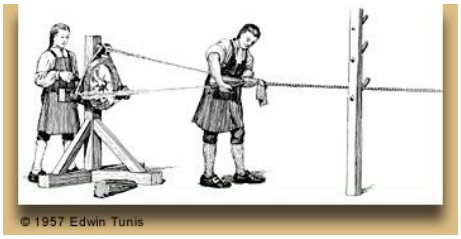


While one man cranks the spinner, the one holding the "top" walks backwards as the rope is twisted. From Edwin Tunis, *The Young United States, 1783 to 1830* (New York: World Publishing Co., 1969), 82. Used by permission of the estate of Edwin Tunis

Ropewalk

The Newsletter for
Shipwrights of Central Ohio
September 2020

Next Meeting: October 17, 2020
"Byrnes Thickness Sander & making Planking"

Table of Contents

September Newsletter

I repeat my monthly advice and urge all of you to take care of yourself and your families. Look to those seniors who live close to you who may need errands run or someone to just call and check on them.

Use this time also to get back in your shop building. Taking the time to do things that make you feel good is essential to survival in this modern world. Spending time ship modeling, reading, listening to music, or just sitting quietly watching nature from your porch or patio, allows you to recharge and absorb new ideas, information and you might discover something that speaks to you. In the end, it's all worth it.

Your editor.

September Meeting

And yet, another Zoom meeting! We had 11 who signed in to the Zoom meeting on Saturday morning, which is a good turnout and no I have not figured out how to provide chocolate chip cookies in Zoom meeting

I am again thankful for Bob (our Zoom Master) for taking on the responsibilities for scheduling, notification and hosting and Alan Phelps for his presentation on soldering.

Business

Zoom

I repeat this reminder since some of you are still not signing in. If you have tried to sign in and could not, contact Bob, *Please*. He can be reached at (rmains1@columbus.rr.com) and he can help you to connect.

2020 Meeting Presentation

With the cancelation of our road trip for September, Alan Phelps was rescheduled to fill this month's slot and led the discussion on "Soldering".

This leaves us with open presentation topics for the next three months. I had sent out a request for possible subjects that you may be interested in. Received four suggestions: Byrnes Thickness sander, Adhesives, Jigs & Fixtures, and wood finishing. After a discussion during the meeting, the October meeting will cover the Byrnes Thickness sander and how to cut planking for scratch building hulls. Darrell Markijohn brought up the subject of "Air Brushing" and he will follow up with Kurt Van Dahm for a possible speaker and demo and to answer questions on this subject. Darrell will also follow up with Chuck Passaro, Syren Ship Model Co. to talk with us in December.

2021 Presentations

It is that time of the year when we start building the program schedule for the 2021. I will send out, within the next week, a form listing 62 subjects and the dates they were last presented.

The list will also include a new subject, "The Evolution of the Wooden Ship" based on Basil Greenhill's book of the same title.

You will be asked to pick four subjects and send those to me to consolidate into a list for our October meeting.

"Great Harry" Update

Progress is being made on the restoration project. There are two blogs on Model Ship World covering our progress. I started one during the research phase and John Boeck has one that documents the progress. The blogs are:

https://modelshipworld.com/topic/24529-the-henry-grace-a-dieu/

https://modelshipworld.com/topic/24658-great-harry-henry-grace-a-dieu-restoration/

Here are photos of Johns work on the hull:

John has done the repair work on the hull and is trying to keep it as close as he can to how she originally looked

I used the digital photos of the model of the "Great Harry" from the Powerhouse Museum, Sidney, Aus.to develop the standing and running rigging plans. Darrell is rigging the masts and the standing rigging and then will return them to John for the final restoration work installing the sails and running rigging.

Presentation:

Soldering

Our main presentation was "The Science and Art of Soldering" by Alan Phelps. I have a copy of his PowerPoint presentation that I can send to anyone who wants a copy. Alan's presentation covered the types of soldering tools, heat control, solder alloys and usage, the science of the solder heating cycle and "flow zones", and the advantage of variable power versus fixed power soldering.

He then took us through the "Soldering Process – The Art Part":

1. Clean all parts, wipe off residue with alcohol
2. Secure work pieces from moving
3. Clean and tin tip of soldering iron or gun
4. Heat base metals – not the solder
5. Apply solder – if it:
    a. Beads it is too cool
    b. Drips off and turns dull it is too hot
    c. Melt and flows into joint and "wicks" it is just right, in the "flow zone"
6. Remove heat and allow joint to cool without moving any of the piece
    a. Movement will result in "cold" joint not structurally strong and a poor conductor
7. Use solder sparingly to avoid drips and runs
    a. Adding more solder will not add strength once the 'wetting' and flow have occurred
    b. Good solder joints should be a shiny silver color and have concave curves
8. Cleaning finished joint
    a. Rosin core solder leaves little residue
    b. Paste fluxes can be removed with alcohol or Acetone
9. Reflow technique
    a. Apply solder to each piece separately
    b. Align the pieces and heat to reflow solder to joint

He then took us through how to fix mistakes and the care and maintenance of the soldering iron.

We were introduced to "Resistance Soldering", what it is and the advantages and disadvantages.

Alan had requested questions or problems we had with our soldering experience. They were:

- How do I keep the soldering tip clean?
- How do I solder fine wires w/o clumps?
- How do I get strong joints with chain?
- How do I silver solder (high temp) w/o deforming parts?

Alans response can be found in his PowerPoint presentation.

He then listed the most common problems we have when soldering, which are:

- Power not controlled for the amount of metal
- Over heated joint past the flow zone
- Base metal oxidized – no flow
- Solder and flux burnt
- Soldering tip coated with burnt flux
    - Heat transfer problems
- Soldering tip oxidizes quickly – replacement
- All the above can be solved with a power control. Alan has offered to build a power control for your solder iron. It would look like the photo below. Cost $25. Contact him

The "Key Take Aways" from his presentation were:

- Joint cleaning and preparation are the key
- Know the compatibility of the metals
- Use flux to keep joint oxide-free during heating
- Control power consistent with mass of metal
    - Less is essential for small parts
- Apply heat to the largest part, not the solder
- Wait for the joint to heat enough to draw the solder into it – flow zone
- Keep parts immobile until solder cools
- Clean up joint if necessary

Thanks, Alan, for a great informative presentation.

Ships on Deck:

Here is what your fellow craftsman have been doing during our confinement.

Rail Roading

Stan Ross

Above is the before and after of stan's railroad layout. He replaced a round house with the two structures shown on the right. Nice work.

Armed Virginia Sloop 1768

Bill Nyberg

Adding wood to the frames in the stern so that the hull is faired level before planking. Mike Dowler suggested that I check out a "Square Tuck" as a way to finish the stern transom. Thanks Mike, it was the answer I was looking for.

