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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 – July 2023

**Next Meeting: October 14, 2023;  
"Finishing: Natural & Paint" – Cliff Mitchell**

## Table of Contents

<b>September</b>	<b>1</b>
<b>Question</b>	<b>1</b>
<b>Announcements</b>	<b>3</b>
<i>Shipwrights of Ohio Fall Activities</i>	3
<i>Presentation Schedule</i>	3
<i>National Museum of the Great Lakes</i>	3
<i>Nautical Research Guild</i>	3
<i>The MSB Journal</i>	3
<i>Restoration Project</i>	3
<b>Presentation</b>	<b>4</b>
<i>Soldering</i>	4
<b>Ships on Deck</b>	<b>5</b>
<i>DD847 USS Robert L. Wilson</i>	5
<i>HMS Sphinx</i>	5
<i>Drakker</i>	5
<i>HMS Flirt - 1782</i>	6
<i>L'Indiscrete (Xebec)</i>	6
<b>Other Notes: "Stuff", Tugs &amp; Things</b>	<b>6</b>
<i>Nautical Terms</i>	6
<i>Tugs: Great Lakes</i>	7
<i>Champion (Towboat) 1877</i>	7
<i>C. M. Charnley 1882</i>	7
<b>Presentation Schedule:</b>	<b>8</b>
<b>Events &amp; Dates to Note:</b>	<b>8</b>
<b>Cargo Hold</b>	<b>8</b>
<b>Wooden Steamers on the Great Lakes</b>	<b>9</b>
<b>Some Notes</b>	<b>18</b>

## September

Fall, college football seasons start, Ohio State home game, and cool weather. Why would anyone want to sit in front of a computer, zooming, or in an in-person meeting with chocolate cookies, when they could be outside hiking, biking, attending a football game or just doing yard work?

On the third Saturday of the September, we gathered at the Westerville Public Library for our sixth hybrid meeting and a chance to hear and see an excellent presentation on soldering. There were four attending in-person and five on zoom for the meeting. Our history of attendance at meetings shows that in March, May, September and December there are always other attractions that draw our attention away from meeting and talking about ship modeling.

I do want to acknowledge that George Montag joined the meeting via Zoom. George is a resident in a retirement community in Marysville, OH. Good to see you George. The reminds me that I need to follow up on our other two members who are 85+.

Note: The library conference room has been reserved by us through the rest of the year. So, see if you can arrange your schedule to attend either in-person or via zoom. We meet the second Saturday of October (14<sup>th</sup>) and the third Saturday of November (18<sup>th</sup>), and December (16<sup>th</sup>).

We have three club business activities that will be handled during those meetings: Planning for the 2024 presentation schedule; payment of 2024 dues (collection will be December through March); and the election of officers for 2024. Our club constitution states that officers will be elected for the next year in November.

At this time, the position of president of the club is open for 2024. Your present president has held this position sine the founding of the club in 2004. It is time to transfer this responsibility to a younger member. If you are interested in learning what the president's responsibility are, contact me at [shipwright@breezelineohio.net](mailto:shipwright@breezelineohio.net).

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

Your editor.

## Question

Jason Smith asked:

"He and his wife were in Erie camping and visited the Erie Maritime Museum and the *Brig Niagara*. Awesome museum and he had seen the *Niagara* before in a Tall Ships event but had never noticed

that she had stacked horizontal lines extending from the masts to the shrouds.



Jason asked the guide if those were "aftermarket" OSHA-specified lines and was told that they were foot ropes for the fore and aft sails so the crew members could get at them at multiple heights. He then asked if they'd have been on the original, and was told yes.

His question is: "have you seen these footropes in research you've done?" For those who have built the *Niagara*: "Are these shown on your plans?

Your editor found the following photo while researching the question.



Photo above shows the crew members standing on the thwartship footropes.

Were they on the original *Niagara* in 1812? That answer is: We do not know".

Further research provided the following information:

In 1820, the *Niagara* was sunk for preservation in Misery Bay on Presque Isle, which means she was stripped of her masts, yards and rigging. She was raised in 1913 and rebuilt for the centennial of the Battle of Lake Erie. After being allowed to deteriorate, the restoration was re-started in the 1930's but was hampered by lack of funds due to the Great Depression and remained uncompleted until 1963. A more extensive restoration was carried out in 1988 in which much of the original ship was largely destroyed. The incorporation of new materials and modern equipment makes it ambiguous as to whether it is or is not a replica.

Efforts to rebuild the *Niagara*, in 1913, were hampered by the lack of original plans from 1812.

To understand why there are no plans, one has to remember that in 1788, at the end of the Revolutionary War, the Ohio Territory was ceded by Britain to the new United States. Her first settlers arrived via the Ohio River at Marietta in 1788. Ohio was opened to soldiers and sailors who had served in the war, as payment for their services. In September 1812, Daniel Dobbins, a merchant on the Great Lakes was authorized to build four gunboats. He drew up plans for these ships. Captain Isaac Chauncey, commander of naval forces on Lake Ontario, made some changes to the plans and authorized him to build, additionally two brigs. Noah Brown, a shipwright, was brought in from New York City to supervise the building of the fleet required. Of the ships built and launched under the supervision of Noah Brown, were:

<u>Ship Name</u>	<u>Type</u>	<u>Launched</u>
<i>Tigress</i>	Schooner	April 1813
<i>Porcupine</i>	Schooner	April 1813
<i>Scorpion</i>	Schooner	May 1813
<i>Lawrence</i>	Brig	June 1813
<i>Niagara</i>	Brig	July 1813
<i>Ariel</i>	Schooner	July 1813

Keels were made from virgin black oak logs. Due to lack of iron, the hulls were fasten with wooden treenails. The timbers and planking were made from green lumber because the builders did not have the time to dry the wood properly. The cannons came from foundries at Washington, D.C. and Sackets Harbor.

Oliver Perry arrived at Erie in March 1813 and the battle of Lake Erie happened in September 1813.

None of the above answers the question about the thwartship footropes. A simple statement found during my research opened another source for the answer. The brig *Niagara* is certified for sail training by the United States Coast Guard, and she is designated as *SSV Niagara*. SSV means she is designated as a "Sail School Vessel". That designation led me to look up the sail training vessel for the U.S. Coast Guard. The photo below is of the *Eagle*.



Looking carefully, you can make out the thwartship footropes. Another view.



Possible answer: the thwartship footrope may be requirement for any sailing ship being designated a SSV "Sail School Vessel".

## Announcements

### Shipwrights of Ohio Fall Activities

As a ship modeling club, we have three items that will occur this fall. They are:

- Presentation schedule planning for 2024
- Dues collection for 2024
- Election of officers for 2024

Your president turns 86 before the end of 2023 and your vice president is 80. We need to develop younger leadership for the club and someone to take on as editor of this newsletter.

If you want to find out more, what the responsibilities of each officer are, send a note to [shipwright@breezelineohio.net](mailto:shipwright@breezelineohio.net).

### Presentation Schedule

The meeting presentation schedule for the remainder of 2023 has been revised.

- Oct 14<sup>th</sup>: Finishing – Natural and paint by Cliff Mitchell; (Oct. meeting is on the second Saturday of the month.)
- Nov. 18<sup>th</sup> Displaying & Mounting Ship models by Stan Ross
- Dec. 16<sup>th</sup> Open – Any ideas

### National Museum of the Great Lakes

Fall Lecture Series (in-person or on-line zoom.

Oct. 5, 2023: "Logging and the Birth of a Land Ethic" with Natalie Cypher – 7pm:

Oct, 25, 2023: "Ford Motor Company-A Great Lakes Manufacturer" with Ian Rose – 7pm.

Nov. 15, 2023: "Dugout Canoes of Wisconsin" Sissel Schroeder – 7 pm

Register at:

<https://nmgl.org/event/2023-fall-lecture-logging-and-the-birth-of-a-land-ethic/>

### Nautical Research Guild

The Nautical Research Guild has announced a special Fall "Back to the Modeling Bench" sale. The sale will be an across the board 20% discount on most all the items in the store.

