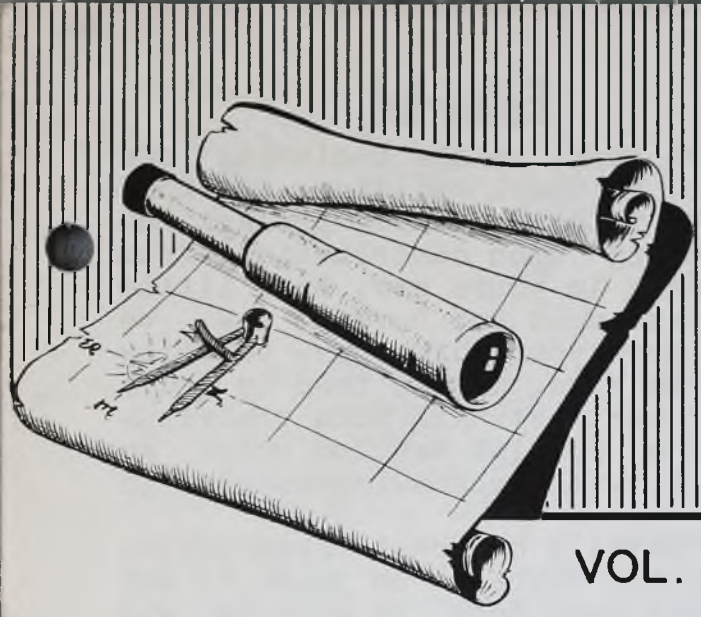


TELESCOPE

VOL. 7 NO. 1 JANUARY 1958 35 CENTS

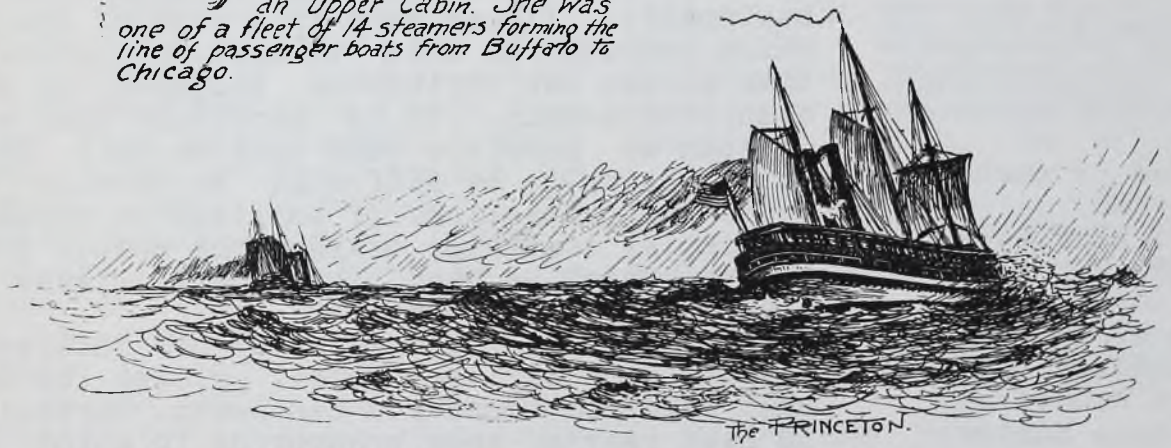
PRINCETON:

BUILT 1845, by SAML. HUBBELL, at PERRYSBURG, OHIO.

Designed by Amos Pratt Hubbell.

Length 185 feet; Breadth, 27 feet (over guards 39 feet); Depth of hold, 10 feet. Two twin-screw Engines, 24 inch cylinders, by 24 inches stroke; built by the Auburn, New York, States Prison. Two boilers, 6 by 14 feet. Speed, 11 miles.

THE Princeton was the first propeller on the Great Lakes that had an Upper Cabin. She was one of a fleet of 14 steamers forming the line of passenger boats from Buffalo to Chicago.



The PRINCETON.

Telescope

PUBLISHED BY

GREAT LAKES MODEL SHIPBUILDERS' GUILD

5401 Woodward Avenue

Detroit 2, Michigan

THE GUILD

Organized in 1952 to locate, acquire, and preserve information and objects related to the history of shipping on the Great Lakes and to make same available to the public through the Museum of Great Lakes History and the columns of Telescope. The construction of authentic scale models of Great Lakes ships is one of the prime objectives of the organization, which has brought into being the largest existing collection of models of these ships. The Museum of Great Lakes History, located at 5401 Woodward Avenue, Detroit 2, Michigan, is official headquarters for the organization and repository of all of its holdings. The Guild is incorporated as an organization for no profit under the laws of the State of Michigan. No member receives any compensation for his services. Donations to the Guild are Deductible for tax income purposes.

Supported in part by
THE
DETROIT HISTORICAL
SOCIETY

****

Joseph E.Johnston,
Editor
Robert H.Davison
Associate Editor

Membership runs by the
calendar year: $4.00

Editorial

ON MODEL BUILDING

As promised, last year, we are beginning our series of articles on model building, in this issue of TELESCOPE. This is a Guild project and its success will depend upon contributions from members. Begin sending in yours now. Send little sketches to illustrate what you have to say. We will probably work over your drawings, to bring them down to required size, and do them in India ink to obtain sharp contrast. All such contributions will go into a special section under an appropriate heading, with acknowledgements to the contributors.

Needed most are details of Great Lakes ships, as they actually were. There is no point in our duplicating what has been done by authors who have covered the salt water scene, but it is urgent need of gathering, and preserving information on fresh water practices. Let's make a very real contribution.

REGARDING MARINE HAPPENINGS

Mr.Robert Radunz has been supplying us with a very valuable chronology covering happenings on the Great Lakes, but since no one of us can have access to all newspapers published in the region it would help a lot to have someone in each port to help collect materials. Mr.Radunz has asked for this kind of cooperation. Who will respond?