Odds and Ends

Nautical Terms

Zebec: An alternative spelling of *xebec* (*q.v.*).
Zephyr: The west wind. A gentle breeze
Zulu: A type of Scottish sailboat introduced in 1879, used for fishing. A Zulu is carvel-built (*q.v.*), with the vertical stem and stern and the steeply raked stern of a skaffie class boat; two masts rigged with three sails (fore, mizzen, and jib); and a longer deck and shorter keel than previous Scottish fishing boats, allowing greater maneuverability.

Glossary of Nautical terms Wikipedia

Other Notes: "Stuff" - Tugs & Things

Nautical Research Journal

A little blatant advertisement. If you are not already an NRG member, go to info@thenauticalresearchguild.org. Yearly subscription is available in three forms: Print copy, On-Line copy (E-Journal) and a combined both Print & On-line.

Print Journal - $50
E-Journal - $40
Combined - $65

Books

Bill Maxwell "Hyde Street Pier Model Shipwrights" San Francisco, responded to the articles in the June and July "Ropewalks" on Books – Patrick O'Brian's Aubrey-Maturin series. He wrote:

"Bill: I saw that you were reading the Capt. Aubrey series by Patrick O'Brian. Turns out I have been rereading the series as well, now up to #13. But in this time, I broke and read (for the first time) a couple of his earliest books set in the 1740's and was his early development of the Aubrey/Maturin prototypes for the series. I got them through our local library and here are two (very good) books: *The Golden Ocean* followed by *The Unknown Shore* covering the English/Spanish war primarily in the Pacific. Great reads following adventures of different characters, but strongly influenced the development of the Aubrey/Maturin relationships in his later series. Best read in this order to tie them together."

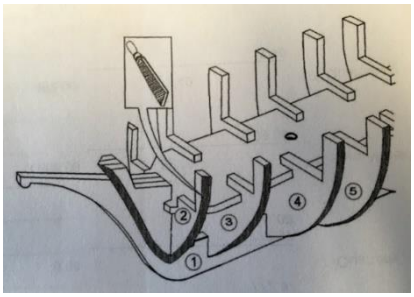
I have both in my library and they are quite good. If you have not read them, I would strongly recommend them to you.

Tips

Fairing:

The following tip appeared in the Bluejacket Shipcrafters newsletter and came originally from the Redwood Empire Model Shipwrights.

Using a file, fine rasp or coarse sandpaper on a wooden block, or a combination of all of these, bevel the edges of the frames so that the planks will come in contact with a full thickness of each frame - not just a sharp leading or trailing edge. While the midships frames will require little adjustment, those toward the bow and stern will require more. A piece of broomstick with sandpaper glued to it will make it easier to shape those frames with a hollow curve.



Use a plank and lay it over the frames in various positions to check the bevel (i.e. the plank should touch the full face of each frame as it is bent around them.) If you do have a hollow spot on one (or more) frames(s) it can be built up using slivers of timber.

The whole process of leveling and checking is known as fairing and is extremely important to ensure that when planked, the hull is free of bumps and hollows. Please take your time and resist the temptation to start planking before the hull is satisfactorily faired.

Check again. It cannot be emphasized too strongly that the fairing process described above is the single most important step in building a model ship of which you'll be proud.

Ropewalk Recipe

The following was received from Dr. Mike Dowler who found it on Model Ship World and is an entry by Chuck Passaro, April 24, 2020. Chuck is the owner of Syren Ship Model Co.

I do want to encourage everyone to take up the skill of making their own rope. Hopefully I will have more ropewalks in stock soon. I am biased but believe the type of manual ropewalk like I offer is the best and quickest way to make it. But whatever ropewalk you choose, I want to try and make it easier for folks.

Since I have been making rope available for a few customers on a custom basis using Mara for several years now, I would like to share the recipe for making the various sizes I offer this material to my clients. Now the sizes you end up with may vary a bit depending on your technique and how tightly or loosely you lay up the rope. But as you can see from above, a tightly laid up rope is much more realistic. So, when using MARA try and give more twists to the initial strands than you think. And then

you will be able to twist those strands together more tightly in the opposite direction to make better looking rope.

So here is my recipe using MARA for the sizes I offer.

TPS - threads per strand.
S - Number of strands .... or hooks on the ropewalk.

.008 rope.....mara 120.....1 TPS x 3S very tightly laid up
.012 rope.....mara 100.....1 TPS x 3S very tightly laid up
.018 rope.....mara 100.....1 TPS x 4S
.025 rope.....mara 70.....1 TPS x 4S
.035 rope.....mara 30.....1 TPS x 4S
.045 rope.....mara 30.....2 TPS x 3S
.055 rope.....mara 30.....2 TPS x 4S
.065 rope.....mara 30.....3 TPS x 4S
.080 rope.....mara 30.....4 TPS x 4S
.095 rope.....mara 30.....5 TPS x 4S

Your results may vary as I said. BUT after you lay up your rope, make sure you tie a knot on each end. Poly wants to unravel. Remember Morope!!! It’s crazy. Then get yourself a toaster oven.... or use a real oven. Wind your rope around a metal sheave or pully. I have these!!!! Garage door pulleys. They work fantastic.

Then place these in your toaster oven at 350 degrees for no more than 5 minutes. If you approach 400 degrees you will make a mess. The poly will melt. After much trial and error this is the best temperature.....also, no longer than 5 minutes because it will also change the way the rope looks and feels. Let it cool off on a rack. Now you can cut the ends with a sharp blade without any worry that it will unravel. This recipe and process makes perfect rope out of 100% polyester like Gutermann MARA.

The best place to buy it in the USA....is Wawak

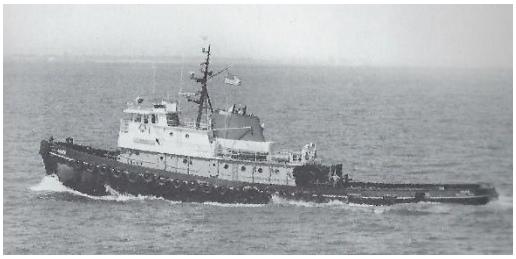
https://www.wawak.com/Thread/Thread-By-Brand/Gutermann/

Gutermann also makes other sizes, like MARA 50. A great size for making rope. But this must be bought from the MFG in large amounts. I have a bunch of this and it changes the recipe above. But the regular stuff you guys can get from Wawak use the recipe I have given.

Hope this helps.....start making your own rope. It’s rewarding and FUN!!!!!! Until you have to make 1000 feet per day for seven days every week.

Tugs

Mars



An American ocean-going tug, one of the few remaining when the photo above was taken in 1971.Built in 1970, by McDermott Shipyard of Morgan City, LA (hull 3163) for Crowley Marine Services Inc., San Francisco, CA.

She was designed and built to tow barges for the Puget Sound Tug and Barge Co., between Seattle and southwestern Alaska.