Access Model Ship World, <https://modelshipworld.com/>, on the top bar, click on NRG Home Page, then on the top bar click on "Store" Scroll through all the pages. the savings by product is shown in a small box besides or below the price listed, stating "Save \$#". You must be a member of Model Ship World or the NRG.

Wearing apparel or other items from "Queensboro" are not included in the sale. Also not included: "Thin Strip Saw Jig", NRG Patches", and "Steele's Tables".

### The MSB Journal

The July 2023 MSB Journal contains a 9 page practical guide on "The Ship Builders Machines – Scales & Proportions"; and interesting article on "Pivot Gun Sweeps and Gun Ports"; and an article on the tools and process of cutting and milling your own milled lumber for ship modeling; and an article on methods used to mount cannons and carronades.

You can download a copy of the MSB Journal from the home page of "Ships of Scale" <https://shipsofscale.com/>.

### Restoration Project

We received a request through our web site for someone to repair and restore a 1970 ship model. The son found the model while helping his mother clean out a closet. Here is a photo:





The model is of the two-masted schooner, fore & aft rigged (no name listed). If you enlarge the photo, the masts and yards appear to be dowels, the shrouds and ratlines appear to be plastic and there is a cross yard on the second mast but none on the foremast. The hull needs cleaned and the deck housing and boats remounted. The model is 10" long, 2" wide and 8.5" tall.

The owner lives on Johnson Island, in Sandusky Bay, south of the Marblehead Peninsula.

If you are curious about ship model restoration, this could be a good starter. You would have to either research a ship similar to the model to get rigging plans or draw a rigging plan for the model based on what is presently there.

If interested, contact me at [shipwright@breezelineohio.net](mailto:shipwright@breezelineohio.net).

## Presentation

### Soldering

Our subject was soldering and our presenter was Alan Phelps. Alan's presentation consisted of a set of slides on "Why?" and "How?" and a video demonstrating the soldering techniques..

#### Why Solder?

- Joining metal parts can be challenging for glue.
- Soldering and provide a more authentic look.
- Improper soldering will result in ugly, weak joints.
- Misalignment of parts can be easily fixed.
- Proper soldering procedure is really easy.

#### Soldering in Ship Models

- Materials
  - Solder
    - Fine wire 60/40 tin/lead
    - Rosen Core
  - Silver solder for strength and conductivity
    - 3% to 6% silver content typical
  - Paste Flux
    - Helps to make metal connect better
    - Use sparingly after preparation
    - Do not use acid

#### Surface Preparation

- Remove oxidation and impurities
  - Use wet or dry #600 dry sand paper
    - Do not use Emory paper – leaves particles
  - Clean oily surfaces with a solvent (remember ventilation)
    - Alcohol
    - Lacquer Thinner
    - Acetone – best cleaner
  - Flux – use sparingly
    - Continues oxidation process
    - Paste flux provides the most control
    - Liquid – limits control where the flux is placed
    - Do not use acid flux
- Acceptance of solder to metals
  - Copper – Excellent
  - Brass – Excellent
  - Gold, Silver – Excellent
  - Bronze – Moderate
  - Steel – Moderate
  - Cast Iron – Difficult
  - Aluminum – Impossible

#### Soldering Techniques

- Heat Transfer
  - Apply heat to the largest mass
    - Let the heat travel to the smaller part
  - Hold the heat until the solder flows freely or draws into the joint
  - Hold the joint steady until it is cool to avoid a "cold" joint (weak connection)
- Sweating
  - Apply heat to the larger mass until solder flows to a "puddle"
  - Apply the smaller part and reheat the large part until the solder flows to the smaller part
  - Add additional solder as necessary to fill out the joint.
- Solder Transfer
  - Used for small parts or light (thin) wire
  - Assemble the parts or wire so that they have good contact
  - Reduce the soldering iron temperature
  - Apply solder to the iron
  - Apply the iron to the joint and allow the solder to transfer into the joint.

Alan then shared a video he had made demonstrating the soldering techniques. He uses two types of soldering irons: a 15 w and a 30 w, depending upon the type work he is doing. He emphasized that the preparation of the parts to be soldered is most important for a good soldering job. The preparation should also include the soldering iron tip. It should be cleaned and a 60/40 rosin core solder should be used to prepare the thin point tip.

Here we ran into a technical problem with the video. He was showing the video from his home

via zoom. The video worked well, but the sound was muted to the zoom audience. He had to use his mic to pick up the sound track from the video player for the rest of the participants to hear. We are still investigating why.

## Ships on Deck

### **DD847 USS Robert L. Wilson**

Steven Keller

With the start of the new semester, Steven's time was limited. This month he finished the reconstruction of the waterways atop the Level 1 deckhouse of the Dearing class DD 847, nicknamed "Willy Boat".

Figure 1, below, shows the near final sanding and priming>

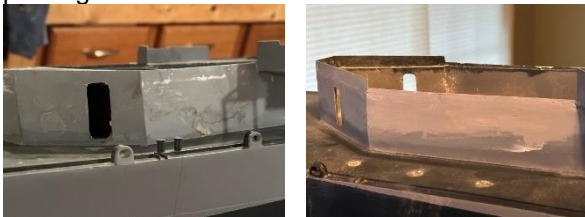


Figure 2, below, shows a section ready for airbrushing the final haze gray color.



Also, Steven tested methods for making the shell racks mounted inside the 40 mm Bofor gun tubs. The racks are stacked three high with a series of openings to secure four 40 mm rounds clipped together. Racks were made by laser cutting the pattern in 1/32" maple veneer. 3D printing was unsuccessful.



Shown above is the aft quad 40 tub on the level 1 deck. A top rack can be seen placed in the tub to check dimensions. Also shown are the rounds, some painted and some only primed.

Rounds will be placed in the racks of the two quad 40s and two twin 40s on the ship.

### **HMS Sphinx**

Cliff Mitchell

Cliff is working on planking the hull of the HMS Sphinx.



On the left, pins were used to secure the placement of the wood. Cliff uses a Permanent PVA Adhesive to glue the planks. On the right are his planking tools: two kinds of pin pushes and his trusty hammer.



Above: the pinning process begins.



The above picture shows most of the first layer of planking finished. Next up sanding and filling in the cracks with putty and then applying the second layer of planks.

### **Drakker**

Phil Templeton



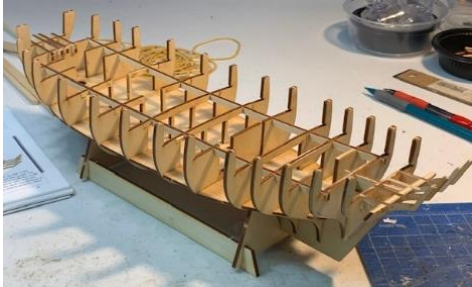


Phil shared photos of a model he finished earlier this spring. The model is from the Amati kit for the Viking ship *Drakker*.

### **HMS Flirt - 1782**

Rob Washburn

Rob shared his progress on the Vanguard kit of the *HMS Flirt*, 14-gun sloop built in 1782.



Early progress on this Vanguard kit, his second one. High quality kits with good materials, instructions and plan sheets, particularly the rigging plans.



Rob soaked some of the first layer planks too long. Some seams had gaps and I had some dips. Filler needed. Rookie mistake.  
Working on final shaping of first hull planking for second layer which is in maple.

### **L'Indiscrete (Xebec)**

Bill Nyberg

The restoration project on the Chebec is finished.



### **Other Notes: "Stuff", Tugs & Things**

#### **Nautical Terms**

**Hulk:** A ship, often an old ship or one that has become obsolete or uneconomical to operate, that has had its rigging or internal equipment removed and is incapable of going to sea, but that is still afloat and continues to serve a useful function, such as providing living, office, training, storage, or prison space.

**Hull:** The shell and framework of the basic flotation-oriented part of a ship.

**Hull-down:** Of a vessel when only her upper parts (e.g. funnel, masts, superstructure, are visible on the horizon but her hull remains below the horizon.

**Hull-up:** Of a vessel when her hull as well as her upper parts are visible on the horizon.

**Hydrofoil:** A boat with wing-like foils mounted on struts below the hull, lifting the hull entirely out of the water at speed and therefore greatly reducing water resistance.

