WRECK OF THE STEAMER *F. H. PRINCE*: AN ARCHAEOLOGICAL INVESTIGATION IN LAKE ERIE AT KELLEYS ISLAND, OHIO

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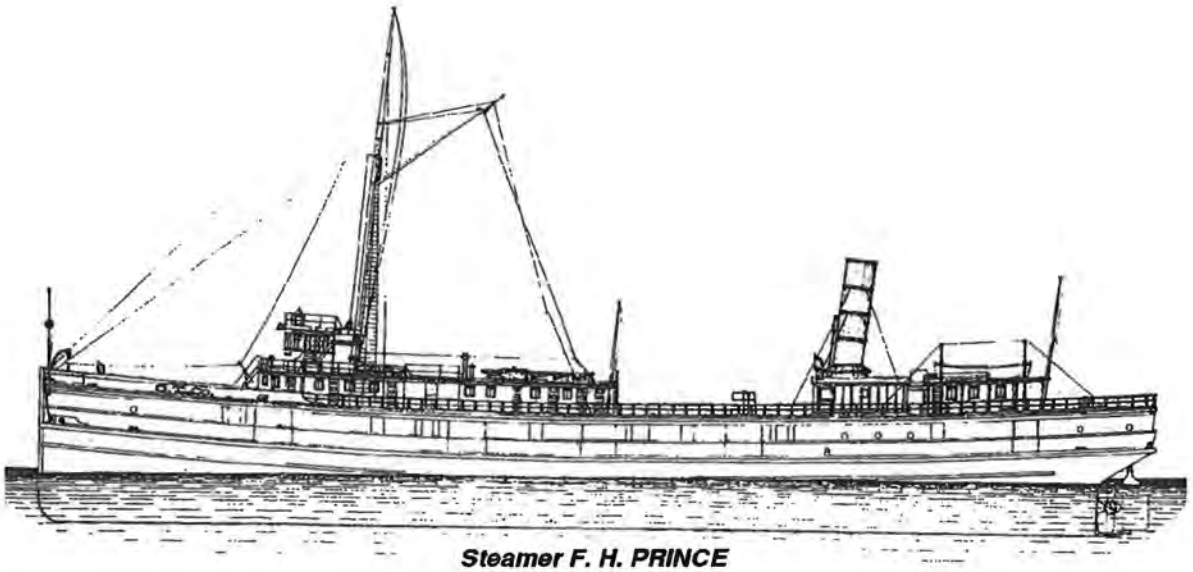

Steamer F. H. PRINCE

Great Lakes Historical Society
Peachman Lake Erie Shipwreck Research Center
Technical Report No. 3

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The Peachman Lake Erie Shipwreck Research Center (PLESRC), located on the grounds of the Inland Seas Maritime Museum in Vermilion, Ohio, is a component of the Great Lakes Historical Society. The PLESRC vision is to be the most comprehensive source of shipwreck information for Lake Erie and its environs.

Dr. Charles E. Herdendorf
Coordinator, PLESRC

Capt. Wayne E. Bratton
Chair, PLESRC Subcommittee

Cover Illustration:
Detroit Dry Dock Company plans for hull no. 102; F. H. PRINCE, 1890 (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society).

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Peachman Lake Erie Shipwreck Research Center

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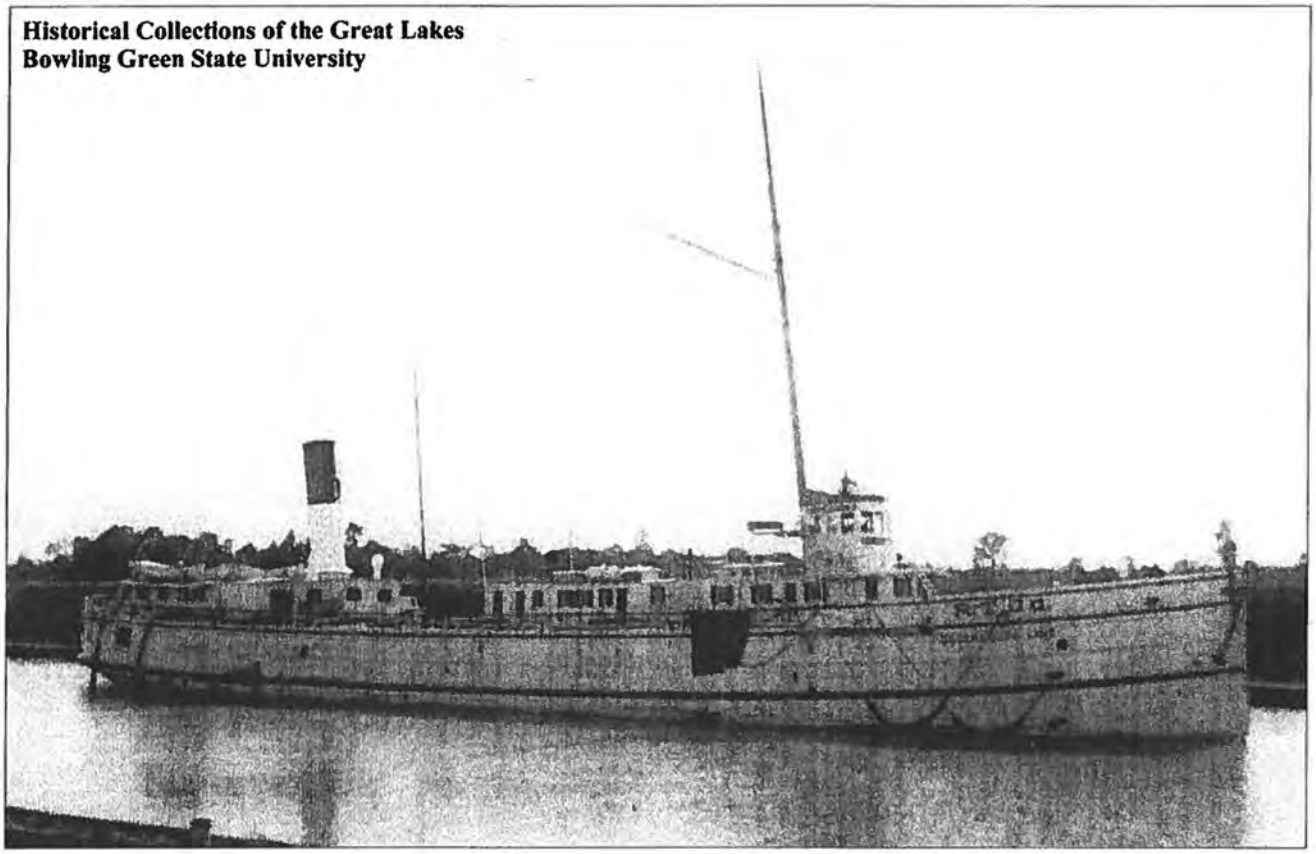


Steamer F. H. PRINCE, circa 1900.

Wreck of the Steamer *F. H. PRINCE:* An Archaeological Investigation in Lake Erie at Kelleys Island Ohio

by Linda L. Pansing, Peachman Lake Erie Shipwreck Research Center, Great Lakes Historical Society and Charles E. Herdendorf, Department of Geological Sciences, The Ohio State University

Introduction

From June 18 to June 24, 2001, as part of Ohio Archaeology week, the Peachman Lake Erie Shipwreck Research Center (PLESRC), twenty-two members of the Maritime Archaeological Survey Team (MAST), and 5 volunteers participated in a survey of the shipwreck *F. H. PRINCE* (1890-1911). The goal of this research is twofold: 1) to document the present conditions of the shipwreck and 2) to create a plan of the site. In conjunction with Ohio Sea Grant, the project results will be used to develop an underwater diver slate of the wreck site. An additional objective of the project is to explore the history of Lake Erie's sand and gravel dredging industry—the trade the *F. H. PRINCE* was engaged in on its final voyage. These activities are aimed toward documenting the underwater resources contained therein and using that information to educate the public, diver and non-diver alike about Ohio's maritime heritage.

The Peachman Lake Erie Shipwreck Research Center at The Great Lakes Historical Society in Vermilion, Ohio opened its doors in June 2000. PLESRC provides resources and a facility where researchers, students, and people with an interest in shipwrecks, their exploration, & cultural and historical significance can conduct research.

MAST, the Maritime Archaeological Survey Team is an avocational group dedicated to the documentation of Ohio's underwater historic resources. MAST members are involved in projects to produce site plans of historic shipwrecks in the Ohio waters of Lake Erie and to disseminate shipwreck information. Formed in March 2000, MAST is composed of individuals who participated in underwater archaeology workshops sponsored by: Bowling Green State University, Ohio Council of Skin and Scuba Divers, Inc., Ohio Department of Natural Resources Office of Coastal Management , Ohio Historical Society (Historic Preservation Office), Save Ontario Shipwrecks (Ohio Chapter), Submerged Lands Advisory Council, The Great Lakes Historical Society, and The Ohio State University (Ohio Sea Grant College Program).

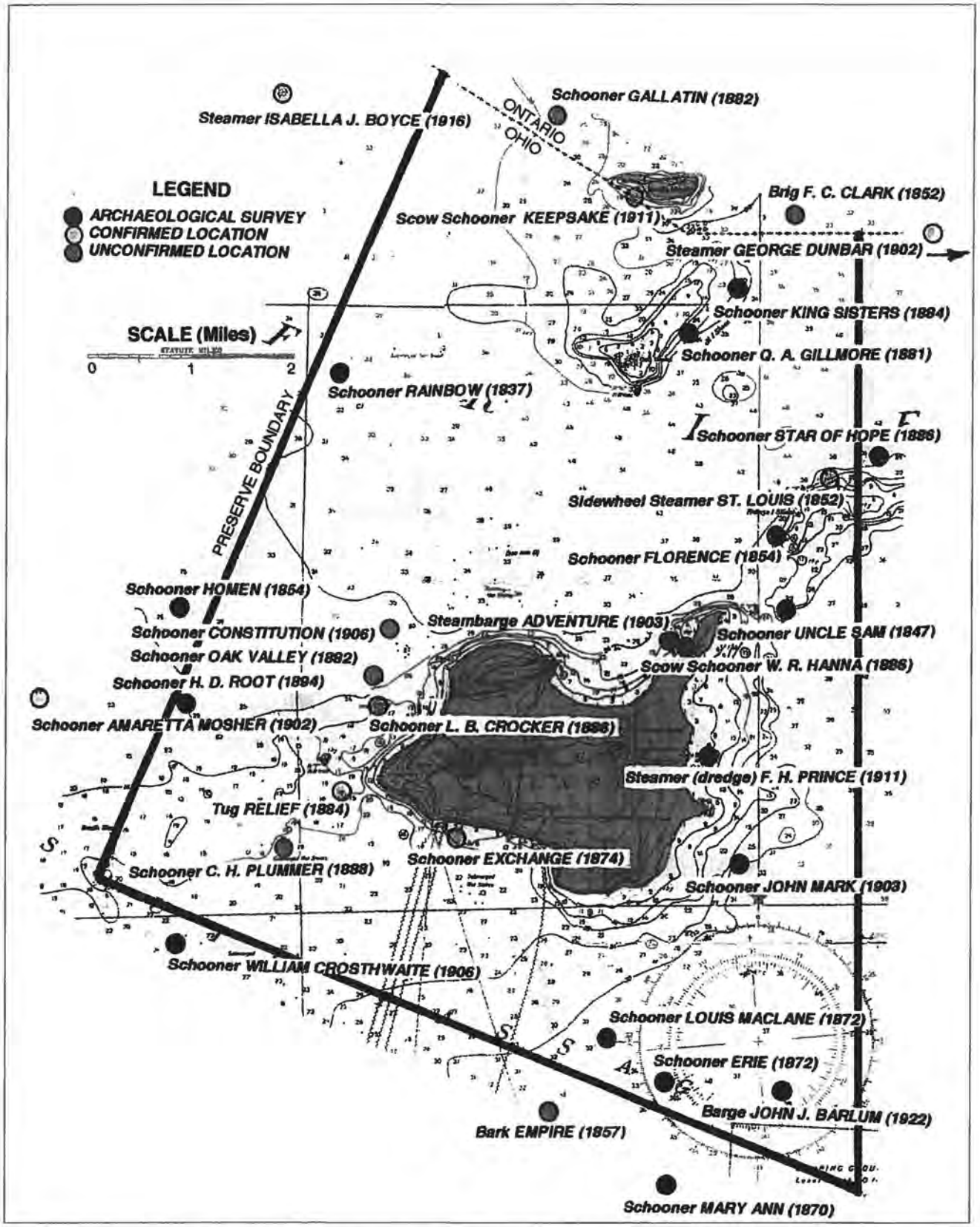


Figure 1. Locations of reported shipwrecks in the vicinity of Kelleys Island, showing boundary of the Kelleys Island Port Authority (base map from NOAA chart no. 14844; illustration prepared by Charles E. Herdendorf).