THE 1958 BOAT SHOW AT DETROIT

The Detroit News Boat Show will open February 22, and run through March 2. We have been asked to participate again this year, and in order for us to accept the invitation we should have some new models. Please send in a list of the models which you will be able to make available. This time we can use unfinished projects, as well as completed models. It is important that we know as soon as possible just what we will have, as it is going to be difficult to provide enough cases for protection. If possible we should have on display something besides the models from the museum which we used last year. Please let us hear from you at once.

Volunteers to take care of our interests during the show will be needed. Please let us know what days and hours you can serve. Participation in last year's show brought us in a lot of new members. Let's do even better in 1958.

YOU ARE APPOINTED A COMMITTEE OF ONE,

to help bring in new members. Publicize our work in every way possible. If everyone who is now a member would bring in five new ones we may reduce members by almost 50%. If your local library does not get TELESCOPE, ask them to send in $3.00 for an institutional membership.

Models of Great Lakes Vessels

Good books on the subject of ship model building have always been limited in number and high in price. There have never been any that dealt with the building of models of Great Lakes vessels, and for very good reasons. It has been almost impossible to obtain authentic plans. Through the persistent efforts of the Museum of Great Lakes History, and the Great Lakes Model Shipbuilders' Guild, and the cooperation of the major shipbuilding companies of the region, this obstacle has been overcome, and there are now in the Guild's files nearly one hundred sets of original plans, which are being re-drawn and refined, for use by model builders. The process is a tedious one, involving great skill and patience, combined with a knowledge of ship building in general. For this operation the scale of 1/8" to 1' has been adopted. A smaller scale would necessitate the elimination of many important details, while a larger one would result in a problem of space for the storage or display of the finished model.

Perhaps the question of "Why special treatment of Lakes vessels?" The answer is,"They have always been different from ocean vessels." While the open Lakes are deep enough for any vessel yet constructed, the connecting channels,and the harbors, have always been shallow. To get increased carrying capacity, hull design has run to greater beam and less draft than is common on salt water. On the other hand the open Lakes called for designs that could take heavy seas. This will be dealt with in detail later.

In the days of sailing vessels utility was the prime objective. The fine finish and the spit and polish of ocean vessels was seldom evident on the Lakes. Teak decks and rails never came into use, and there were very few figure-heads, ornamented sterns, or other fancy work, inside or out, until the coming of the delux passenger steamers.The beautiful sheer of ocean vessels were sacrificed for the greater strength of straighter sides, especially in vessels equipped with centerboards, and centerboards were the rule, even in very large ships.

The Great Lakes sailing vessel was on the way out when the art of building steel hulls reached a reasonable degree of perfection, so for this type of craft steel hulls may be disregarded. The shallow hulls did not call for 'tween decks, and were seldom employed. So much for hulls.

SAILING RIGS.

Mr. Loudon Wilson, who has made an exhaustive study of Great Lakes sailing rigs, sums it up briefly, "They were unique." They became so because of local weather. During the open season of navigation, the prevailing winds are westerly,making good sailing for square-rigged ships bound down the Lakes with full cargoes, but the same rig was not so good for working to westward. Furthermore, they required large crews, and were more expensive at the time of build. The schooner rig could work to windward better than the brigs, brigantines, and ships. Full-rigged ships and barques never became numerous. In 1830,the Sheldon Thompson came out as the first three-mast schooner, and thereafter that rig was the most popular on the Lakes.

To get the most out of the prevailing westerlies, there was devised a sail which came to be known as "runner", since it was used only when running before the wind. This was a huge square sail, carried on a yard on the foremast. Instead of furling it on the yard, it was "brailed" to the mast. It was hauled in and out along the yard like a window curtain or drapery. The yard

was carried on a goose-neck and could be canted into an almost perpendicular position when not in use.

At a later date the "raffee" was devised. This was a triangular sail carried above the "runner", with its apex near the top of the fore-topmast and its lower corners sheeted out to the ends of the yard. The "spit raffee" came first, and probably was nothing more than two gaff-top-sails, laced together at the center line. Once the worth of the idea was proven triangular "raffees" were made in one piece. While the "runner" was nothing more than a primitive square sail, used in ancient times, on craft all over the world, the "raffee" was strictly a Great Lakes device, and never went to sea.

Ocean sailing vessels were quick to replace dead eyes and lanyards with steel turnbuckles, for keeping the shrouds taut and "in tune", but on the Lakes the dead eyes remained in use until the end. I have never heard why. Shrouds of steel wire were introduced on the Lakes in the 1830's, to replace the older tarred hemp, or manila. Another salt water rigging detail that never became popular on the Lakes was the tough wooden batons, in place of rope ratlines.

There was little in the way of brass fittings on the old Lakes sailing craft. Fresh water was easier on iron,and iron was cheaper. Very few wooden steering wheels were used, iron being preferred to the end, perhaps because they required less upkeep. Lakes voyages were short, so there were no long periods underway when it was well to have work for idle hands to do. Frequent changes of course, in the relatively restricted waters, kept the watch on deck busy a good part of the time.

GREAT LAKES TRADITIONS.

The birth and growth of commercial shipping on the Lakes was a thing apart from ocean shipping. The caste system never developed as it did on salt water. Many of the earlier Lakes sailing vessels were family, group,or community projects. This stemmed from the urgent need for boats, when all travel was by water. Isolated settlers, often a single family, at some remote spot not accessible by road, had to have at least one boat. They were as necessary as the automobile of today, for travel and for the transportation of supplies and farm produce or forest products. Usually these small boats were constructed of local materials, taken from the woods, by one family. The skills developed on such projects were later employed on larger boats. When one was launched the builders had to sail it,experienced seamen not being available, or, for that matter, wanted. So, with all hands being of one family, or of one community, and all of about equal skill as seamen, rank never entered the picture, as it did at sea where crews were composed of men of many nationalities and varying ability. In the earlier, and smaller craft, all hands lived aft, eating and sleeping in the same quarters.