Nautical Terms Wikipedia

### **Tugs: Great Lakes**

#### **Champion (Towboat) 1877**



George T. Davie built a wooden sidewheel towboat at Levis, Que. for A.T. Beaulieu also of Levis. Registered at Quebec in 1877, her measures were: 131.2' x 23.3' x 10.7'; tonnage 323 grt, 81 net. The tug was powered by a low-pressure engine, single cylinder, 40" bore x 81" stroke, rated at 80 hp. Her official number was 74297.

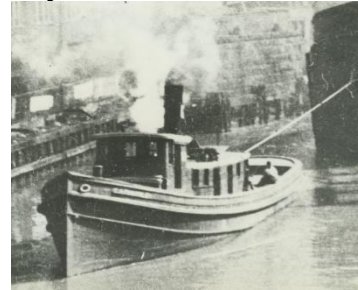
In 1883, her ownership was changed to the Canadian Pacific Railroad Co., Montreal. Early in 1888, the steamer sank at Owen Sound, Ont. She was raised on April 23, 1888 and renamed *Cambria*. During winter 1888/89 layup, she was lengthened and her measures updated at Owen Sound, Ont. to: 174.8' x 23.3' x 10.7'; 2 decks, 1 mast, 937 grt. September 23, 1893, she was in a collision with *United Empire* (C-80776) near Sarnia, and had her stern badly damaged. July 27, 1897, she struck adrift logs and damaged her wheels and machinery, losing steerage. She drifted ashore north of Sarnia, Ont.

Purchased by Donnelly Wrecking & Salvage Co., Kingston, Ont. the *Cambria* was pumped out and released in April 1898.

After receiving repairs, she was purchased in June 1898 by George Palmer, Toronto, Ont. In July 1902, she was run ashore on Reid's Island, Welland Canal, where she was stripped of her engine and fixtures and broken up.

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

#### **C. M. Charnley 1882**



Rand & Burger, Manitowoc, WI, built a wooden towboat for C. M. Charnley, Chicago. Her measures were: 78'4" x 19' 1" x 9' 1"; tonnage 83.98 grt, 41.98 net. She was powered by a high pressure non-condensing engine, 25" x 26", built by Cuyahoga Iron Works, Cleveland. She was assigned official number 126117.

April 1883, ownership of the towboat was changed to A. W. Lawrence, Sturgeon Bay, WI who had the tug homeported at Chicago.

Ownership of the towboat was changed early in 1888 to SBL Co., Chicago

In May 1888, her ownership was changed to Lambert Navigation Co., Green Bay, WI, Lambert Nau, Jr.

February 1890, ownership of the towboat was transferred to George D. Nau, Green Bay, WI.

In November 1895, ownership of the *C.M. Charnley* was changed to the Independent Tug Line, Chicago.

July 1898, ownership of the towboat was changed to Barry Brothers Tug Line, Chicago.

October 1899, ownership of the *C.M. Charnley* was changed to Dunham Towing & Wrecking Co., Chicago.

In 1920, her ownership was changed to G.D. Curry, Patched, NY and the towboat *C.M. Charnley* was taken to the Atlantic Coast.

In July 1922, the towboat *C.M. Charnley* caught fire and burned to a total loss at Port Jefferson, NY, Atlantic Ocean.

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

## **Presentation Schedule:**

### **2023- Tentative**

Jan 21 – Principles of Rigging  
Feb 18 – Research: internet, Historical  
Mar 18 – Getting Started with RC Boats  
Apr 15 – Fixtures: Rudders  
May 20 – Capstans & Windlasses  
June 17 – Standing Rigging & Deadeyes  
July 22 – Running Rigging, Blocks, Belaying  
Aug 19 – Making Sails  
Sep 16 – Soldering  
Oct 14 – Finishing: Natural & Paint  
Nov 18 – Displaying & Mounting ship models  
Dec 16 – Open

## **Events & Dates to Note:**

### **2023 Tentative Schedule**

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

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

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

**46<sup>th</sup> Midwestern Model & Boat Show,**  
Wisconsin Maritime Museum, Manitowoc, WI  
**May 19 – 21, 2023**

**U.S. Navy "Blue Angles"**  
Rickenbacker Int. Airport  
Columbus, OH  
**June 16-18, 2023**

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

**U.S. Air Force "Thunderbirds"**  
Dayton Int. Airport  
Dayton, OH  
**July 22-23, 2023**

**U.S. Air Force "Thunderbirds"**  
Cleveland Burke Lake Front Airport  
Cleveland, OH  
**September 2-4, 2023.**

**Ohio River Sternwheel Festival**  
Riverfront Park, Marietta, OH  
**September 8 – 10, 2023**

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## **Cargo Hold**

[www.shipwrightsofohio.com/cargo\\_hold/](http://www.shipwrightsofohio.com/cargo_hold/)

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

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

There are currently two logo styles available:

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

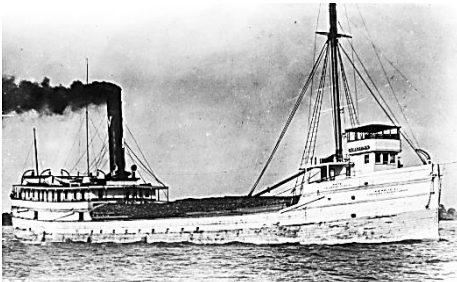




## Wooden Steamers on the Great Lakes

Written by William E. Nyberg

### 1868-a



**Arizona:** September 07, 1868 the wooden propeller *Arizona* was enrolled at Chicago. Built by Quayle & Martin, Cleveland, her measures were recorded as: 189.4' x 32.5' x 12.0'; with tonnage of 870.7 grt. The propeller was built to order for the Erie & Western Transportation Co. to be used in the passenger, package freight trade. Her original owners were listed as F.B. Gardiner, et al, Chicago. She was issued official number 1768. She was powered by a Steeple Compound engine, 22", 40" bore X 30" stroke, built in 1868 by Shepard Iron Works, Buffalo. Her master for the 1868 season was Captain Patrick Myers. She was chartered to run the Grand Trunk line from Buffalo, NY to Green Bay, WI.

In April 1872, ownership of the propeller *Arizona* was changed to J.C. Evans and E.T. Evans, Buffalo, (Anchor Line) to run freight between Buffalo, Milwaukee and Chicago. Her master for the 1873 season was Captain Robinson. In May 1873, loaded with 26,000 bu. No. 1 Duluth wheat, the *Arizona* was struck on the port side about 25 feet abaft the stem in a collision with steamer *B.W. Blanchard* (US2806) near the upper end of St. Clair Flats, sinking in four fathoms of water. Later that month, she was pumped out and raised, then towed to Detroit, MI. for repairs, by tug *Satellite*.

April 1877, the enrollment tonnage for the propeller *Arizona* was altered at Erie, PA. to 677.59 grt. During winter 1878/79 layup the *Arizona* was rebuilt as a package freighter at Erie, PA. Her enrollment measures were changed to: 187.25' x 32.33' x 13'; 924.21 grt - 810.83 net on April 26, 1879. She was chartered to Lake Superior Transit Co. for the 1879 season and ran from Buffalo, NY to Marquette, MI, Portage, and Duluth, MN. When up-bound she carried railroad iron, oils, kerosene, acids and general merchandise and down-bound grain & barreled flour. In October 1882, at Duluth, a barrel of carboic acid exploded. Her master for the 1887 season was Captain George Graser. In November

1887, bound down Marquette, MI for Portage Lake, MI, on her last trip into Lake Superior for the season, the propeller *Arizona* turned around during a gale to return to port and burst into flames off Marquette, when casks of acid broke. She ran into port, beached and burned inside the breakwater at Marquette. No lives lost.

Ownership of the propeller *Arizona* remains was changed to Walter D. Young, Bay City, MI. She was salvaged by Tom Reid Salvage in June 1888, and the propeller *Arizona* was rebuilt by Dunsford & Alverson, Port Huron, as a bulk carrier for lumber trade. In September of that year her enrollment was updated to: 189.25' x 32.33' x 13'; 684.38 grt - 475.57 net. The propeller *Arizona* was operated in the lumber trade by Walter D. Young, Bay City, MI for next 14 years. During that time, she was rebuilt Bay City, MI and given a new Marine Iron Works steeple compound engine, 22' + 40" x 30'; 500 hp. Her enrollment was updated, April 1893 to: 189.33' x 32.42' x 13.33'; 765.03 grt - 601.06 net.

