.L. Johnson* was changed in 1884, to Hebard & Thurber, Pequaming, MI. The tug was renamed to *Daniel L. Hebard*, (U150033). Her master of the tug *Daniel L. Hebard* was Captain Andrew J. Wilcox for the 1884 season.

Ownership of the tug *Daniel L. Hebard* was changed to Ford Motor Co. in 1925. In 1931, the tug *Daniel L. Hebard* was dismantled at Detroit, MI and her engine was taken to Greenfield Museum, Detroit, MI.



Niagara: Melancthon Simpson, St. Catharines, Ont. built a wooden propeller for R. Fowlie & A. Jeffrey, St. Catharines, Ont. Enrolled at St. Catherines, October 1875, her measures were recorded as: 135.6' x 26.3' x 12.2'; 347.67 grt, 272.57 net. She was powered by a low-pressure engine, 36" bore x 36" stroke, 150 horsepower, built by Yale & Co., St. Catharines, Ont. in 1875. The *Niagara* was built for the bulk freight trade and valued at \$32,000. At enrollment, she was issued official number C73951.

In June 1878, ownership of the steambarge *Niagara* was changed to James Matthews, Toronto, Ont. In May 1881, the steambarge *Niagara* went ashore at Point Sanilac, MI, Lake Huron. She was released by the tug *I. U. Masters* (U12795) and proceeded on the Chicago, having not sustained any damage. The following month, the steambarge *Niagara*, laden with grain, was detained by Canadian authorities for not having bells and other conveniences according to regulations. In August 1882, her enrollment record was changed to reflect the lengthened by 34 1/2' at the Detroit Dry Dock; and her measures updated to: 172' x 26' x 12', 468 grt. Her master for the 1885 season was Captain Gorman. In May 1885, the steambarge *Niagara*, laden with grain from Toronto for the Montreal Transportation Co., ran aground at Long Point, Lake Ontario. She was lightered by the schooner *Elgin* (C77778) and the tug *McArthur* (C72586) and was released the next day.

Her masters and engineers were: Captain Morgan in 1889; Captain Robert Chestnut for the 1890 -

93, 95 seasons; and Captain James Morgan in 1899. Her engineers were J. Baldwin for 1879 - 81, Fred E. Wheeler in 1887, and Thomas Mills in 1899. June 1890, the steambarge *Niagara*, down bound on the Rideau Canal, went aground on Fiddler's Elbow. Released. In December 1899, down bound from Georgian Bay to Buffalo, NY, the steambarge *Niagara*, laden with lumber and shingles, foundered in a gale on Lake Erie, east of Long Point, Ontario. All on board, 17, were lost.

Final enrollment was surrendered, August 23, 1900.



Ohio: At her initial enrollment at Sandusky, OH, May 29, 1875, her owners were listed as: John Estes Steamship Co. Investors: John C. Estes, 1/4, Sandusky, OH; Charles N. Ryan, 1/4; John T. Johnson, 1/4; E.J. Ring, 1/4; and her measures recorded as: 203.2' x 35.0' x 18.6'; 1101.8 grt, 850.82 net. She was powered by a low-pressure engine, 42" bore x 36" stroke, builder unknown. Steam was generated by a tubular boiler, 9 1/2' x 18', 60 pounds steam, built by Globe Iron Works, Cleveland, OH in 1875. She was built for the bulk freight trade. Her master for the 1879-1888 seasons was Captain John C. Estes. In October 1884, the propeller *Ohio* went aground on Lake Huron. Released. Hull loss was set at \$500. In October 1887, the propeller *Ohio* struck the spiles in the Detroit River, near Sandwich Point, that were used to raise the steambarge *Eight Ohio* early in the 1880's. The *Ohio* had her bottom, from the bilge to the keel, caved in and the frames for a distance of 100 feet broken. The vessel was repaired at Cleveland Drydock. Hull loss set at \$5,000.

In April 1889, ownership shares of the propeller *Ohio* were transferred to: John T. Johnson, 1/4; E.J. Ring, 1/4; Lucius P Mason, 1/4, E. Saginaw, MI; M. Madden, 1/4, E. Saginaw, MI. In May 1890, the propeller *Ohio* and the steamer *Siberia* (U115848) collided in Mud Lake, St. Mary's River, Sault Ste. Marie. The *Ohio* sank in 32 feet of water. She was raised.

Ownership of the propeller *Ohio* was changed in April 1892 to: Frederick D. Montgomery, 1/2, Chicago, IL; Charles W. Elphicke, 3/8, Chicago, IL; A.L. Fitch, 1/8, Chicago, IL. Her master of the propeller *Ohio* was Captain R.T. Evans with A. G. Frazier as engineer for the 1893 season. In April 1893, the propeller *Ohio*, bound up from Buffalo to Chicago, laden with coal, was wrecked during a gale near Detour, MI, Lake Huron. She was repaired.

In April 1894, ownership share in the propeller *Ohio* were transferred to: J.J. Rardon, 1/2, Chicago, IL; Charles W. Elphicke, 3/8, Chicago, IL; A.L. Fitch, 1/8, Chicago, IL. In September 1894, down bound from

Duluth, MN to Ogdensburg, NY with 900 tons of flour and feed, the propeller *Ohio* sank in a collision with the schooner *Ironton* (US100122) off Presque Isle, MI, Lake Huron. The *Ohio* sank in 30 minutes. No lives lost.

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: $\text{Tonnage} = ((\text{length} - (\text{beam} \times 3/5)) \times \text{Beam} \times \text{Beam}/2)/94$

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 $1533\frac{3}{4}$ 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.)