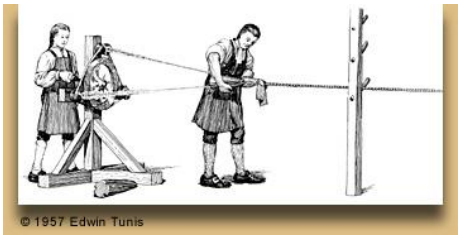


While one man cranks the spinner, the one holding the "top" walks backwards as the rope is twisted. From Edwin Tunis, *The Young United States, 1783 to 1830* (New York: World Publishing Co., 1969). Used by permission of the estate of Edwin Tunis.

Ropewalk

The Newsletter for
Shipwrights of Ohio–August 2025

Our Next Meeting: September 20, 2025;
Hybrid –
"Bending Wood"
by Dr. Steven Keller

Table of Contents

August

Editors Comments;

If you could not make the meeting, either in-person or via zoom, you missed a very informative presentation by Doug Buchanan on his learning experience, planking a wooden hull.

We had 14 in attendance, seven in-person and seven on Zoom. I know, it is summer and with kids returning to school and all the talk about OSU football, you didn't want to miss all that heat?

Joining us at the library were: new member Roger Baughman. Roger is building "Sovereign of Sea" model kit from A.J. Fisher; also, joining us for the first-time, but a member since 2022, Rob Washburn. Welcome.

Our skipper was laid up due shoulder surgery on Thursday, so the meeting was run from his house. I guess that makes all of us remote attendees.

The presentation, by Doug Buchanan, titled "Planking the Wooden-Hulled Ship" covered the history of ship planking as well has his experience planking Model Shipways "Mayflower".

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

Till next month. Your editor.

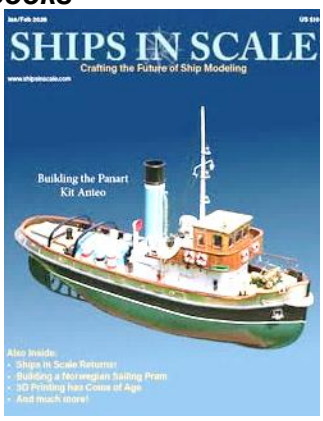
George Montag

Reminder, a Celebration of Life service will be held for George, on Saturday, September 20, 2025, 11 AM to 2 Pm, at Schoedinger Worthington, 6699 North High Street, Worthington.

On Saturday, June 28th, 2025, George passed away at his residence in Marysville, OH. George was a "plank-owner" in the Shipwrights of Ohio.

"Fair winds and calm seas" George. You will be missed.

Sea Watch Books



The relaunched *Ships in Scale* magazine will publish six issues per year starting with the January/February 2026 edition.

There are two subscription options:

- Print & Digital
- Digital Only

Pricing:

- Digital: $39.95/year
- Print & Digital: $44.95 (US); $54.95 (Canada); $64.95 (International)

To take advantage of the Pre-Launch Discount: Subscribe before the end of 2025 and get a 10% off your first-year subscription.
www.Simplecirc.com/subscribe/ships-in-scale/relaunch

Reminders & Announcements

Tall Ships Festival

The Tall Ships Erie festival will be held from August 21-24, 2025, at Dobbins Landing on Erie's bayfront.

According to the Tall Ships Erie website, the following fleet will be ported in Erie during the festival:

- *Lettie G. Howard - schooner*
- *Pride of Baltimore II – Topsail schooner*
- *Appledore IV - schooner*
- *When and If - schooner*
- *SSV Ernestina Morrissey - schooner*
- *Liberty Clipper – Baltimore Clipper*

Columbus Air Show

Rickenbacker Air Field - August 22-24, 2025

Featuring:

- U.S. Navy – Blue Angles; U.S. Marine,
- C130; Navy F-35 Lighting Demo; US Air Force F-16 Demo; US Navy
- Parachutes; Air Force F-35 Lighting.

https://columbusairshow.com/

Ohio River Sternwheel Festival

Marietta, OH - September 5-7, 2025

Are you aware, that after the end of the American Revolutionary War, that a group of veterans, who were shipwrights, crossed into the Ohio territory, for Marietta, and set up ship yards on the Muskingum River to build sea going ships. The forests in Ohio provided the lumber. The ships were launched, and sailed down the Ohio River to the Mississippi and then to New Orleans where they were fitted out before being sent to their new home on the East coast or across the Atlantic.

The Embargo Act of 1807, declared that American ships were forbidden to carry exports, thus killing the ocean-going ship building in Ohio.

For more information, read David McCullough's "The Pioneers". Copyright 2019.

American River Roots Festival

Cincinnati – October 08-12, 2025

This festival is a signature event for America's 250th year celebration. Come celebrate as they host a unique fusion of Music, Cuisine, Culture and Cruises on the Cincinnati, Covington and Newport riverfronts.

www.americasriverroots.com

Sea History Activity

LST-325 Ship Memorial: The World War II, LST-325, commenced summer hours April 1, 2025. The LST is docked on the Ohio River at Evansville, Ind.