OHIO "SHIPWRECK LAW" AND LAKE ERIE UNDERWATER PRESERVES

The Abandoned Shipwreck Act was adopted by the United States Congress in 1987. According to this act the United States holds title to all abandoned craft in its territorial waters. Each state was given title to shipwrecks within their jurisdiction as well as the managerial responsibilities of these resources. In 1991, Ohio passed legislation to protect its submerged cultural and natural resources, Ohio Revised Code Sections 1506.30-1506.99. This law prohibits the removal of material associated with a shipwreck; set up salvage permit procedures; and provides for the establishment of underwater preserves (Lake Erie Shipwreck Research Center and Submerged Lands Advisory Council 2001).

The Ohio Department of Natural Resources has proposed the establishment of Ohio's first underwater preserve to be located in the Islands Region of western Lake Erie. The goal of such a preserve is to protect cultural and natural resources within this region.

In 2000, through historical documentation, the Peachman Lake Erie Shipwreck Research Center identified 20 wrecks reported to be within the preserve area. Of those 20, locations are known for eight (*L. B CROCKER* 1886, *RELIEF* 1884, *EXCHANGE* 1874, *ST. LOUIS* 1852, *KEEPSAKE* 1911, *ADVENTURE* 1903, *W. R. HANNA* 1886 and the *F. H. PRINCE* 1911).

With the completion on the *F. H. PRINCE* survey, three shipwrecks have been archaeologically investigated and registered with the state Historic Preservation Office, the *ADVENTURE* (Ohio State Archaeological Site #33ER481), *W. R. HANNA* (Site #33ER488) and *F. H. PRINCE* (Site #33ER496).

The data resulting from these investigations will enrich our understanding of maritime history in the area, and will provide information to the visitors of the Lake Erie islands as well as divers accessing the shipwrecks. One product from the archaeological surveys of the *ADVENTURE*, *W. R. HANNA*, and *F. H. PRINCE* are underwater dive slates. These slates, jointly produced by the Great Lakes Historical Society and the Ohio Sea Grant College Program (Herdendorf et al. 2002), contain a picture of the vessel while in operation; site plan of each ship; ship component identification; information about the vessel and its deposition on the lake bottom. This will enhance diver appreciation and can also be used to educate the general non-diving public by giving them access to the site via dive slate information.

Due to ecological diversity, shallowness of depth and relatively close proximity to land the *F. H. PRINCE* provides an attractive venue for use by divers, snorkelers, sport fisherman, boaters and jet-skiers. Because of the multi-use facet of the wreck, its potential hazard to marine traffic (based on its shallowness), and due to the lack of firm anchorage on the east side of the *F. H. PRINCE* which could lead to anchors being dragged over the wreck, the *F. H. PRINCE* is slated to be one of the first Ohio shipwrecks on which a mooring buoy will be officially placed (Figure 2).

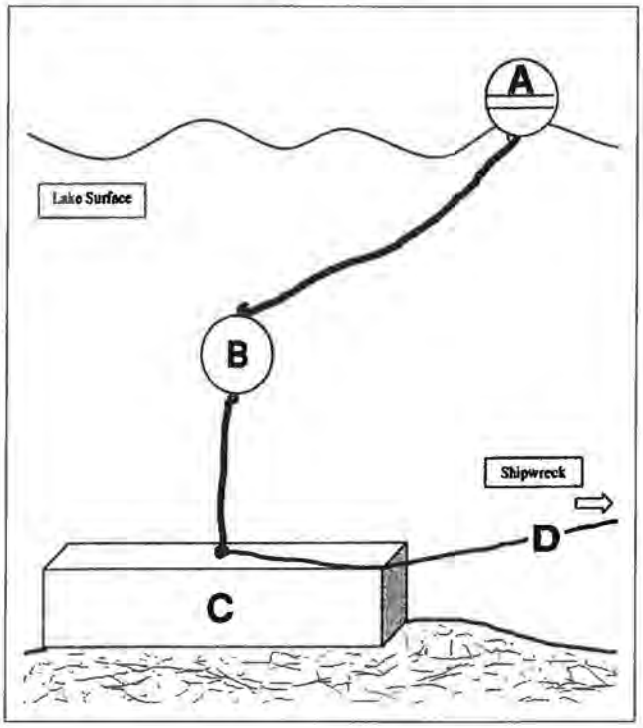


Figure 2. The F. H. PRINCE is slated to be one of the first shipwrecks to be officially buoyed in Ohio waters of Lake Erie. Pictured is a conceptual model of a mooring buoy arrangement that is under consideration for placement at the F. H. PRINCE shipwreck site: A—mooring buoy; B—sub-surface buoy located several feet below the water surface; C—concrete block weighing several tons; and D—lead line directing divers to the shipwreck. This design will permit the mooring buoy to be conveniently removed duing the winter months, while the sub-surface buoy and concrete anchor block will remain in place year around (modified from Pansing 2001:5).

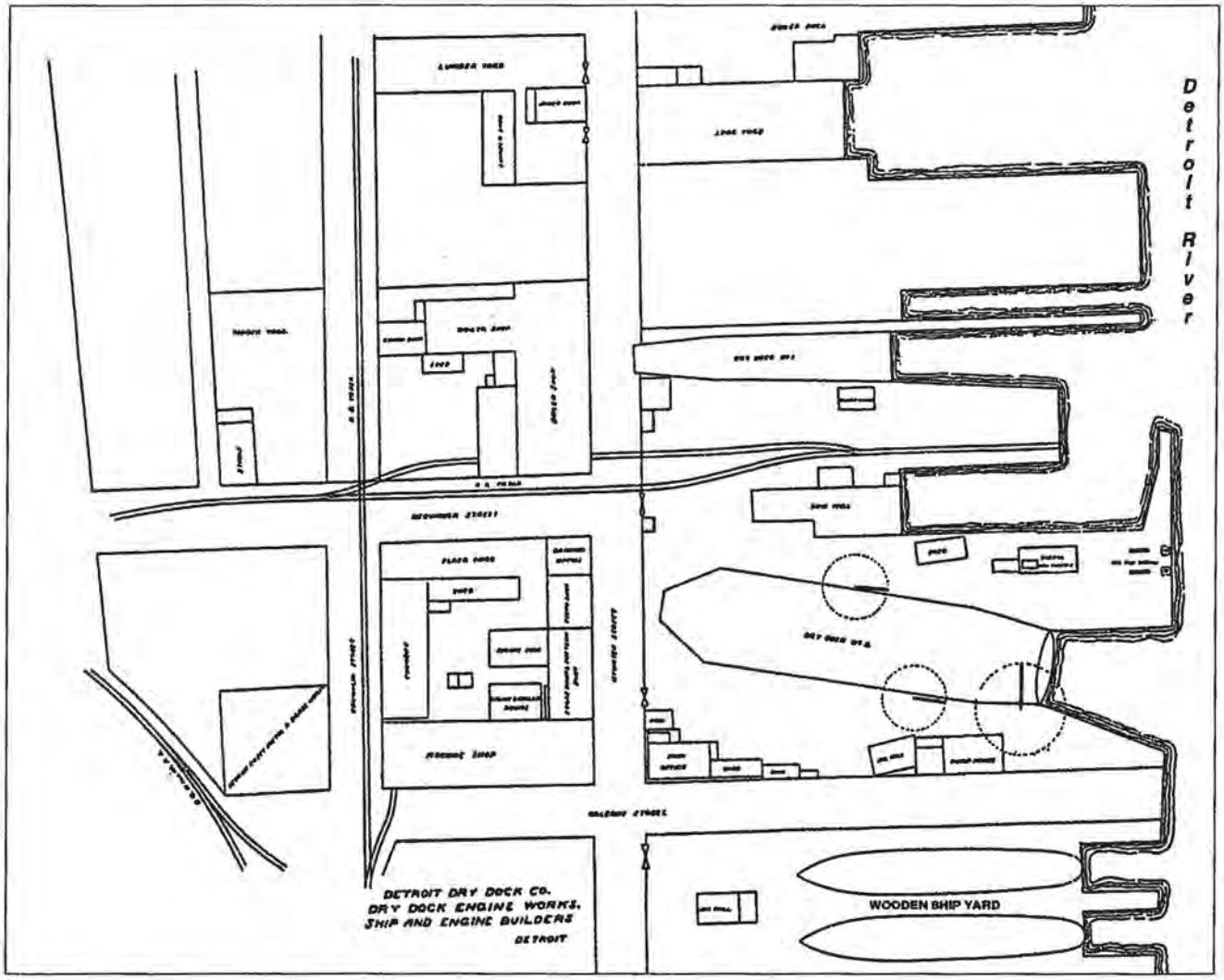


Figure 3. The Detroit Dry Dock Company's East Atwater Street yards where the F. H. PRINCE was constructed in 1890 (Detroit Dry Dock Company 1894:84).

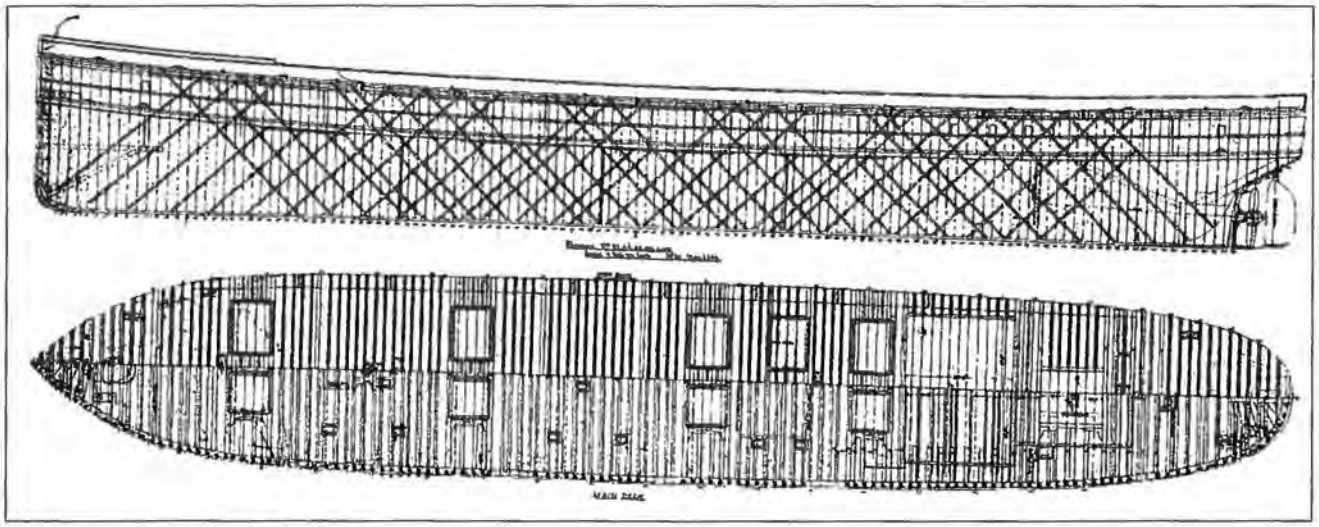


Figure 4. Detroit Dry Dock Company's construction plans for the F. H. PRINCE (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society). Note hull reinforced by metal strapping.

HISTORICAL DOCUMENTATION

CONSTRUCTION DETAILS

The *F. H. PRINCE* (Official No. 120797, hull #102) was built as a propeller, package-freight steamer in 1890 by the Detroit Dry Dock Company (Figure 3), at their Detroit River yards (Pletz 1965:283). Named for a financier of the Ogdensburg Transit Company, Frederick Henry Prince, the cost was $125,000.00 (Greenwood 1986:430). She measured 240 feet long x 42 feet wide x 23 feet deep and was 2047 gross and 1547 net tons. Her wood hull was reinforced by metal strapping (Figure 4).

The *F. H. PRINCE* was fitted with fore and aft compound engines (28-52x40; 800 horsepower) that transferred energy to turn the propeller a maximum of 74 revolutions per minute. She had two scotch boilers, each 12 feet in diameter x 11 feet long that could achieve a pressure of 120 pounds per square inch (*Beeson's Marine Directory* 1911:121). Construction drawings for the gangway and the steering arrangement and are shown in Figures 5–8). In 1910, she was converted to a sand dredge (Wachter and Wachter 1997:123).