In December 1902, ownership of the propeller *Arizona* was changed to Gray Transportation Co., Willoughby, OH. Her master for the 1905 season was Captain Walter Neal.

Ownership of the propeller *Arizona* was changed in 1906, to James A. White's, White Transportation Co., Buffalo. Her masters for the 1906 season are listed as Captain John A. Wilson and Captain George H. Phelps

Ownership of the propeller *Arizona* was changed, in 1916, to Twin City Transit Co. and managed by John J. O'Hagan, North Tonawanda, NY. Her master for the 1916 - 21 season was Captain Melvin D. Mackey.

Ownership of the propeller *Arizona* was changed in April 1918 to Runnels Steamship Corp., Buffalo.

Ownership of the propeller *Arizona* was changed in May 1920, to McDonald & Griffin, Ogdensburg, NY and the vessel was employed in the Lake Ontario coal trade. Her master for the 1922 season was Captain J. W. Carrigan. In December of that year, the propeller *Arizona* caught fire while alongside government pier, Cape Vincent, NY and burned to a total loss. No lives lost. She was the oldest freighter on the Great Lakes. The hulk rested in the St. Lawrence River near Cape Vincent, NY.

**Hiram A. Calvin:** Built by Henry Roney, Garden Island, Ont. for Calvin & Breck, Kingston, Ont., the wooden, sidewheel steamer (towboat) was enrolled at Kingston, September 25, 1868, with measures: 143.9' x 42.8' x 9.9'; 309.26 grt. She was built as a

large river towboat. Her master for the 1868 season was Captain Fortier. October 1880, the tug *Hiram A. Calvin*, on her way down the river with wreckers and steam pumps to raise the propeller *Lake Michigan* (C88537), ran aground on a shoal five miles east of Gananoque, Ont., St. Lawrence River. Her master for the 1881 season was Captain Saughrue with Captain J. F. Allen as master in 1882.

Ownership of the tug *Hiram A. Calvin* was changed in 1886 to D. D. Calvin. Her master for the 1888 – 1889 seasons was Captain David Lafare. In December 1895, the tug *Hiram A. Calvin* caught fire while fitting out at the Calvin Shipyard, Garden Island, Ont. and burned to a total loss. Her registration was surrendered at Kingston, Ont. December 13, 1896 and endorsed "broken up".



**Champion:** Built in 1868 by Campbell & Owen, Detroit, she was hull # 00005. Her owners were Merrick & Company which included her builder 'Campbell & Owen, John Edwards, tug man Thomas Murphy, machinist William Crowe, and boilermakers Desotelle & Hutton. Her hull dimensions were: 1334.50' x 21.33' x 10.58'; tonnage: 262.0 grt, 147.0 net. She was issued official number 5720. She was powered by a direct-action, high-pressure engine, 26", 26" bore x 33" stroke, 800 horse power, built by Dry Dock Engine Works, Detroit, in 1868. Steam was generated by two firebox boilers, 7' x 18', built by Desotelle & Hutton, Detroit. The propeller *Champion* was built as the largest steam tug on fresh water for use in towing schooner barges or large log rafts. Her master for the 1868 season was Captain John A. Holt, with Captain Byron B. Inman as master for the 1869 season. John McCellan was chief engineer. The tug *Champion* was made famous in the Seth Whipple, Detroit, 1878 painting of the *Champion* towing eight schooners: *Burt Wells*, *Michigan*, *Elizabeth A. Nicholson*, *James F. Joy*, *Francis Palms*, *Sweetheart*, *Sunnyside*, and *Emma L. Coyne*.

Ownership of the tug *Champion* was changed to: N.N. Strong, Detroit in 1871. Her masters were: 1877 season - Captain John Mason; 1882 season - Captain C. F. Moore; with Andrew J.

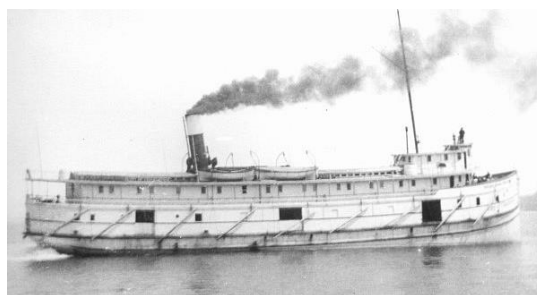
Wilcox as chief engineer in 1877 and Alexander Morrison as chief engineer during 1878 – 82.

Ownership of the tug *Champion* was transferred to the Estate of N.N. Strong, executor Thomas Ditts, Detroit, in 1883.

In 1884, ownership of the tug *Champion* was changed to Grummond Tug Line, Detroit. Masters of the tug *Champion* were Captain C.E. Benham for the 1886 season; with E. C. Miller as chief engineer in 1887 & 88.. As wrecking master, Captain Benham and the *Champion* were used during salvage operations of the propeller *Robert Wallace* (US 110518) and schooner barge *David Wallace* (US 157128) at Marquette, MI. Up bound on the Detroit River with six vessels in tow in September 1887, the tug *Champion*, broke down off Sandwich Point and was towed to Hodge's dock where she received a new crank pin. Damage estimated at \$3,000 and the tug was unavailable for a week. In 1890 she was converted to a wrecker. Her master for the 1893 season was Captain E. Tormey and for the 1894 season, Captain John J. Pearson.

In March 1896, ownership of the tug *Champion* was changed to Harris W. Baker and C.A. Chamberlain, both from Detroit. She was used in wrecking operations and towing barges *Tycoon* and *Mikado* on Lake Erie. In 1899, she had her cabins raised 18" and her engine rebuilt to a fore & aft compound, 26", 44" bore x 36" stroke. Her masters were: Captain William McCarter for the 1899 season and Captain E.M. Warner & Captain Harris W. Baker for the 1901 season.

Ownership of the tug *Champion* was changed to Captain Harris W. Baker, Detroit in 1902. He was also master of the vessel for the 1902/03 seasons. September 1903, while at anchor at Put-In-Bay, South Bass Island, Lake Erie, she caught fire and burned to her waterline and sank. The hull was raised in 1904 and towed to the bone yard at Detroit, where the engine was removed. The loss is valued at \$32,000 and she was insured for \$5,000.



**City of Concord:** The wooden propeller was built by Elihu M. Peck at Cleveland for the Northern Transportation Co. Cleveland. She was enrolled at

Cleveland, September 19, 1868 and her measures recorded as: 135.2' x 25.8' x 11'; tonnage 440.93 grt, 338.26 net. She was assigned official number 5538. She was powered by a high-pressure, non-condensing engine, 22.5" bore x 36" stroke, 380 horsepower, built by Atlantic Engine Works, Boston, MA in 1868. Steam was provided by a firebox boiler, 10' x 16', 115 pounds steam. The *City of Concord* was built for the passenger, package freight trade on the Ogdensburg, NY to Chicago run. Her master for the 1869 season was Captain Russell Smith; and for the 1870 season Captain A. McGrary. In March 1871 the Central Vermont Railroad was contracted to operate the Northern Transportation Co. vessels. Her master for the 1871 – 72 seasons was Captain William Rolls. In July 1871, the *City of Conrad* collided with the schooner *Sweepstakes* (US22358), in the Chicago River. The schooner was badly damaged while the *City of Concord* received minimal damage. Later that same month, her machinery was disabled while on Lake Michigan and she was repaired at Milwaukee. In August, of the same year, while passing through the Welland Canal, a porter, William Mott, fell overboard and drowned. In October, she ran aground, due to low water, near the pier at Port Colborne, ONT. She was released with minimal damage when the water rose. In September 1872, the *City of Concord's* officers and crew rescued the crew of the propeller *Dalhousie* when she caught fire and burned in Lake Ontario. No lives lost off the *Dalhousie*.