With her USCG #526607, her measures were 136.2’ x 36.5’ x 10.8’ and a gross tonnage of 194. Powered by two, sixteen cylinder, EMD 16-645-E-7 diesel engines, turning two cast steel fixed pitch propellers. She was rated at 5,750 horsepower. The tugs electric service was provided by two, 90kW generator sets. She had a capacity for 165,000 gallons of fuel.

She was the fifth Sea Swift class designed by Naval Architect Phil Spaulding with a pilot-house controlled engine room. Besides towing barges to Alaska, she towed oil barges from Puerto Rico to New York and went to the North Sea as an anchor-handling tug. In 2012, the tug was acquired by Capital Oil and Gas Industries of Lagos, Nigeria. She retained her name.

(Original Source: "On the Hawser" by Steven Lang and Peter H. Spectre, 1980)

Lower T

The *Lower T,* a small harbor and river tug, was built at Port Arthur, Texas, and was owned by Thums Long Beach Co. She was only 44 feet in length, 15’ breadth and 7’ depth and rated at 450 horsepower. She had the power to haul sand and gravel barges and do some ship handling.

She had an open deck aft which simplifies towing but precludes accommodations. She had room for a galley and a head under the wheelhouse. The design affords the pilot the advantage of good visibility. She had a narrow stack, which ran high up the mast, to discharge the engine exhaust.

Later in her career she was renamed *Big Willy*.

Original Source: "On the Hawser" by Steven Lang and Peter H. Spectre, 1980

Presentation Schedule:

2020

~~Jan 18 - Research~~
~~Feb 15 – Scratch Building~~
~~Mar 21 – Canceled~~
~~Apr 18 – Zoom Training~~
~~May 16 – Bending Wood - Zoom~~
~~Jun 20 – Small Boat Making - Zoom~~
~~Jul 18 – Fairing a Hull/Cooper Plating - Zoom~~
~~Aug 15 – Rope Walk~~
~~Sep 19 – Soldering~~
Oct 17 – Byrnes Sander Demo
Nov 21 – Open
Dec 19 – Open

Events & Dates to Note:

2021

IPMS Columbus
47th Anniversary BLIZZCON
Arts Impact Middle School
680 Jack Gibbs Blvd. Columbus 43215
Saturday, February 20, 2021

Miami Valley Woodcarving Show
Christ United Methodist Church
700 Marshall Rd., Middletown, Ohio 45044
March 6 & 7, 2021

66th "Weak Signals" R/C Model Show
Seagate Convention Ctr.
401 Jefferson Ave. Toledo, OH
April 03-04, 2021

31st North American Model Engineering Expo.
Yack Arena
Wyandotte, MI
April 23-24, 2021

44th Midwestern Model & Boat Show,
Wisconsin Maritime Museum, Manitowoc, WI
May 14 – 16, 2021

Constant Scale R/C Run – Carmel, Ind.
Indianapolis Admirals reflecting pond
Carmel, IN
May 15 & 16, 2021

Lakeside Antique & Classic Wooden Boat
Lakeside Hotel, Lakeside, OH
July 18, 2021

NRG Conference
Channel Islands Maritime Museum
Oxnard, CA
Oct. 21-23, 2021

Toledo Antique & Classic Boat Show
Promenade Dock, Maumee River, Toledo, OH
Aug 21-22, 2021

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Wooden Steamers

1851 - 1860

The years before the "War between the states" attracted immigrants from England, Ireland, Germany and Sweden. Europe had become overcrowded, and faced crop failures, artisans and craftsman left because of the industrial revolution and they left to flee religious and political chaos. People who could not support their families in Europe came to the United States for the economic opportunities, availability of land and the freedoms promised.

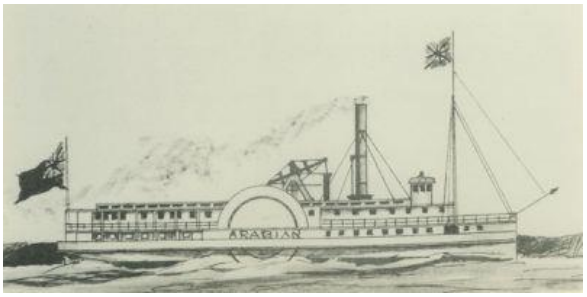
In the prior years the Marquette iron range had been discovered in 1844; in 1847 the St. Lawrence River canal system is finished connecting the ocean with the Great Lakes; the Illinois River – Lake Michigan Canal connection Chicago with the Mississippi River was completed in 1848; and in 1850 the second Welland Canal was completed.

Change was also happening in the United States that made travel easier for the immigrant and his family to reach the open spaces made available by the Louisiana Purchase and the Mexican Cession of the southwest. In 1851, the Erie railroad connected with Lake Erie at Dunkirk, NY. Between 1854-57, Fresnel lens were installed in lighthouses on the Great Lakes and the State of Michigan completed a canal at Sault Ste. Marie, opening vessel traffic between Lake Huron and Superior; 1855- railroad extensions were completed westward to the Mississippi River, increasing the eastward shipment of grain and westward shipment of manufactured goods; and in 1859 oil was discovered at Titusville, PA.

In 1857 a financial panic struck the lake region impacting greatly upon the commercial interests. Vessels were laid up at various ports and freight shipments were down to their lowest margins. By 1858, few vessels were built on the lakes. On Lake Ontario only four side-wheel steamers, a bark and 13 sail, while on the upper lakes one side-wheel and eight propellers and 25 sail were built. This continued well into 1859.

By 1860, the Great Lakes fleet consists of 369 steamers (propellers and sidewheel) and 1,207 sail. This is less than one-tenth of all registered shipping in the United states. One of the greatest marine losses on the Great Lakes was the sidewheel steamer *Lady Elgin* on September 8, 1860.

1851 – Part 1



Arabian: Niagara Harbour & Dock Co., Niagara, Ontario, launched on June 30, 1851 a wooden sidewheel steamer with measures: 174.0' x 24.0' x 8.0' and a tonnage (old style) of 350. She was equipped with a vertical beam (Walking Beam) engine, with a 48" bore x 132" stroke, that had been built by Niagara Harbour & Dock Co. She was equipped with 26-foot wheels. Her owners, Andrew Heron & James Sutherland, Toronto, ONT, had her built as a Lake Ontario mail steamer for the passenger, package freight trade. She ran from Hamilton, Ont. to Montreal, P.Q. on the "Through Line" with the steamers *New Era* (1848)*, Champion* (1851)*, May Flower* (Comet 1848)*, Maple Leaf* (1851) and *Highlander* (1850). Her masters for her first seven years were Captain Coleleugh (1851), Captain Sclater (1856) and Captain Stauter (1857).