The *F. H. PRINCE* was one of eight vessels the Detroit Dry Dock Company was commissioned to make for the Ogdensburg Transit Company. The *WALTER L. FROST* (hull #62), *WILLIAM A. HASKELL* (hull #67), and *WILLIAM J. AVERILL* (hull #68) were rigged as Ohio and Mississippi River boats, with an auxiliary sail and two funnels crosswise. The rest, *GOVERNOR SMITH* (hull #97), *JAMES R. LANGDON* (hull #98), *ALEXANDER MCVITTIE* (hull #99), *F. H. PRINCE* (hull #102), *and HENRY R. JAMES* (hull # 104) were built from the same blueprints with one stack and one mast (Mason 1954:283; Detroit Dry Dock Company 1894: 43). The ships in the line had hulls painted black and the upper portions painted white, while the stacks were painted white at the bottom and black at the top (Mason 1954:86).

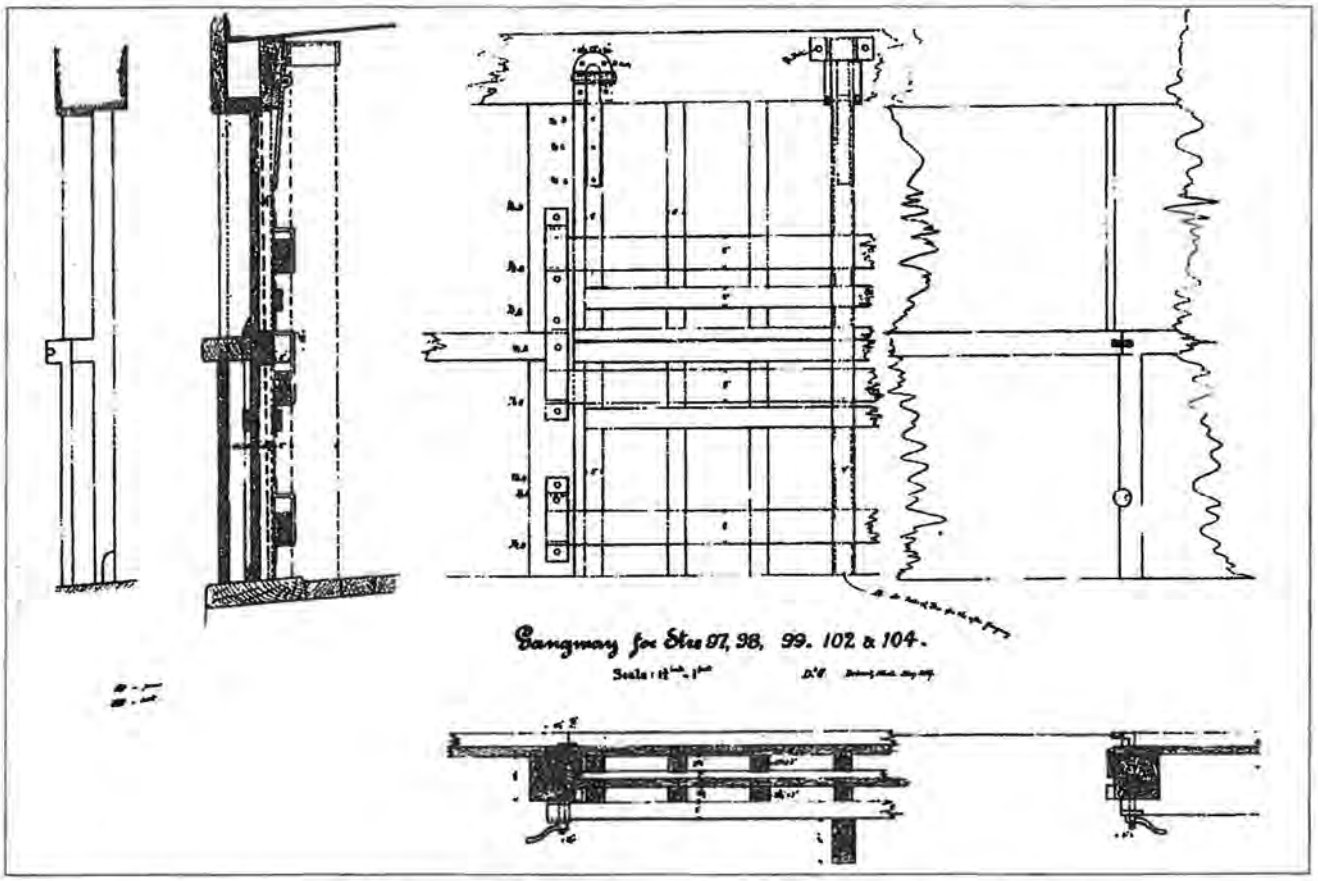


Figure 5. Gangway design for F. H. PRINCE (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society). Note pine and oak construction.

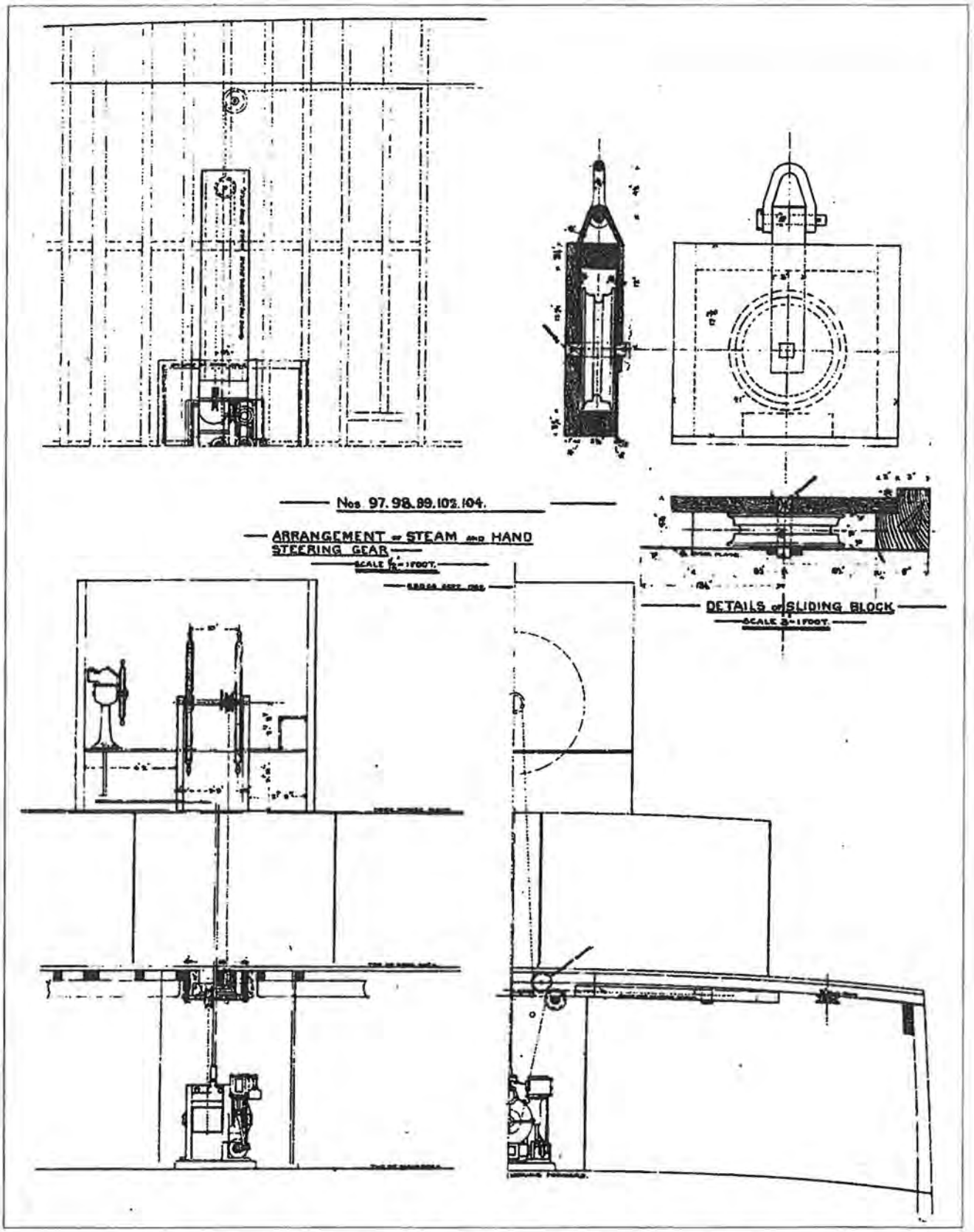


Figure 6. Steering gear arrangements of the F. H. PRINCE (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society). Plan demonstrates the multi-level dynamic of the steering works.

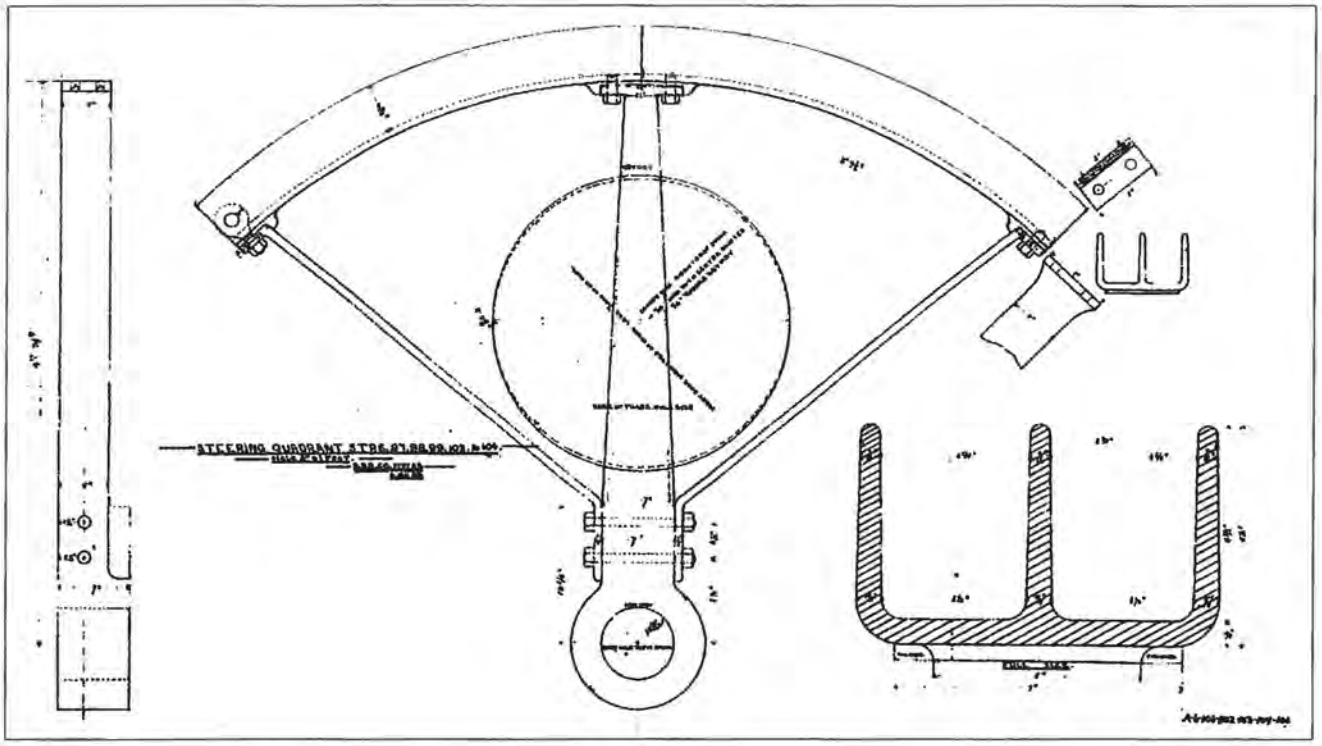


Figure 7. Steering quadrant for tiller used on the F. H. PRINCE (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society).