Sailing on the Lakes never involved celestial navigation. It has always been a matter of piloting, which involves intimate knowledge of local waters and landmarks, plus the ability to handle a vessel in close waters. No more education was required of a captain than was necessary to figure profit and loss. Celestial navigation, so mystifying to the uneducated, never came into use to create in the mind of the common seamen a feeling of dependence upon the master or the officers. The registering of Lakes vessels came late, and it was not until about 1860 that the Federal Government began licensing masters and mates on these waters. The first charts of the Lakes were drawn by private cartographers, usually on linen. They were sold to ship masters, who folded them up and carried them in their pockets. They were the property of the navigator, not the ship. The first government charts were scorned by the Lakes skippers, because they were made by a lot of fellows who had never sailed the waters they covered. The government, in order to encourage the use of its charts, presented

each vessel with a set, to which was attached a sticker, reading, "This chart is presented to the schooner "Mary" with the distinct understanding that it is to be the property of that vessel. Under no circumstance is it to be removed therefrom by the master or any other person." So, no "elite" were recognized among early Lakes seamen. The only instrument on the ship was the compass. There were no chart rooms, and no innersanctums for which anyone was excluded.

There was no romance of far places and strange people. No long-absent world wanderers returned with fantastic tales to stir the imagination. That there were romance, and danger, and often death, there is no denying, but no literature and no tradition has grown up around them. This is odd, for in old newspaper files scattered around the region, there is ample evidence of bravery, unselfish sacrifice, and real heroism to people a thousand volumes of fact and fiction. "GET THE JOB DONE" may be said to summarize Great Lakes tradition. So it was from the beginning, is, and ever shall be, so long as ships ply these waters. The unique ships which have served under that tradition reflect its meaning, and the character of the men who have built and sailed them.

Turn to page 6.

HUGE ANCHOR SALVAGED

Shown here is a huge anchor which was salvaged from the bottom of Lake Huron, on September 20, 1957 by Mr. Merle Duffisey, of Cheboygan, Mich.

This type of anchor was in use before the discovery of America and were common on the Great Lakes up to the end of the sailing ship era. The wooden stock on this specimen is 12 feet long, made of two pieces of oak which are held together by four iron rings. It is of the same type and weight as one owned by the Museum of Great Lakes History, the only difference being that the two pieces of oak, making up the stock of the one in the museum are held together with iron drift pins fitted with clincher rings on both ends of each. Both anchors weigh 1,600 pounds.

The lighthouse keepers on Boise Blanc Island have, for three generations been of one family, but they have no record of any incident that might have caused the loss of an anchor in that locality. Members of the family have manned the light since 1898. The name of the vessel from which it came probably will never be determined.

The style of the two anchors is not so remarkable as their weight. Big clipper ships seldom carried any larger. Naval vessels of the olden times were noted for their big anchors. Could the two mentioned here have been left by British, or American, men-o-war of Perry's day?

Models of Great Lakes Vessels, (Cont'd. from page 5)

TYPES OF LAKES VESSELS

To begin with let us be quite technical. Let's speak of "vessels" when not being specific as to type, and use the word "ship" only when referring to a vessel with three or more masts, all of which carry yard arms, even though the mizzen-mast may also carry booms for a spanker. Technically speaking that is the rig which makes a vessel a ship. If I become too technical, refer to the glossary for explanations. And, to split another hair, let's use Lakes terminology and say "steamboat" when referring to a side-wheeler, and "propeller" when referring to a vessel driven by a propeller, even though both are driven by steam engines. Also, the customary term for Lakes vessels in the ore and grain trades, is "bulk carrier", which sets them apart from vessels designed to carry "package freight", such as boxes, bales, and barrels.

Commercial sailing vessels are always known by their rigs, regardless of hull design. Let's begin at the bottom and work up.

Name of type	Description of rig
Sloop	One mast, rigged fore-and-aft; that is, carrying a boom, and usually, a gaff. A true sloop also carries one or more head-sails, and has a bow-sprit.
Schooner	Two or more masts, all of which carry fore-and-aft sails, and head-sails. Gaff-topsails are also a part of the schooner rig, anywhere, and on the Lakes a "runner" and a "raffee" were sometimes carried.
Brig	Two masts, square-rigged.
Brigantine	Two masts. Square-rigged on fore-mast, and fore-and-aft rigged on main.
Barkentine	Three or more masts. Square-rigged on fore. Fore-and-aft rigged on all others.
Ship	Three, or more, masts. Square-rigged on all of them. Often carried a "spanker" on the last mast towards the stern.

Each of the above type names should create in your mind just what the descriptions indicate. There was much loose terminology around the Lakes in the days of sail. Many of the smaller two-mast schooners, so called, were actually "ketches", since their second mast (from the bow) was smaller than the fore-mast, and stood forward of the stern post. Technically, that constitutes a ketch rig. The "scow schooners", once so numerous on the Lakes were simply schooners with scow hulls, meaning that they were flat bottomed and had square bows and sterns.

GREAT LAKES MARINE HAPPENINGS, -- 1858

The financial panic of 1857 caused a sharp decline in Great Lakes shipping. Many vessels were laid up, and freight rates remained very low into 1858, reducing ship building to a few small craft. On Lake Ontario four sidewheel vessels were commissioned. One bark and 13 small sailing vessels of other rigs came out. On the upper Lakes only one sidewheel steamer, eight propellers, one bark, and 25 small schooners were built.

Seeking a livelihood, fifteen sailing vessels left the Lakes for salt water.