During the summer of 1857, the Toronto newspapers severely criticized the Captain Stauter for endangering his vessel and passengers for racing the sidewheel steamer *Champion.* July 1857, the steamer *Arabian* was caught in a storm from the east while anchored in the St. Lawrence River off Ile Madame, about 24 miles below Quebec. Dragging her anchors, she was driven ashore, stem first, on a rocky beach on the west end of Ile Madame, tearing away her keel and collapsing the engine guides. A month later she was refloated and towed to Quebec for repairs. During the summer of 1858, the steamer *Arabian* ran on Lake Ontario and in October, replaced the steamer *Maple Leaf* on the run between Rochester, NY to Cobourg, Ont.

Due to the depression of 1857, the steamer *Arabian* was seized by the sheriff due to bankruptcy of her owner, in 1859, and she was sold for operations below Montreal, P.Q. Her upper cabins were removed and she was converted to the tow-boat for operations on the St. Lawrence River.

Ownership of the steamer *Arabian* was changed to Robert Sawyer & Ramon Menendez, of Nassau, BWI. She was rebuilt at New York City for ocean service and placed under British registry: 174' x 24' x 18.4'; 263 grt. She was operated as a Confederate blockade runner between Nassau and

Wilmington, NC from late 1862 to early 1863. In 1863, on her third trip to Wilmington, N.C. after she discharged her cargo of contraband and loaded a cargo of cotton, the steamer *Arabian,* while leaving Wilmington, NC, she was spotted by Federal blockaders on the Atlantic Ocean. Turning back to Wilmington, to avoid the federal ships, she mistaking the inlet and piled the vessel on shore below Fort Fisher, NC. A storm pounded the hull to pieces. She was declared a total loss, September 1863.

Arctic: Eber B. Ward, Samuel Ward, and Captain Thomas Butlin all from Detroit, MI had the shipyard of J. L. Wolverton, Newport (Marine City) MI, build a wooden sidewheel steamer with measures: 236.5' x 30.0' x 12.5' and a tonnage (old style) of 861 42/95. She was equipped with a vertical beam (Walking Beam), low pressure engine, 51" bore x 120" stroke, 225 horsepower built by West Point Foundry Co., New York, NY in 1837. The engine came from the steamer *Cleveland* (1837). She was built for the passenger, package freight trade. April 1851, while bound up, the steamer *Arctic* came in contact with the down bound brig *John Irwin* (1845) off Fairport, OH, Lake Erie. The brig lost her bowsprit, jib-boom and had her cut-water carried away. The *Arctic* had her bulwarks stove in.

In 1852, ownership for the steamer *Arctic* was changed to Captain Clement. Her master for the 1852-54 seasons was Captain Butlin. In November 1853, while down bound from Chicago for Detroit, the steamer *Arctic* went ashore during a heavy gale on Beaver Island, northwest of Petoskey, MI, Lake Michigan. She was released and her property loss estimated at $5,000. In November 1854, bound from Chicago from Milwaukee, WI, the steamer *Arctic* broke her walking -beam within five miles of Waukegan, IL. She was towed back to Chicago for repairs. October 1857, the steamer *Arctic* broke her walking-beam on Lake Michigan. Towed back to Milwaukee for repairs. Property loss set at $200. April 1858, the steamer *Arctic* broke her shaft on Lake Michigan and was towed back to Chicago for repairs. Property loss set at $2,000. Her master for the 1858 season was Captain Flood and for the 1860 season Captain F. S. Miller. May 1860. Up bound on Lake Superior, the steamer *Arctic,* struck the westernmost of the Huron Islands in dense fog and stranded on Lighthouse Island, Keweenaw Bay. She was declared a total loss. No lives lost.

Atlas: E. C. Louis & William L. Bancroft, Buffalo, NY enrolled at Oswego, NY on March 7, 1851, a wooden propeller, built by the Bidwell & Banta Shipyard, Buffalo, NY. Her measures were: 156.5' x 25.5' x 11.0', with a tonnage (old style) of 372 87/95. She was built for the package freight trade and intended to run between Ogdensburg, NY and Detroit, MI.

June 1851, the propeller *Atlas*, laden with general merchandise, sank in the St. Lawrence River. She was raised and repaired. October of that same year, while bound down from Detroit, MI for Buffalo, NY, the propeller *Atlas,* laden with a cargo of 2,972 barrels of flour, experienced high winds and heavy seas, shipping water required the pumps to be manned, and in the early morning the raising water put out her boiler fires. She drifted onto a rocky shore eight miles west of Grand River, Ont., Lake Erie. The vessel was declared a total loss. Of her cargo, 2,300 barrels of flour were recovered. No lives lost.

Brantford: Louis Shickluna, St. Catharines, Ont. built for Holcomb & Henderson, Hamilton, Ont. a wooden propeller with measures: 153.5' x 23.4' x 9.7', unit tons: 222.0. she was equipped with a high-pressure engine, 26" bore x 30" stroke, 100 horse power, built by Beckett, Hamilton, Ont. She was enrolled at Hamilton, Ont. in 1851 and designated for the package freight trade, running between Montreal and Hamilton, Ont. Master of the propeller *Brantford* from 1851 – 57 was Captain Davis. November 1853, the *Brantford* was disabled near Toronto, Ont. She was towed into Toronto for repairs. The estate of Holcomb & Henderson placed their forwarding stock of steamers, including the propeller *Brantford,* up for sale.

Ownership of the *Brantford* was changed to Benson & Merritt, St. Catharines, Ont in 1854. She ran between Montreal, Que. and St. Catharines, Ont. Bound from Quebec in August 1854, the propeller *Brantford* arrived at Kingston with a good number of emigrants aboard. Upon arrival, her crew abandoned the vessel due to the prevalence of cholera onboard. 26 of the passengers out of the 140 aboard had died during the run up the river. The sick were removed to the hospital, with the remainder quarantined and the *Brantford* towed into the harbor to be purified.

January 1858, ownership of the propeller *Brantford* was changed to T. Kirkpatrick, Kingston, Ont.; T. Hart & John Ostell, Montreal, P.Q. She would run between Hamilton, Ont., Toronto, Ont. and Montreal, P.Q.

In April 1859, control of the propeller *Brantford* was changed to A. Cowan, Kingston, Ont. The *Brantford* while off Cornwall, Ont. collided with the schooner *Dawn* (U6127) in 1861 while on the St. Lawrence River.

In March 1862, her ownership returned to the Holcomb family, when S. F. Holcomb, Toronto, Ont.

took ownership of the *Brantford.* She was formed into a freight line with other steamers that ran between Hamilton, Ont and Montreal, Que. During winter 1862 layup, the *Brantford* received large repairs during winter lay-up.

In 1864, ownership of the propeller *Brantford* was changed to J. A. Henderson, Montreal, Que. Her master for the 1864 season was Captain Hannan.

