

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 – August 20, 2022

Next Meeting: September 17, 2022;
"Ships in Miniature" by Simon Stephens

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August

Saturday, August 20th, with 9 others, meeting via zoom, we had a very informative meeting. Those of you who missed it, I will try to summarize Stephen Keller's presentation on "Cannon Rigging and Accessories"

The September meeting, Sept. 17th, will also be via Zoom. Our presenter will be from the UK, so, plan to join us. Mark it on your calendar, Saturday, September 17, 2022, 9 AM – 9:30 open discussion, meeting starts at 9:30.

I repeat my monthly advice and urge all of you to take care of yourself and your families. Look to those you know who may need help or are lonely and need human contact. Till next month.

Your editor.

Business

September Presentation

"Ships in Miniature" presented by Simon Stephens, Curator of the Ship Model and Boat Collections at The National Maritime Museum, will talk about the world's largest collection of ship models numbering 4600 and ranging from 1800 BC to the present.

This is a recording, and was presented by Wellington Trust in January of this year. If you have already seen it in January, you know it is worth seeing again.

Election of Officers

The "Shipwrights of Ohio" Constitution and By-Laws states that the officers of the club will be elected at our annual meeting, held in November of each year. You also know that we have been a bit lack during COVID.

That may be a few months out, but it is time for some "new blood" to take over running the club. The positions open for new candidates are president and vice president. Your president will turn 85 before our November meeting and Alan Phelps, VP, has health problem. All other officers plan to continue their present positions

In preparation for the November election, your club officers are in the process of developing a management framework, with a focus on increasing membership and mentoring ship modelers. As soon as we have an agreed to draft document, we will share it with the regular members and hold an open discussion.

The clubs present officers are:

President – Open

Vice Pres. – Open

Treasurer – Lee Kimmins

Editor – Bill Nyberg
 Photographer – Alan Phelps
 Web Master – John Boeck
 Zoom Master – Bob Mains, Steve Keller

2022 Meeting Schedule

The presentation subjects for the remainder of 2022 are:

October – Finishing: Natural & Paint

November – Flags: How to Make.

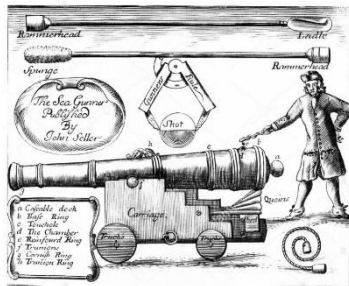
December – Rigging: Standing

The December meeting topic needs a presenter.

Presentation:

Steven Keller led the presentation and discussion on "Cannon Rigging and Accessories". His presentation focused on Naval carriage guns and cannons, from the "Age of Sail", 17th to 19th centuries, and was limited to the European and American navies.

He started with an example of the 1511, *Mary Rose* which was the first to use fixed guns, armed with new types of heavy guns that could fire through recently invented gun-ports. She was one of the first to be able to fire a broadside.



He then shared tables comparing English guns of the 16th and 18th century:

Principal English guns of the sixteenth century

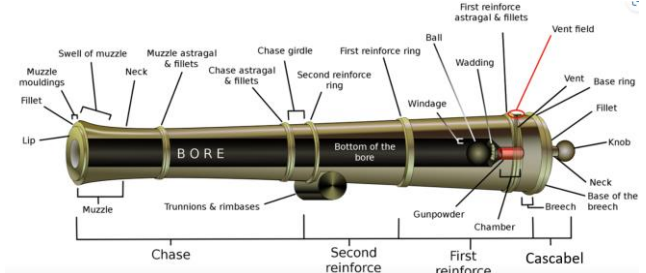
Name	Caliber (inches)	Length		Weight of gun (pounds)	Weight of shot (pounds)	Powder charge (pounds)
		Ft.	In.			
Rabinet	1.0	.....		300	0.3	0.18
Serpentine	1.5	.....		400	.5	.3
Falconet	2.0	3	9	500	1.0	.4
Falcon	2.5	6	0	680	2.0	1.2
Minion	3.5	6	6	1,050	5.2	3
Saker	3.65	6	11	1,400	6	4
Culverin bastard	4.56	8	6	3,000	11	5.7
Demiculverin	4.0	.....		3,400	8	6
Basilisk	5.0	.....		4,000	14	9
Culverin	5.2	10	11	4,840	18	12
Pedrero	6.0	.....		3,800	26	14
Demicannon	6.4	11	0	4,000	32	18
Bastard cannon	7.0	.....		4,500	42	20
Cannon serpentine	7.0	.....		5,500	42	25
Cannon	8.0	.....		6,000	60	27
Cannon royal	8.54	8	6	8,000	74	30

Calibers and lengths of principal eighteenth century English cannon

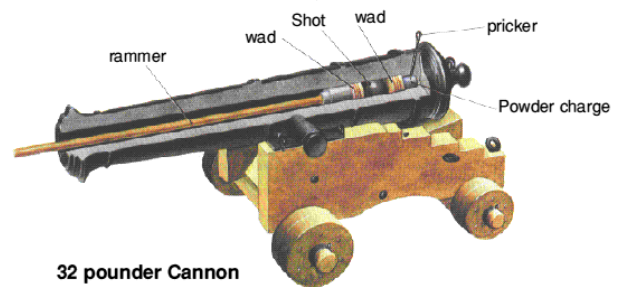
Caliber	Field		Ship				Siege		Garrison	
	Iron		Bronze		Iron		Bronze		Iron	
	Old	New	Old	New	Old	New	Old	New	Old	New
1½-pounder . . . . .	.....	.....	.....	.....	.....	.....	6'0"	.....	4'6"	4'2"
3-pounder	3'6"	3'3"	.....	3'6"	4'6"	3'6"	7'0"	.....	4'6"	4'2"
4-pounder	4'6"	4'1"	8'0"	4'4"	7'0"	4'4"	8'0"	.....	6'6"	5'3"
6-pounder . . . . .	.....	.....	.....	5'0"	7'0"	5'0"	9'0"	.....	7'0"	6'0"
8-pounder	5'0"	5'1"	9'0"	5'6"	9'0"	5'6"	9'0"	6'7"	8'0"	6'7"
12-pounder . . . . .	.....	5'10"	.....	6'4"	9'0"	6'4"	9'6"	7'6"	9'0"	7'6"
18-pounder	5'6"	6'3"	9'6"	7'0"	9'0"	7'0"	9'6"	8'4"	9'0"	8'4"
24-pounder . . . . .	.....	.....	.....	7'6"	9'6"	7'6"	10'0"	9'2"	9'6"	9'2"
32-pounder . . . . .	.....	.....	.....	7'10"	.....	.....	9'6"	.....	.....	.....
36-pounder . . . . .	.....	.....	.....	9'6"	8'4"	10'0"	8'4"	10'0"	.....	10'0"
42-pounder . . . . .	.....	.....	.....	8'6"	.....	.....	10'6"	.....	.....	.....
48-pounder . . . . .	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Steve then took us through:

The parts of the cannon;

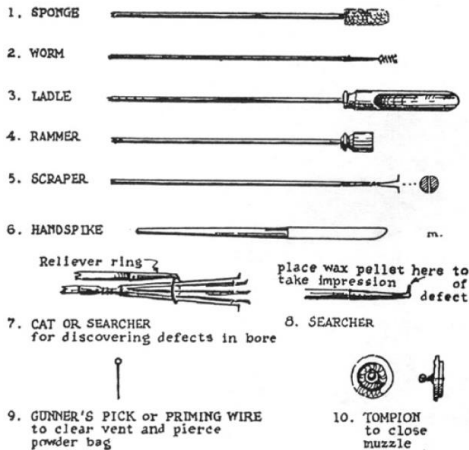


The loading and firing sequence:



- Shot rammed in with the rammer
 - Solid ball shot
 - Fused shot
 - Canister shot
 - Split shot
 - Second cloth wad loaded to secure shot
- Gun carriage "run out" to the bulwark using two-gun tackles (out haul tackle)
- Touch hole primed with fine priming powder or quill filled with priming powder
- Barrel Mopped
- Gunpowder Loaded
 - Loose
 - Cartridge
 - Cloth or Parchment
 - Pierced through the touch hole using a "pricker"
 - Cloth Wad Loaded and rammed home with a rammer

The next three slides focused on the gun equipment or tools. There are 10 tools used and stored near the gun. They are:



Tools of the gunner's trade (not to scale). The sponge, moistened with water, extinguished sparks in the bore after firing. The worm cleaned unburned fragments of cloth powder bags from the bore. Ladders were originally used to load powder; after cartridge bags came into use, they were used to extract loads from muzzle-loaders without firing. The rammer sealed cartridge and ball in place; the scraper and searchers were used to clean the gun and to find damaged spots in the bore. The handspike helped to move the gun carriage and to raise the gun breech so the wedge-shaped quoin could be moved to adjust the gun's elevation. The priming wire pierced the powder bag to make sure that the flame of the primer would ignite the powder charge, while the tompkin kept the bore dry while the gun was not in use. (From Albert Manucy, *Artillery Through the Ages* (Government Printing Office, 1949).)