For the 1873 season, the *City of Concord's* route was changed to run between Buffalo and Chicago, with stops at Detroit, Port Huron, Presque Isle, Cheboygan, Mackinaw, Glen Haven and Milwaukee. Her master for the 1873 season was Captain Charles Ely. In September of 1873, the *City of Conrad* collided with the scow *Sea Bird*, off Milwaukee. The scow was heavily damaged and the *City of Concord* received little damage. Both required repairs.

The Panic of 1873 sent the economy into chaos and impacted lakes shipping. For the 1874 season, the *City of Concord* was again placed on the Ogdensburg, NY to Chicago run with stops at ports in between. In April 1874, while entering the harbor at Oswego, NY, Lake Ontario, the propeller *City of Conrad* collided with the schooner *Knight Templar* (U14110) with the steering pole, head-board and stairs being carried away. The following month, she went aground, two miles below Cape Vincent, on Feather Bed Shoal, St. Lawrence River. The Northern Transportation Co. tried to maintain profitability in the face of a poor economy. Freight rates had dropped continuously during the season and the company lost the steamer *Brooklyn* (U2151)

with 14 lives lost in 1874. In November of that year, the *City of Concord* ran aground entering the harbor of Erie during a storm and required to be lightered to be released. By 1875 the Northern Transportation Co. went into receivership and their vessels were laid up for the majority of the 1875 season due to poor economic conditions. The courts appointed A.W. French as receiver and Philo Chamberlain as the interim manager. One by one the vessels were placed back into service as the economy recovered.

In January 1876, the Northern Transportation Co. was reorganized into the Northern Transit Co. and acquired the propeller *City of Concord* at an assignee's sale in Chicago. The propeller *City of Concord* was converted to a tow barge, at an expense of \$8,000, while wintering in Detroit. (385 grt - 282 net). Her master of the tow barge *City of Conrad* for the 1877 season was Captain H. Brown. Late in 1877, up bound for Milwaukee, on Lake Huron, the barge *City of Concord* was overtaken by a gale and snow storm. In the gale she lost her direction and struck Forty Mile Point, was damaged and began to leak. Towed to Sheboygan WI, a steam pump was secured by her owners and the vessel continued to Milwaukee for repairs. Her master for the 1878 season was Captain Rolow. In August 1878, the tow barge *City of Concord* broke her machinery off Cheboygan, MI, Lake Huron and was towed back to Duncan City for repairs.

During winter layup of 1880/81, ownership of the tow barge *City of Conrad* was changed to Botsford & Son, Port Huron, for \$18,000. She was rebuilt as a steambarge at Wolverine Dry Dock, Port Huron, and her tonnage measures changed to 338 grt. Chief engineer was of the steambarge *City of Concord* was Robert Cameron (1883 - 85, & 1889 - 90)

In September 1883, she broke her machinery off Detroit. In July 1886, the steambarge *City of Concord*, with the schooner *Fred J. Dunford* in tow, both laden with grain, went ashore in thick weather on Sleeping Bear Point, Lake Michigan. Released. In July 1872, the steambarge collided with the tug *Chicago* (U126009) off Hyde Park, Chicago. The tug rolled over and sank with two lives lost. Masters of the steambarge *City of Concord* were Captain Frank Hebner in 1896; Captain D. A. Kendall in 1899; Captain Joseph R. Inches in 1901 – 03; and Captain McEaghern in 1906. Her chief engineers were George Cater in 1901; Charles Babcock in 1902; and Sewell Moore in 1906. In May 1906, the steambarge *City of Concord* went aground at Cleveland. She was underwater for five weeks until her heavy deck load was removed by lighters, a



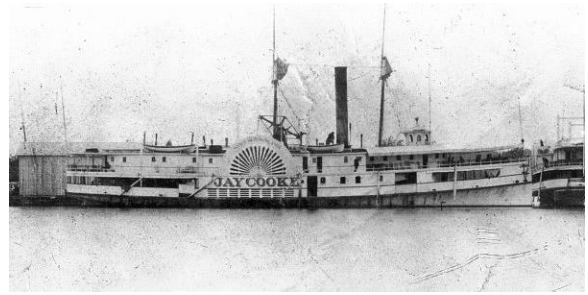
cofferdam built, and all openings boarded up, before the vessel was raised. She was floated in to the Ellsworth Slip for repairs by May 1906.

Ownership of the steambarge *City of Concord* was changed to N. Millis, Port Huron during the summer of 1906. In September of that year, up bound in a storm, the steambarge *City of Concord*, with consorts *Negaunee*, *Montpelier*, & *Donaldson* in tow, all laden with coal, foundered about fifteen miles off Huron, OH, near Pelee Island on Lake Erie. Two lives were lost. All three barges had been cut loss and left to the mercy of the storm. The barge *Negaunee* was also lost.

***City of Toledo:*** A.C. Keating, Ogdensburg, built a wooden propeller for the Northern Transportation Co. Cleveland. She was enrolled at Cleveland, October 29, 1868. Her recorded measures were: 135.42' x 26.0' x 10.75'; 413.27 grt. She was issued official number 5586. She was powered by a high-pressure engine: 26" bore x 36" stroke, builder unknown. Steam was generated by a boiler, 18' x 7.5', builder unknown. The *City of Toledo* was built for the package freight trade on the Lake Michigan Line running between Ogdensburg, NY and Chicago. In June 1871, the propeller *City of Toledo* went the aground in heavy fog, on False Presque Isle, Lake Huron. She was released after much of her cargo was lightered, to a Buffalo - Chicago steamer. In September of that same year, the *City of Toledo* collided with the schooner *Wild Rover* (U26238), at Milwaukee. In 1873, the Vermont Central Railroad assigned the leased propeller *City of Toledo* to the Lake Michigan fleet running from Ogdensburg and Chicago. Her master for the 1873 season was Captain A. W. Rosman. In September 1875, she went aground, in dense fog, on Pelee Island, Lake Erie. Released.

In January 1876, the propeller *City of Toledo*, of the Northern Transportation line, was sold at an Assignee's sale. Her new owner was Northern Transit Co. Her master for the 1876 season was Captain Knapp with J.E. Lewis in 1877 and Charles H. Wilcox in 1879 as chief engineer. In May 1879, her enrollment was transferred to Grand Haven, MI. In December 1879, the *City of Toledo*, wheat and flour laden, struck a reef in a white squall and stranded seven miles north of Ludington, MI, sinking a half mile off shore. The vessel was declared a total loss. No lives lost.

The engine and machinery from the propeller *City of Toledo* was salvaged by diver Captain Falcon and the Northern Transit barge *Keating*. Wolf & Davidson, Milwaukee, purchased the salvaged material and used them in a new boat.



***Jay Cooke:*** John P. Clarke, Detroit, with George Irving, master carpenter, built a wooden, sidewheel steamer for the excursion passenger and general merchandise, to ply between Detroit, Put-in-Bay, OH, and Middle Bass Island, Lake Erie. The steamer *Jay Cooke* was issued official number 13780. She was powered by a vertical beam engine, 40" bore x 108" stroke, 212 horsepower, built by Fletcher & Harrison Co, New York, NY. Her boiler was built by Desotel & Hutton, Detroit. Her master for the 1869 season was Captain John Edwards.

Ownership of the steamer *Jay Cooke* was changed, September 1880, to the Sandusky & islands Steamboat Co. The *Jay Cooke* was placed on the excursion route between Sandusky and Put-In-Bay. During winter 1881 layup she received extensive repairs at Sandusky.

In 1882, ownership of the steamer *Jay Cooke* was changed to Andrew Wehrle, Eugene McFall, et al., Middle Bass Island, OH. her master for the 1882 season was Captain George Brown. In 1887, the steamer *Jay Cooke* broke her walking beam. During winter layup 1888/89 she was rebuilt and had her staterooms removed. She was renamed *City of Sandusky* in the spring of 1889 and enrolled with measures: 162.8' x 25.7' x 9.0'; 414.62 grt, 281.4 net. In 1894 the steamer was dismantled and her machinery installed in the steel steamer *Arrow* (107155).

November 1894, ownership of the *City of Sandusky* was changed to Harris W. Baker who used the hull as a lumber barge.

Ownership of the barge *City of Sandusky* was changed in April 1895, to George A. Dupuis, et al., Detroit. The *City of Sandusky* was used to haul street sweepings from Detroit out into Lake Erie for dumping.