Her annual cruise is scheduled for September 3 – October 2, 2025, where she will stop at Muscatine, IA, Alton, IL, Cape Girardeau, MO before returning to Evansville, IND, October 01, 2025.

Recognition

Many of our multi-talented members have been published, awarded and praised over the past years; Darrell, Lee, Bill, John and most recently:

Alan Phelps. His presentation on **"Adhesives"** was published in the:

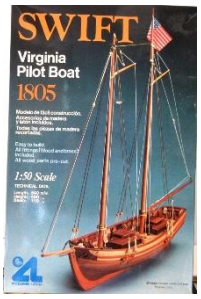
"US Vintage Model Yacht Group" – Summer Journal.
https://usvmyg.org/tmy-index/

Jeff Beck, USVYMG, commented

> "I was impressed with your newsletter and the robustness of your club. I hope that the links we included in the journal will drive some traffic to your site. I feel like, although our concentrations are different, we probably have some overlap in interested members, and there is overlap in some of the construction techniques and topics."

Ship Model Kit Available

Your editor was contacted by a ship modeler, Brian Hunt, who lives in Louisville, OH. Louisville is northeast on route 62, between Canton and Alliance, OH. Brian had started building the Virginia Pilot Boat, *Swift* of 1805, a Artesania Latina kit at 1:50 scale. He is dealing with nerve issues and would like to find a home for the kit.




He has done very little, and much of the parts are still in their original packaging. It would please him to provide the kit to another ship modeler at no cost.

If interested, contact your editor at shipwright@breezelineohio.net.

Presentation

Our presentation for August was “Planking the Wooden-Hulled Ship” and our presenter was Doug Buchanan.

“Planking is the art and science of covering the complex curved shape of a ship’s hull with a wooden skin.”

There are two primary techniques:

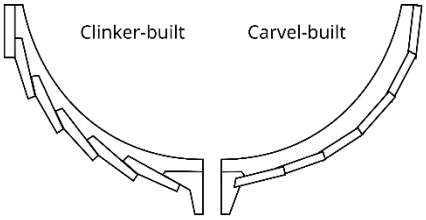
- Clinker of “lapstrake” planking
  - Planks overlap
  - Higher planks always overlap the lower
  - Found in Viking longships and other Northern European ships of the Middle Ages.
- Carvel Planking
  - Planks are butt-joined to each other
  - Originated in the Mediterranean
  - Began to predominate European shipbuilding by the end of the 14th century.

With Clinker built ships, the hull was built first and then framed.

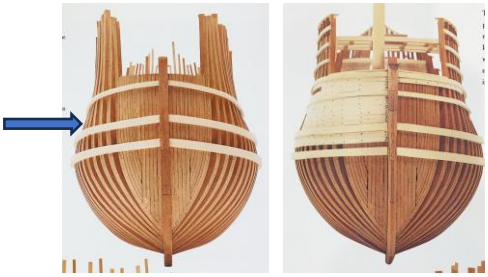
The iron bolts that hold the planks to each other are driven through the two planks and then then hammered tight.

A medieval hybrid between clinker built and carvel built is the “Bremen Cog” circa 1380. She had a carvel bottom with clinker sides,

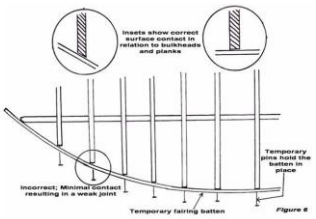
.Building POF, Carvel planked ship, if time permitted, the ship was left to “stand in frame” for a year before planking. This allowed the fresh cut timber to age and dry. **Carvel built** or **carvel planking** is a method of boat building in which hull planks are laid edge to edge and fastened to a robust frame, thereby forming a smooth surface.



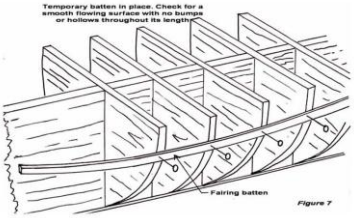
To provide strength to the hull when planking, the wales were added first



Critical to a good planking is fairing the frames, so that there is good plank contact.



The second critical step is installing battens.



This requires the builder to “Line Off” the hull into four, evenly spaced separate bands at the hulls center-line. Then fasten a batten to the frames so that you end up with four evenly spaced bands of varying distances at the stem and stern.