Besides the above, there are also the sponge bucket and the powder. The most important tool was the ladle. It was not only the measure for the powder but the only way to dump the powder in the bore at the proper place.

Steve had two slides on projectiles and two on firing hardware. The projectiles are shown below.

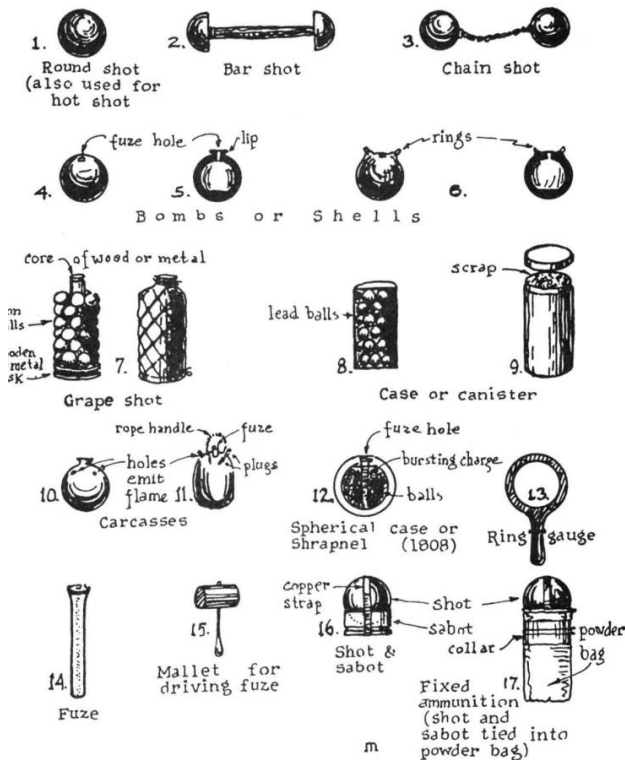


FIGURE 41—EIGHTEENTH CENTURY PROJECTILES. (Not to scale.)

We covered firing hardware, such as: linstock, flintlock, percussion and friction primer.

Did you ever wonder why a navy sailing ship needed such a large crew? There were 13 men & boys required to fire a 24-lb gun. A 24-gun ship, would require 312 men & boys to man the guns. The gun stations and crew stations were:

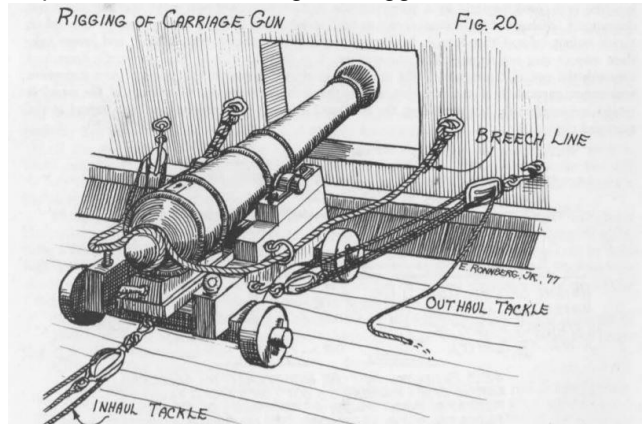
WHEN CALLED AWAY	POSITION - DUTY AT GUN	LONG	POSITION - DUTY AT GUN	WHEN CALLED AWAY
2 nd BOARDER	1 st LOADER - SIDE TACKLE	24 ROUND GUN	1 st SPONGER - RAMMER - ST	2 nd BOARDER
1 st BOARDER	2 nd " " " "		2 nd " " " "	1 st BOARDER
1 st BOARDER	2 nd SHOT - WAD		1 st SHOT & WAD	2 nd BOARDER
PIKEMAN - WINCH	2 nd TRAIN - TACKLE		1 st TRAIN - TACKLE	PIKEMAN - FIREMAN
PIKEMAN	2 nd HANDSPIKE - T-T		1 st HANDSPIKE - T-T	
3 rd BOARDER	1 st CAPTAIN		2 nd CAPTAIN	

● POWDER BOY

CREW STATIONS AT 24 LB GUN

Most of the gun crew would also have a second responsibility as boarders, plus a fighting ship needed sail handlers, officers, quartermasters for steering, carpenter to remove damaged masts and yards, and the doctor and medics.

We then went through: gun firing sequence, and how to gun is rigged when run out or stowed. As ship modelers, how the gun is rigged.



The photo above, show the gun tackle, battle ready.

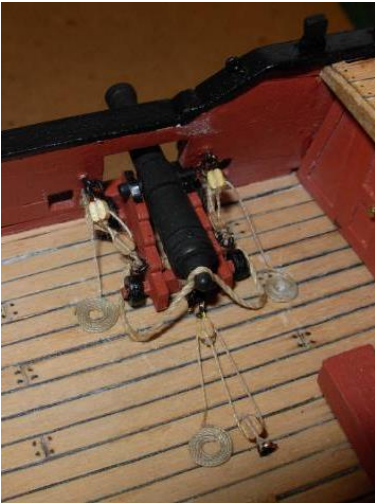
There are four tackles:

Breech line – stops the gun going backwards after it is fired.

Outhaul tackle – port and starboard of the gun carriage to haul the gun into place for firing or for the stowage of the gun.

Inhaul tackle – to haul the gun carriage towards the center of the vessel so that the tools have access to the bore of the gun barrel.

The following are some modeling examples we reviewed.



We were left with the following to consider when rigging cannons on our models:

- ▶ Rope and blocks
 - ▶ Out of scale diameter and winding can significantly reduce realistic effect

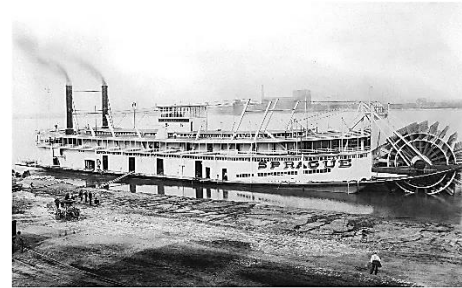
- ▶ Draping of ropes using stiffening agent can add to realism
- ▶ Rope color should be appropriate for the period of the model
- ▶ Rigging
 - ▶ Should be appropriate for the country and period of the model
 - ▶ Rigging surrounding the gun appears cluttered but is purposeful, which adds to realism.

Ships on Deck:

The following is an update on what your fellow shipwrights have been working on. As you can see, the progress covers from finishing prior work, restoration, to new builds. Thanks to all who submitted their progress reports and photos.

Sprague

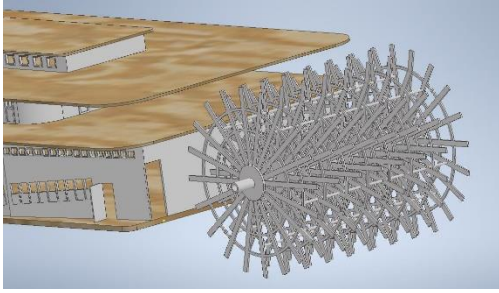
Lee Kimmins



Lee has started the drawings for the sternwheel steamer *Sprague*. She was built at Dubuque, Iowa by the Iowa Iron Works in 1901 by Captain Peter Sprague for the Monongahela River Consolidated Coal and Coke Company. She was the world's largest steam powered sternwheeler towboat (318' x 61'), and was nicknamed "Big Mama", capable of pushing 56 coal barges at once. In 1907, *Sprague* set a world's all-time record for towing: 60 barges of coal, weighing 67,307 tons, covering an area of 6+½ acres, and measuring 925 feet (282 m) by 312 feet (95 m). She was decommissioned as a towboat in 1948. After decommissioning, the *Sprague* became a museum on the Vicksburg, Mississippi, waterfront. For many years the long-running melodrama "Gold in the Hills" was performed there. The boat burned at Vicksburg on April 15, 1974



Lee is doing the CAD drawings and shared both the drawing above "Profile of the *Sprague*" and below.