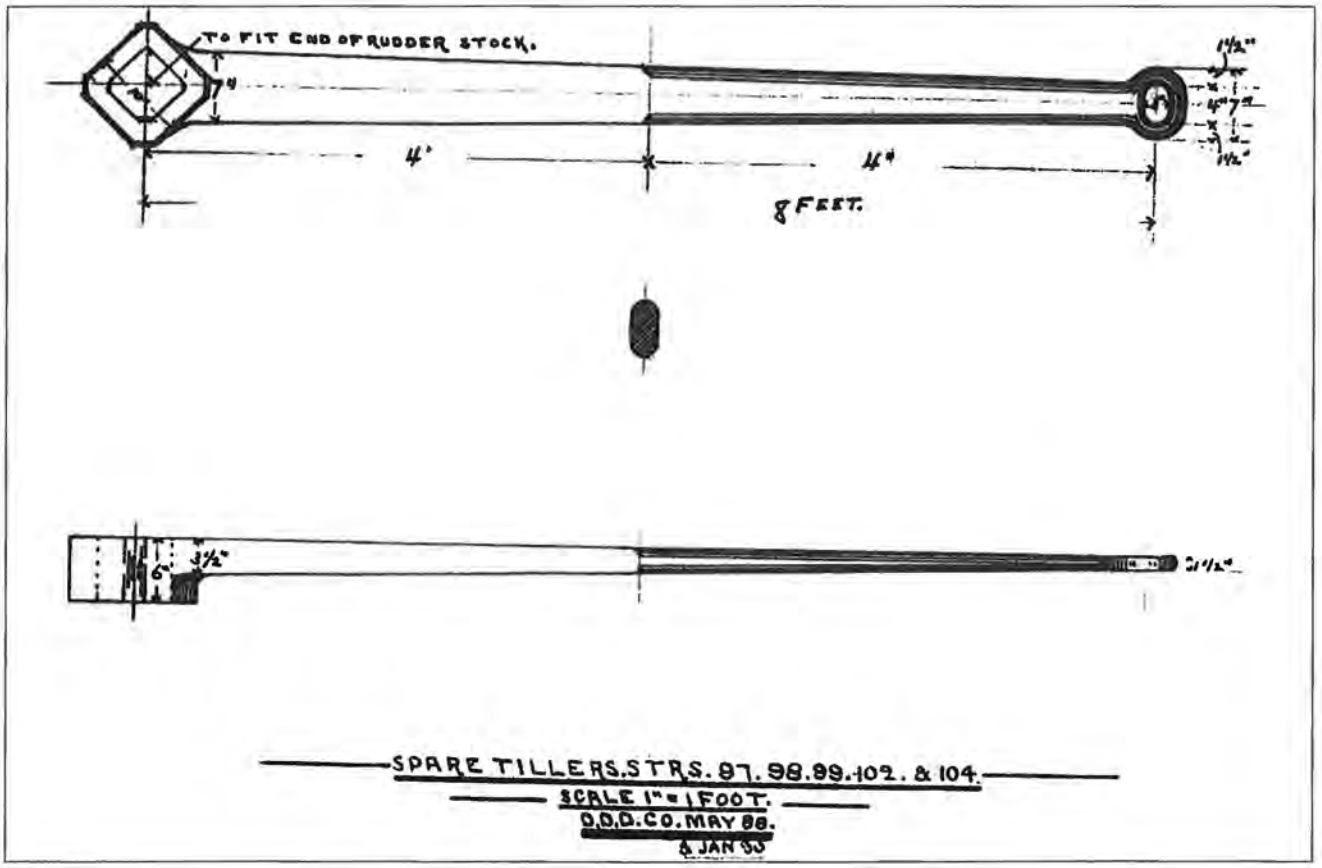


Figure 8. Spare tiller design used on the F. H. PRINCE (Naval Architecture Plans: American Ship Building Company and Predecessors 1867-1920, Great Lakes Historical Society).

OWNERSHIP AND SERVICE HISTORY

Ownership of the *F. H. PRINCE* is fairly uncomplicated. The Ogdensburg Transit Company was listed in the *Inland Lloyd's Vessel Register* as owner until 1899. That year the company was foreclosed and the line was purchased by the Rutland Transit Company on May 15, 1899 (Pletz 1965:283). The package freighter was engaged in the Ogdensburg to Chicago circuit until she was sold to the Great Lakes Freighting Company on June 15, 1910.

Package Freighter *F. H. PRINCE*. As a package freighter, the *F. H. PRINCE* delivered a variety of merchandise on the Ogdensburg to Chicago circuit. Typically, eastern manufactured material was transported to Chicago and grain was sent back on the return trip. One leg of the circuit could be completed in 4 days (Dowling 1976:1).

Based on information obtained from the *Inland Lloyd's Vessel Register*, general maintenance and repairs were routinely performed on the *F. H. PRINCE* during the 20 years she served as a package freighter (Figure 9):

1897: Re-caulked topside, refastened, repaired (*Inland Lloyd's Vessel Register* 1900:76).

1899: Repairs (*Inland Lloyd's Vessel Register* 1901:81).

1902: Re-caulked deck, repairs (*Inland Lloyd's Vessel Register* 1903:90).

1903: Re-caulked topside (*Inland Lloyd's Vessel Register* 1903:90).

1904: Re-caulked ceiling and repairs (*Inland Lloyd's Vessel Register* 1904:90).

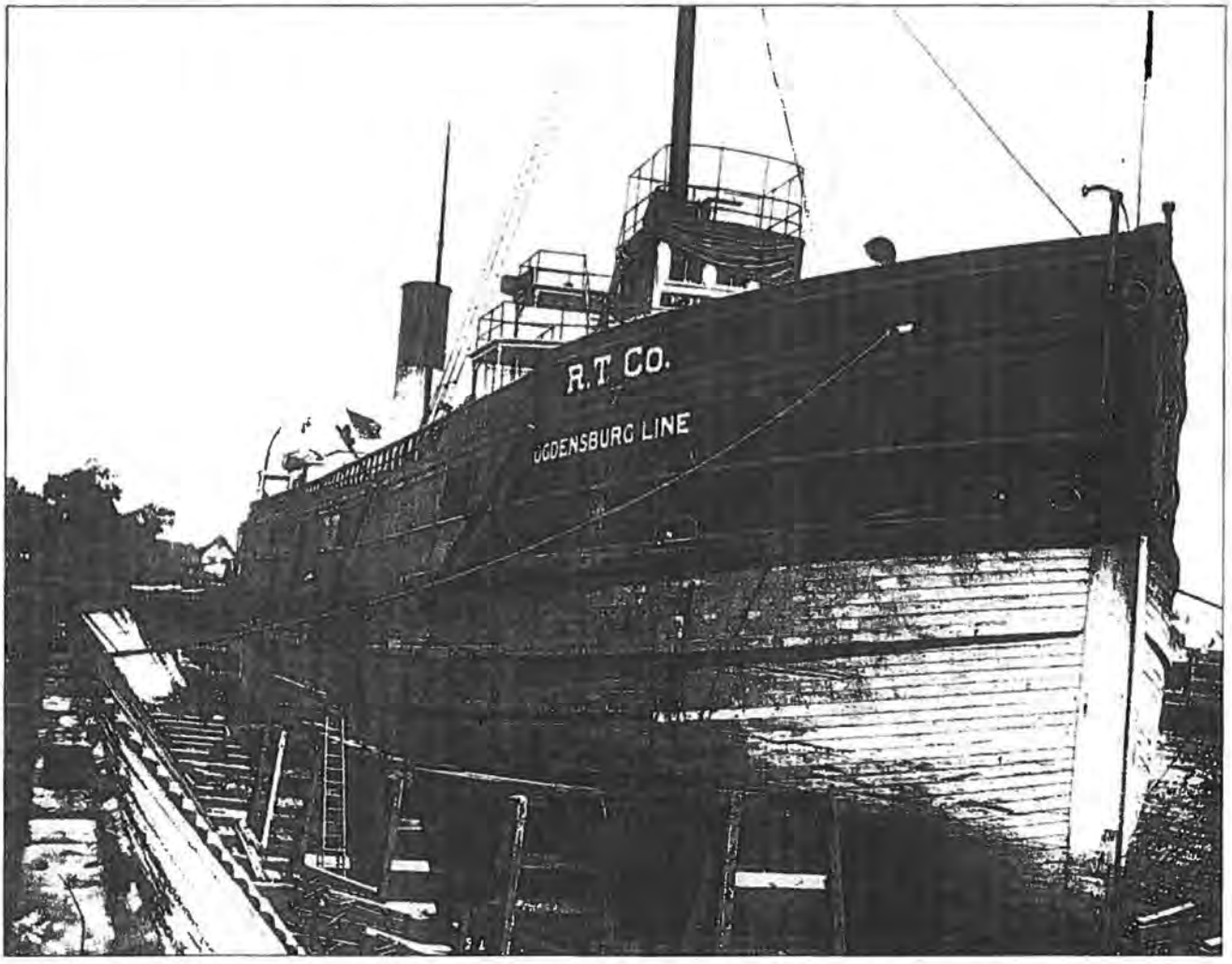


Figure 9. F. H. PRINCE in dry dock, circa 1904 (Herman G. Collection, Milwaukee Public Library).

1906: Repairs (*Inland Lloyd's Vessel Register* 1906:86).

1907: Re-caulked topside and repairs (*Inland Lloyd's Vessel Register* 1907:40).

The *F. H. PRINCE* was involved in at least two collisions during its tenure on the lakes. The first, in 1904, was recorded in the *Door County Advocate,* Sturgeon Bay, Wisconsin, July 2, 1904:

> "The steamer *F. H. PRINCE* ran into the new pier under construction at the west of the breakwater, while trying to enter Cleveland harbor last week Thursday, and had to be beached to keep her from going to the bottom, a bad hole having been cut into her bow. She was raised Saturday, towed into port and docked. The *PRINCE* has on board a large quantity of rubber goods and books and was bound to Chicago. The loss on the cargo is almost total."

The second, in 1906, was reported in the *Detroit Free Press*, June 19, 1906. Fog was listed as a major contributor to the accident:

> "The steamer *F. H. PRINCE*, of the Rutland line, collided with the schooner *OLIVER MITCHELL* twenty miles from Thunder Bay early Sunday morning. The schooner was but slightly damaged, but the steamer's bulwarks and after gangway were stove in. The *MITCHELL* was towed to Port Huron by the *PRINCE*, which then continued her trip down, passing Detroit at 1 o'clock yesterday afternoon."

Great Lakes Freighting Company. According to the *Detroit Free Press* (January 26, 1910) Capt. Herbert H. Parsons left his position as Captain of the Cleveland Cliffs Iron Company's *WILLIAM G. MATHER* in order to start a new company with Herbert King Oakes (Figures 10 and 11). March 4, 1910 the paper stated "The vessel and lake freighting agency formed by H. K. Oakes and Capt. H. H. Parsons will open offices this week at 903 Rockefeller Building, Cleveland, under the name of the Great Lakes Freighting Company. Mr. Oakes will not, as has been reported, make his residence in Cleveland, but will remain in Detroit. The affairs of the Cleveland Office will be under the active charge of Capt. Parsons as vice-president and manager. The Great Lakes Freighting company will do a general vessel agency business and will act as Lake Erie representative for a number of ships of the Franklin and Fremont steamship companies, which are managed by Mr. Oakes."

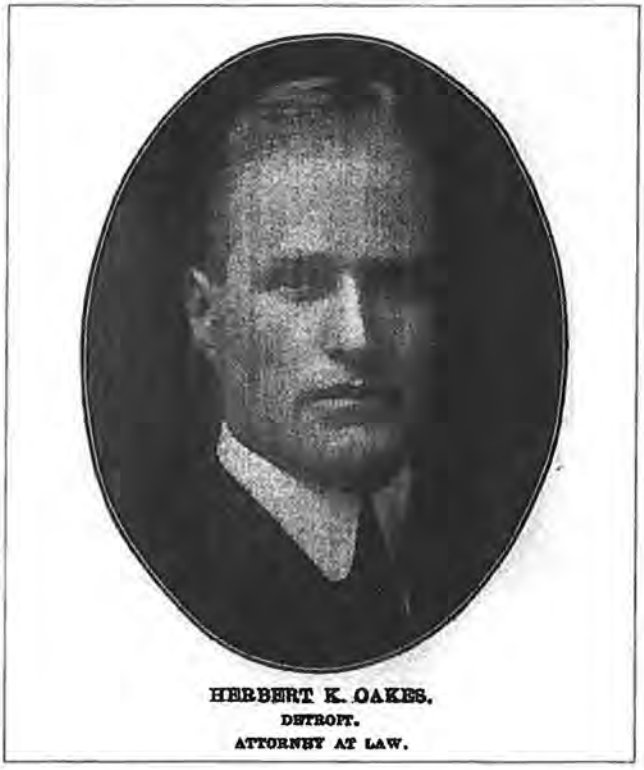


Figure 10. Herbert King Oakes, 1904 (Burton Historical Collection, Detroit Public Library).