Name	Rig	Tons	Cargo	Destination	
QUEEN	Schooner	375	Staves	Toronto	for Liverpool
CHIEFTAIN	Bark	375	"	Detroit	" "
H. E. HOWE	"		Oak Lumber	"	" London
BLACK HAWK	Brig	384	Lumber	"	" Liverpool
COLONEL COOK	Schooner	327	Lumber-staves	"	" "
O. B. SEXTON	"	345	Staves	"	" London
CORRESPONDENCE	"	294	Wheat	"	" Liverpool
C. REEVE	"	299	Staves	"	" "
HARVEST	"	309	"	"	" London
E. S. ADAMS	Bark	407	Lumber	Lake Ontario	" Liverpool
D. C. PIERCE	"	396	Staves	Detroit	" "
C. J. KERSHAW	"	382	Lumber		" "
R. H. HARMON	Schooner	343	Staves	Detroit	" "
J. F. WARNER	"	341	"	"	" Greenock
PARMELIA FLOOD	Bark	384	Lumber	Green Bay	" West Indies

The schooner QUEEN never returned to the Lakes. The bark H.E. HOWE was sold at London, in 1860 for $7,500. The BLACK HAWK returned to the Lakes and was lost at Point Betsy, Lake Michigan, in 1862 with a 19,000 bushel cargo of grain. The schooner COLONEL COOK was wrecked in the Gulf of St. Lawrence and she and her cargo were a total loss. The schooner O.B. SEXTON sank in the Straits of Gibraltar in 1862. The REEVE returned to the Lakes and was lost in Lake Ontario, in 1862. In this year, when we look to the opening of the St. Lawrence Waterway, it is interesting to look back on what was accomplished just one hundred years ago. We may also compare shipping in those days with what we have today. Mansfield, in History of the Great Lakes mentions the following:

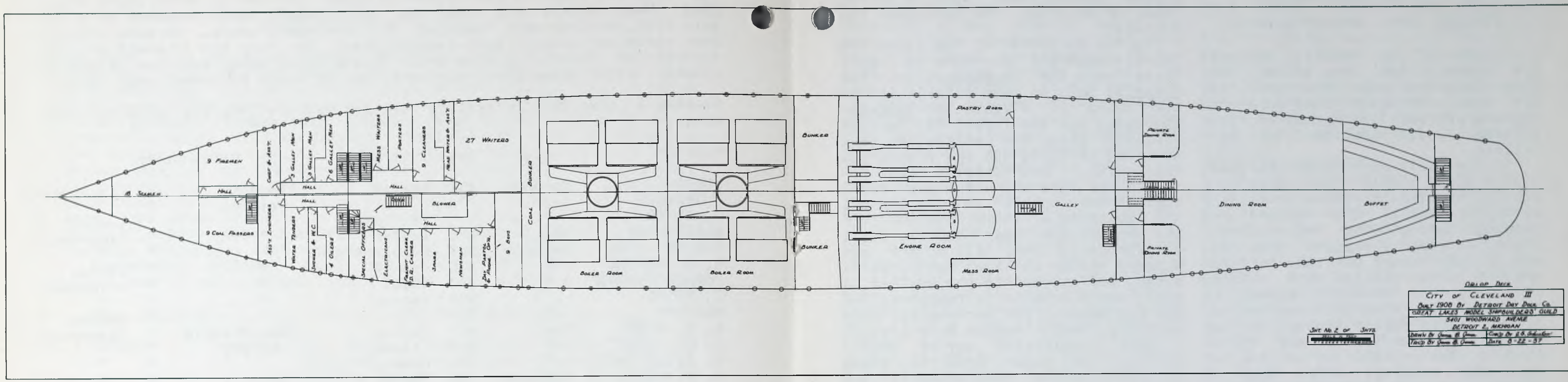
In the spring of 1858 there were in commission on the Great Lakes, 130 side-wheel steamers, with a total tonnage of 72,108 tons, and a valuation of $3,953,800; 182 propellers, 65,271 tons, valuation $3,537,900; 57 barks, 22,817 tons, valuation $707,500; 99 brigs, valuation $628,900; 974 schooners and sloops, 200,300 tons, valuation $6,383,900. Total number of craft, 1,442, tons 387,740, valuations $15,212,000.

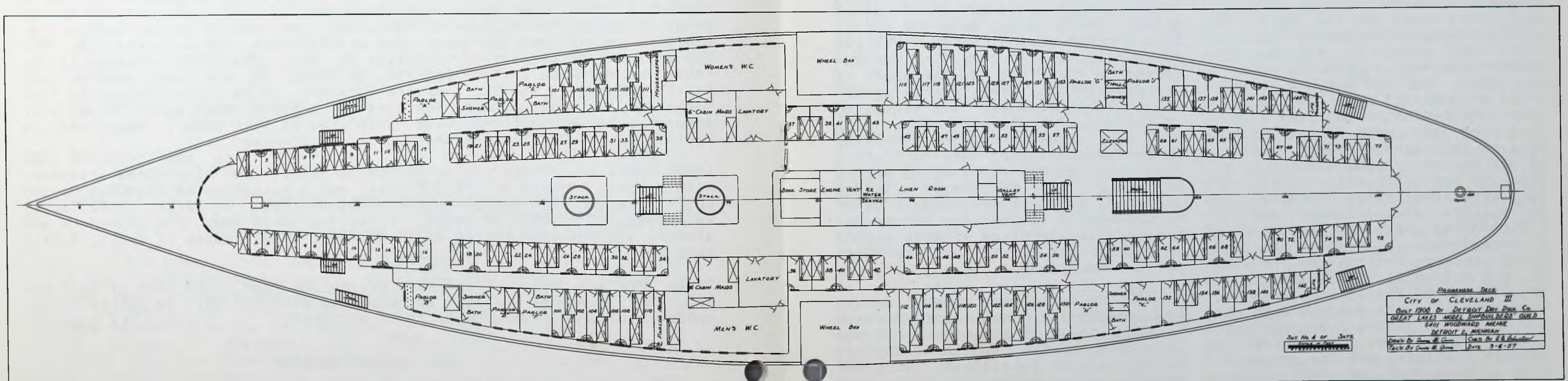
There were 362 marine disasters during the year. The loss of life was 122, and property losses amounted to $732,232.00. In dollar value, approximately 5% of the Lakes fleet was lost.