Stern paddlewheel.



Another view of the *Sprague*

Sailing Ship

Bob Mains



Bob was gifted the above kit. The pieces snap together.

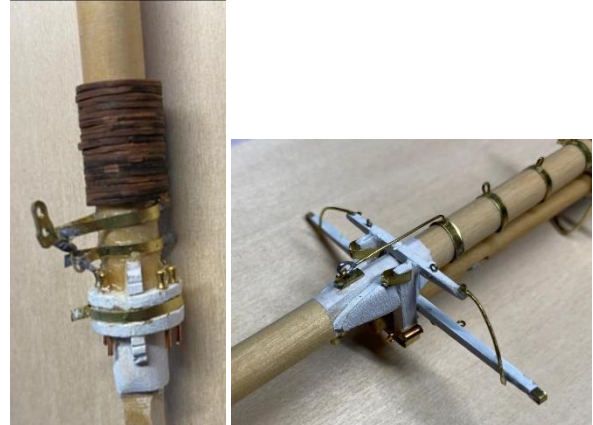
Bluenose - Restoration

Cliff Mitchell

Cliff, continues this restoration project and is working on the masts and their fixtures. He shared: I have finished the lower and upper fore and main masts. This was quite a challenge because the masts required many brass fittings which had to be fabricated by myself. Unlike *BlueJacket* models, which provided all the fittings usually, this partial built *Bluenose* did not. I ended up buying sheets of .005 and .016 Brass and using my old photography paper cutter, sliced them to the required thickness (1/16). I'm sure there are better ways to cut sheets of

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brass into small strips. Attached are close ups of the brass fittings I made.



The masts are very tall and he has not been able to photograph them properly...maybe next month.

Next: He will begin working on the main boom.

Red Jacket

Stan Ross

Stan is continuing the rigging of the BlueJacket clipper ship *Red Jacket*. Here are two photos of his work in process:



Working on the rigging foremast to bowsprit.



A stern view.

Distraction

Bill Nyberg

My son gave us an anniversary present of a wooden puzzle, made up of 785 pieces, laser cut, 1/8" thick. All are interlocking and the puzzle size is 12' x 24". Started July 9th, and worked on it every day, finishing August 13th.



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Maybe now, I can get back to my steambarge build.

Other Notes: "Stuff", Tugs & Things

Nautical Terms

liberty: A relatively short period when a sailor is allowed ashore for recreation.

licensed ship: A term used by the British East India Company from the 17th to the 19th centuries for merchant ships not under charter to it which it nevertheless permitted under a license issued by the company to trade between England (later the United Kingdom) and ports east of the Cape of Good Hope, a trade over which the company otherwise held a strict monopoly. The company placed strict controls on what ports a licensed ship could visit and what kinds of trade it could engage in. A licensed ship that violated these rules became an interloper and faced harsh penalties if caught.

lie to: To arrange a ship's sails so that they counteract each other. A ship in this condition or in the process of achieving this condition is said to be *lying to*.

lifebelt or lifebuoy, lifejacket, life preserver, and personal flotation device (PFD): A portable or wearable device such as a buoyant ring or inflatable jacket designed to keep a person afloat in the water.

lifeboat: (shipboard lifeboat) A small boat kept on board a vessel and used to take crew and passengers to safety in the event of the ship being abandoned. (rescue lifeboat) A small boat usually launched from shore and used to rescue people from the water or from vessels in difficulty.

life raft: An inflatable, sometimes covered raft used in the event of a vessel being abandoned or in the evacuation of an aircraft after a water landing.

lift: 1, A rope that supports a spar on a sailing vessel. Examples include the topping lift on the boom of a fore and aft rigged sail, or the lifts on the yard of a square rigged sail, which can adjust the yard to the horizontal or cock-bill the yard to get it out of the way when unloading cargo or alongside another vessel. 2, An enabling shift in the direction of the wind that allows a close-hauled sailing ship to point up from its current course to a more favorable one. This is the opposite of a header.

light irons: Iron bars mounted near the main shrouds that support the navigation lights.

light screens: Boards on which the navigation lights are hooked and which shield the direction that the red or green light shows.

lighter: A flat-bottomed barge used to transfer goods and passengers to and from moored ships, traditionally unpowered and moved and steered using "sweeps" (long oars), with their motive power provided by water currents.

lightering: The process of transferring cargo from one vessel to another in order to reduce the draft of the first vessel, typically done to allow a vessel to enter a port with limited depth or to help free a grounded vessel.

lightvessel or lightship: A permanently anchored vessel performing the functions of a lighthouse, typically in a location where construction of the latter is impractical. These have largely been replaced by buoys or, as construction techniques have improved, actual lighthouses.

limber hole: A channel cut in the underside of a frame, close to the keel, to allow bilge water to drain away to the pump well, rather than being trapped between each set of frames.

limber board: A part of the ceiling alongside the keelson, easily removable for cleaning out the limber holes.

the cordage or "ropes" used on a vessel. An individual line will always have a more specific name (e.g. the mizzen topsail halyard) that specifies its use.

line astern: In naval warfare, a line of battle formed behind a flagship.

liner: 1, During the Age of Sail, a ship-of-the-line, or a major warship capable of taking its place in the main battle line of fighting ships. 2, Any cargo or passenger ship running scheduled service along a specific route with published ports of call, excluding ferries and other vessels engaged in short-sea trading. When referring to cargo ships, "liner" contrasts with "tramp", which refers to a ship engaged in spot-market trade that does not follow a regular schedule or make regular calls at specific ports. When referring to passenger ships, "ocean liner" refers to ships providing scheduled transportation between regular ports of call, but excludes cruise ships, which voyage for recreational purposes and not primarily as a form of transportation between ports.

list: The degree or angle to which a vessel leans or tilts to one side, on the roll axis, at equilibrium, i.e. with no external forces acting upon it. The term typically refers to a lean caused by flooding or improperly loaded or shifted cargo, as opposed to heeling, which is a consequence of external forces. A vessel with such a lean is said to be listing.



A ship with severe **list**

lizard: A short length of rope with an eye, used to hold another rope in position.

Glossary of Nautical Terms - Wikipedia

Tugs: Great Lakes

Arthur (fish tug: a type of boat that was used for commercial fishing in the first half of the 20th century, primarily on the Great Lakes)



Arthur, was built at Milwaukee, in July 1889, as a wooden propeller, builder unknown. Official # 106683. She was 55.7' x 16.1' x 7.4'; with a tonnage of 37 grt, 18 net. Powered by a high pressure (HPNC) engine, 14" bore x 16" stroke, 130 rpm, built by Hoffman & Billing Co., Milwaukee. She had a firebox boiler, 5.6' x 10'. She was owned by G. Rosenstock in 1891, Henry Doepke in 1897, Cornelius Tamms in 1900, all from Milwaukee. In 1908, J.R. Hilborn from Cheboygan was her owner until she was abandoned in 1921.

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

Arthur (towboat)



Arthur, was built at East Saginaw, MI, in 1890, as a wooden propeller, by builder C. R. Clark. Official # 106726. She was 54' x 15' x 6.6'; with a tonnage of 29 grt, 13 net. No information available on her engine or boiler. Her original owner was George W. Moiles, Saginaw and she was enrolled on May 16, 1890 by J.W. Cochrane, Ashland, WI in 1897, Thomas Hadlund, Bayfield WI in 1904, who used her for fishing, and by Neil Matherson, Bayfield until she was listed as out of registry in 1921.