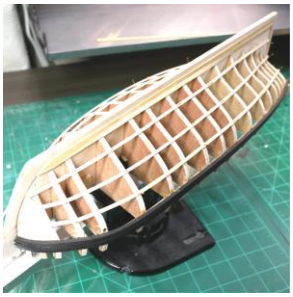
With those basics covered, Doug then took us through his planking experience on Model Shipways “*Mayflower*”. He recommends the Suburban Ship Modeler’s website as a resource:

https://suburbanshipmodeler.com/

The general approach is:

1. "Line off" the hull, separating into four bands.
2. Plank the garboard strake, which is the first plank in the band that runs along the keel. Then plank the band that runs along the wales.
3. Plank the next band "up' from the wales (with the hull upside down).
4. Plank the final band.

Step 1: "Line off" the hull, separating into four bands



Step 2: Plank the garboard strake, which is the first plank in the band that will run along the keel

Finish the planking in that band.

Step 3: Plank the next band "up' from the wales (with the hull upside down).

As the gap between bands got narrower, he found that he was running out of space at the bow. The general rule is: "the planks should never be tapered by more than half their width", and that was now becoming a problem. The solution to this is to use a "drop plank" (a plank of a given width, which takes the place of two separate planks of lesser width.

Step 4: Plank the final band

Doug, then shared photos that had found on Model Ship World of the planking of Billings Boats "Wasa".

He ended with the following references:

- "Historic Ship Models' by Wolfram Mondfeld
- "The Art of Ship Modeling" by Richard Mansir.
- "Wooden Warship Construction" by Brian Lavery
- "Planking the Built-Up Ship Model" by Jim Roberts.
- "Simple Hull Planking Techniques for Beginners," by Dirk de Bakker & Greg Booker.
- "Wooden Ship," by Peter Spectre & David Larkin
- "Ship Modeling from Scratch," by Edwin Leaf
- "How to Build First-Rate Ship Models from Kits," by Ben Lankford
- "The American Navies of the Revolutionary War," by Nowland van Powell

Two on-line resources available, both on YouTube, are:

- Chuck Passaro's YouTube channel
- Olha Batchvarov's YouTube Channel has hundreds of excellent and well-produced videos.

Websites include:

- "The Suburban Ship Modeler" is a great planking resource: https://suburbanshipmodeler.com/

Ships on Deck

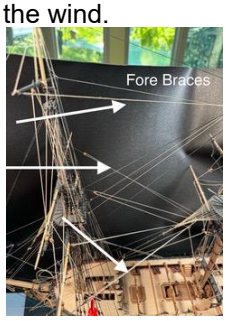
The intro photos for each ship shown before the title is for reference to what the model may look like when finished.

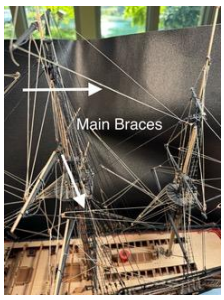
HMS Sphinx

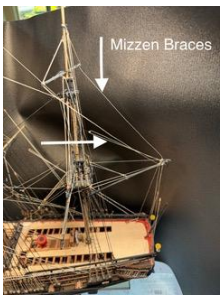
By Cliff Mitchell

Vanguard Ship Models.

Cliff is installing braces for all his yards. A brace on a square-rigged ship is **a rope (line) used to rotate a yard around the mast**, to allow the ship to sail at different angles to the wind.







Buccaneer

by Jim Oberst

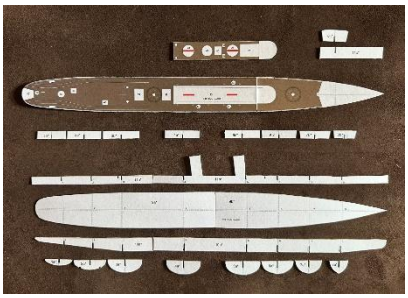
This is Jim's first ship model.

Torpedo Boat

By Julia Holloway

Photo above is of a completed waterline version of a German WWII V108 torpedo boat card model produced by Digital Navy and featured on Model Ship World.

Julia is preparing for Decembers presentation on card modeling and is using the Torpedo Boat as an example. In the photo below are the images she has downloaded. That are paper images that will be cut out and glued to cardboard.



Below is the frame for the hull and below that is the hull with decking installed.

HMS Grecian

By Rob Washburn

The "*Grecian"* is a model of a Baltimore schooner built in 1812. The kit, produced by Vanguard Models, includes laser-cut and engraved parts, high-resolution 3D-printed parts, and a double-planked hull. The model is a 1:64 scale replica of the original ship. Rob is presently working on planking the hull

Tugs: Great Lakes

Gladiator - 1871

August 1871, the tug *Gladiator* was enrolled at Port Huron, MI. Built by Fitzgerald & Leighton for George E. Brockway, Port Huron, she was of oak construction

and had two decks. Her measures were: 115.8’ x 22.3’ x 12’; 220.88 grt, 153.19 net. She was powered by a steeple compound engine, 22’ + 40” x 30’, 460hp @ 100 rpm. The engine was built by Cuyahoga Furnace Co., Cleveland, and her boiler also came from Cleveland. Her official number was 85263.