In April 1866, her ownership was changed to Theodore Hart & John M. Young, Montreal, Que. April 1968, after taking on wood at Gananoque, Ont. St. Lawrence River, a defect in her machinery was discovered. She proceeded to Kingston for repairs.

Her ownership reverted back to J. A. Henderson, Montreal, Que. in 1869. October 1870, bound from Montreal to Hamilton, laden with general cargo, the propeller *Brantford* broke her wheel at Brockville, Ont., St. Lawrence River, losing a bucket.

April 1872, ownership of the propeller *Brantford* was changed to J. Power & T. Smart, Jr., Brockville, Ont. In March 1873, her ownership of the *Brantford* was changed to Henry & William Zealand, Hamilton, Ont. & D. Butters, Montreal, Que.

April 1873, D. Butters and his partners had the Brantford stripped down and rebuilt by A. Muir & Brothers, Port Dalhousie, Ont. into a steambarge. She was registered at Hamilton, Ont. as *Calabria* with measures: 145.6' x 22.3' x 7.3', with a gross tonnage = 391. August 1873, the steambarge *Calabria,* while proceeding down the Trent River, had her machinery give way near Oak Point, Ont. She was towed into port for repairs. She was rebuilt in 1875 and her enrollment up-dated to: 158.4' x 26' x 11.4'; 656.21 grt, 425.13 net. May 1876, the steambarge *Calabria* sank at the foot of the Matilda Canal, Ont, St Lawrence River. She was loaded with wheat from Toronto to Montreal. Raised the *Calabria* was raised and towed to Ogdensburg, NY for repairs in May 1876. June 1877, remeasured and registration changed for the steambarge *Calabria* to: 158.40 x 26.00 11.40; 656.21 grt, 425.13 net. September of the same year, during a gale on Lake Ontario, the steambarge *Calabria,* laden with 21,000 bushels of grain, broke her engine. She was taken in tow by the steambarge *D. R. Van Allen* (C71104) and towed to Kingston, Ont. for repairs.

Investors in the steambarge *Calabria* was changed to D. Butters & H. Zealand, Hamilton, Ont. in October 1878. In May 1880, her investors were A. Turner & H. Zealand, St. Catharines, Ont. During the winter layup of 1880/81, the steambarge *Calabria* was rebuilt and renamed *Glenfinlas* (C77695): 158.40 x 26.00 x 11.40; 686.21 grt, 425.13 net. She was placed on the Fort Williams, Ont. to Montreal, Que. grain trade. Her master for the 1881-83 seasons was Captain H. Zealand. August 1883, bound down from Detroit, MI for Montreal, P.Q., laden with 20,000 bushels corn and general freight, the steambarge *Glenfinlas* caught fire around the boiler, and was destroyed by fire in the Welland Canal, near St. Catharines, Ont., Lake Ontario. No lives lost. Her final enrollment for the *Glenfinlas* was surrendered at Hamilton, Ont, September 14, 1883 and endorsed:" burnt".

J. W. Brooks: At Detroit, MI, the first enrollment was issued July 25, 1851 for the wooden propeller, built at the shipyard of William Gooding, Detroit, for the investor led by J. W. Kelsey, et al, Detroit, MI. Her measures as recorded were: 135.75' x 25.25' x 9.75' and a tonnage of 312.41. Her engine was built by Van Schoick & Kellogg. Her boiler was of the Montgomery pattern, built by J. & J. Brennan. The *J. W. Brooks* was built for the package freight trade and initially built for the St. Clair and Buffalo trade carrying lumber. Her master for the 1851 season was Captain Kellogg. September 1851, while bound from Ogdensburgh, NY for Detroit, MI. with a cargo of merchandise, the *J. W. Brooks* lost her iron rudder during a gale on Lake Erie after leaving the Welland Canal. She was towed to Buffalo for repairs. The loss was estimated at $1,500.

August 1853. ownership of the propeller *J. W. Brooks* was changed to William Cole, Detroit. That fall, her ownership was changed to the Northern Transportation Co., Cleveland, OH and she ran between Ogdensburg to ports on Lake Erie and Lake Michigan. In October 1854, the *J. W. Brooks* broke her air chamber and was towed into Buffalo, NY for repairs.

February 1855, her ownership was changed to Chamberlain & Crawford, Cleveland, OH and she was operated by the Northern Transportation Co. Master for the 1855 season was Captain G. F. Shattuck. May 1855, while bound for Ogdensburgh, NY laden with a cargo of flour, the *J. W. Brooks,* went ashore, in fog at Long Point. Ont., Lake Ontario. She was released and her property loss estimate was set at $2,000. In July of the same year, bound for Ogdensburgh, NY*,* laden with freight and several passengers, the *J. W. Brooks* boiler blew up about ten miles from Ashtabula, OH on Lake Erie. Two firemen, believed somewhat scalded, jumped overboard and were lost and the second engineer was badly scalded. Property loss was set at $3,600. Her master for the 1856 season was Captain Charles Hammond. May 1856, bound up from Ogdensburgh with merchandise for the west, the *J. W. Brooks* went ashore in heavy fog four miles above Oswego, NY while trying to find the harbor entrance. She was lightered and released. Property loss was set at $200.

November 1856, late in the season, the *J. W. Brooks* was bound down from Cleveland, OH, Lake Erie, for Ogdensburgh, NY on the St. Lawrence River, She carried merchandise and a crew of twenty and some passengers, when she was caught in a heavy gale on Lake Ontario and foundered 8 miles NE of False Ducks Light with the loss of every soul on board. The hull sank in 70 feet of water.

July of the following year, the hull of the *J. W. Brooks* was raised using flotation gear and towed in "a submerged state" from where she foundered to Garden Island, opposite Kingston, Ont. where the remains were place submerged in 25 feet of water. The Calvin Company Shipyard raised the hull and towed her into their shipyard where she was rebuilt by Henry Rooney as a towboat for Calvin & Breck, Garden Island, Ont. Her engine and propeller were removed and she was converted to a sidewheel towboat with a vertical beam (walking beam) engine, 55" bore x 96" stroke, that had been built by Bennett & Henderson, Kingston, Ont., from the 1831 towboat *William V.* In 1861, the *J. W. Brooks* was renamed *William* and would be used on the St. Lawrence River towing large timber rafts between Lake Ontario and Montreal & Quebec, Que. September 1861, a log raft of timber originally made up at Port Rowan, Ont, Lake Erie, was wrecked while coming through Lake Erie, and again on Lake Ontario. The remainder of the timber raft, while under tow of the *William* near Brockville, Ont. was overcome by a gale from the northeast, which broke up and the remainder of the timber raft, which was driven before the wind and scattered along the St. Lawrence River. The rafts men were rescued. Two months later, in November, the towboat *William* broke her machinery and needed repaired.