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

Presentation Schedule:

2022

Jan 15 — Canceled
Feb 19 — Planking a deck
Mar 19 — Deck house from scratch
Apr 16 — Mast and Yard Making
May 21 — Jigs & Fixtures — discussion
Jun 18 — Midwestern Ship Model Comp.
Jul 09 — Tall Ships: Cleveland
Jul 16 — Treasurers of the National Museum
Aug 20 — Cannons and Accessories
Sep 17 — Ships in Miniature
Oct 15 — Finishing: natural & paint
Nov 19 — Flags: How to Make
Dec 17 — Rigging: Standing/Running

Events & Dates to Note:

2022 Tentative Schedule

Tall Ships – Erie
Erie, PA lake front.
August 25-28, 2022

NRG Conference
Canceled
Oct. 2022

2023 Tentative Schedule

Columbus Woodworking Show
January 21-23, 2023

IPMS Columbus
BLIZZCON 2022
Saturday, February

Miami Valley Woodcarving Show
March

46th Midwestern Model & Boat Show,
Wisconsin Maritime Museum, Manitowoc, WI
May 13-15, 2023

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

NRG Conference
?
Oct. 2023

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August 23, 2022

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Cargo Hold

www.shipwrightsofohio.com/cargo_hold/

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

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

There are currently two logo styles available:

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



Wooden Steamers on the Great Lakes

Written by William E. Nyberg

1861-65, the War Years

1863-A

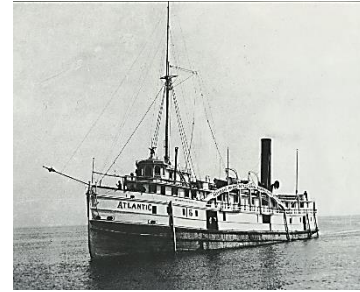


America: Built at St. Catharines, Ontario by Louis Shickluna, the wooden propeller was enrolled at the same location, on May 09, 1863. Her measures were 134.0' x 24.0' x 10.0' with a tonnage of 331.0 grt. Her original owners were James Norris & S. Neelon, both from St. Catharines. Built for the package freight trade between Montreal, Que. and the upper lakes at a cost of \$25,000, she was powered by a low-pressure engine, with a 30" bore x 34" stroke, rated at 240 HP and built by G. N. Oill, St. Catharines. Her master for the 1863 season was Captain Parrot. The propeller *America* often operated under other names for: Merchants Line, Henderson & Co., Black Perry & Co., Western Express Line and "Mr. Chaffey's Line". Her master for the 1873 season was Captain Vaughan. In June 1874, the *America* broke her wheel in the St. Lawrence River. Loss set at \$500.

Ownership of the propeller *America* was changed, in 1877, to D. McDonald, Toronto, Ont. In 1877, she was readmeasured according to 40th Victoria, Chapter 19 at; 631 grt, 418 net.

The Canadian enrollment for the *America* was closed in 1880 and endorsed as "broken up".

In May 1880, ownership of the propeller *America* was reported, changed to Thomas M. Ryan, Buffalo, who planned to convert her to a lumber barge at Owen Sound, Ont. She was renamed *John A. Ryan* and her machinery went into new steamer *Manitoulin* (C85491). There is no evidence that has been found that the *John A. Ryan* was registered in the U.S. The Buffalo Express newspaper of March 18, 1881, states that Thomas A. Ryan planned to convert the *John A. Ryan* into a steam barge for the Georgian Bay lumber trade. Her new engine, already purchased, would be a high pressure, 24" bore x 36" stroke, and with an iron boiler. 16.5' x 8.5'.



Atlantic: On May 23, 1863, the new propeller *Atlantic* was enrolled at Cleveland. Built by Peck & Masters for Dean Richmond et al, Union Steamboat Co, Buffalo, and her recorded measures were 177.58' x 28.16' x 11.83', with a tonnage (old style) of 564.50. She was powered by a low-pressure condensing engine, 41" bore x 36" stroke, 230 horsepower, built by Cuyahoga Furnace Co. in 1863. Steam was generated by a firebox boiler, 9' x 26', 45 psi, also built by Cuyahoga Furnace Co. She was built for the passenger, package freight trade on Lake Erie between Buffalo and Cleveland. Her master for the 1863 season was Captain James Pratt. The *Atlantic* was chartered to the New York Central RR and could accommodate 100 passengers. Dean Richmond was a director and officer of the company. In May 1865, the propeller *Atlantic* was readmeasured at Buffalo and her enrollment updated to: 176.42' x 28.33' x 10.58'; 656 grt, 556 net. She was assigned the official number 298.

The ownership of the propeller *Atlantic* along with 17 other propellers were sold to T.D. Dole in 1867. New York Central RR contracted with T. D. Dole to handle all freight to and from Lake Erie ports for five years starting from the spring of 1868. July 1869, the *Atlantic* went aground at Superior City, WI, Lake Superior. In November of that same year, she was damaged in a collision at Buffalo. In July 1871, the *Atlantic* went on the rocks in the St. Mary's River, Sault Ste. Marie. November 1872, the *Atlantic* was in a collision with her tow Canadian bark *Cecelia* & schooner *Montgomery* (U16348) on the St. Clair Flats, receiving damage to her forward cabin and pilothouse. In June of 1874, she went aground at Detroit and three months later, September 1874, she went aground at St. Clair Flats, Lake St. Clair. Released.

In 1882, ownership of the propeller *Atlantic* was changed to Steve B. Grummund, Detroit. She ran in the Detroit & Mackinac Line, between Cleveland and Lake Huron ports. During 1885/86 winter layup, the *Atlantic* received engine repairs, a new stack, decks and her bow sheathed with boiler iron. During the 1892/93 winter layup, she received new arches, deck repairs and a new electric light

plant. For the 1894 season, the propeller *Atlantic* the *Atlantic* was put on the Cleveland, Toledo, Detroit, Alpena, and Mackinac run.

In September 1896, ownership of the propeller *Atlantic* was changed to H. S. Brown, Detroit. Later the same month her enrollment was changed to indicate that her owner was Rose D. Brown, Detroit. The *Atlantic* was laid up in a slip at the foot of 21st Street, Detroit in 1896.

In March 1898, her ownership was changed to William Wallace Brown, Detroit. August of that year, she caught fire and burned at her dock. The hull settled into the water.

In April 1900, the ownership of the propeller *Atlantic* was purchased by Fredrick W. Whiting at auction to settle dockage claims. She was rebuilt as a steambarge for bulk freight at the Davidson Dry Dock, Michigan City, MI. Her enrollment measures were updated to: 176.42' x 29.42' x 11.66'; 448 grt, 281 net. Her engine was replaced in 1901, with a steeple compound engine with 22" x 42" x 3-foot stroke built by Montague Iron Works.

Ownership of the *Atlantic* was changed in April 1901, to Frank C. Andrews, Detroit. She was renamed to the *Homer Warren*.

Her ownership was changed in 1902, to Shannon & Carey, Saginaw, MI. In September 1906, bound down from Alpena, MI, the *Homer Warren*, with barge *William Crosthwaite* (US26217) in tow, both loaded with lumber, collided with each other off Kelly's Island, Lake Erie. The *Crosthwaite* sank and the *Homer Warren* had received bow damage. No lives lost.

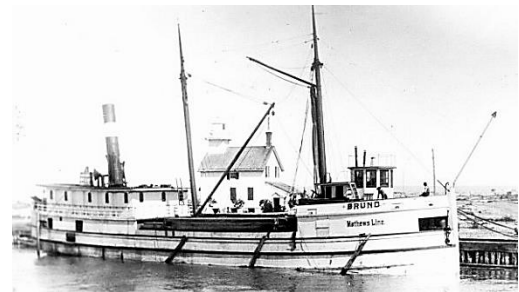
In June 1914, the *Homer Warren* was sold Canadian to Peninsula Tug & Towing Co., Warton, ONT. She was registered at Owen Sound, ONT (C130222), with Canadian measures: 176.5 x 30 x 12; 447 grt, 304 net.

In May 1918, ownership of the *Homer Warren* was changed to Milnes Brothers, Toronto, ONT and employed in the coal transportation trade. In May of the following year, ownership shares in the *Homer Warren* were redistributed to Milnes Brothers (48 shares), Captain (8 shares), Chief Engineer (8 shares). In October 1919, bound from Oswego, NY for Toronto, laden with a cargo of 500 tons of corn, the *Homer Warren* foundered off Pultneyville, N Y, Lake Ontario and sank 13 miles west of Sodus Point, NY. Nine lives lost.

The location of the wreck of the steambarge *Homer Warren* was discovered in June 2003.

Brockville: At Brockville, on the St. Lawrence River, William Saunders built for the George Chaffey &

Brothers, Brockville, a wooden propeller, with measures: 136.2' x 23.5' x 11.5', with a tonnage – 340.9-unit tons. She was built for the passenger, package freight trade between Montreal and the upper lakes. Her initial enrollment was at Kingston, Ont. on May 29, 1863. Her engine, built at Davidson & Doran's Foundry, Kingston, is unknown. Her master for the 1863 season was Captain John Moat. Bound down, in November 1865, Milwaukee to Montreal, the propeller *Brockville*, laden with 2,400 barrels of flour, was driven ashore near Big Sable Point, Lake Michigan, during a gale and was pounded to pieces. Three lives lost.