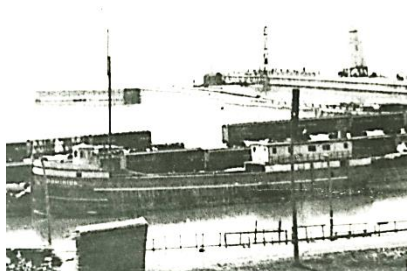
In 1900, ownership of the barge was changed to the Hawley Brothers. In 1905 she was abandoned in the 24<sup>th</sup> Street boneyard. In November 1908, the hull was towed to Windmill Point, Lake St. Clair and sunk as a breakwater. In October 1922, the breakwater caught fire and the hull was burned.

**William Cowie:** David Lester of Marine City, MI, with Phillip Rice as master carpenter, built a wooden steambarge for the bulk lumber trade on the Saginaw River. Her owner was a consortium of investors led by James Leitch et al, Marine City. She was enrolled at Port Huron and her measures recorded as: 133.4' x 25.0' x 9.8'; with tonnage of 208.81 grt, 173.75 net. She was assigned official number 26910. She ran between Saginaw and Ogdensburg, NY. In October 1870, while discharging her cargo of wheat at Oswego, NY, the steambarge *William Cowie* caught fire and her upper works and part of her cargo was destroyed. In October 1871, she went ashore at Chatham, Ont. on the Thames River. In July 1873, the steam barge *William Cowie*, down bound for Ogdensburg, NY, laden with lumber, went aground on a shoal a short distance below the Thousand Island house, Saint Lawrence River. The steam barge *William Cowie* collided with, and sank the barge *Alexander* on the St. Clair River in October 1874. In 1882, she ran between Alpena, Mi and Toledo in the lumber trade. Her master for the 1884 – 85 season was Captain William Maxwell with John Michellson as chief engineer.

In October 1888, ownership of the steambarge *William Cowie* was changed to Charles O. Henning & John Scheitberger, E. Saginaw, MI. She was rebuilt during winter layup 1888/89. Her master for the 1890 season was Captain John Henning. She towed barges *John Warner* (12768) and *Mariner* during the 1890 season. In November 1890, while lying at Cheboyganing Creek, Saginaw River, Michigan, the steam barge *William Cowie* caught fire and burned to the water's edge.

During winter layup 1890/91, ownership of the hull of the steam barge *William Cowie* was changed to Steele of Saginaw, MI who converted the hulk to a tow barge.

Enrollment documents for the steam barge *William Cowie* were surrendered at Port Huron, MI, October 26, 1893, and endorsed "vessel burned in Saginaw River, Oct. 28, 1890, a total loss".



**Dominion:** Louis Shickluna at St. Catharines, Ont., built a wooden propeller for S. Neelon, St. Catharines, to be used in the bulk freight trade between Montreal, P.Q. and the Upper Lakes. The propeller *Dominion* was enrolled at St. Catharines and assigned official number C90707. Her measures from the enrollment document were: 135.0' x 25.8' x 11.4'; with tonnage at 478.13 grt, 304.16 net. She was powered by a high-pressure engine, 26" bore x 18" stroke, 26-unit horsepower, built by G. N. Oille, St. Catharines, Ont. in 1868. In her time, she claimed to be the largest Canadian vessel ever on the lakes. In April 1869, the *Dominion* was damaged in a collision with the bark, *Sir Edmund W. Head* (C-1856), off Clay Banks, Lake Erie.

In 1869, ownership shares in the propeller *Dominion* were transferred between S. Neelon & James Norris, both from St. Catharines. The vessel was inspected at Port Dalhousie in St. Catharines, Ont. and her tonnage updated to 352 grt, 285 net. In September 1870, the vessel, laden with sugar and salt, sank at Taylor's Wharf, Gananoque, Ont., St. Lawrence River. Raised. For the 1871 season, ownership of the vessel was consolidated to S. Neelon. She was placed on the Quebec to Chicago service. In August, bound for St. Catharines, Ont., the propeller *Dominion*, broke her cylinder near the Ducks, Lake Ontario. Towed to Kingston for repairs. Her master for the 1873-86 seasons was Captain R. McMaugh. In June 1872, the propeller *Dominion* collided with the schooner *Camanche* (4932), 40 miles off port Dalhousie, Ont. and rescued the crew and passengers from the wrecked steamer *Kingston*. In April 1875, the propeller *Dominion* formed a daily line between Montreal, Toronto, Hamilton and St. Catharines, with eight other Canadian propellers. October 1879, laden with general merchandise, the *Dominion*, stranded in heavy fog on the northeast end of False Duck Island, Lake Ontario. Released. August 1880, laden with soda ash, 2000 sacks of salt and a large quantity of liquor, the propeller *Dominion* went aground near Morrisburg, Ont. on the St. Lawrence River. She had a hole on her port side 20 feet from the bow. She was released and taken to Port Dalhousie, Ont. for repairs. June 1881, off Scarborough' Heights, Lake Ontario, the propeller *Dominion* had her engine explode, cross heads, cylinder cover and piston destroyed. She was towed to Toronto for repairs. In July 1881, she was engaged to distribute lighthouse supplies from Kingston to Sault Ste. Marie. In 1883, she was rebuilt at St. Catharines, Ont. and she received a new high-pressure engine, 26.5" bore x 28" stroke, built by G. N. Oille, St. Catharines, Ont. Her master

for the 1886 season was Captain Colvin with Samuel Henry Braund as chief engineer.

Ownership of the propeller was transferred, in 1887, to Sylvester Neelon and her measures recorded as: 135.0' x 25.8' x 11.4'; 478.13 grt, 304.16 net. The propeller *Dominion*, laden with grain, went ashore in November 1889, on Grindstone Island, St. Lawrence River. Assisted off by the tug *H. F. Bronson* (C141472). In November 1889, she broke her wheel between Toronto and Montreal and was towed to Toronto for repairs. Her master for the 1890 season was Captain George Mackie. In May of the year, while entering lock 7 of the new canal at St. Catharines, Ont., the propeller *Dominion* struck the stone abutment and smashed a large hole in her bow. Repaired. In June, she her consort arrived at Kingston with 55,000 feet of pine timber from St. Ignace, MI.

In 1895, ownership of the propeller *Dominion* was changed to J. Sidley, Bellville, Ont.

In 1898, ownership of the propeller *Dominion* was changed to G. P. McGarr, Toronto, Ont. Her master for the 1900 season was Captain Edward Horn. In October of that year, while lying at the Sulphur Springs Canal, Detroit River, below Sandwich, Ont., the propeller *Dominion*, preparing for winter quarters, caught on fire and burned to the water's edge. Vessel was declared a total loss.

Ownership of the burned hull of the propeller *Dominion* was changed in November 1900, to Jake Harris, London, Ont. for \$300. The hull was recovered and rebuilt as the barge *Canada*.

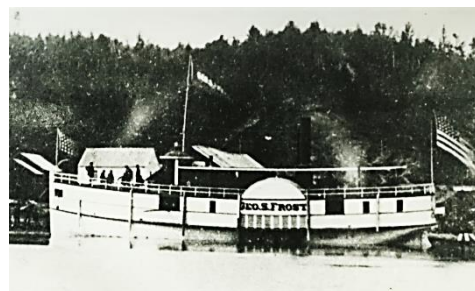
***Dromedary*:** The initial enrollment of the wooden steambarge *Dromedary* was issued at Hamilton, Ont, September 28, 1868. Built by W. H. Andrews, Port Dalhousie for A. Jefferey, St. Catharines, Ont. she was intended for the package freight trade between Montreal, Que. and Upper Lakes. Her recorded measures were: 120.0' x 22.5' x 10.6'; with tonnage 461-unit tons (old style). In November 1868, while approaching Swift's wharf to coal, the steambarge *Dromedary* went aground on a shoal. The following month, bound down, Oswego to Kingston, the steambarge broke her shaft and required towed in for repairs.