September 1864, the towboat *William,* prepared to tow the schooner *Rapid* down the St. Lawrence River, responded to the order to reverse her engine by going forward and colliding with the schooner with some force, sinking in shoal water. She was raised and repaired. July 1866, while bound up the St. Lawrence River, the towboat *William* sprang a leak near St. John's Island and started taking water fast. The crew was able to control the leak by the bilge injection pumps. The towboat worked up to Garden Island where the cause of the leak was determined to be breakage of the planks forward, at the bluff of the bows, below the waterline, which was caused by the steamer coming in contact with a sunken timber while under full headway.

April 1869, the tug *William* was re-measured and her registration updated to 139.5 x 25 x 10.8, 267 grt, 109 net. She was retired in1876 and reported broken up and destroyed March 12, 1878.

Buckeye State: George W. Jones, Cleveland, OH, built for J. B. Philips, Cleveland, OH a wooden sidewheel steamer with measures: 273.1' x 33.6' x 14.3' with tonnage (old style) 1,274.18. She was powered by a vertical beam, low pressure engine with an 81" bore x 132" stroke, builder unknown. She was built for the package freight trade and chartered to the Michigan Central Railroad and ran between Detroit, MI and Cleveland, OH. Her master for the 1851 – 54 seasons was Captain Jacob Imson.

September 1851, after leaving Cleveland, the steamer *Buckeye State* was thrown on her beam ends during a heavy northwester. She lost overboard a considerable portion of the mails and baggage overboard. She returned to Cleveland for repairs. The following month, again bound up in heavy weather, the *Buckeye State* collided with the down bound schooner *Saratoga* (US-1848) off Long Point, Ont., Lake Erie. The schooner was cut in two and sank immediately, a total loss and the loss of three lives on the *Saratoga.*

November of 1851, ownership of the steamer *Buckeye State* was changed to A. R. Cobb & Co. and Captain Imson. November of 1851, while lying at a wharf in Buffalo, the steamer *Buckeye State* caught fire in her hold. The crew quickly scuttled the vessel and she sank in 12 feet of water. Damage to the boat was set at $17,125 and to the cargo at $10,000. July 1852 the *Buckeye State* broke her machinery and was towed into Buffalo for repairs. June 1854 the *Buckeye State* collided and sank the schooner *Oneida* (US-1845) near Buffalo, NY, 2 miles off Point Albino, Lake Erie. No lives lost. The following month she was placed on the Buffalo to Chicago route. October of that same year while down bound from the Sault for Buffalo, the steamer *Buckeye State* went aground on the Flats, Lake St. Clair. She was released and dry docked at Detroit for repairs.

Her master for the 1855 season was Captain Andrews. Late in May of 55' while down bound from Detroit for Buffalo at night, the steamer *Buckeye State* collide with the up bound schooner *Belle Sheridan* (US2379) who was not showing any lights. The following month the *Buckeye State* went ashore on Point Albino, Ont., Lake Erie. She was pulled off by the steamer *Michigan* and towed into Black Rock, NY for repairs. Property loss was set at $4,000. In November of 1855 the *Buckeye State* was involved in two incidents: she struck a rock in the Detroit River and sprang a leak which required repairs and later that month she was damaged during a gale on Lake Erie that also required repairs.

Laid up at Buffalo, NY due to the depression of 1857, the steamer *Buckeye State* caught fire and burned to the water's edge. She was dismantled and

converted into a barge. In 1863 she was converted to a coal barge and continued hauling coal until she was abandoned at Wyandotte, MI on the Detroit River in 1872.

Buffalo: Bidwell & Banta shipyard, Buffalo, NY built for G. B. Walbridge, & L. H. Pratt of Buffalo, NY a wooden vessel for the bulk freight trade that was launched April 26, 1851. When enrolled, her measures were listed as: 202.0' x 29.1' x 12.2' and a tonnage (old style) of 689.2. Propeller driven, she was powered by a high pressure, non-condensing engine, with a 32" bore cylinder and a 48" stroke. The engine was built by the S. Shepherd Foundry and her boiler was 10' x 98", rated at 185-psi. Her master for the 1851 season was Captain Goldsmith.

May 1853, wood met iron when the propeller *Buffalo* collided with the iron sidewheel steamer *U.S.S. Michigan* off Point Aux Barque, Lake Huron. The propeller received extensive damage to her upper works. October of the following year, while down bound on the St. Clair River, the *Buffalo* collided with the barque *Indiana* (US12086) on St. Clair Flats and had two of her arch posts broken. Vessels entering the port of Buffalo that drew over 9.5 feet ran the risk of grounding on the bar when in entering the creek. October of 1854, the propeller *Buffalo*, with a 12.2' draw ran aground on the bar. She was released. November of that year, the *Buffalo* collided with and sank the steamer *Fashion* (US-1847) on the St. Clair River.

April 1855, her enrollment was changed to reflect that her owner was the American Transportation Co., Buffalo, NY.

July 1860 her enrollment was updated when ownership of the propeller *Buffalo* was changed to Charles Ensign, Buffalo, NY. In October of that year, while bound up from Buffalo, NY for Chicago, IL on Lake Erie, the propeller *Buffalo* ran aground in fog on the shore reef half way between Little's Point and the Colchester, Ont. August 1861, the propeller *Buffalo* collided with and sank the tug *Clara* (US5220) in the Detroit River. Damage to *Clara* $600. October of the same year, the *Buffalo* went hard aground on Fighting Island, Detroit River. May 1863, the *Buffalo* went aground in fog on at Point Aux Barque, MI, Lake Huron. She had to jettison part of her cargo to be released

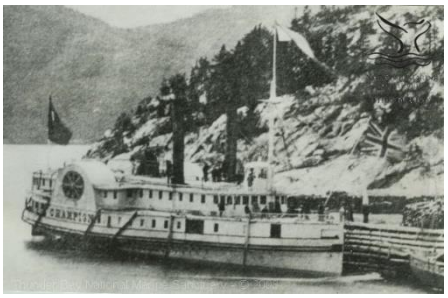
April 1864. Western Transportation Co., Buffalo, NY purchased control of the propeller *Buffalo* for $27,000. The following month the *Buffalo* went ashore about 3 miles east of the "Old Mill" on the south side of the Straits of Mackinac, Mackinaw City, MI and sank in 10 feet of water. She was raised and repaired. April 1865 she was re-admeasure and her enrollment updated to 202' x 28.6' x 11.05'; 829 tons. June,1866 she broke her wheel on Lake Michigan and had to be drydocked for repairs. The property loss was set at $750.

Her ownership was changed to J. S. Noyes, et al, Buffalo, NY in April 1871 and she was listed as a steambarge. That month she ran aground near Saginaw Light, Bay City, MI and required lightering to be released. August of the same year the steambarge *Buffalo* collided with the steamer *R. N. Rice* (US 21191) opposite Detroit, MI on the Detroit River and in September she lost her rudder on Lake Michigan. In September 1872, she ran aground with a tow of barges on the St. Clair Flats and in June of 1873, with four lumber barges in tow, she was disabled when her shaft broke near Long Point, Ont., Lake Erie and had to return to port for repairs.