Bruno: Loignon Bruno, at Montreal, built a wooden steambarge for Captain Robert & J. Allan, also of Montreal, with measures: 136.1' x 26.3' x 12.1' and a tonnage (old style) of 398. She was built for the bulk freight trade, Montreal – Upper Lakes and had the capacity for 16,000 bushels grain, or 525,000 feet lumber. She was powered by a low-pressure engine, 26" bore x 30" stroke, built by Bartley & Gilbert, Montreal. Her initial enrollment at Montreal was in 1863 and she was assigned official number 80600. Her master for the 1863 season was Captain Robert Allan.

Ownership of the steambarge *Bruno* was changed in 1864, to Montreal Transportation Co., Montreal. In November 1868, the *Bruno* broke her wheel due to low water in the Matilda Canal, St. Lawrence River.

In 1869, ownership of the *Bruno* was changed to the H. McLennan & Co., Montreal. Master of the vessel for the 1869 & 70 seasons was Captain Gaskin. May 1869, the *Bruno* went aground on St. Clair Flats, St Clair River. June 1870, the *Bruno*, down bound, laden with wheat and salt, sprang a leak resulting in her sinking in the Welland Canal. She was raised and taken to Buffalo for repairs. In November 1871, she went ashore on Chantry Island and was heavily damaged.

Ownership of the steambarge *Bruno* was changed in 1871, to G. E. Jaques & Co. In August

1871, the steambarge smashed the lower gates of lock No. 15, Cornwall Canal, and lodged on the top with her bow four feet out of the water. Released. In October of that same year, she and the steamer *Corsican* (C167791) collided on Lake Ontario. Both vessels damaged. Down bound from Kincardine for Montreal, in October 1871, the steambarge, laden with grain, sprang a leak on Lake Huron due to heavy weather. The following year, in October 1872, laden with a cargo of flour, she struck bottom in the Gallop Rapids, St Lawrence River, and sank at the head of the Williamsburg Canal in about 9 feet of water. The steambarge was rebuilt during winter layup of 1872-73.

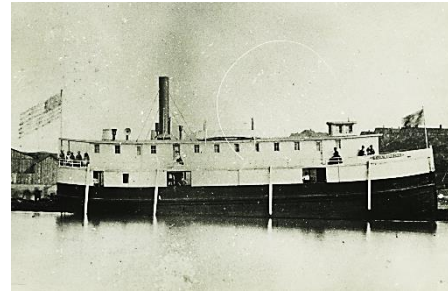
Ownership of the steambarge was changed in 1873, to Prentiss Roberts & Co, Montreal. In June of 1873, the steambarge was engaged by the Dominion Government to perform lighthouse service on the lakes for the year. For the 1874 & 75 seasons the steambarge ran in the Western Express Line, between Montreal and Chicago. In December 1874, the *Bruno* went ashore at Peche Island, Lake St. Clair. Released.

In 1877, ownership of the steambarge *Bruno* was changed to Sylvester Hadley, Chatham, Ont. Her recorded enrolled measures were: 136.1' x 25.4' x 11.8'; 475 grt, 300 net. While lying at Chatham, Ont., Lake St. Clair, in May 1879, the steambarge *Bruno* caught fire in the hold and destroyed the greater part of her upper works and stern. She was rebuilt in 1880, at St. Catharines by M. Simpson, at a cost of \$20,000. The following year she was reengined by Doty Engine Works.

In 1882, ownership of the steambarge *Bruno* was changed to J. T. Mathews, Toronto, Ont. Her masters were Captain Maitland for the 1887 season and Captain Clifford for the 1889 season.

Ownership of the steambarge *Bruno* was changed in 1890, to George P. Magaun, Toronto, Ont. Master of the steambarge for the 1890 season was Captain Peters with Mr. Munro as chief engineer. Upbound from Cleveland, laden with coal, the steambarge *Bruno* with the schooner barge *Louisa* (C88636) in tow, encountered a heavy gale and snow storm near Thunder Bay. Both vessels went aground near Magnetic Reef, south of Cockburn Island, Georgian Bay and both vessels were a total loss. No lives lost.

The final enrollment for the steambarge *Bruno* was surrendered December 29, 1891.

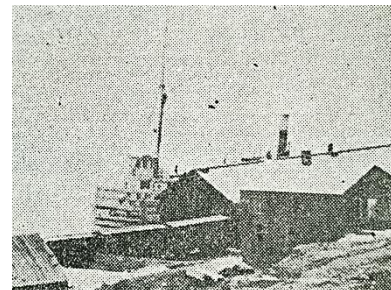


***Ella Burrows*:** Alvin A. Turner, Cleveland, built a wooden propeller for O. B. & F. O. Burrows, Cleveland, OH to be used for the passenger, package freight trade. Her enrollment in 1865, lists the *Ella Burrows* as a sidewheel steamer with measures: 90' x 18.5' x 7.3' with a tonnage of 97.8 grt. She was also issued official number 7326. In 1868 her enrollment lists her as a propeller, with measures: 88.8' x 18.5' x 7.3'; 149.77 grt.

In September 1869, the *Ella Burrows* struck on the St. Joseph's bar, St. Joseph, MI, and lost her shoe. The following month, she collided with the scow schooner *Union* on the Detroit River.

Ownership of the propeller *Ella Burrows* was changed to H. C. Schnoor, Fair Haven, MI in 1874. In June of that year, the *Ella Burrows* was converted to a sailing barge and towed by the steambarge *H. C. Schnoor* (US95386). The enrollment measures for the *Ella Burrows* were updated in June 1874, to: 88.8' x 18.5' x 7.3'; 112 grt.

Ownership of the barge *Ella Burrows* was changed in July 1879, to Alexander Watson, Dresden, Ont. and registered Canadian at Wallaceburg, Ont. as barge *Ella Burrows* (C77714) with measures: 91.1' x 18.7' x 6.8'; 91.1 grt. The Canadian register for the barge *Ella Burrows* was closed November 10, 1890 and endorsed "no longer fit for use".



***City of Boston*:** Stephens & Presley's Shipyard, Cleveland, built a wooden propeller for the Northern Transportation Co., also at Cleveland. She was enrolled at Cleveland and her measures noted: 136.0' x 25.8' x 11.9'; tonnage (old style) at 392. She

was powered by a high-pressure engine 24" bore x 36" stroke, originally installed in the steamer *City of Superior* (1857). The *City of Boston* was built for the passenger, bulk freight trade, to run between Ogdensburg and Chicago. Master of the vessel for the 1863 season was Captain John Condwell.

In May 1865, the *City of Boston* was readmeasured at Cleveland, and enrollment updated to: 136' x 26.25' x 11.16'; 297.58 grt. She was assigned official number 4375. In April 1866, the tonnage measures for the *City of Boston* were corrected and registration changed at Cleveland to 431.56 grt. November 1868, laden with flour and grain, the *City of Boston* collided with the propeller *Milwaukee* (U17984) off Point Waugoshance in the Straits of Mackinac, and sank in 125 feet of water. No lives lost.

August 1870, the hulk of the *City of Boston* was raised, deepest salvage ever attempted on the Great Lakes. She was towed by the *Empire* to Cleveland to be dry docked and rebuilt as a passenger, package freight boat. Her upper works were gone and her stern badly wrenched. Late in September, the Northern Transportation Co. decided that the *City of Boston*, now being rebuilt at Cleveland, will come out as a steam barge.

The steam barge *City of Boston*, leased to Vermont Central Railroad, will be part of the "Lake Michigan Fleet". She will run between Ogdensburg and Chicago, touching daily at Detroit, Port Huron, Presque Isle, Cheboygan, Mackinaw, Glen Haven and Milwaukee. The "Lake Michigan Fleet" is composed of 13 steamers. Master of the steambarge *City of Boston*, for the 1872 season, was Captain John Brown. May 1872, the steambarge collided with the bark *Sea Gull* in the Welland Canal and suffered damage to her upper works. In October 1873, she became disabled at Mackinaw, MI. In November of that same year, the *City of Boston*, downbound, laden with corn and flour, stranded during a storm, three miles south of Frankfort, MI, in thick weather. She became a total loss and broke apart on the beach. Her cargo was lost. No lives lost.

Enrollment documents for the steam barge *City of Boston* was surrendered July 30, 1874.