In August 1874, she went aground on Bois Blanc Island, Lake Huron. In 1874, she collided with the freight, passenger propeller *Lowell* (14655) and later broke her wheel on Lake Erie.

She changed ownership in 1879, and in August, 1882, she collided with and sank the tug *Mockingbird* in the Detroit River. That same month, she carried 3,000 pine logs down Lake Huron to Lake Erie.

Ownership was changed to Detroit Tug & Transportation in 1884. In 1887, she ran between AuTrain on Lake Superior and Bay City, MI, hauling lumber.

Ownership was changed to Kelsey & King, Detroit. She received a new steeple compound engine and firebox boiler.

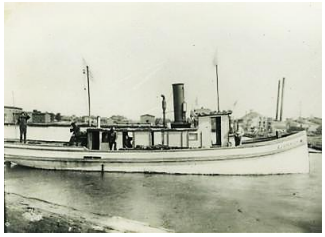
Ownership changed to B.B. Noiles in 1895. In October 1895, the *Gladiator,* burned at Sault Ste, Marie and was scuttled and sank. In 1896, she was raised and rebuilt.

In 1901, ownership was changed to Lake Superior Split Rock Lumber Co; in 1904, to Thomas D. Merrill, Duluth; in 1909 to R.B. Knox. Duluth; and in 1910, to Duluth Superior Dredging Co. In 1934, she was rebuilt, receiving steel cabins, and boiler. Her owners were bought out by Dunbar & Sullivan Dredging Co. and she was transferred to Detroit.

In 1955, she was laid up at Stoney Island, Detroit. In February 1959, the tug *Gladiator* was scrapped.

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

Charlie J. Gnewuch - 1880



Built by D. Robertson at Grand Haven, MI, the *Charlie J. Gnewuch* was wooden towboat. She was enrolled at Manistee, MI in 1885. Her measures were” 55.3’ x 14.2’ x 6.7’; 32.39 grt, 16.2 net. She was powered by a 14’ x 16’ engine, 190Hp at 135 rpm. Built by Ottawa Iron Works, Ferrysburg. Steam was generated by a firebox boiler 5’ x 10’ at 100# steam. Her official number was 125829.

Ownership of the towboat was changed in 1899 to A.O. Wheeler, Grand Haven, MI.

In 1904, ownership of the towboat was changed to H.J. Walker, East Tawas, MI and N. Barkell, Marine City, MI.

In June 1916, her documents were surrendered at Port Huron, MI and the *Charlie J. Gnewuch* was listed as “abandoned”.

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

Events & Dates to Note:

2025 Tentative Schedule

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

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

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

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

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

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

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

Great Lakes Tall Ship Festival,
Erie, PA
August 21 – 24, 2025

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

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

"America's River Roots Festival"
Cincinnati, Covington and Newport riverfronts
Oct. 08 – 12, 2025

"The Art of Wood" – woodcarvers show
Sauder Village, Archbold, OH
October 24 & 25, 2025

Miniature Society Show & Sale
St, John's Evangelical Lutheran Church
Grove City, Oh
November 15, 2025

Shipwrights of Ohio
2025 Officers & Staff
President – Bob Mains……..…614-306-6866
Vice Pres. – Cliff Mitchell ……..614-890-6164
Communications – Bill Nyberg..614-370-5895
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Treasurer – Lee Kimmins……..614-378-9344
Web Master – John Boeck…… 937-620-0258
Zoom Master – Steven Keller.. 513-280-2210
Web Site: www.shipwrightsofohio.com
Email: shipwright@breezelineohio.net

Presentation Schedule:

2025 – Schedule Tentative

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

Editor: Wiliam Nyberg
Shipwrights of Ohio
Shipwright@breezelineohio.net

Cargo Hold

www.shipwrightsofohio.com/cargo hold/

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

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

There are currently two logo styles available:

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

Wooden Steamers on the Great Lakes

Researched & Written
By William E. Nyberg

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

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

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

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

1877

Alberta: David & William McMurchy, at Picton, Ont., built a wooden propeller for John Brokenshire & Rathbun & Sons, Kingston, Ont. to be used in the passenger, package freight trade on daily runs between Picton, Ont and Alexandria Bay, NY on the Saint Lawrence River. She was initially enrolled at Picton, Ont, May 01, 1876, with her measures recorded as: 100.5' x 18.67' x 7.5'; 125.0 grt. Her engine is unknown. In 1877, the propeller *Alberta* was readmeasured according to 40th Victoria, Chapter 19: 89.7' x 22.0' x 5.9'; 93 grt. In 1883, the propeller *Alberta* was reported "out of service"