Ownership of the steambarge was changed in 1870 to Steel, McIlwraith & Galbraith, Hamilton, Ont. She ran between Montreal, Que and Cleveland, OH. Her master for the 1871 season was Captain W. R. Taylor. In June of that year, she landed 2,500 barrels of salt at Kingston and retained 500 barrels to be delivered for Brockville. In September of 1871, the steambarge *Dromedary* struck a shoal and sank, near Brockville, Ont, St. Lawrence River. She was

raised and repaired. In November of that same year, she struck and sank the anchored schooner *Dominion* (C-1867) at Hamilton, Ont. In November 1872, the steambarge *Dromedary* broke her wheel and was disabled near Port Darlington, Ont. She was towed to Kingston for repairs. In June of the following year, she struck and sank the barge *Royal Oak* (C-1865/66) in the Lachine Canal near Brewer's Bridge, St. Lawrence River. In July of 1874, while steaming on Lake Ontario, the steambarge *Dromedary* sprang a leak off Cobourg, Ont. Loss was set at \$500.

In June 1876, ownership of the steambarge *Dromedary* was changed to D. Butters & Robert Peddle, Montreal, Que. She was readmeasured at Kingston, Ont. and her enrollment update June 1877: (Custom House measures pre-1877) 120' x 22.5' x 10.6'; 460.95 gross, 358.95 net.

In February 1880, ownership of the steambarge *Dromedary* was changed to J. C. Burrows & Wm J. Crankshaw, Hamilton, Ont. Her master for the 1881 season was Captain Burrows. September 1881, in heavy fog, the steambarge *Dromedary*, laden with corn, went ashore on Long Point, Ont., Lake Ontario. Released. In October of the same year, bound for Montreal, the steambarge *Dromedary*, laden with flour, struck a rock, due to low water, five miles east of Gananoque, Ont., St. Lawrence River and had to be run ashore. In November 1882, she had just finished unloading her cargo and was moored for the night at Hamilton, Ont. when her banked fire overheated, she caught fire and burned to a total loss. No lives lost. The steambarge *Dromedary's* machinery was recovered and the hull raised in 1883. It was reported that the steambarge was rebuilt at Hamilton in 1884, but no record has been found to support that.



***George S. Frost*:** First enrolled at Port Huron in June 1868, the wooden sidewheel steamer *George S. Frost* was issued official number 10828. Built by Joseph Luff at Marine City for owners Joseph Luff and Fred Kerns & Co., Frankfort, MI. Her measures were: 85.3' x 15.5' x 7.2'; 131.33 grt. The vessel was built for the passenger, package freight trade on



Grand Traverse Bay. Lake Michigan. Her owners, finding the Grand Traverse Bay route unprofitable, transferred the steamer *George S. Frost* to Saginaw Bay, Lake Huron, where she would ply between Saginaw, MI and the Alabaster plaster beds in Lake Huron.

In May 1869, ownership of the steamer *George S. Frost* was changed to D. Schutte et al, Superior, WI. In November of that same year, the steamer was damaged by ice at Superior City, WI. She was rebuilt at Detroit during winter layup and her measures update in June 1870 to: 97.2' x 15.6' x 6'; 140.16 grt.

In June 1871, ownership of the steamer *George S. Frost* was changed to James Marshall & T. J. Rutledge, Marine City, MI. In July 1874, her machinery became disabled at Detroit. In October 1875, bound down from Algonac, MI for Detroit, the steamer *George S. Frost*, laden with hay, ran aground and sank just below the flats on Lake St. Clair. She was raised and repaired.

June 1876, ownership of the steamer *George S. Frost* was changed to S. B. Grummond, Detroit. She was readmeasured and her measures updated to: 1 deck; 97.2' x 15.6' x 6'; 76.10 grt.

In January 1877, ownership of the steamer *George S. Frost* was changed to William Conklin, Greenbush, Alcona County, MI.

June 1878, ownership of the steamer *George S. Frost* was changed to Frank D. Welcome, Detroit. The steamer *George S. Frost* caught fire and burned to a total loss at Erie, PA, Lake Erie in September 1879. No lives lost.

**Bob Hackett:** J. P. Jones. Amherstburg, Ontario, built a wooden propeller towboat for Felix Jones & Robert A. Reynolds, Windsor, Ont. She was built for short freight, and tug service between Windsor and Amherstburg Ont. on the Detroit River. Her measures were: 67.0' x 15.0' x 6.3'; 65.0 grt. She was powered by an engine: 16" bore x 20" stroke, 18.68 horsepower, builder unknown. Her master for the 1868-75 seasons was Captain Bob Hackett. In 1869 her regular route was between Amherstburg, Ont. and Pelee Island, Ont. In February 1871, she went aground in the Detroit River. When released, the tug *Bob Hackett*, was cut in two and lengthened 25 feet, had her cabin enlarged and improved and passenger accommodations were added. She was refitted and repainted. Her new measures were: 92' x 15'; 135 grt. She ran between Amherstburg and Windsor, Ont. on the Detroit River. December 1873, while lying at her dock in Windsor, Ont., the tug *Bob Hackett* was run into by the Great Western Railroad car ferry *Transit* (C-1872). She was repaired at

Clarks Dock, Detroit. Her damage loss was set at \$3,000. In August 1875, the passenger tug *Bob Hackett* pulled the U.S. registered barge *Alfred F. R. Braley* (US29366) off the beach, five miles east of Dummy, Point Pelee, Ont., Lake Erie, and towed her to Detroit for repairs.

In late 1875, ownership of the tug *Bob Hackett* was transferred to R. A. Reynolds, Windsor. In February 1876, the tug *Bob Hackett*, with seven passengers and freight aboard, ran aground on a bank in the Detroit River. She was released and towed to Steven's dock in Amherstburg, to winter over. After going into winter quarters, a force of ice moving rapidly down the Detroit River broke the chains used to moor the *Bob Hackett*, causing the tug to drift down the river with the heavy ice. The *Bob Hackett* collided with the schooner *Fanny Campbell* (C96846) smashing her bulwarks. Repaired.

In 1877, the enrollment record for the tug *Bob Hackett* was updated to change ownership of the tug to Odette & Wherry, Windsor, Ont. In October 1883, while on Lake St. Clair, the tug *Bob Hackett*, took fire in her upper works. The fire was extinguished and she was towed to Detroit for repairs.

January 1885, ownership of the tug *Bob Hackett* was changed, at admiralty sale at Windsor, Ont., to Sam Stover for \$1,300. Master of the tug *Bob Hackett* for the 1885 season was Captain George Odette. In September 1885, the passenger tug *Bob Hackett* collided with the Western Line propeller *St. Magnus* (C77693) near the head of Bois Blanc Island, Detroit River. The tug sank in sixteen feet of water. She was valued loss \$1,200. No Lives lost. In August 1886, the boiler and engine of the *Bob Hackett* were removed and the hull blown up.



**Lake Breeze:** J. E. Bailey, Toledo, built a wooden propeller (excursion vessel) to run between Amherstburg & Windsor, Ont to Pelee Island in Lake Erie. Her original owner was the Toledo & Put-in-Bay Steamboat Co., Toledo. Her first enrollment was issued at Toledo, July 30, 1868 and her measures were: 126.6' x 24.6' x 8.5'; 196.4 grt. She was issued official number 15572. The *Lake Breeze* was powered by a high-pressure engine, 20" bore x 24" stroke, 110 horsepower, built by Novelty Engine Works, Toledo.

In June 1869, ownership of the propeller *Lake Breeze* was changed to the Lake Erie Steamboat Co., J. E. Bailey, president. She ran in the excursion trade between Toledo, OH to Put-in-Bay, OH. In August of that year, she broke her machinery and became disabled at Toledo.

In April 1870, ownership of the *Lake Breeze* was changed to John Phillips, Detroit and Seldon A. Jones, Port Huron. She would run in the passenger, packet freight trade between Saginaw Bay, Bay City, AuSable, MI. In March 1871, a steam pipe burst aboard the *Lake Breeze* while she was at Bay City, scalding two crewmen. Her master for the 1872 season was Captain M. S. Lathrop with George Smith as chief engineer and P. H. Doyle as engineer.

In April 1873, ownership of the propeller *Lake Breeze* was changed to Darvis Cole, Eugene McFall & Ira Holt, all from Detroit.