***City of New York*:** Stephens & Presley, Cleveland, built a wooden propeller for the Northern Transportation Company, to be used in the package freight trade. The *City of New York* was enrolled at Cleveland, September 29, 1863 and her measures as recorded: 134.16' x 25.75' x 11.96'; tonnage (old style) 395.50. She was powered by a high pressure, non-condensing, engine, with a 24" bore x 36" stroke, and rated at 425 horsepower, builder unknown. She was readmeasured at Cleveland, October 10, 1865: 136.42' x 25.58' x 11'; 504.53 grt. She was assigned official number 4377.

In November 1866, downbound, Detroit to Buffalo, the *City of New York* went aground on Fighting Island, Detroit River. She had to be lightered to be released. November 1867, the *City of New York* foundered at the St. Catharines lighthouse during heavy seas on Lake Ontario, when a steam pipe burst, scalding and killing an engineer. The vessel was repaired at Shickluna's Dry Dock at Buffalo. Master of the vessel for the 1868 season was Captain Chadwick. In June of 1870, the vessel broke her piston while on Lake Ontario and was towed to the Genesee River at Rochester for repairs.

For the 1873 season the *City of New York* was under charter to the Vermont Central Railroad. Her master for the 1873 season was Captain A. C. Chapman. In June of that year, bound from Ogdensburg, NY for Buffalo, the *City of New York* went aground in fog at Oswego, NY. She was released through the aid of the tugs *Crusader* (U4935) and Fred D. *Wheeler* (U9456). Then, while entering the Oswego harbor she broke a wheel and had to be towed to Cleveland to receive another. Master of the vessel for the 1874-75 seasons was Captain Lyman H. Waterbury. July 1874, the *City of New York* broke a wheel on Lake Ontario. Damage estimated at \$500. October 1875, with the water low in the Detroit River, the *City of New York* went aground at Grosse Isle, Detroit River during a storm. Released the next day.

March 1876, ownership of the vessel was changed to Northern Transit Co., Philo Chamberlain, Cleveland, at an assignee's sale. Readmeasured in May 1876, at Cleveland: 416.71 grt - 212 net. In 1877, the *City of New York* and the schooner *America* (U105337) collided near White Fish Point,

Lake Superior. Both vessels were damaged. November 1879, the *City of New York* went aground at Ludington, MI, and was damaged with a large hole on her side. She laid waterlogged in 12 feet of water until raised and repaired. Master of the vessel was Captain Jack Connors for the 1880 season.

February 1881, ownership of the *City of New York* was changed to Captain Shepard, Erie, who proposes to convert her into a steambarge for the Escanaba and Pine River iron ore trade.

March 1881, her ownership was changed to E. L. Thompson, Detroit. She was rebuilt as a steambarge: 133.4' x 26.5' x 11.4'; 287 grt, 212 net.

April 1884, ownership of the steambarge *City of New York* was changed to Frank Boden, Chicago. July 1884, the *City of New York* struck a dock at Chicago and then was struck by the propeller *Cumberland* (U125918) near the 18th St. bridge, Chicago River. During winter layup of 1884/85, she was rebuilt and her measures recorded April 1885 as: 136.25 X 27.66 X 11.66; 301 grt - 209 net. Her master for the 1885 season was Captain Meil Chatterton. November 1886, the *City of New York* went aground during a storm at Cheboygan, MI. Her chief engineer for the 1887 season was William Cavanaugh.

Ownership of the steambarge *City of New York* was changed in March 1888 to the Chicago Lumber Co. Her master for the 1890 season was Captain Jacob Burnstein. In April 1890, the *City of New York*, towing two barges, laden with a cargo of corn, foundered near Manitowoc, WI. The *City of New York* was rebuilt in 1891 and was converted to bulk freighter. Her master for the 1891 season was Captain Thomas D. McBride.

Her ownership was changed in April 1896 to Thomas Currie, Port Huron, MI. Her master for the 1899 – 1900 seasons was Captain Thomas Currie with Captain Guy G. Geel as master for the 1901-02 seasons. Her chief engineers were James Dillan. 1899-1900 and G. Kelly in 1902.

May 1903, ownership of the *City of New York* was sold Canadian to G. Wilkinson, Sarnia, Ont. and enrolled with official number C116393, 136' x 27.5' x 11.5'; 292 grt - 198.56 net.

In 1906, ownership of the *City of New York* was changed to J. Glass, Sarnia, ONT.

In July 1907, her ownership was changed to Captain George Plunkett, Cobourg, Ont. Master of the vessel in 1908 was Captain Daniel Rooney with chief engineer Norris for the 1907-08 season. The bulk carrier *City of New York* went aground in April 1908 at Wilson, NY. In October 1908, she went aground again at Halliday Point, eight miles down the St. Lawrence River from Cape Vincent, NY.

In 1910, ownership was changed to J. Richardson & Sons, Kingston, Ont. her master for the 1910-11 season was Captain M. Robineau with her chief engineer as J. Brotorchand.

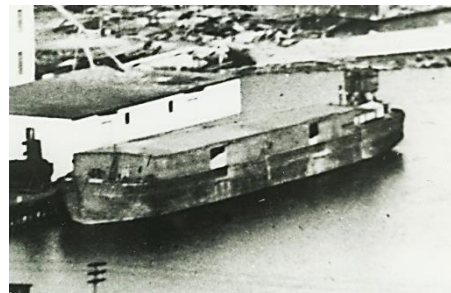
In May 1911, the *City of New York* was owned by Murray Brown, Toronto.

In July 1914, she was owned by the Lake Shore Sand and Gravel Co., Toronto.

In 1921, ownership of the *City of New York* was changed to John Randall, Seely's Bay, Ont. Bound from Oswego, NY to Trenton, ONT in November 1921, laden with a cargo of phosphate, the *City of New York* foundered in a gale, off Main Duck Island, near Stoney Point, Ontario on Lake Ontario, with all hands. Eight (all) lives lost.

City of Troy: H. C. Pearson, Ogdensburg, built a wooden propeller for R. F. Silliman, managing owner, Troy, NY. Her measures were: 172' x 24' x 16.8'; with a tonnage (old style) of 262.47. Powered by a Twin Screw, (2) 30" bore x 72" stroke engines. She was intended for the tow boat trade on the Hudson River. Her master for the 1863 season was Captain Brooks, West Troy, NY.

The *City of Troy* was chartered to the U.S. Government and served April 28, 1864 – June 17, 1865. In September 1878, the *City of Troy* was converted to a barge at Albany, NY. Her enrollment was listed as "Out of documentation – exempt" in 1879.



Stephen Clement: The wooden sidewheel steamer *S. Clement* was built at Newport, MI. by J. L. Wolverton, with R. C. Cornwell as master carpenter. She was a prototype bulk freighter, built ocean-style with overhanging guards only at the paddlewheels. Her original owner was E. B. Ward, Newport, and her initial measures, were recorded as: 153' x 30' 4" x 10' 7" and a tonnage (old style) of 455 49/95. She was powered by two low pressure engines; 36" bore x 54" stroke, builder unknown. Built for bulk freight trade, she ran Detroit – Lake Superior in the iron ore trade.

She was readmeasured April 8, 1865 and her enrollment updated: 163' x 30.5' x 12'; 563.35 grt.

May 1866, her ownership was changed to John Hutchings, Detroit. Her master for the 1866 season was Captain George Cleveland. September 1869, the steamer *S. Clement* went hard aground in the Sault River. She was released and while downbound, broke her machinery on Lake Huron. For the 1867 season she ran Saginaw to Toledo in the lumber trade and in 1868 she continued in the lumber trade but also carried grain. In July, laden with ore, she went aground on Elk Island. In the fall of 1868, the steamer *S. Clement* was listed for sale.

Ownership of the steamer *S. Clement* was changed at public auction at Detroit on February 10, 1869, to John P. Clark, Detroit, MI. He converted her to a barge for use in the lumber trade. In October, after being converted to a barge for the lumber trade, her enrollment was updated and she was issued official number 57467. She would be used mainly in the lumber trade until 1896. April 1870 her tonnage was updated to 447.95 grt. In October 1871, she broke her steering gear and was repaired at Detroit.

Ownership of the barge *S. Clement* was changed April 17, 1872, to Ballentine, et al, Detroit.

In March 1874, ownership of the barge *S. Clement* was changed to Wellington R. Burt & Julius Nelson, E. Saginaw, MI.

In April 1879, ownership of the barge *S. Clement* was changed to Hamilton & McClure & Co., E. Saginaw, MI.