Figure 11. Capt. Herbert H. Parsons (Pipp 1927:40).

Conversion. On August 3, 1910 the *F. H. PRINCE* went into Kenyon's shipyard for a "general overhauling" *(Detroit Free Press, August 4, 1910)*. Because the Great Lakes Freighting Company had purchased the vessel two months earlier, the overhaul most likely included the conversion to sand dredge.

Several photographs are extant which show the *F. H. PRINCE* either as a package freighter or on fire as a sand dredge, but only one of the later group provides any information regarding the kinds of alterations made to the vessel during conversion to a sand dredge in 1910 (Figure 12). In the process, most of the ship's upper structure was most likely removed, leaving a flat surface on which the crane could operate. According to the *Sandusky Register* (August 9, 1911), at least the pilothouse and other portions of the superstructure remained. Figure 12 shows that the crane was mounted on a track approximately 20 feet wide that ran much of the length of the vessel. This photograph also shows reinforcing braces placed on the sides of the cargo hold and rails on which the crane moved fore and aft. The crane, probably steam-powered, was located on deck and had a clamshell bucket (Figure 13). The bucket was used to dig up the sand or gravel and deposit these materials in the cargo holds. In order for the crane to move without interference, it may have been necessary for some of the internal bracing and cross bracing to have been removed from the cargo space (personal communications, C. Patrick Labadie, Superior Historical Research, January 17 and February 15, 2002).

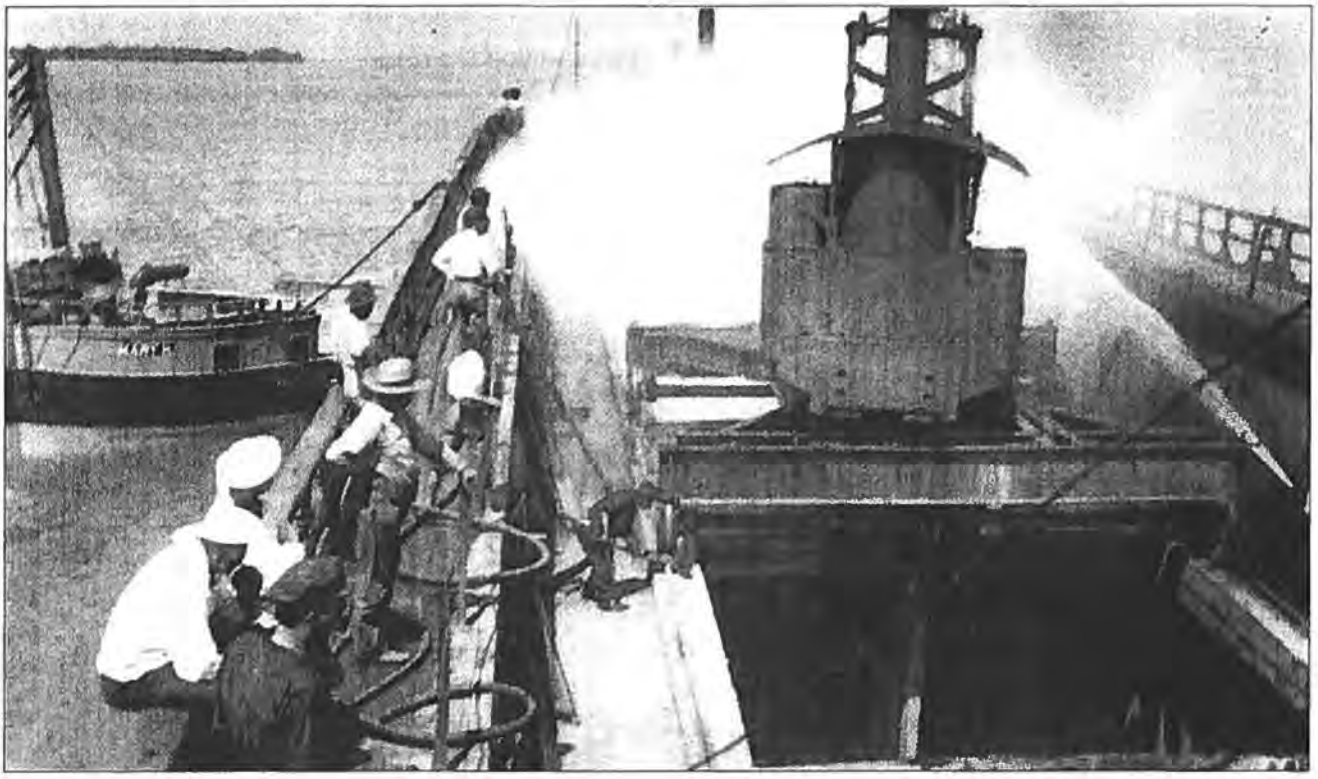


Figure 12. Photograph of the F. H. PRINCE on fire off Kelleys Island, August 8, 1911 (Gordon Wendt Collection). This picture illustrates the base of the track-mounted crane that was used to dredge sand and gravel from the bed of Lake Erie in the islands region. By comparing the crewman with the fire hose near the port side rail of the track, the distance between the tracks can be estimated to be at least 20 feet. The sand dredge MARY H. (left center) was working off Cedar Point when the fire on the F. H. PRINCE was discovered and came to the aid of the burning vessel by pumping water in an attempt to quench the fire.

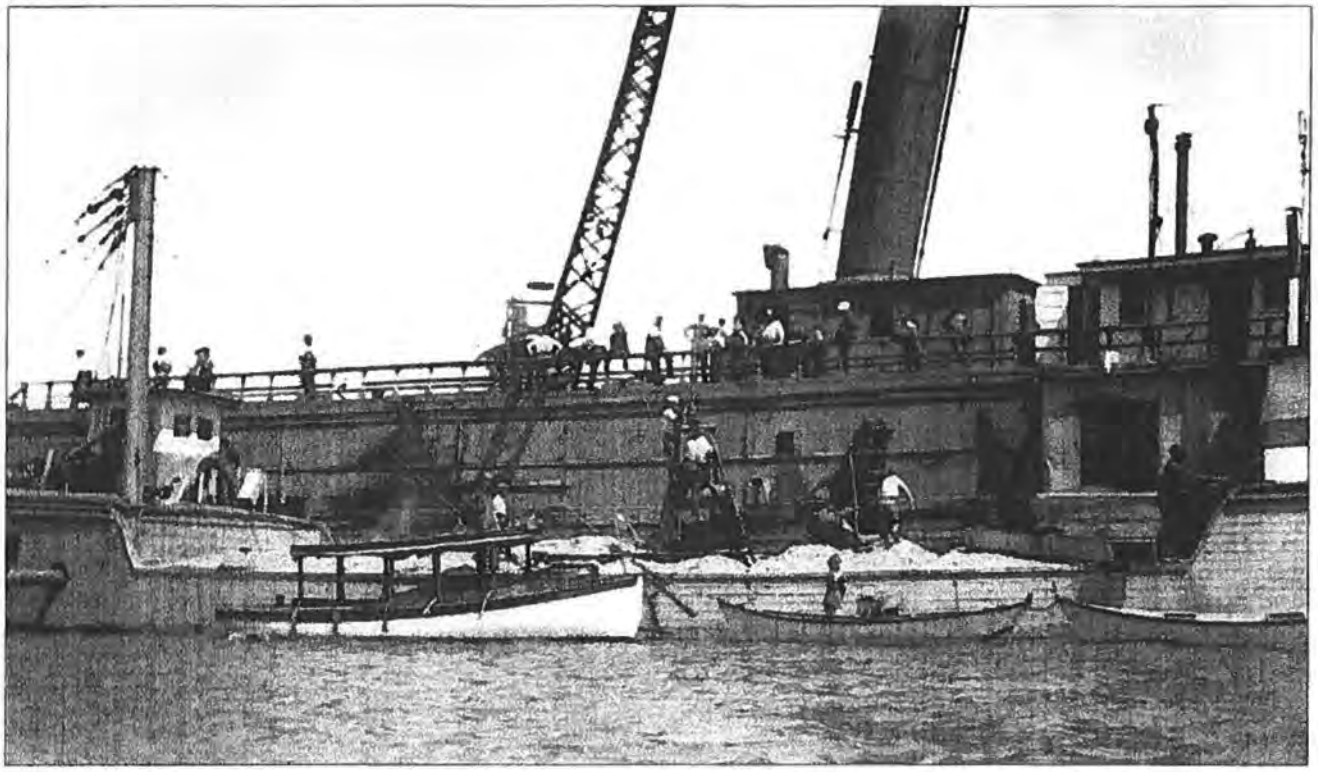


Figure 13. Photograph of the F. H. Prince on August 8, 1911 after the initial fire had been extinguished (Gordon Wendt Collection). The sand dredge MARY H., with a full load of sand came to the aid of the burning vessel and is shown here laying along the port side of the F. H. PRINCE. Note the F. H. PRINCE's large dredge bucket which has been placed on top of the MARY H.'s cargo of sand.

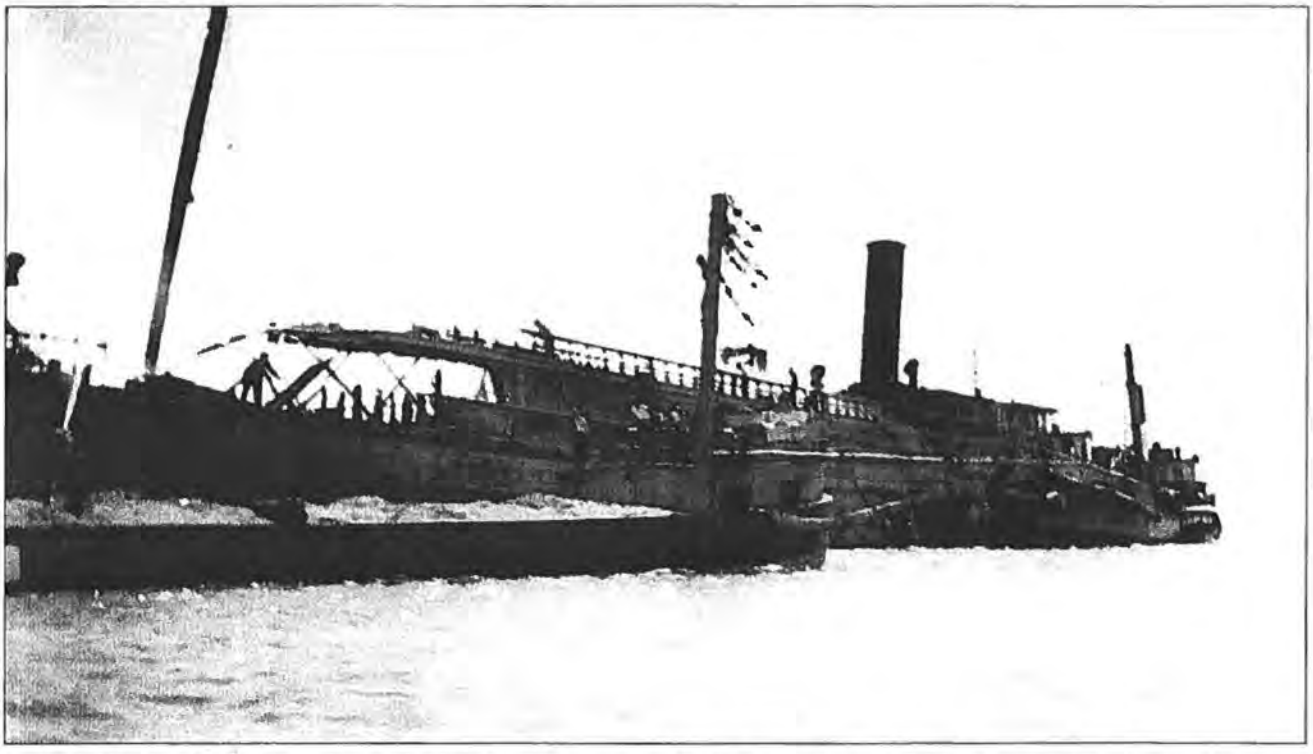


Figure 14. Photograph of the F. H. PRINCE on August 8, 1911, showing extensive fire damage to the forward end of the vessel (Gordon Wendt Collection). The sand dredges MARY H. (left center) and PROTECTION (right center) came to the aid of the burning vessel.