Avon: The Union Dry Dock Company, Buffalo, NY, built a wooden propeller Union Steamship Co., Buffalo, to be used in the package freight trade. Her hull number was 00010, and she was launched August 30, 1877 and registered at Buffalo. Her measures were recorded as: 251.0' x 35.33' x 15.0'; 1702.33 grt, 1538.84 net. The propeller was powered by a Steeple Compound engine, 25", 54" bore x 36" stroke, 600 horsepower, built by King Iron Works, Buffalo, NY. Steam was generated by a boiler: 9' x 18' 1/2"; she was equipped with a 11' wheel by King Iron Works. She was assigned official number 105733. For the 1877-78 seasons, her chief engineer was Frederick Rehbaum. She carried package freight between Buffalo and Chicago & Milwaukee. In June 1878, the propeller *Avon* with schooner *G.S. Hazard* (US85338) in tow, mistaking a locomotive headlight for the Bois Blanc Light, went aground on the Canadian side of the Detroit River. She was released and repaired. Master of the *Avon*, for the 1883 season, was Captain Marion. In March 1881, the *Avon*, collided with the package freighter *Thomas A. Scott* (24785), in Milwaukee Bay, sinking the *Scott* in 30 feet of water. In November 1883, the *Avon* broke her steering gear, during high winds off Buffalo, and stranded at South Beach, Lake Erie. Released and repaired. During winter layup in 1886, the *Avon,* received new steel crown arches, to prevent hogging. In November of 1887, the propeller *Avon* struck the coal laden schooner *Middlesex* (US91307)*,* crushing her badly on the starboard side from foremast to mainmast, due to high winds. The *Avon* received minor damage. Her chief engineer for the 1889 season was George Fritsche.

In March 1892, ownership of the propeller *Avon* was changed to Union Transit Co.; a consortium of investors from Buffalo, including: Henry C. French, 51/100; John Gordon, 25/100; and William B. Meadowcroft, 24/100 shares. Master of the propeller *Avon* for the 1892 season was Captain M. H. Murch. The

Avon ran between Lake Superior and Buffalo, NY for the 1892 season.

April 1893, ownership shares in the Union Transit Co., propeller *Avon* were transferred to Henry C. French, 51/100, and William J. Conners, 49/100, both of Buffalo NY. Her chief engineers for the 1894 season were Charles Coushaine and Henry C. Farrell. In June 1893, the propeller *Avon*, lost steering and went aground at Sault Ste Marie. Released.

September 1895, ownership shares in the Union Transit Co., propeller *Avon* were transferred to Henry C. French, 51/100, and John Gordon, 49/100, both from Buffalo NY. In August 1896, the Canadian excursion boat *Garden City* (C100035) collided with the propeller *Avon* in the Buffalo harbor due to a misunderstanding of signals. Minor damage to both. September 1897, the *Avon,* struck bottom and sank at Lime-Kiln Crossing on the Detroit River. Raised and repaired. Her master for the 1899 season was Captain James Countryman; followed by Captain Joseph Jamieson for the 1900-01 season; with Norman McGuire as chief engineer for the 1899 to 1901 seasons. In June 1901, down bound, loaded with grain, and fighting a strong gale, the propeller *Avon* caught fire and totally burned off Point Aux Pins, St Mary's River, Lake Superior. The vessel was declared a total loss by underwriters from New York and London.

In October 1901, ownership of the wreck of the propeller *Avon* was transferred to John Hannah, Hannah Coal and Transportation Co., Ogdensburg NY. She was rebuilt, during the 1901-02 winter layup, as a bulk freighter for Hannah Coal Co. Her masters were: Captain David Allen Kiah, 1902 season; Captain George P. Clifford for the 1903 –11 season; and Captain John Gallagher for the 1912 to 19 seasons. Her chief engineers were: 1912 - Hugh Goodheart; 1903 - Thomas Grady; 1905 - Freeman Axtell; 1906-07 - D.G. Costello; 1908 - Patrick Holleran; 1909 & 1911–12 - Charles Cotter; 1910 - Charles Potter; 1913 - W. Duncan; 1918 - C.H. Little; and C.A. Stillson in 1919.

During the 1919/20 winter layup, the bulk freighter *Avon* was sold Canadian to Canadian Steamship Lines and renamed *Stormont* (C140962) to be used as a St. Lawrence River barge. She was readmeasured Canadian: 254.25’ x 35.25’ x 14.58’; 1180 grt, 704 net. Master of the bulk freighter *Stormont* was Captain E. J. Smith for the 1919 & 1920 seasons. In November 1920, the bulk freighter *Stormont* stranded opposite Morrisburg, ONT, in Williamsburg Canal. She was removed from Kingston and the *Stormont* was scuttled at Nine Mile Point Graveyard.