January 1881, ownership of the barge *S. Clement* was changed to Henry A. Hawgood, et al, Milwaukee, WI. In March 1882, her enrollment tonnage was changed to 436.95 net. The barge *S. Clement*, was towed by the sidewheel steamer *Belle P. Cross* (US2719), and was placed in the Buffalo to Milwaukee coal trade. She would be towed by the steamer *Belle P. Cross* through 1894. In November 1887, the barge *S. Clement* went aground, in Lake Erie, on Long Point Cut. Released. April 1889, she collided with the schooner *Moonlight* (U90719) at Grosse Point, where the Lake St. Clair joins the Detroit River. In November of that same year, the barge went aground at Buffalo.

June 1891, ownership of the barge *S. Clement* was transferred to Hawgood & Avery Transit Co., Mantua, OH. Master of the barge *S. Clement* was Captain Fred Watson for the 1891 season.

Ownership of the barge *S. Clement* was changed, in March 1894, to B. B. Inman, Duluth. In June of that year, the *S. Clement* lost her mainmast and 200,000 feet of lumber on Lake Superior. In May 1896, the *S. Clement* was leased to Northern Steamship Company to be used as a lighter. A house was built on her, plus other improvements.

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Over the next 10 years, her ownership was changed to Northern Steamship Co., Buffalo, in September 1897; Mutual Transit Co. Buffalo in May 1903; and finally, to Universal Milling Co., Duluth in November 1904. Not sure if she ever left Duluth and expect that she was used as a lighter in Duluth harbor.

The final enrollment documents for the barge *S. Clement* were surrendered at Duluth, MN, October 12, 1906 and endorsed "abandoned".

General A.E. Burnside: August 15, 1863, the wooden propeller *General A. E. Burnside* was enrolled at Sandusky, Ohio. Built by John E. Monk, Sandusky for George A., E. L. & A. A. Marsh, Sandusky. Her measures at enrollment were: 87.0' x 17.3' x 8.3', with a tonnage (old style) of 114.72. She was built for the towing trade, but from June 1864 to October 1865, she was used for patrolling the Great Lakes during the Civil War under chartered to the U.S. Government. The tug *General Burnside* was readmeasured August 1866: 80.6' x 16.9' x 7.7'; 65.93 grt.

Ownership of the *General Burnside* was changed to Jacob B. Baker & E. C. Adams, Detroit in October 1866.

Ownership of the tug *General Burnside* was changed to William Livingston, Jr., Detroit, in April 1867. She was issued official number US10234, with measures: 91' x 16.6' x 8.7'; 76.55 grt. In June 1867, she broke her machinery and was towed to Detroit, for repairs. March 1871, the *General Burnside* sank at the yard of Muir, Livingston & Co., Port Huron. She was raised and rebuilt. Her recorded tonnage was 123.5 grt.

May 1871, her ownership was changed to Phillip Scribner, Tonawanda, NY. June 1871, she arrived at Detroit, with her wheel loose. April 1874, she broke her engine on the St. Clair River. In July of that same year, she broke her rudder while on Lake Erie.

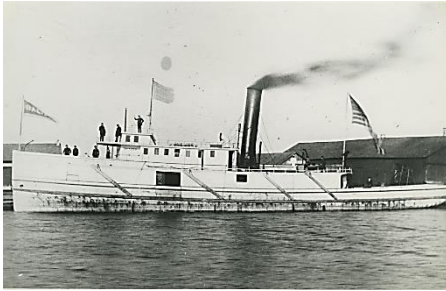
Ownership of the tug *General Burnside* was changed to Mary Chester Hubbel, Miner Hubbel & James Bell, Saginaw in April 1880.

In March 1882, ownership of the *General Burnside* was changed to George Prentis, Detroit. At enrollment, she was renamed *James Reid* with tonnage 88.35 net.

April 1884, her ownership was changed to James Reid & Co., Alpena, MI.

April 1886, ownership of the tug *James Reid* was changed to D. N. Runnels, Port Huron. June 1887, bound down from "Bay de Noque" (Menominee

River, Upper Peninsula Michigan) for Chicago with two scows laden with cedar, the tug *James Reid* caught fire on the west side of the Sturgeon Bay Canal, WI., and was abandoned. Her machinery was removed and the hulk towed to Green Bay and was sunk in deep water.



Mary Grandy: Ira Lafrinier, at Cleveland, built a wooden, wrecking tug for H. J., N. C. and Rufus K. Winslow all from Cleveland. She was enrolled at Cleveland on June 27, 1863 and her measures recorded as: 130.06' x 21.72' x 12'; with a tonnage (old style) 321.1. The *Mary Grandy* was powered by a low-pressure engine, 34" bore x 30" stroke, rated 500 nominal horsepower. The engine was built by Globe Steam Engine Works, Cleveland. She was equipped with a return tube boiler, 22' x 8.5', built by Scott Levake. The *Mary Grandy* was built specifically as a heavy weather wrecker tug. Her master for the 1863 season was Captain J. L. D. Kimball with George Clifford as first engineer.

In May 1864, ownership of the tug *Mary Grandy* was changed to Copeland & Howe, New York, and her enrollment was transferred to New York, NY.

In August 1864, ownership of the tug *Mary Grandy* was sold into the U.S. Navy for \$56,100 and commissioned *U.S.S. Bignonia* for service in the North Atlantic Blockading Squadron. She was described as: Screw steamer; wood, iron fastened, rate – 4th; dimensions: 131' x 22' x 11' 9", 321 tons; draft: loaded, forward, 8' 4"; aft, 10' 8": Draft light, forward, 7' 2"; aft 9' 4"; speed: Maximum 10 knots; average, 5 knots; engines: (1) overhead, cylinder, non-condensing, semi-rotary valve, wrought-iron steam pipe. Diameter of cylinder, 30"; stroke, 30"; boilers: (1) extra heavy; flues return through tubes; battery: 30 pounder Parrott rifle, 2 heavy 12 pounders. Her master of the tug *U.S.S. Bignonia*, effective October 26, 1864, was Acting Volunteer Lieutenant Roath, U. S. Navy. She was assigned on December 29, 1864 to blockade duty off the Western Bar, Cape Fear River.

The *U.S.S. Bignonia* was decommissioned and sold by the US Navy to L. Burrows, Stonington, CT for \$22,500 and renamed *Balize*, assigned official number US 2714: 130.6' x 20' x 12'; 247 grt, 168 net, on July 12, 1865.

The tug *Balize* was resold at Mystic, CT, Sept. 19, 1865, and brought back to the lakes, arriving back at Detroit, July 12, 1867.

On August 28, 1867, ownership of the tug *Balize* was changed to E. Douville, Detroit; W. B. Mosley, Sodus Pt., NY; T.W. Cook, Forest Grove, NJ and her measures recorded as: 130.6' x 22' x 12.4'; 184.72 grt. She was equipped with an 18" x 30" steeple compound engine built by J. Duncan, Green Bay, WI. Her master for the 1867 season was Captain Egbert Doville and Captain Charles Tyler Morley as master for the 1868-69 seasons. In October 1868, the *Balize* enrollment was transferred to Oswego, NY. In September 1869, the tug *Balize* had her machinery disabled on the Saint Clair River. She was towed to Detroit for repairs.

In April 1871, ownership of the tug *Balize* was changed to Thomas Murphy et al, Detroit. In September of that year, the tug *Balize* went ashore at Stoney Point, Lake Michigan (?). Released by the tug *Vulcan*. The tug *Balize* was rebuilt in 1875; receiving two steeple compound engines: 18", 34" bore x 30" stroke, 460 horse power, built by J. Murphy, Detroit, in 1870 and a firebox boiler 10' 6" x 17', 110 pounds steam, built by M. Riter, Buffalo. June 1881, the tug *Balize* was rebuilt and measures were changed at Detroit: 130.7 x 21.7 x 11.4; 250.19 grt, 157.53 net. She was used for rafting on Lake Huron pulling 1,200,000 feet of logs.

April 1883, ownership of the tug *Balize* was changed to Detroit Tug & Transit Co., S. A. Murphy, president. In September of that year, the tugs *Balize* and the *A.W. Colton* (U106025) collided near the head of Belle Island Park, Detroit River, sinking the *Colton*.

April 1886, ownership of the tug *Balize* was changed to John Kelderhouse, Buffalo.

In September of 1886, her ownership was changed to W. T. M. Charlton, Tonawanda, NY. Master of the tug *Balize* for the 1886 – 1891 seasons was Captain John M. Johnston. In 1894, she rafted 140,000,000 logs.