Loss of the *F. H. PRINCE*. As the steamer *F. H. PRINCE* passed the east shore of Kelleys Island, some 6 miles northeast of the U.S. Coast Guard Station at Marblehead, Ohio on the morning of Tuesday August 8, 1911, islanders on the shore and those on watch at the station noted flames on her bow, at times shooting as high as 30 feet (*Sandusky Register*, August 9, 1911; Wachter and Wachter 2001:152). Although Swayze (2001) states that she was driven to shore by a gale and engine fire, other accounts and photographs (Figures 14-16) indicate the lake was calm. The following accounts from Sandusky and Cleveland newspapers give vivid accounts of the loss.

Sandusky Register, Wednesday, August 9, 1911

"FIGHT FLAMES THREATENING BOAT FAR OUT IN THE LAKE

Captain and Crew of Steam Barge *F. H. PRINCE* Have Close Call Off East Shore of Kelley's Island – Sandusky Sandsuckers to Rescue

The steamer *F. H. PRINCE* of Detroit, Capt. Parsons in command and bound for Cleveland with a cargo of gravel was threatened with total destruction by fire and sixteen lives were jeopardized in Lake Erie about half a mile off the East shore of Kelley's Island, Lake Erie shortly before noon Tuesday. How the fire started no one knows. The *PRINCE* was proceeding on her way when all of a sudden the upper part of her bow was found to be in flames that at times shot as high as thirty feet and forced islanders assembled on the shore to the conclusion that the boat was doomed.

The sandsuckers *MARY H. CLINTON, PROTECTION,* and *ALBERT Y. GOWAN* all of this port happened to be at work in the Lake off Cedar Point, and their captains and crew realizing the danger the burning craft faced, went to her assistance. They arrived none too soon. By pouring four streams of water upon the *PRINCE* they succeeded in saving her but not until after her pilot house and superstructure in the rear as far back as the No. 2 hatch, had been destroyed. When the flames were discovered the Captain of the *PRINCE* ordered the boat backed into a gale that was blowing from the northwest. This had the effect of carrying the flames over the bow and away from the stern and did more than anything else toward saving the boat from total destruction. Captain and crew remained aboard the threatened steamer until the fire was put out.

Although the lifesavers from the Marblehead station were summoned to the *PRINCE*, their services were not needed as the sandsuckers and a dozen smaller boats from Kelley's Island were ready to rescue captain and crew at a moments notice.

The *PRINCE* is a wooden vessel, is 240 feet long, is of 2047 tons gross and 1, 547 tons net. She was built in Detroit in 1890 and was originally owned by Ogdensport, N. Y. parties, although she is now owned by the Great Lakes Freighting Co.

The *PRINCE* was originally a package freighter but her upper deck works were nearly all removed for the trade she has recently been engaged in.

Late Tuesday afternoon word came from Kelley's Island that the *PRINCE* had been beached and that the flames were still raging in her hull. It was apparent then that there was a great danger of the total destruction of the boat, but at last reports Tuesday night it was believed that she could be recommissioned after receiving an overhauling."

Cleveland Plain Dealer, Thursday, August 10, 1911

"ABANDONED *PRINCE* AS TOTAL LOSS

Owners of Burned Boat Believed Damage Will Exceed 75 Per Cent. Of Value

Damaged to such an extent the owners believe, that she cannot be repaired satisfactorily without more expense than the insurance will cover the steamer *F. H. PRINCE* has been abandoned to the underwriters as a constructive total loss. She lies on the beach at Kelley's Island with the forward of her hull burned almost to the water's edge.

The vessel is insured for $35, 000. The fire which caused Capt. H. H. Persons to beach the vessel ate its way almost half way to the stern. Without the cost of releasing her and towing her to a dry dock where she can be properly repaired, it is thought the damage amounts to at least the 75 percent necessary to make the ship a total loss.

No arrangements were made by the managers of the *PRINCE*, H. K. Oakes and Capt. H. H. Persons, to obtain a temporary sand boat to take up the work in which the burned vessel was engaged. This will probably be given more serious consideration after the next day or two after the survey of the *PRINCE* is made and the full extent of the damage determined.

If the wreck can be repaired it will not require such a long service of a hired ship as if a

Figure 15. Photograph of the F. H. PRINCE after the second fire on August 14, 1911 which caused the total loss of the vessel (Gordon Wendt Collection). Note the metal reinforcement strapping that was exposed once the wood hull had burned away.

new boat is built, a matter which must be determined before other arrangements can be finally made."

Sandusky Register, Friday, August 11, 1911

"STEAMER *PRINCE* NOW A TOTAL LOSS

Boat Burned Off Kelley's Id. Is Abandoned to Underwriters

Damaged to such an extent the owners believe, that she cannot be repaired satisfactorily without more expense than the insurance will cover the steamer *F. H. PRINCE* has been abandoned to the underwriters as a constructive total loss. She lies on the beach at Kelley's Island with the forward of her hull burned almost to the water's edge.

The vessel is insured for $35, 000. The fire which caused Capt. H. H. Persons to beach the vessel ate its way almost half way to the stern. Without the cost of releasing her and towing her to a dry dock where she can be properly repaired, it is thought the damage amounts to at least the 75 percent necessary to make the ship a total loss.

No arrangements were made by the managers of the *PRINCE*, H. K. Oakes and Capt. H. H. Persons, to obtain a temporary sand boat to take up the work in which the burned vessel was engaged. This will probably be given more serious consideration after the next day or two after the survey of the *PRINCE* is made and the full extent of the damage determined.

If the wreck can be repaired it will not require such a long service of a hired ship as if a new boat is built, a matter which must be determined before other arrangements can be finally made."

Sandusky Register, Tuesday, August 15, 1911

"FLAMES LICK UP BOAT

Complete Destruction of the Str: *F. H. PRINCE*

The steamer *F. H. PRINCE* beached off the east shore of Kelley's Island a week ago today after she had been swept by flames, was totally destroyed and is now a total wreck, the fire having broken out when, it is believed, the high winds of Sunday night fanned smouldering embers into a blaze.

The *PRINCE* was seized by federal authorities last Saturday after the Homegardener Sand Co., of this city, had filed a claim for salvage against her owners.

Despite the fact that she was held by the government persons unknown are said to have rushed aboard and to have stripped the boat of about anything of any value when the fire that completed the destruction was discovered Monday."

Estimated value of cargo and vessel at time of loss was $50,000 (Heden 1993:91). The remaining burned wreckage was sold for $180.00 at a U.S. Marshall sale in Cleveland, Ohio (*Beeson's Marine Directory* 1912:96). The engines and boilers were removed in 1914 by William Ellory of Detroit, Michigan (Historical Collections of the Great Lakes 2001).

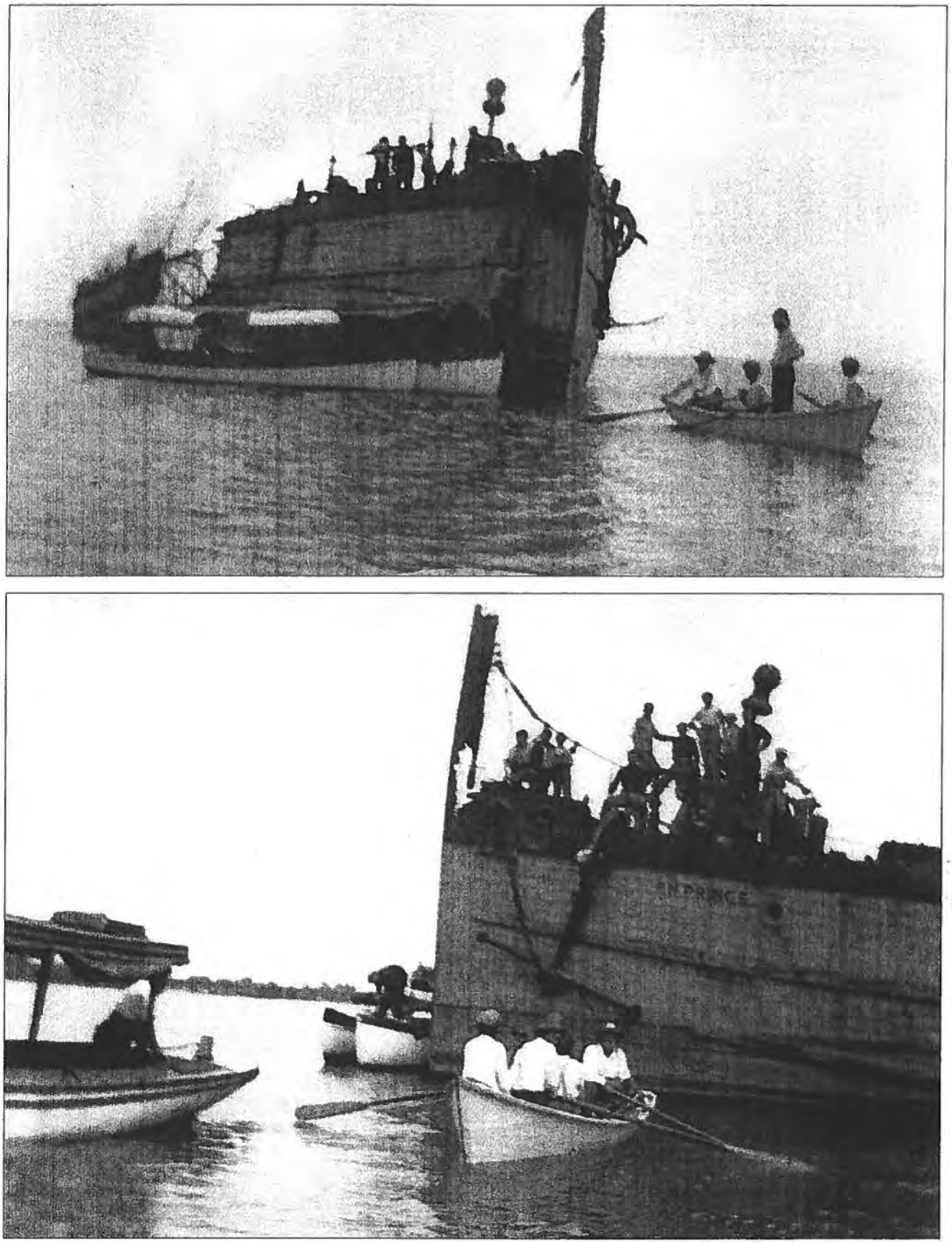


Figure 16. Starboard (above) and port bow (below) views of the F. H. PRINCE wreck after the fires of August 1911 (Gordon Wendt Collection).

HISTORY OF THE LAKE ERIE SAND & GRAVEL INDUSTRY

The final role of the steamer *F. H. PRINCE* was that of a sand dredge. Sand, a seeming commonplace construction commodity, was critically important to the growth and development of the cities along Lake Erie's shoreline in the 19th and 20th centuries. Plentiful deposits of sand and gravel occur on the lakefloor east of Kelleys Island and to a lesser extent in the North Bay of Kelleys Island, on Fish Point at the southern tip of Pelee Island, and in sandbars and spits along the mainland shores of Ohio and Ontario, particularly Cedar Point and Point Pelee. From time to time during the past two centuries each of these areas has been used as a commercial source of sand and gravel.

Because the unrestricted removal of sand from beaches and nearshore areas was beginning to cause shore erosion problems by the first half of the 20th century, the State of Ohio took steps to regulate extraction. With the formation and expansion of the Beach Erosion Board in the Department of Public Works in 1935 (Substitute Senate Bill 236 enacted May 1, 1935 and Substitute Senate Bill 34 enacted June 28, 1945), the creation of the Division of Beach Erosion in the Ohio Department of Natural Resources (Amended Senate Bill 13 enacted August 11, 1949), and the passage of the Shore Erosion Act of 1955 (House Bill 77), dredges were required to obtain leases and permits to remove mineral resources from the bed of Lake Erie (Swartzmiller 1990:141-144).