R. C. Brittain: James L. Elliott, at Saugatuck, MI, built a wooden propeller for Ralph C. Brittain, Toledo, OH, to be used in the bulk freight trade, running between White Lake, MI, Saugatuck, St, Joseph and Chicago, IL. At her initial enrollment, August 1877, at Grand Haven, MI, her measures were recorded as: 105.16’ x 22.0’ x 8.0’; 286.04 grt. She was powered by a High-Pressure Non-condensing (HPNC) engine, 20" bore x 22" stroke, built by Henry Bloecker, Grand Haven, MI. Her assigned official number was 110327. Her master for the 1877 & 78 seasons was Captain Ralph Brittain. In October 1877, she collided with the bark *Naiad* (18100). In September 1878, the propeller collided with a tree, losing her top mast. In 1879, she recorded her quickest trip to Chicago from Saugatuck, MI in 7 hours, 40 minutes. In October 1879 she lost her rudder shoe. Repaired. During winter layup, 1879-80, the *R.C. Brittain* was rebuilt as a steambarge. In March 1880, her enrollment tonnage was changed at Grand Haven, MI, to 174.47 grt.

Ownership of the steambarge was changed in 1880, to Covell & staples, Whitehall, MI. In May 1881, she had been lengthened and her enrollment tonnage was corrected to:142.2’ x 24’ x 8’; 200.17 grt, 148.23 net. During winter layup 1882-83, she received extensive repairs to boilers and machinery. In November 1883, she lost her a portion of her deck load near Whitehall.

Ownership of the steambarge *R. C. Brittain* was changed to George Morley, Detroit. Her master for the 1887 season was Captain H. L. Sanders.

Ownership of the propeller *R. C. Brittain* was changed in 1890, to E. Theobald, St. Clair, MI.

In 1899, the propeller *R. C. Brittain* was sold Canadian to W. Scott, Wallaceburg, Ont. She was registered in 1899 as *R.C. Brittain,* C100125, 213 grt, 149 net. The US registration enrollment for the propeller *R. C. Brittain* was surrendered at Port Huron, MI, September 16, 1899.in November 1901, the propeller *R.C. Brittain* went ashore, in heavy fog, on Duck Island, Lake Huron. For the 1907 season, the *R.C. Brittain* was laid up at Sarnia, Ont. In 1912, the *R.C. Brittain* burned at her layup dock Sarnia, Ont. Her hull was set aside for future rebuilding, but sank at her dock in 1924 and was scuttled in Lake Huron in 1935.

Burt R. Wellington: James E. Kelly, at Carrollton (East Saginaw), MI, built a wooden sidewheel steamer for the Saginaw River Steamboat Line, A. M. Root, East Saginaw, MI. Initial enrollment was issued at Port Huron, MI, July 18, 1877. Her recorded measures were: 154.0' x 23.0' x 6.42'; 252.94 grt, 218.22 net. Her engine is unknown. Steam was generated by a firebox boiler, 7'2" x 17', 87 psi, built by Weidemann Bros., Saginaw in 1867. She was built for the passenger, package freight trade and ran three round trips daily between Bay City and Saginaw, MI. Her assigned official number was 80763. Master of the sidewheel steamer *Wellington R. Burt* for the 1877 season was Captain Robert Medler with Harmon Gregory as chief engineer.

Ownership of the sidewheel steamer *Wellington R. Burt* was transferred, in 1882, to: Root & Miller, East Saginaw, MI. The sidewheel steamer *Wellington R. Burt* was rebuilt in 1883, receiving arches.

Ownership of the sidewheel steamer *Wellington R. Burt* was changed, in 1887, to James E. English, Saginaw, MI. in May of that year the sidewheel steamer *Wellington R. Burt* received a new horizontal engine, 24" bore x 72" stroke, built by Harkness & Mason, Cincinnati, OH. During the 1887 season, Evans Jenkins was chief engineer of the sidewheel steamer *Wellington R. Burt.*

Ownership of the sidewheel steamer *Wellington R. Burt* was changed, in April 1889, to Dora English, Saginaw, MI.

Ownership of the sidewheel steamer *Wellington R. Burt* was changed, in May 1890, to D. M. Pierce, Bay City, MI.

In 1893, ownership of the sidewheel steamer *Wellington R. Burt* was changed to Maumee Valley Navigation Co., Perrysburg, OH. The sidewheel steamer *Wellington R. Burt* was rebuilt at Sandusky, OH in 1897.

In 1899, ownership of the sidewheel steamer *Wellington R. Burt* was changed to S. C. Wheeler, Sandusky, OH. She was dismantled at the foot of Decatur Street, Sandusky, OH, and the hull towed to the head of Sandusky Bay, at Venice, OH, in 1901.

Final enrollment for the sidewheel steamer *Wellington R. Burt* was surrendered at Sandusky, OH, December 31, 1901 and endorsed as "abandoned".

Champion: George T. Davie, at Levis, Que. built wooden sidewheel steamer for A. T. Beaulieu, also from Levis, to be used as a big rafting tug for below Quebec, Que. on the St. Lawrence River. She was also known as "Champion No. 2". Her initial enrollment at Quebec in May 1883, recorded her measures as: 131.20' x 23.30' x 10.70'; 323.42 grt, 81.18 net. She was powered by a low-pressure engine, 40" bore x 81" stroke, 80 horsepower, builder unknown. Her official number was C74297.