Later in that month, ownership of the *Lake Breeze* was changed to Englemann Transportation Co., Milwaukee. Her master for the 1874 season was Captain John W. Cochrane. In February 1874, she broke her rudder near Milwaukee. In that same month, she ashore at Ludington, MI. In September of that year, the *Lake Breeze* became disabled on Lake Michigan. In November of that year, the propeller *Lake Breeze* and the propeller *Messenger*

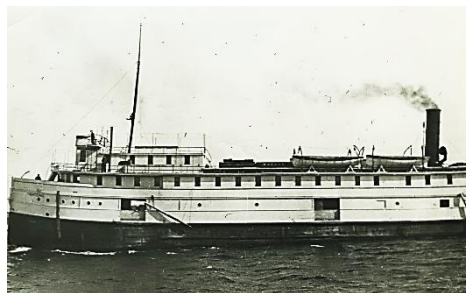
(tug, US17733) collided at Ludington. During winter layup of 1874/75, the propeller *Lake Breeze* was rebuilt at Detroit.

Ownership of the propeller *Lake Breeze* was changed, in early 1875, to James M. Longwell & Henry Isman, Benton Harbor, MI.

In November 1875, ownership of the propeller *Lake Breeze* was changed Canadian, to J. Laframbois, Amherstburg, Ont. and enrolled Canadian at Leamington, Ont; C71259; 122' x 22' x 8', 301.19 grt, 198.43 net. She ran between Windsor and Leamington, Ont. under charter of Northwestern Transportation Co. Her master for the 1875 season was Captain J. Laframboise.

In February 1876, ownership of the propeller *Lake Breeze* was changed to A. Hackett, Colchester Township, Ont. Her master for the 1876 season was Captain Frank Hackett.

Late in November 1878, the propeller *Lake Breeze* caught fire while at her dock in Leamington, Ont. and burned to her water's edge. One life lost. In November 1880, the hull was raised by the tug *Mystic*. Her machinery and metal gear were sold American.



**Lawrence:** On October 09, 1868, the wooden propeller *Lawrence* was enrolled at Cleveland, OH. Built by Ira Lafrinier, Cleveland, for the Northern Transportation Co., Rockport, OH. She was issued official number 15450 and her measures recorded as: 135.42' x 25.66' x 11.0'; 447.37 grt, 334.34 net. She was powered by a high pressure non-condensing direct acting engine, with a 26" bore x 36" stroke, rated at 385 horsepower and built by Cuyahoga Steam Furnace Co., Cleveland. She was equipped with a firebox boiler, 8' x 18', 67 pounds steam, built by Cuyahoga Steam Furnace Co. The Northern Transportation Co., planned to use her for the passenger, package freight trade from Ogdensburg, NY to ports on Lake Erie, Huron and Michigan. Her size was limited to be able to transit the locks on the Welland Canal. The vessel was valued at \$50,000. In November 1868, the propeller *Lawrence*, due to a misunderstanding between the captain and chief engineer, ran into the upper gates

on the Allanburg Lock, Welland Canal, carrying away the gate and forcing the schooner *Augustus Ford* (U1084) through the lower locks. Her master for the 1873 season was Captain A. Reed. In May 1874, the *Lawrence* broke a wheel in the Welland Canal.

Ownership of the propeller *Lawrence* was transferred, in 1876, to Philo Chamberlain, Cleveland, during a corporate reorganization. In September 1877, the *Lawrence* went ashore on 40-mile point, Lake Huron. Released by the tug *Leviathan* (U-14612).

In April 1879, ownership of the propeller *Lawrence* was changed when the Northern Transportation Co. reorganized into the Northern Transit Co. Glen Haven, MI. In February 1881, the *Lawrence* was cut by ice and forced to discharge cargo at Detour MI leaving the residence of Sault short of supplies.

May 1883, ownership of the propeller *Lawrence* was changed to Simeon S. Burke, Glen Haven, MI; Peter J. Klein, Milwaukee, WI; Frederick Seymour, Chicago, IL. In May of that year, she went ashore on Mackinaw Island, Lake Huron, in early morning fog. Released. In November of the same year, the *Lawrence* went ashore at South Manitou Island, Lake Michigan. She was assisted by the revenue cutter *Andrew Johnson* (U.S.R.C.S.). In that same month, a fire was found near the smokestack and the crew cut away the burning wood to put out the fire. The vessel reached Harbor Springs, MI, Lake Michigan and transfer her passenger to a train to complete their journey.

In 1886, ownership of the *Lawrence* was transferred the reorganized company of Burke & Klein, Grand Haven, MI. In October 1888, she blew her boiler in the early morning hours off North Point near Milwaukee, WI. Four lives lost.

In April 1892, her ownership by Burke & Klein was reorganized as Northern Michigan Transportation Co. Chicago. The *Lawrence* went on the route from Chicago to Mackinac, MI with stops at various ports.

In March 1899, ownership of the propeller *Lawrence* was changed to People's Transit Co, Chicago, and the *Lawrence* ran the Milwaukee to St. Joseph, MI route. She was rebuilt at the Burger Yard, Manitowoc, WI, and was lengthened 34 feet. Her enrollment measures were updated April 26, 1902 to: 169.33' x 26.42' x 10.25'; 626 grt, 479 net. Her engine was also replaced with a Steeple Compound, 18", 38" bore x 36" stroke built by Atlantic Iron Works, Boston, MA. At the start of the 1902 excursion season the propeller *Lawrence* was renamed to *Frontenac*, (U15450) and registered at Chicago. She sailed the summer resort route

between Chicago and White Lake and Pentwater, MI.

Ownership of the propeller *Frontenac* was transferred in April 1905, to Henry B. Burger, Manitowoc, to settle debt from the 1901 rebuild.

In May 1905, ownership of the *Frontenac* was changed to N.C. Burrell, Lorain, OH but stayed on Lake Michigan under charter to Nessen Transportation Co., Manistee, MI. In 1907 she was placed in the excursion trade out of Lorain, OH, under management of her owner. In July 1908, while moored at the docks of the American Shipbuilding Co., Lorain, the *Frontenac*, caught fire, destroying all but the hull to just above the waterline. The remains of the hull were towed to the south side of the Nickel Plate Bridge at Lorain. On July 18, 1908, the final enrollment for the *Frontenac* was surrendered at Cleveland, and endorsed "vessel lost".

H.N. Jex, Toledo, a part owner of the *Frontenac* with H.C. Burrell, Lorain, had the hulk towed to Toledo, to be rebuilt at Gilmore's Shipyard as a steambarge: 420 grt, 301 net.



Her enrollment was reopened on July 10, 1909, with her same official number. In March 10, 1910, she was renamed the *H.N. Jex* (U15450). In May of that same year, she went ashore on Thunder Bay Island, Lake Huron in fog; released.

In June 1910, ownership of the steambarge *H.N. Jex* was changed Theobald Emig, et al, St. Clair, MI to be used in the bulk coal trade. For five years the steambarge *H.N. Jex* plied the bulk coal and timber trade towing the schooner barge *Ida Keith* (U100110) and at times the *Three Brothers* (U24987).

In May 1915, the steambarge *H.N. Jex* was sold Canadian to John F. Sowards, Kingston, ONT. and registered as *H.N. Jex*, C137982; 170.16' x 26.42' x 10.25'; 441 grt, 231 net. John Sowards, a well-known coal dealer, used the *H.N. Jex* in the coal trade between the New York shore and Kingston, ONT. August 1921, bound from Sodus, NY to Kingston, ONT., laden with 550 tons coal, the steambarge *H.N. Jex* foundered, during a heavy storm, ten miles southwest of Point Petre, ONT, Lake Ontario. No lives 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.

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

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

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

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

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

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

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

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

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

**Tonnage (Old Style):** The British took the length measurement from the outside of the stem to the outside of the sternpost; the Americans measured from inside the posts. The British measured breadth from outside the planks, whereas the American measured the breadth from inside the planks. Lastly, the British divided by 94, whereas the Americans divided by 95. The upshot was that American calculations gave a lower number than the British. For instance, when the British measured the captured *USS President* (a three-masted heavy frigate), their calculations gave her a burthen of 1533<sup>7</sup>/<sub>8</sub> 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 fore-castle 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.)