Guided by this legislation, Ohio established six commercial sand and gravel dredging areas in Lake Erie (Figure 17), each located where extraction would not adversely impact the shore (Hartley 1963:1-3). Two areas are located in Maumee bay (one either side of the Toledo harbor entrance Channel), one area northwest of the Sandusky harbor entrance channel off Cedar Point, two areas on the Pelee–Lorain Ridge 6 and 12 miles offshore between Lorain and Vermilion (Figure 18), and a final area 5 miles offshore near Fairport Harbor. Currently, several companies extract approximately 650,000 cubic years of sand and gravel from Ohio waters. Pennsylvania has also designated two large commercial sand dredging area, both located on the Long Point–Erie Ridge (Norfolk Moraine) off Erie. Ontario has also opened a commercial extraction

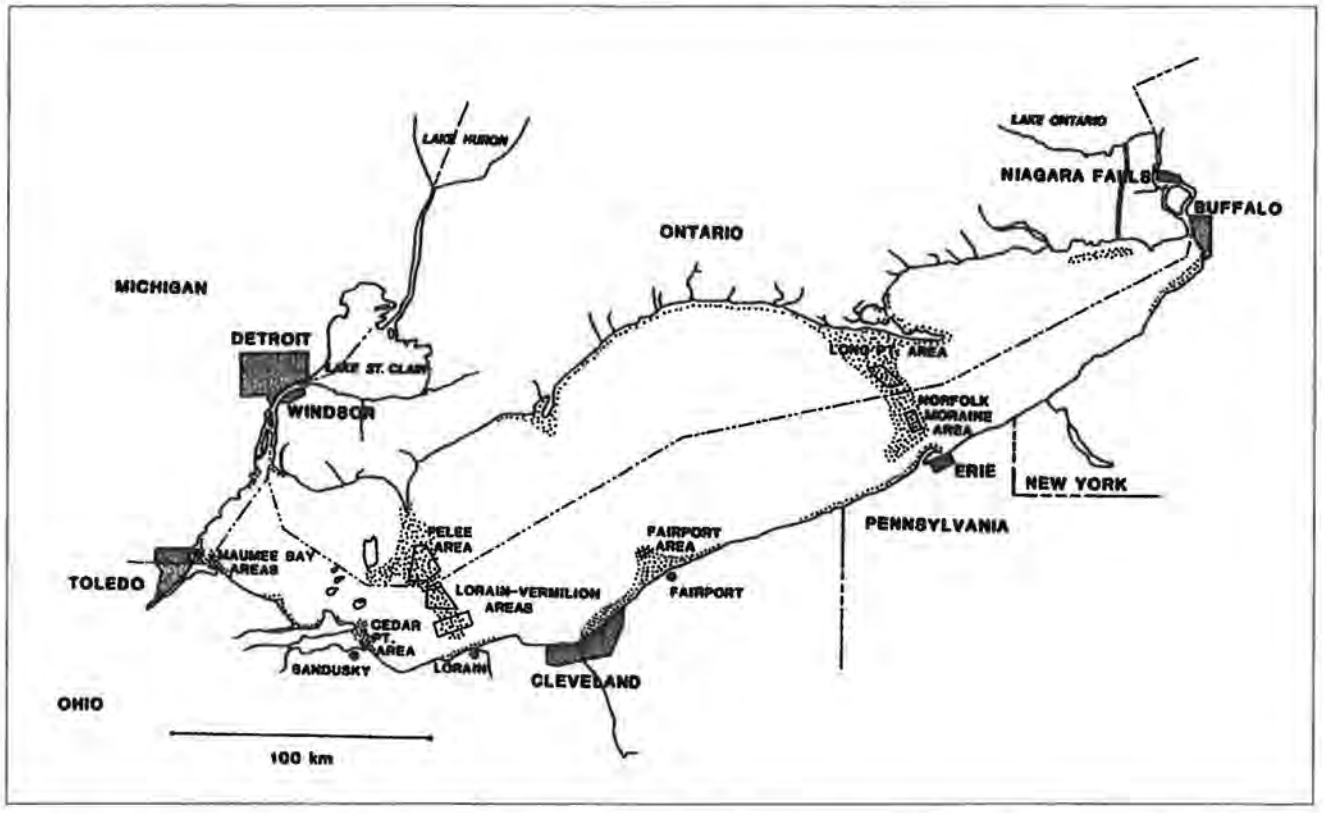


Figure 17. Commercial sand and gravel dredging areas in Lake Erie showing major sand deposits on the lakefloor (Bolsenga and Herdendorf 1993:75,96).

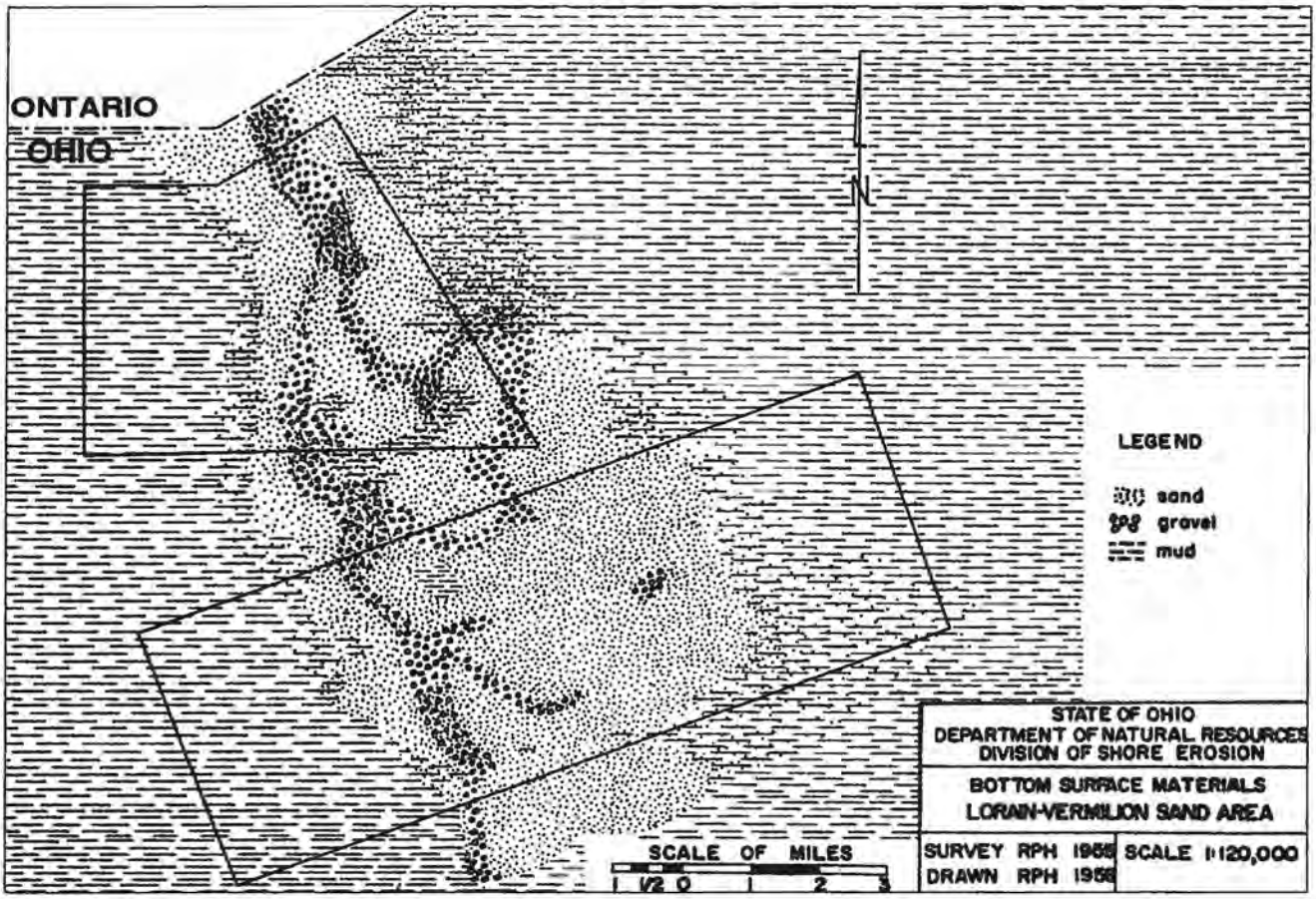


Figure 18. The Lorain-Vermilion commercial sand dredging area (Hartley 1960:42).

area on the same ridge, as well as an area opposite the Vermilion, Ohio, area on the same ridge that extends southeast from Point Pelee. The state and provincial agencies have established these area in places where extraction does not adversely effect the supply of beach-building material in the littoral zone, or disrupt nearshore-spawning fish species (Bolsenga and Herdendorf 1993:95-99).

ORIGIN OF LAKE ERIE SAND DEPOSITS

The origin of the Lake Erie commercial sand deposits are distinctly different. The Toledo and Sandusky deposits were formed by alongshore currents when the lake stood at a lower stage. The sand off Fairport, Ohio was most likely deposited as a delta at the former mouth of the Grand River which once enter the lake near Mentor Headlands. Again, the sand deposit was probably layed down when the lake was at a lower stage some 5,000 years ago. All of the other commercial areas are found on ridges that were deposited as glacial moraines 12,000 to 14,500 years ago. Waves and currents have since concentrated sands and gravel on the surface of these of these features (Bolsenga and Herdendorf 1993:95-96).

COMMERCIAL USES OF LAKE SAND & GRAVEL

Sand has many commercial and construction purposes. These include 1) concrete sand, 2) mortar sand, 3) glass sand, 4) plaster sand, 5) iron molding sand, 6) steel molding sand, 7) engine sand, 8) abrasive sand, 9) roofing sand, 10) grouting sand, 11) filter sand, 12) flooring sand, 13) potters' sand, 14) carborundum, 15) sodium silicate, 16) fill sand, and 17) artificial beach nourishment. Sand and gravel from Lake Erie can probably be found to fulfill the requirements for all the foregoing uses, except sodium silicate which requires 99% quartz (Hartley 1960:12,13). Currently, most sand and gravel dredged from Lake Erie is used for masonry cement, concrete, fill sand, and for beach nourishment. Other potential uses are as iron molding, filter, and grouting sand, but these uses require additional refining of dredged materials.

Experienced lake dredgers can visually differentiate high-quality material from poorly graded' silty, or high-shell sand. Colloquial terms used to describe marketable sizes of sand are "buckshot," which is granule-sized material (2.4 mm in diameter) used for filter sand; "coffee grounds," very coarse sand (1.2 mm in diameter) used for filter and concrete sand; and "snuff," very fine sand (0.125 mm in diameter) used as molding sand, in asphalt roofing shingles, and as a mixture with soil for golf course greens (Liebenthal 1990:2).

METHODS OF SAND & GRAVEL EXTRACTION

The dredging method used by the *F. H. PRINCE* was as exception to the practice of most of the Lake Erie sand dredges of the early 20th century. In that she was converted from a freighter, suction pumps were not installed to remove sand from the lakefloor as was the case with most of her contemporary "sandsuckers." Instead, the *F. H. PRINCE* had a track-mounted crane which moved the length of the upper deck. The crane was fitted with a large clam-shell bucket that was lowered to the bottom in the open position, then closed to extract a desired material. The sand was then lifted to the surface and distributed to various portions of the ships hold. The cane also served as a self-unloading device which facilitated deliver to variety, and at times remote, locations.

The earliest dredging methods mostly consisted of "claming" sand from beaches and nearshoes bars. When steam-powered suction pumps became available, the primarily extraction area continued to be shore deposits such as those found along Cedar Point, the North Bay of Kelleys Island, Fish Point of Pelee Island, and Point Pelee, Ontario. The dredging vessel would approach the beach and send a crewman ashore in a skiff to tie the dredge to a convenient tree. A kedge anchor would then be place off the stern to hold the vessel in position normal to the shore. Next the suction hose, fitted with a hood-like end piece, would be positioned at the shoreline and pumping would commence. As the hold filled with sand, the kedge line would be pulled in, moving the vessel into deeper water (personal communication, Karl Beatty, Sandusky Maritime Museum, February 2, 2002).