Ownership of the sidewheel tug *Champion* was changed in November 1880, to Montreal Transportation Co. to provide service between Montreal and Quebec, P.Q. her masters were Captain J. Murray, 1881 season; Captain C. F. Moore, 1882 season, with Andrew J. Wilcox in 1877, and Alexander Morrison for the 1878-82 seasons. In October 1882, the sidewheel tug *Champion* broke one of her crank pins at Dickenson's Landing, St. Lawrence River, while on her way up with a tow. She was taken to Kingston, Ont. for repairs.

Ownership of the sidewheel tug *Champion* was changed in1883, to the Canadian Pacific Railroad and she operated between Montreal, P.Q. and Fort Williams, Ont., Lake Superior during the construction of the Canadian Pacific Railroad. In May 1883, the sidewheel tug *Champion,* bound for Lake Superior with supplies for the Canadian Pacific Railway, collided at Cornwall, Ont. on the St. Lawrence River, with the barge *Huron* (C80873) belonging to the Kingston & Montreal Forwarding Co. doing great damage to the barge.

Ownership of the sidewheel tug *Champion* was changed to J. Harris, Owen Sound, Ont. in 1885. Chief engineer for the 1887-88 season was E. C. Miller. The tug *Champion* sank at Owen Sound in 1888.

Ownership of the sidewheel tug *Champion* was changed in 1888, to Smith & Keighley, Toronto, Ont. She was rebuilt as a passenger vessel and lengthened 44' with new measures: 174.8 x 23.3 x 10.7'; 937.25 grt, 590.47 net. She was registered at Owen Sound, September 1889, as *Cambria* (C74297).

Ownership of the sidewheel steamer *Cambria* was changed, in February 1892, to the Port Arthur & Duluth Steam Packet Co., George T. Marks, president, George H. Brown, vice president. He masters were: Captain Peter C. Telford – 1894 season; Captain Neal Campbell, 1895 season; and Captain Charles Hill, 1897 season, with John Mayberry in 1893, and John Doran, 1894-95 season, as chief engineers. In September 1893, she collided with the *United Empire* (C80776), near Sarnia, Lake Huron. In May 1894, she ran ashore at Kincardine, Ont. Released. In June 1896, the sidewheel passenger steamer *Cambria,* with a few passengers aboard, went on the rocks near Algomah Mills, Georgian

Bay, in fog. Released. In July 1897, the sidewheel passenger steamer *Cambria,* up bound on Lake Huron from Sarnia, Ont., ran into a gale from the north. Trying to run back to Sarnia, the *Cambria* ran into a broken log raft and damaged her paddles and blew out a cylinder on her engine. She drifted ashore three miles north of Sarnia, Ont. The vessel was declared a total loss.

She was pumped out and pulled off the beach, in April 1898 by her new owners Donnelly Wrecking & Salvage Co., Kingston, Ont. and taken to Kingston for repairs.

Ownership of the sidewheel passenger steamer *Cambria* was changed, June 1998, to George Palmer, Toronto, Ont.

In 1902, ownership of the sidewheel passenger steamer *Cambria* was changed to M. Nesbitt, Port Arthur, Ont. to be used on the Buffalo to Crystal Beach excursions. While being towed to her new owner, the sidewheel steamer *Cambria* sheared off and struck the rocks surrounding Reid's Island, Welland Canal, Lake Erie and sank. She was raised but found to be a constructive total loss.

The enrollment for the steamer *Cambria* was surrendered in 1903 and endorsed "broken up".

Maganettawan: James Story, at Byng Inlet, Ont., built a wooden propeller for the Maganettawan Lumber Co. of Byng Inlet. First enrolled at Collingwood, Ont., June 1877, her measures were recorded as: 100.0' x 20.06' x 9.04'; 269.7 grt, 183.4 net. Her official number was C71112. She was built for passenger, package freight trade between Byng Inlet and Collingwood, Ont. on Georgian Bay, and was powered by a High-Pressure engine, 18" bore x 20" stroke, 150 horsepower, built by Lowie & Co., St. Catharines, Ont. Masters of the propeller *Maganettawan* were Captain E. O' Donnell, 1880 – 82 season and Captain Parsons. In October 1881, the propeller *Maganettawan* was delayed arriving at Byng Inlet due to a broken screw. Repaired.

Ownership of the propeller *Maganettawan* was changed, in 1884, to Jessie Peckham, Waubaushene, Ont.

In 1890, ownership of the propeller *Maganettawan* was changed to Georgian Bay Lumber Co, Byng Inlet, Ont.

In October 1892, the propeller *Maganettawan* enrolled measures were updated due to an alteration in tonnage: 186.89 grt, 127.09 net.