Turn to page 10

THE JANUARY MEETING

The January meeting of the Guild will be held at the Detroit Historical Museum, Friday, January 31, 1958. The hour,--7-30 P.M. Come and give your new officers your support.


Orlop Deck
City of Cleveland III
Built 1908 By Detroit Dry Dock Co.
Great Lakes Model Shipbuilders' Guild
5401 Woodward Avenue
Detroit 2, Michigan
Date 8-22-57
Sht No. 2 of Shts.
18 Seamen
Hall
9 Firemen
9 Coal Passers
27 Waiters
Blower
Bunker
Coal
Boiler Room
Boiler Room
Engine Room
Pastry Room
Mess Room
Galley
Private Dining Room
Private Dining Room
Dining Room
Buffet


Promenade Deck
City of Cleveland III
Built 1908 By Detroit Dry Dock Co.
Great Lakes Model Shipbuilders' Guild
5401 Woodward Avenue
Detroit 2, Michigan
Date 3-6-57
Sht No. 4 of Shts.
Womens W.C.
Lavatory
6-Cabin Maids
Wheel Box
Stack
Stack
Book Store
Engine Vent
Ice Water Service
Linen Room
Galley Vent
Elevator
Lavatory
6-Cabin Maids
Mens W.C.
Wheel Box
Parlor "A"
Parlor "B"
Bath
Shower
Housekeeper
Parlor Maids

MODELS OF GREAT LAKES VESSELS.

STEAMER TYPES ON THE LAKES

Unlike sailing vessels, steamers are known by the type of hull construction, their superstructures, and the work for which they were designed, as well as method of propulsion i.e., side-wheel, or propeller.

In the early days of the steamer, on the Lakes (1816-1841) hulls were usually similar to those previously used for sail. The steamer was passing through the experimental stage, as far as engines were concerned. So rapid was the development of power plants, that seldom, if ever, were two built alike. As is the case with jet engines of today, every engine installed was obsolete by the time it was bolted down in the vessel. It is too bad that the drawings of so many of those early engines have been lost. The Great Lakes were the laboratory of the marine steam engine for many years. For ocean service the steamer was not satisfactory until engines became dependable for long runs, and coal came into use for fuel. The early steam-powered vessel could not carry wood enough to suffice for a trans-ocean voyage, even if no cargo was taken. On the Lakes a steamer could stop almost anywhere along the shores, to replenish the fuel supply. Supplying cord wood to steamers became an important industry, and some of our smaller towns owe their origins to that business. Even with fuel available every few miles, the early Lakes steamers were not very efficient as cargo carriers, and had to depend upon passengers and high-class package freight for revenue. It was not until the beginning of the decline of the lumber trade that they were able to compete with sail for that, and other, rough cargoes.

The manuscript histories by Captain VanCleve, and the monumental work of Erik Heyl, of Buffalo, have preserved for us many pictures of early Lakes steamboats. Looking back, from our day of scientific design, it is hard to conceive of anyone risking their life on one of them, or enduring the hardships involved.

So far no plans of the first two Lakes steamboats have come to light. These were the Frontenac, and the Ontario, both on Lake Ontario. Above the falls of Niagara the Walk-in-the-Water was the first, and for her adequate plans are available. She came out in 1818, and was considered successful, mechanically and financially. However, her low-pressure engines were unable to keep her off the beach in a storm, and in 1820 she went ashore near Dunkirk, N.Y., and broke in two. All of her machinery was in an open hatch, amidships, and exposed to the weather, a most uncomfortable arrangement for the engineers. The cartoonist, Rube Goldberg, could hardly have devised a more complicated way of transmitting the power from the steam cylinder to the paddlewheels. The single cylinder stood upright, and the piston and piston rod, moving up and down carried a cross-head, on both ends of which there was a link which engaged a big steel triangle, (one on each side of the engine) which in turn rocked back and forth. From another corner of the triangle another link, or connecting rod extended to the crank on the shaft of the paddlewheel. This crank, actually a sprocket wheel was connected to a counter-shaft, aft of the main shafts, by means of a sprocket-chain. On the counter-shaft was a 12-foot cast iron balance wheel which helped to keep the machinery running smoothly, but must have been a major hazard when a quick stop became necessary. In the plans of this engine there is nothing to indicate that the machinery could be put into reverse.

Walking beams were adopted early, and remained a conspicuous feature of all side-wheel steamers until the invention of the inclined engine, which made it possible to keep the weight well down in the hull, thus increasing stability, and making possible a weather-proof engine room.

All wooden-hull vessels tend to "hog", or droop at both ends, in part due to the greater bouyancy of the mid-section, and the lesser bouyancy of the tapered ends. To overcome this tendency, arches were built into many steamboats. These arches ran from forward to aft, on both sides, holding the two ends up, and through columns extending downward at intervals, exerted a downward thrust amidships. These arches became another conspicuous detail of all large side-wheelers. While necessary, they were objectionable, because of the space they required. The perpendicular columns, and diagonal tie-rods, penetrated cabins and decks, constituting a nuisance throughout the vessel. In an attempt to eliminate the arches, steel bands were imbedded in the hull frames, inside of the planking. These bands were about ½ inch thick and 10 or 12 inches wide. They were firmly attached to the hull,low in both ends, and extended from those points, upward to near the deck line amidships. This appears to have been quite satisfactory, but came so late in the era of wooden hulls that relatively few were employed before steel hulls came into use. Steel hulls permitted of building in the necessary strength to prevent hogging.