May 1902, the tug *Balize* was sold Canadian to Victoria Harbour Lumber Co., Victoria Harbor, Ont. and registered as *Balize*, C100306: 132' x 20' x 12'; 247 grt, 168 net. In September of the following year, the tug *Balize* wrecked at Little Detour Passage, Georgian Bay. The vessel was salvaged.

In 1907, ownership of the tug *Balize* was changed to John Carlton, Lyndoch, Ont. November

1915, the *Balize* was dismantled at Midland, Ont. and abandoned on the northwest shore of Midland Bay.

Her enrollment was surrendered at Midland, Ont., December 17, 1920.

Heather Belle: At Detroit, May 04, 1863, the wooden sidewheel steamer *Heather Belle* was enrolled. Built by Stewart McDonald, Detroit, for John Stewart of the same city, her measures recorded were: 115' 6" x 19' 6" x 7'; tonnage (old style) of 149 13/95. She was powered by a high-pressure engine, 18" bore x 48" stroke. Steam was generated by a tubular boiler, 4' 6" x 18', 60 pounds steam, built by J. McKenna. The *Heather Belle* was built as a river boat to run Detroit to Chatham, Ont on the Thames River, in the passenger, package freight trade. July 1866, the steamer *Heather Belle* broke her cylinder head while in port at Wyandotte, MI. In September of the same year, she broke her machinery while on the Detroit River. Repaired. Master of the steamer *Heather Belle* for the 1867 season was Captain William Irwin.

In March 1868, the steamer *Heather Belle* was sold at Admiralty sale to Duncan Stewart. With the ownership recording, the vessel was issued official number 11196.

May 1872, ownership of the steamer *Heather Belle* was changed to Hurd Line, Detroit, to be used on the Detroit River as a tender and towing lighter barges.

April 1873, ownership of the steamer *Heather Belle* was changed to Gordon and Hackett, Bay City, MI. She would be operated as a towboat to Buffalo, and Lake Erie ports. For the 1874 season, the steamer *Heather Belle* was used in the coal trade between Sandusky - Cleveland, and later Toledo - Amherstburg - Detroit.

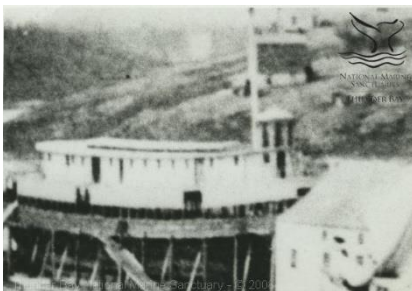
In 1876, ownership of the steamer *Heather Belle* was changed to Hartshorn et al, Sandusky, OH.

Final enrollment for the steamer *Heather Belle* was surrendered in 1881, and endorsed "abandoned".

Her Majesty: Louis Shickluna, St. Catharines, Ontario, built a wooden propeller for Captain Charles Perry, Black & Co., Toronto. She was built for the passenger, package freight trade between Montreal and Hamilton, Ont. her measures were: 185' x 30' x 12.3'; with a tonnage of 670 grt. She was powered by a vertical high-pressure engine, 2 cylinders at right angles to shaft, 26", 26" bore x 26" stroke, built by Davidson & Doran, Kingston, and designed by S. Risely, Toronto. Steam was generated by a return tubular boiler 7' 6" dia, steam pressure 70 pounds, built by the Davidson & Doran's Foundry. *Her Majesty* was launched broadside November 5, 1863 and had accommodations for 80 cabin passengers and freightage capacity at 6,000 barrels. Her master for the 1864 season was Captain Handside. In September of 1864, in an attempt to haul out the propeller *Her Majesty* on the ways at Portsmouth to replace her propeller, her weight was too much and the ways gave way under her. In August 1865, Davidson & Doran brought *Her Majesty* to Kingston in order to convert her engines from high pressure into condensing with the objective to save fuel and increase speed. Fuel usage was cut in half and the engines operated at thirty-five pounds of steam versus the sixty pounds she operated the previous year. In October of 1865, the *Her Majesty* went ashore at Colborne, Ont., Lake Ont. with 500 hundred barrels of flour which were thrown overboard to lighten her.

Ownership of the propeller *Her Majesty* was changed to G. Chaffey & H. Chisholm, Kingston, late in 1865. They had her passenger accommodations removed and she was converted to a steam barge at Kingston Marine Railway, Kingston and her tonnage was changed to 531 grt. In April 1867, she ran on the St. Lawrence River, between Montreal to Halifax, Nova Scotia.

In 1869, ownership of the *Her Majesty* was changed to T. Chisholm & Co., Toronto. In October of that year, she broke her cross-head on Lake Ontario. Repaired. The following month, the propeller *Her Majesty* went ashore on Whitehead Shoal, Gaspé, Que. St Lawrence River. Declared a total loss.



Idaho: E. M. Peck & Masters. Cleveland, built a wooden propeller for her original owners: Dean Richmond, Sheldon Pease, Henry A. Richmond, J.M. Richmond all from Buffalo. She was enrolled at Cleveland, June 10, 1863, with measures: 220.61' x 31.42' x 13.72'; tonnage (old style) 915 45/95. She would be powered by a vertical direct-acting, low pressure engine, with a 54" bore x 40" stroke, built by Cuyahoga Iron Works, Cleveland. Her boiler: 10.5' x 23'. She was built for the passenger, package freight trade and would run between Buffalo, NY and Lake Michigan ports, connecting with the New York Central Railroad Line. Master of the vessel for the 1863 season was Captain A.B. Conkey with Charles Whitman as chief engineer. In September 1863, the *Idaho* collided with the tug *Watson* at Chicago. In November, she struck an obstacle on the St. Clair Flats. Her master for the 1864 season was Captain Leeds H. Weeks with Captain Kingsbury Walker as master for the later part of 1864 and all of 1865. In October 1864, the propeller *Idaho* went aground at Point aux Barque, MI, on Lake Huron. Released. June 1865, she was readmeasured at Buffalo and her enrollment updated to: 2 decks, 1 mast, 220.42' x 32' x 12.25'; 1110.97 grt, 906.80 net. She was assigned official number 12069. In October 1865, the propeller *Idaho* went aground at Buffalo. Released.

In 1867, ownership of the propeller *Idaho* was transferred to Western Transit Co, Buffalo. In November 1867, the *Idaho* broke her machinery on Lake Erie. Repaired. In 1868, the propeller *Idaho* received a fore & aft compound engine: "Direct-acting combined cylinder", one of five first tried in lake vessels. In October of that year her boiler exploded at Black Rock, NY, Niagara River. Her master for the 1869 season was Captain Penny with Daly as chief engineer. In October 1870, the *Idaho* collided with the *B. W. Blanchard* (U2806) in the Chicago River. August 1871, the Western Transit Co. propeller *Idaho* entered Union Dry Dock, Buffalo, to have new journals put in and to be caulked. In September of the following year, the *Idaho* went aground on Fighting Island, Detroit River. Released. She went aground in St. Clair Flats, Lake St. Clair in September 1874. During winter layup 1875/76, she was rebuilt at Buffalo, NY, receiving new arches. Her masters were: Captain Robert Jones, 1877 season; Captain James Gibson, 1883 season; Captain Archibald McEachem, 1884 season; and Captain Alexander Clark, 1884 – 86 seasons. Chief engineers were Henry Higgins in 1881 and James Anderson for the 1888 – 95 seasons. January 1887, the propeller *Idaho* was damaged by a freshet at Buffalo. In June 1891, she went ashore in fog, 10 miles from Ontonagon, MI, August 23, 2022

Lake Superior. She was removed from commission and laid up at Buffalo in 1891 and remained through 1893 due to lack of business. Master of the *Idaho* was Captain Alexander Gillies with William Clancy as chief engineer for the 1897 season. The propeller *Idaho* was thoroughly overhauled and placed at the disposal of the Naval Veterans Association and used as a naval flagship during the GAR (Grand Army of the Republic) encampment in August 1897.

In November of the same year, bound up from Buffalo for Milwaukee, with a cargo of general merchandise, in a blinding storm of hail and rain, the propeller *Idaho* foundered 12 miles off Long Point, ONT, on Lake Erie. Value of the vessel was set at \$15,000 and her cargo at \$50,000. Nineteen lives were lost.

Final enrollment for the propeller *Idaho* was surrendered at Buffalo, NY, November 10, 1897.

Some Notes:

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

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

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

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

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

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

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 1533⁷/₉₄ 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.)