In 1896, ownership of the propeller *Maganettawan* was changed to William Irwin, Collingwood, Ont. for use at the lumbering trade. In 1896, her master of the propeller *Maganettawan* was Captain A. W. Clark. July 1896, the propeller *Maganettawan* went to the aid of the tug *Howard* who, while towing logs, had broken her wheel and was adrift. She struck a shoal under full steam and went aground hard. The *Maganettawan* broke in two and sank lying seven feet under water. Declared a total loss.

McArthur: George Chaffey & Brothers at Portsmouth, Ont., with J. W. Pierce as master carpenter, built a wooden propeller towboat for towing lumber rafts from Georgian Bay to the lower lakes. Owned by Collins Bay Rafting & Forwarding Co., Kingston, Ont., her first enrollment was issued at Kingston, Ont., in May 1877. Her measures were:103.0'x 24.6' x 8.1'; 167.47 grt, 77.032 net. She was powered by two up right, high-pressure engines, 18" bore x 20" stroke, built by Clute Brothers, Schenectady, NY. She was assigned official number C72586. Her master for the 1878 to 1889 seasons was Captain Arch McDonald with Gilbert Johnson as chief engineer during the 1883-86 seasons.

In May 1879, bound for Port Hope, the towboat *McArthur* ran into Oswego, NY for coal and at the foot of the D. L. & W. pier went aground. Released. In that same year, her owners rigged the *McArthur* wrecking on Lake Erie. In November 1880, the wrecking tug *McArthur,* became stuck in ice at Colchester, Ont. on Lake Erie and damaged her rudder. She was repaired at Detroit. March 1881, due to the press of business in rafting, the Collins Bay Rafting & Forwarding Co. withdrew the *McArthur* from wrecking on Lake Erie to towing lumber rafts between Collins Bay and Quebec. September 1884, bound for Kingston from Toronto, the towboat *McArthur* collided with the yacht *Atlanta,* carrying away her head-gear and staving in a part of her bulwark. In November of that same year, while pulling the schooner *Mary Ann Lydon* (C71162) off Weller's Beach, St. Catharines, Lake Ontario, the towboat *McArthur* broke her wheel. During winter layup, 1886/87, the towboat *McArthur* was rebuilt, raised 18" aft & 12" forward, received new deck frames and top sides, and had one of the largest pumps in America installed allowing 6 to 8,000 tons water per hour to be pumped. Her enrollment measures were updated in May 1887 to: 103' x 24.6' x 8.1'; 190.46 grt, 82.92 net. In September 1887, while towing a raft of lumber made up of three cribs, the towboat *McArthur* broke her shaft during a gale on Lake Erie and took refuge at Port Burwell, Ont. The raft parted and one crib anchored at Port Stanley and the other two went ashore at Tyrconnell, on the north shore of Lake Erie. In April 1890, while working to raise the car ferry propeller *William Armstrong* (C80613) near Collins Bay, Lake Ontario, the wrecking tug *McArthur* caught fire and burned to a total loss. No lives lost.

Luther Westover: F. W. Wheeler & Co., West Bay City, MI, built for Wm. Mitchell, Bay City, MI a Wooden sidewheel tug for towing in the lumber trade in rivers around Bay City, MI. her initial enrollment was issued at Port Huron, MI, July 26, 1877, and her measures recorded as: 107.0' x 20.5' x 6.3'; 125.0 grt, 102.0 net. She was issued official number 140257. Her engine is unknown. Her master for the 1877 to 1881 seasons was Captain Ben Boutell. In September 1881, the sidewheel tug *Luther Westover* stranded on the Au Gres River, Saginaw Bay, Lake Huron. She later burned to a total loss and was abandoned to her underwriters. During the winter layup of 1881-82, the hulk of the sidewheel tug *Luther Westover* was recovered and rebuilt by Chesley Wheeler.

In February 1889, ownership of the sidewheel tug *Luther Westover* was changed to Benj. Boutell. In June 1892, the sidewheel tug *Luther Westover* crashed into the Flint & Pere Marquette Railroad Bridge, Saginaw, MI. The vessel was repaired at Saginaw. In May 1899, the sidewheel tug *Luther Westover* was abandoned as unfit for service at Port Huron, MI.

Ownership of the tug *Luther Westover* was sold, in 1899, Canadian as *Luther Westover,* to Thoman et al., Valdez Island, B.C. and registered C96845; 113 x 19 x 6; 127 grt. In 1903, she was broken up and scrapped.

Notes:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The current system of measurement for ships includes:

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

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

P.Q.: Province of Quebec

Packet Freight: almost every imaginable item of merchandise – bags of onions, grain, etc., processed foods, bags of coal, stoves, furniture, which can be packed and moved by manpower from dock to hold and reverse.

Room & Space: This term has a specific meaning in the context of shipbuilding, referring to the frame and the gap between the frames of a wooden ship's hull.

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.)