In 1841, Captain VanCleve built the first propeller driven steamer on the Great Lakes, and thereafter that type of propulsion gradually replaced paddlewheels. Machinery for propellers required much less space than that needed for side-wheels, and enabled the steamboat to compete with sail in the lumber, grain, and ore trades. Sailing craft were stripped of their rigging and became barges, towed by propellers of various types. This was found to be profitable, and as old sailing vessel hulls wore out new barges were built. Many of these barges carried some sail, to help out when the wind was favorable, and in the "Grampian" we have a fine example of the wooden-hull tow-barge at its best.

Even at their best, wooden hulls were never sturdy enough to withstand the impact of large lumps of iron ore dropped into them from the high chutes at the ore ports, and ore was fast becoming the predominant cargo. In 1882 the propeller "Onoko" came out. She had a long and profitable career, and others of her type followed, and with frequent improvements, and many increases in size that type of bulk carrier has become the most numerous on the Great Lakes. Her iron hull was the forerunner of the steel vessels of today.

PASSENGER STEAMERS.

By the time the railroads reached Chicago the Great Lakes passenger traffic was on the decline. Numerous branch lines spread out from the first railroads, eventually reaching almost every town and village in the region, especially on the United States coasts. Slowly, the scheduled passenger service died away. Some of the boats were employed as cruise ships, but even this has declined until it represents but a minute part of Lakes traffic. Some few Canadian passenger steamers remain in operation, principally in the Georgian Bay country and on Lake Superior. The automobile is fast replacing both the vessels and the railroads. Even the airplanes have contributed to the disappearance of the palatial passenger vessels of a few years ago.

Passenger vessel designs varied. From 1818 to 1841 they were all side-wheelers, and it was a long time before this type of propulsion gave way to the propeller. Frank E. Kirby,the Lakes most noted designer, was a staunch advocate of the former right up to the end of his career. Only a few ocean-type passenger vessels appeared on the Lakes, the most noted being Jim Hill's "Northland" and "Northwest". These two were ocean-type in every respect, and there were a few others, but all the rest of the passenger propellers were designed for the Lakes only, and showed it, in some way, even at a great distance. Perhaps the most conspicuous features of the Lakes passenger propellers were the engines, far back towards the stern, and the pilot house right up forward. In ocean vessels these details are usually nearer amidships.

Ship Modelers Log

by John Leonetti

SCALE ROPE

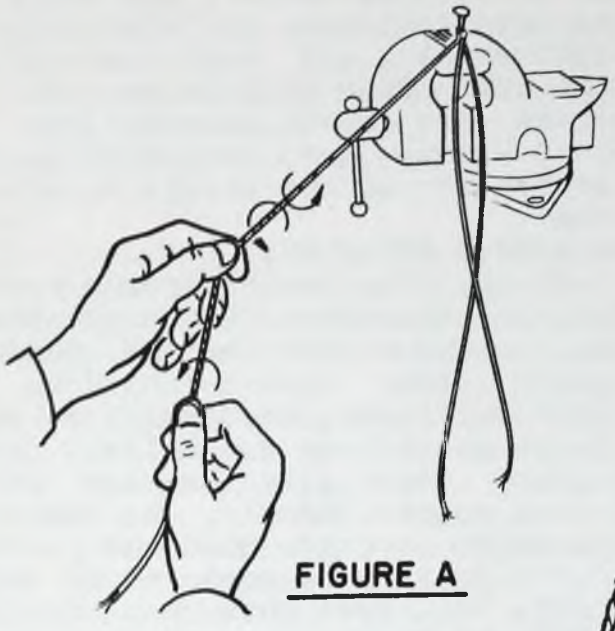
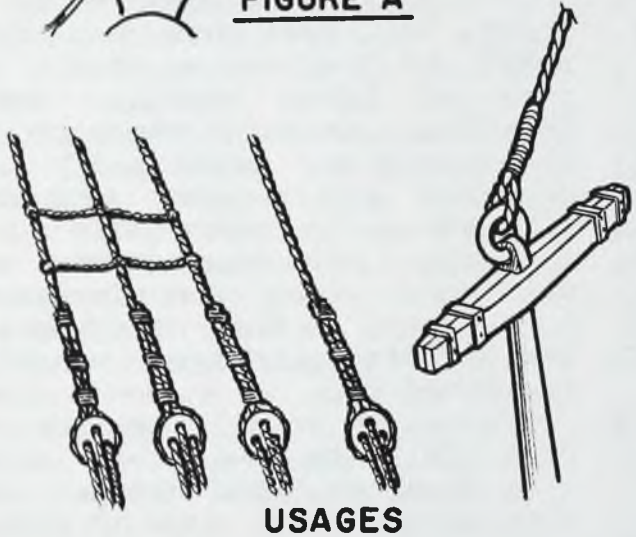


FIGURE A



USAGES

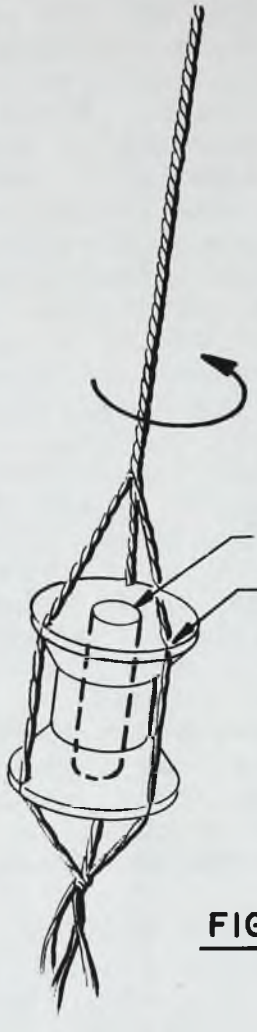


FIGURE B

To weave a scale line for shipmodels try the following:
Take three strands of black or brown thread 36" to 48" long of desired guage, tie strands together at one end and clamp in vise or around nail so both hands are free. See Fig. A.
Twist each individual strand in the same direction the thread is originally woven. Turn 70 to 100 twists by rolling between thumb and forefinger, being careful not to let the strand slip and unravel. Do not allow strand to loosen or it will gather into knots resulting in a poorly formed line.
Insert each twisted strand in notches cut into an ordinary large used spool weighted with lead, etc. Tie strands across "bottom" of spool as shown in Fig. B. Care must be taken to insure all lengths from spool "top" to knot at top of strands are equal.
Remove knotted end of strands from clamping device and pull taut. While holding vertically, release spool and allow to spin freely. When spool has stopped spinning in either direction, line is complete. Providing all else has been accomplished correctly, you should have scale line, hawsers, ratlines and stays by using light or heavy guage thread.