For the next four years the steambarge *Buffalo* went through a series of owners starting with Amos Easton, Bay City, MI in August 1874, F. W. Field, Waterford, MI in April 1875, P. Kane, Bay City, MI in 1876 and then E. J. Campbell, et al, Bay City, MI in August 1877. In July 1878 the *Buffalo* was burned to secure the old iron that was in her.

Caspian: John S. Wolverton, Newport (Marine City), MI built for Samuel & Eber B. Ward a wooden sidewheel steamer in 1851. She was listed with measures of 251.7' x 31.4' x 12.0' and a tonnage (old style) of 921.5. The steamer was powered by a vertical beam, low pressure engine with a 60" bore x 120" stroke that had been originally installed in steamer *Canada.* She was equipped with 30.5' paddlewheels. The steamer was built for the passenger, package freight trade at a cost of $75,000 and ran on the North Shore Line. Her masters were Captain C. H. Ludlow for the 1851 season and Captain C. K. Cooper for the 1852 season. In June 1852 while bound up from Cleveland, OH to Detroit, MI, the steamer *Caspian* broke her shaft and repaired at Detroit.

July 1852, while the *Caspian* was laying head to shore opposite the sidewheel steamer *Queen City* (US-1848) at New Pier, Cleveland, Ohio, belonging to the Cleveland, Columbus, Cincinnati Railway, during an intense storm. She was swept by a North East wind, that broke her hawser and she rode up on a wave coming down on the spiles, tearing away one wheel and breaking through her guards. She was pounded by the waves until she took on enough water to sink and was continually pounded until she broke in two. The engine was recovered, but the hull had been broken to pieces and was been abandoned. No lives lost. The wreckage was flattened with dynamite in 1853.



Champion: Augustin Cantin, at his shipyard at Montreal, Que., built for the partnership of McPherson & Crane, Montreal, forwarders, a wooden sidewheel steamer with measures: 176' x 24' x 11'. Built for the passenger, package freight trade and initially ran as a Lake Ontario mail steamer, she was powered by a vertical beam, low pressure engine with a 42" bore cylinder and 120" stroke. The engine builder is unknown. Her master for the 1851-54 seasons was Captain Marshall. In May 1852, the steamer *Champion* caught a fender on her dock, which sprang from the boat and struck a man on the head, killing him. That July while lying at her pier at Hamilton, Ont, a fireman fell from one of the paddle-wheel boxes and drowned before assistance could be given. The following month, while up bound from Montreal to Toronto, a male passenger leaped overboard and drowned. At the end of October of that same year the steamer *Champion* went ashore in fog near Long Point, Ont., Lake Ontario.

April 1853, ownership of the steamer *Champion* was sold to a confederation called the "Watertown, Cape Vincent and Canada Steamboat Railroad Co." with their headquarters located at Cape Vincent, NY on the shore of Lake Ontario. The vessels of the new company ran in connection with the Rome and Watertown Railroad and made daily trips to Hamilton, Ont, touching at Kingston, Ont. and other places. The company was a joint Canadian-American partnership.

At the end of August of that year, the steamer *Champion* broke her machinery, seven miles west of Kingston, Ont. on Lake Ontario. Her master for the 1855 season was Captain Milloy. In May 1855 the first freight from Chicago arrived at Oswego, NY via Collingwood, Ont. The freight came by steamer from Chicago to Collingwood, then overland to Toronto by railroad, thence by the steamer *Champion* to Oswego. October of that year, plying between Toronto, Ont. and Oswego, NY, the steamer *Champion* was driven ashore during a gale on Lake Ontario nine miles below Oswego, Ont. No lives lost. Her master for the 1856-58 season was Captain A. Sinclair and for the 1859-60 season, Captain William Smith.

Ownership of the steamer *Champion* was changed April 1861 to the Canadian Inland Steam Navigation Co., a company established by an Act of Canadian Parliament in order to command, as far as possible, the passenger, freight trade between Hamilton, Ont. and Montreal, Que. Her master for the 1861-63 seasons was Captain J. R. Kelly. During winter layup the steamer *Champion* was rebuilt: 175.8' x 24.3' x 10.7' with tonnage 373 grt, 127 net. Her master for the 1864 season was Captain A. Dunlop. Up bound from Montreal to Kingston, Ont. in August 1864, a fire was discovered in the wheelhouse of the *Champion* but was quickly extinguished by the crew. Masters of the steamer *Champion* for the 1865 season was Captain Swales and for the remainder of the 1865 season and through 66, Captain D. Sinclair, with Captain Dunlop as master during the 1867- 1869 season. July of 1869, the steamer *Champion,* while bound from Kingston, Ont. to Toronto, Ont. went ashore in heavy fog near Cobourg, Ont. on Lake Ontario. She was released and the underwriters set the hull damage loss at $1,500, and the cargo damage at $900. A few days later the *Champion* went ashore in heavy fog at Grimshaw's Point, three miles east of Cobourg, Ont., Lake Ontario. She was released with no apparent damage. Her master for the 1870-71 seasons was Captain Carmichael, with Captain McCorey for the 1872 season

Ownership of the steamer *Champion* was changed in 1874 to Richelieu & Ontario Navigation Co. She was operated as a towboat on the St. Lawrence River and Lake Ontario. Her registration was surrendered in 1877 and endorsed as "broken up".

Forest City: B. B. Jones, Ohio City (Cleveland), OH built for H. D. Pheatt et al, Cleveland, OH a wooden propeller that was enrolled at Cleveland on August 14, 1851. Her measures recorded were: 177.0' x 25.1' x 12.0' and a tonnage (old style) of 515 39/95. She was built for the passenger, package freight trade and her engine is unknown. Her master for the 1851-55 seasons was Captain H. D. Pheatt.

November 1852, the *Forest City* sprang a leak on Lake Erie and ran to Detroit, MI for repairs. She was unloaded and hauled out to be repaired. Property loss was set at $1,000. In November 1853, the *Forest City* went ashore at Sheboygan, WI, Lake Michigan, during a heavy gale. She was released without injury. The 21st of September in 1855,

upbound Cleveland to Chicago in thick, rainy weather, the propeller *Forest City,* laden with 470 tons of merchandise and 63 passengers, collided in the dark with the schooner *Asia* (U-1848) who was down bound from Chicago for Buffalo, laden with 16,000 bushels of corn. The collision, near Grand Traverse Bay, Lake Michigan damaged both vessels and they sank within 30 minutes in 40 fathoms of water. The crew and passengers all escaped to the boats and were picked up by the schooner *Hamlet* (U-1852). No lives lost.