GREAT LAKES MARINE NEWS OF 1957

Compiled by Robert B.Radunz

Continued.

May 1
Port of Milwaukee boasts seven vessels of foreign nations in port, more than ever before in the city's history. Strong winds tore barge THAMES N. 1 from the tug GOTHAM AND DAMAGES 20 feet of seawall in Windsor.

May 3
Army Engineers report work on the Amherstburg channel in lower Detroit river to begin on May 28th.

May 6
Seafarers' International Union announces new contract with Huron Portland Cement fleet that embodies a new vacation plan and highest wage currently paid on the Great Lakes. National Maritime Union is seeking a 12% general raise. Great Lakes Towing Co. opens new western division office in Chicago. Manager to be Capt. Daniel McGarity formerly a master in the Old Goodrich Line.
Iron ore shipments (American & Canadian) down 1,687,498 tons from last year.

May 10
FAIR HEAD of Belfast, Ireland docks in Detroit. Ship is brand new, built for lake trade.

May 13
FAIR HEAD arrives in Milwaukee.

May 15
Denied jobs on American financed project in Canadian waters near Amherstburg, unionized tug crewman, dredge workers, drillers and engineers on this side of the border were openly bitter. Quota of 39 was worked out between U. S. Army Corp. of Engineers and Canadian government.
Construction has begun on largest ship ever built in Toledo. A 710 foot ore carrier for the Interlake Steamship Co.
Freighter RICHARD M. MARSHALL rechristened JOSEPH S. WOOD, after founder of what is now Wilson Marine Transit.

May 17
S. S. SOUTH AMERICAN makes first trip of season into Detroit.

May 18
Tug ABURG wins Maritime Week tugboat race on Detroit River.

May 22
Capt. Morgan L. Howell of Detroit appointed Captain of S. S. AQUARAMA. AQUARAMA to leave Muskegon June 9 for Chicago where she will undergo extensive alterations to her rudder.

May 23
Sen. Potter (R-Mich)in National Maritime Day speech says nuclear-powered vessels will be sailing the Great Lakes by 1961.

May 25
City of Toledo files $500,000 suit against Cleveland Cliffs Steamship Co. for damage done to FASSETT ST. BRIDGE by freighter blown into bridge by high winds.

May 31
A total of 2,961 vessel passages recorded in May at the canals at Sault Ste. Marie (includes American & Canadian locks).

MANITOU:

Designed by W. I. BABCOCK.

BUILT 1893, at SOUTH CHICAGO, ILL.,
BY THE CHICAGO SHIPBUILDING COMPANY.

HULL, OF STEEL Length of keel 275 feet, over all 295 feet, breadth of beam 42 feet, depth of hold 22 feet; average draft of water 15 feet

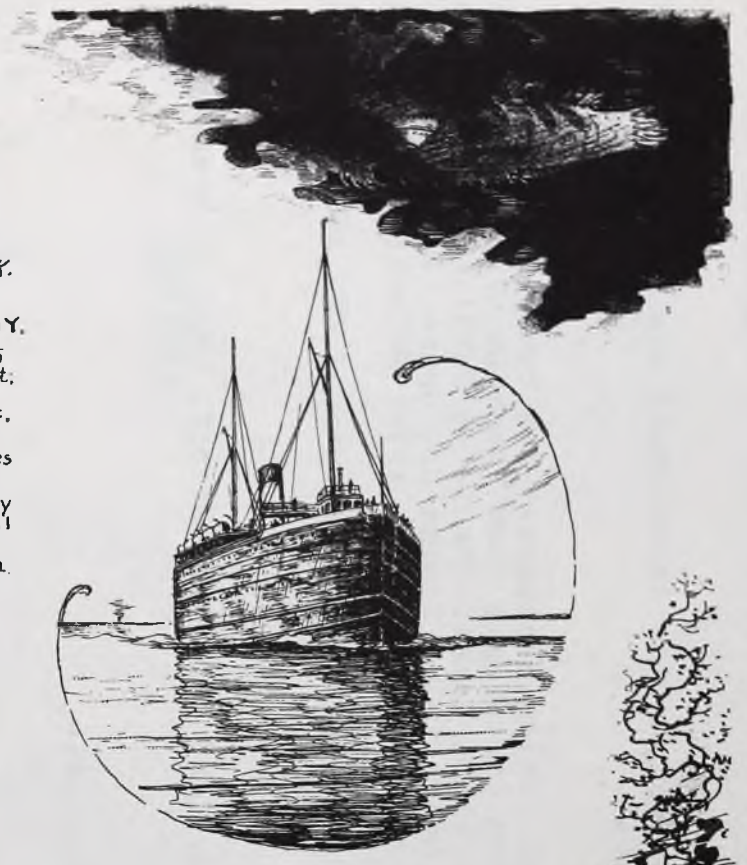
ENGINE, TRIPLE EXPANSION, CONSTRUCTED BY THE CLEVELAND SHIPBUILDING CO, Cleveland, O Diameter of cylinders 23, 38 and 62 inches, by 36 inches stroke Indicated horse power 1800.