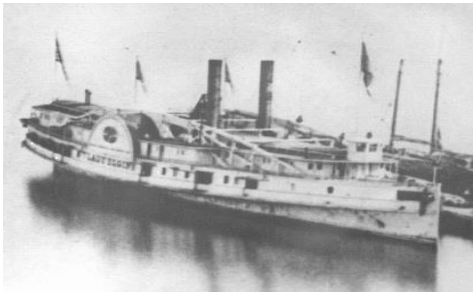
Fox: Vincent Bidwell, Buffalo, NY had his company, Bidwell, Banta Co, Buffalo, NY, build a wooden sidewheel steamer for towing lumber rafts. Her measures were: 99.5' x 16.2' x 6.7; with a tonnage (old style) of 102. She was enrolled at Buffalo, NY, August 27, 1851 with her engine unlisted. Her master for the 1851 season was Captain John. In December 1852 the sidewheel tug *Fox* collided with the brig *Powhattan* (U19767) off Fairport, OH, Lake Erie. The damage to the brig was set at $500.

The ownership of the tug *Fox* was changed in May 1853 to Theo Barton, Buffalo, NY and she towed rafts of square timber between Chippawa, Ont. & Tonawanda, NY.

The ownership of the tug *Fox* was changed in February 1854 to Ebenezer P. Dorr, Buffalo, NY.

October 1855 ownership of the tug *Fox* was changed to James Ogden & Timothy Jerome, Saginaw, MI. During the 1860 season the sidewheel tug *Fox* operated as a river boat on the Saginaw river. June 1861, the tug *Fox* struck and sank the sidewheel ferry *Little Eastern* (U15647) on the Saginaw River, in Michigan.

In 1862 Captain Dana et al, Detroit, MI purchase the sidewheel tug *Fox* who operated her as a towboat on the St Clair Flats. In October 1863, while moored at her Newport, MI dock on the St. Clair River and burned to a total loss. No lives lost.



Lady Elgin: Aaron D. Patchin, Buffalo, NY; Captain Gilman Appleby, Conneaut, OH. had the shipyard of Bidwell & Banta at Buffalo, NY build a wooden sidewheel steamer that was enrolled at Buffalo November 05, 1851. Her cost was $96,000 and recorded measures were 252.0' x 32.7' x 13.0' with a tonnage (old style) of 1037.8. She was powered by a vertical beam, low pressure, 350 horsepower engine with 32' diameter wheels that had been built by Bidwell & Banta. The engine and boiler had been removed from the steamer *Cleopatra* in New York which had been built for the slave trade and was seized by the U.S. Government. She was built of white oak with frames with iron reinforcements. She had accommodations for 200 cabin passengers, 100 deck passengers and a of 43 crew. The *Lady Elgin* was built for the passenger, package freight trade and had originally been constructed for the Buffalo, NY to Chicago, IL services which she did for a short period of time. Her master for the remainder of the 1851 season was Captain Gilman Appleby. For the 1852 to 55 seasons, her master was Captain Luther Chamberlain. May 1852 the steamer *Lady Elgin* collided with the schooner *Florence* on Lake Erie. The collision caused damage to both vessels and the property loss for both was set at $400.

October 1852 the ownership of the steamer *Lady Elgin* was consolidate to sole owner Aaron D. Patchin, Buffalo, NY. During the winter layup of 52/53, the sidewheel steamer *Lady Elgin* received a new engine plus other improvements including a low pressure, 54" bore x 132" stroke engine; 2 - low pressure boilers, 25.5' x 8' that produce 39 pounds steam. During the 1853 navigation season she ran between Buffalo, NY and Chicago, IL.

Ownership of the steamer *Lady Elgin* transferred to Thaddeus W. Patchin, Buffalo, NY on May 24, 1853. August 1854 while down bound from Milwaukee for Buffalo, NY with over three hundred passengers and freight, the steamer *Lady Elgin* struck a rock off Manitowoc, WI during the night, and sank soon after reaching the pier at Manitowoc. Her passengers were sent ashore for safety. The vessel was raised and repaired.

May 1854, the steamer *Lady Elgin* was transferred to Aaron D. Patchin, Buffalo, NY who resumed sole ownership. October of that year, the *Lady Elgin* broke her machinery at Mackinaw, MI and was towed to Collingwood, Ont. for repairs. The repairs or property loss was set at $3,000.

May 1856, the ownership of the steamer *Lady Elgin* was changed to Albert T. Spence & Company, and Gordon S. Hubbard, both from Chicago, IL Her master for the 1856-57 seasons was Captain E. H. Tompkins. For the 1856 season she ran between Chicago, IL and Lake Superior. October of that year, the *Lady Elgin* went ashore on North

Manitou Island, Lake Michigan. She jettisoned 70 head of cattle to lighten her load and was able to work herself off. In October 1857 the steamer was damaged by fire. June 1858. up bound from Chicago with a few passengers, provisions and 50 head of cattle, the steamer *Lady Elgin* struck a reef while entering Cooper Harbor, MI, Lake Superior in dense fog. She was released and repaired. The property loss was set at $7,500. In August 1858, the *Lady Elgin* went aground on Au Sauble Point Reef, Lake Superior. Her property loss was set at $1,400. For the 1859-60 season, her master was Captain John S. Wilson. During the winter layup of 1858/59 the *Lady Elgin* was refitted and refurbished to run the Chicago, IL to Lake Superior ports. October 1859 while steaming on Lake Superior the *Lady Elgin* broke her cross-head beam and required a tow into Marquette, MI for repairs. The following month, up bound, she broke her crank pin near Point Iroquois, Lake Superior.

Total ownership of the *Lady Elgin* was transferred to Gordon S. Hubbard, Chicago, IL. And she was readmeasured and her enrollment at Chicago, IL was updated July 1860 to: 231’ x 31’ 8” x 11’ 7”; 818 53/95 tons (Old Style). For the 1860 season, the *Lady Elgin’s* route was changed to the Chicago, IL to Collinwood, ONT trade.

The sidewheel steamer *Lady Elgin* left Chicago, IL, September 07, 1860, with fifty passengers for Mackinaw and three hundred excursionists returning to Milwaukee from attending a Republican political rally. She had a crew of thirty-five under command of Captain Wilson. At mid-night a heavy gale accompanied by a thunderstorm came up. At 2:30 A.M. some ten miles off Winnetka, IL, the *Lady Elgin* was rammed amidships by the schooner *Augusta,* slicing of her port sidewheel. The *Lady Elgin* tried to reach the beach but she rapidly sank in twenty minutes in 300 feet of water, twelve miles north of Winnetka, IL, Lake Michigan. Two hundred and eight seven lives were lost.

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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The current system of measurement for ships includes:

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

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

P.Q.: Province of Quebec

Packet Freight: almost every imaginable item of merchandise – bags of onions, grain, etc., processed foods, bags of coal, stoves, furniture, that 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.)