BOILERS, TWO, OF STEEL, GUNBOAT TYPE Each 11 by 21 feet Total grate surface 132 square feet; total heating surface 5200 square feet

WHEEL, 4 BLADES, 13 feet in diameter; pitch 16 feet

TONNAGE 2944 66 GROSS
2391 " NET

ONE of the finest steamships ever turned out for service on fresh water~ Strongly built, beautifully finished sumptuously fitted up and of high speed Sleeping accommodations for 400 passengers freight capacity 1500 tons; speed 18 miles an hour Built for the Lake Michigan & Lake Superior Transportation Co, for the route between Chicago and Sault Ste Marie Cost $300,000



Christopher Columbus.

BUILT 1892, at WEST SUPERIOR, Wis.

HULL, OF STEEL, "WHALEBACK" MODEL. Length over all 362 feet; breadth of beam 42 feet, depth of hold 24 feet. Nine bulkheads.

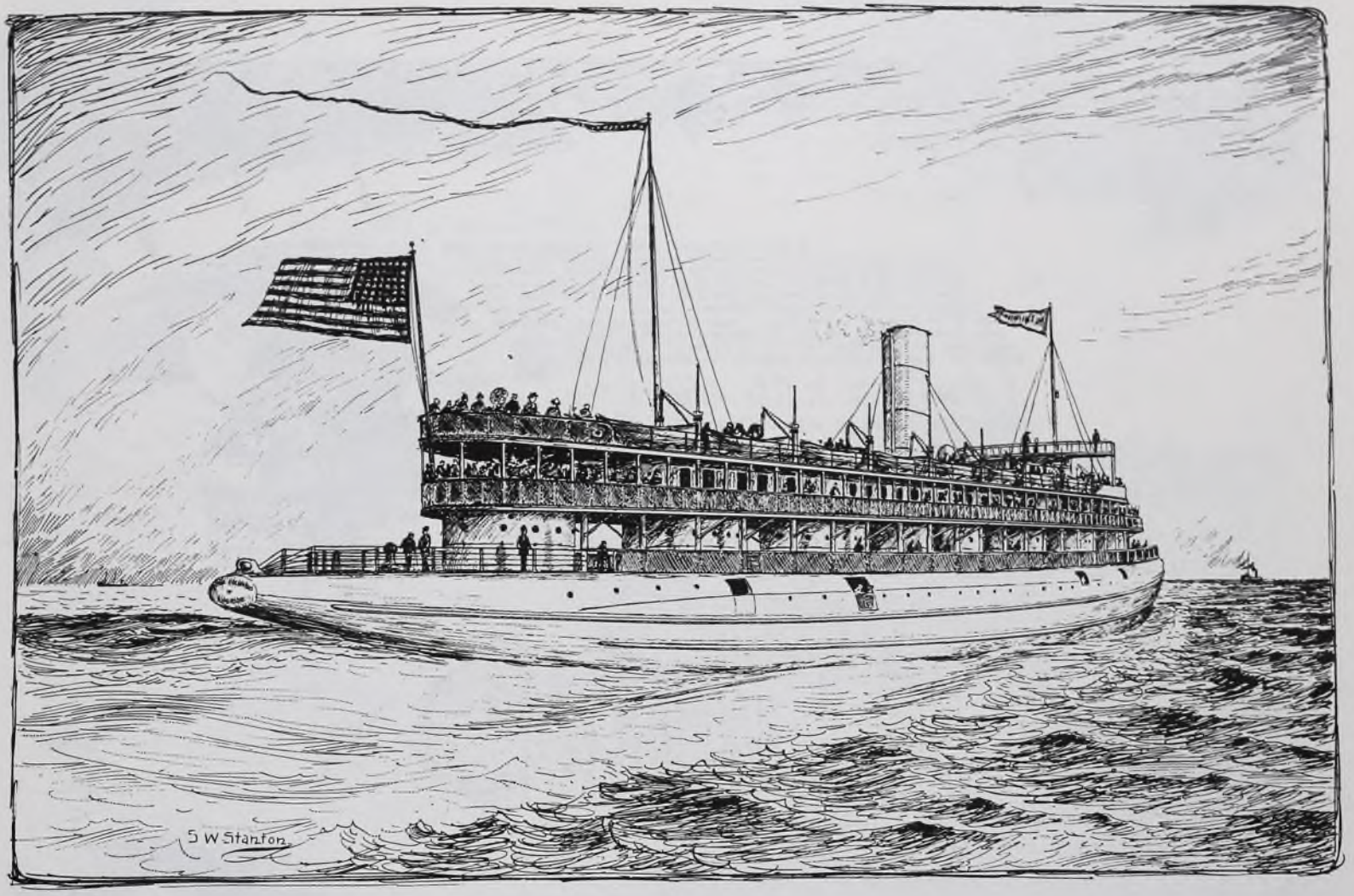
ENGINE, TRIPLE EXPANSION, CONSTRUCTED BY SAMUEL FRODGE & CO, DETROIT. Diameter of cylinders 26, 42 and 70 inches, by 42 inches stroke

BOILERS, SIX, OF STEEL, BUILT BY THE CLEVELAND SHIPBUILDING COMP'Y. Each 11 feet in diameter and 12 feet in length. Return tubular

WHEEL, 4 BLADES, diameter 14 feet; pitch 19 feet.

TONNAGE 1511.05 GROSS
945.95 NET

THE most novel passenger steamer turned out in America during late years. Designed by Alexander McDougall, and constructed by the "American Steel Barge Co" for use as an excursion boat at Chicago during the World's Fair, 1893. This vessel, differing so in appearance from the regulation passenger propeller, combine great strength, fine speed, and a roominess quite unknown among the majority of boats. The model of the McDougall "whaleback" type is ungainly in appearance but it possesses advantages which the other style of hull does not; with an excellent model below the water line, a clean run, and with powerful machinery, great speed is attained. Cabin luxuriously fitted up



GREAT LAKES PASSENGER WHALEBACK STEAMSHIP CHRISTOPHER COLUMBUS, 1893.