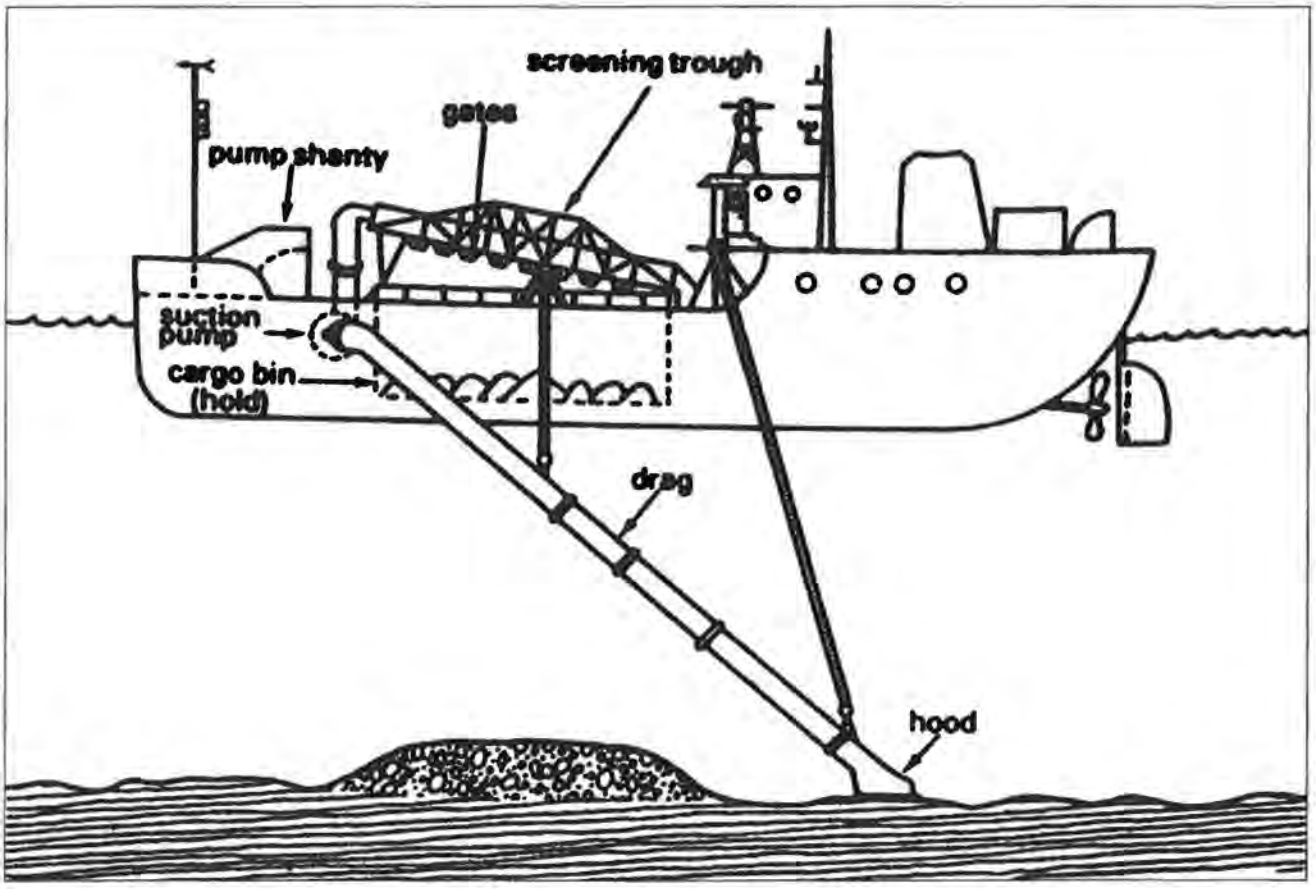


Figure 19. Typical Lake Erie suction dredge (modified from Berkheiser 1987:3).

The method of Lake Erie sand extraction in the 1950s was described by Hartley (1960:1,3). At that time Lake Erie dredging vessels ranged in capacity from 100 to 3,000 cubic yards and all used essentially the same method of extraction. Buoys were placed where the desired materials were found to assist the dredges in returning to the same limited area. Sand and gravel was then pumped through a hard rubber hose, 12 inches or more in diameter, the end of which was equipped with a steel shoe with a large open grid or screen. The shoe was allowed to drag or troll along the bottom (Figure 19). The bottom materials passed through a centrifugal pump with rubber impellers into a screened trough. The desired materials dropped through the screens into the bin of the vessel and the unwanted material was washed back into the lake (Figure 20). Sand and gravel cargoes were then delivered to the Ohio ports of Toledo, Port Clinton, Sandusky, Lorain, Cleveland, Fairport, and Ashtabula, Pennsylvania port of Erie, and New York ports of Dunkirk and Buffalo.

An environmental assessment of sand dredging in Pennsylvania waters of Lake Erie was conducted in 1984 and 1985. The study report described the dredging operation of the *J. S. ST. JOHN* (Figure 21) owned by the Erie Sand Steamship Company (Herdendorf 1985:1). The physical characteristics of this vessel are as follows:

Type: trailing-arm suction dredge
Length: 120 feet
Capacity: 550 cubic yards
Length of hydraulic boom: 65 feet
Dredging time to fill hold: 2.25–4.0 hours
Pumping rate:
Water: 430–540 cubic yards per hour
Sand: 135–245 cubic yards per hour
Total: 675 cubic yards per hour
(approximately 2,270 gallons per minute)

During the normal operation of this dredge, ballast water was taken onboard at the dock before departing for the dredging area. The water was pumped

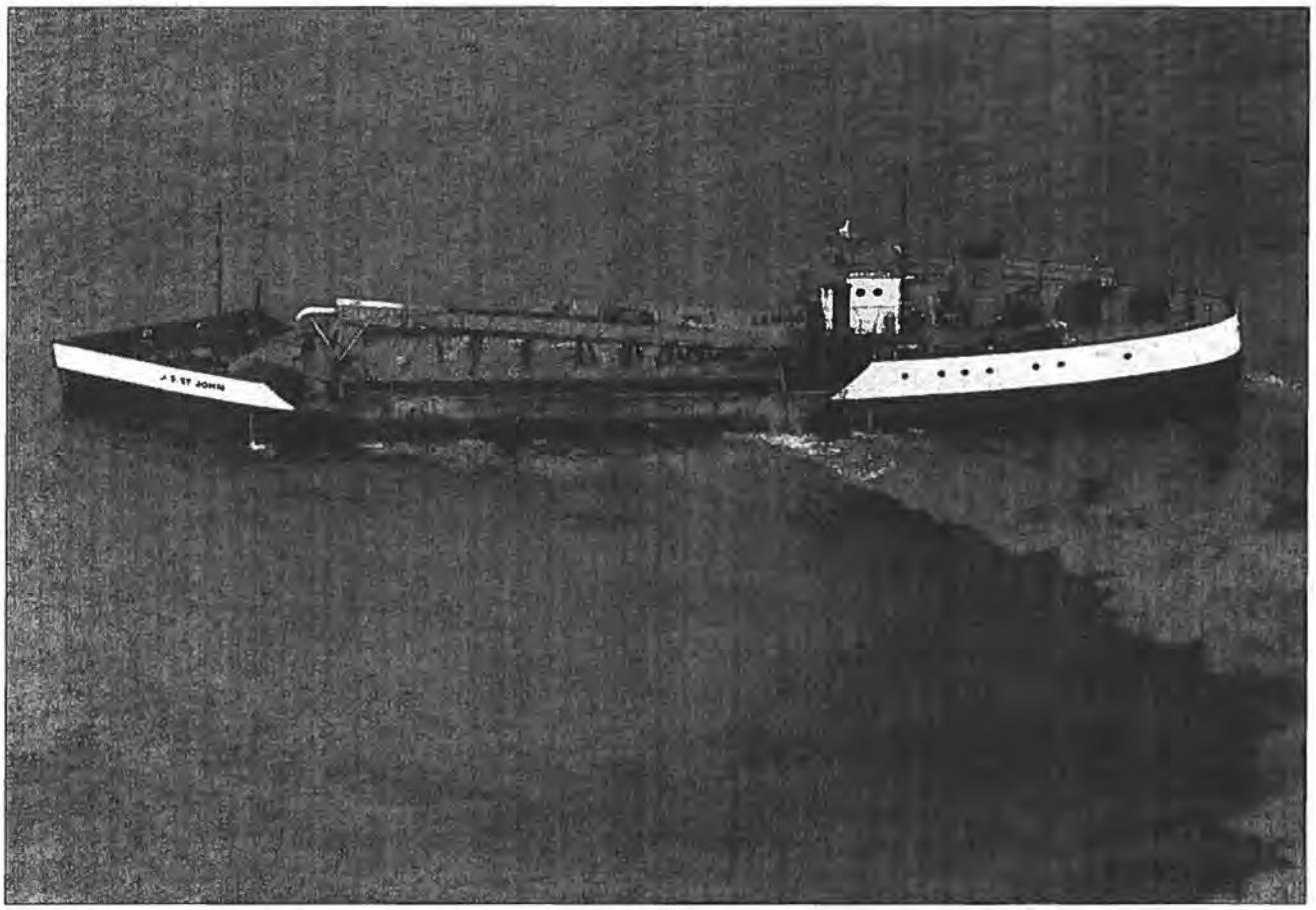


Figure 20. Sand dredge J. S. ST. JOHN working on the Long Point-Erie Ridge (courtesy of Erie Sand Steamship Company). Note turbidity plume at the stern of the vessel caused by fine-grained material washed from the sand.

Figure 21. The sand dredge J. S. ST. JOHN, filled with ballast water, departing Erie harbor for the Long Point-Erie Ridge (courtesy of Erie Sand Steamship Company).

into the cargo box, a bin 60 feet by 16 feet and 14 feet deep, to a depth about 8 to 10 feet. The vessel then proceeded from Erie harbor to the dredging area, approximately 9 miles offshore of Presque Isle, which required about 2 hours of travel time.

Dredging was done by dragging a suction head over the bottom and pumping a mixture of sand and water onboard the vessel. For concrete sand (medium- to coarse-grained aggregate) the pumping ratio was approximately 1 part sand to 4 parts water, whereas for mason and snuff sand (fine-grained aggregate) the ratio is about 1 part sand to 3 parts water. As the sand enters the cargo box through a series of grated openings in an elevated raceway, water in the box is displaced and flows out through ports (hatches) at the upper portion (above deck) portion of the box. Most of the water in the box is removed in this fashion. Between 2 to 4 hours was required to fill the box with sand, a volume of 550 cubic yards. Once the box was filled to a desired level with sand, any remaining water was removed with a suction hose.

Liebenthal (1990:2) described the current process of Lake Erie sand extraction which differed very little from that of 50 years ago. By the 1980s, the advent of the LORAN-C navigational system eliminated the need to place buoys or barrels to mark desired lake deposits. Dredging is now done with a long steel and rubber pipe called a drag. The drag is still 12 inches or more in diameter and has a boxlike free end called a hood. The square bottom of the hood is open with a steel grid which keeps logs and other debris out of the drag (Figure 19). The drag is carried at deck level alongside the ship while the vessel is traveling to and from the dredge area. Once over the desired deposit, the drag is lowered and the vessel slowly circles during the loading process. As the hood drags over the bottom, the grid breaks up the compacted sand, permitting it to be sucked up the pipe by powerful centrifugal suction pump, as a slurry of sand and water. Lake Erie sand dredges are capable of lifting sand from a maximum of 90 feet. After passing through the pump, the slurry passes down a trough running the length of the cargo bin or hold. The trough has openings in its bottom,

spaced evenly along the entire length. The openings have removable screens corresponding to the size to the desired grain size of the sand; thus, the dredged material is sized to specification as it drops through the screens into the vessel's hold. The openings can be individually opened and shut off so that the load can be evenly balanced. Undesired fine sand, silt, clay, shale, and shell particles, especially those with lower specific gravities, are carried along in suspension and washed overboard (Figure 20).

Dredging in the Maumee River Estuary (Herdendorf 1970:1,2; Brant and Herdendorf 1972:417-416) in the 1960s and 1970s was also accomplished with the use of a floating stationary processing plant that was moved from place to place by a pusher boat. Once over the desired deposit, the plant was held in position with anchors and hydraulically operated spuds. The processing plant was capable of crushing, screening, and washing sand and gravel. The plant utilized a rotary cutterhead to loosen the often gravel-rich deposits. The processed material was then loaded by conveyors onto barges, which when filled were towed to dockside storage areas in Toledo by a tug (Herdendorf and Cooper 1975:5-8).

COMMERCIAL SAND & GRAVEL PRODUCTION

The earliest known records of sand and gravel production from the Ohio waters of Lake Erie were reported by Chief Engineer of the War Department (1932). The average annual sand production delivered to Ohio ports from 1921 to 1930 amounted to 940,600 tons (723,500 cubic yards). In 1931 specific port data indicates the following production:

Toledo Harbor	297,628 tons
Port Clinton:	785 tons
Sandusky:	263,575 tons
Lorain	163,283 tons
Cleveland	129,300 tons
Conneaut	535 tons
Total	855,106 tons
	(657,774 cubic yards)

In addition, 1,075,572 tons of Lake Erie sand were delivered to Detroit and 122,517 tons to River Rouge, Michigan.

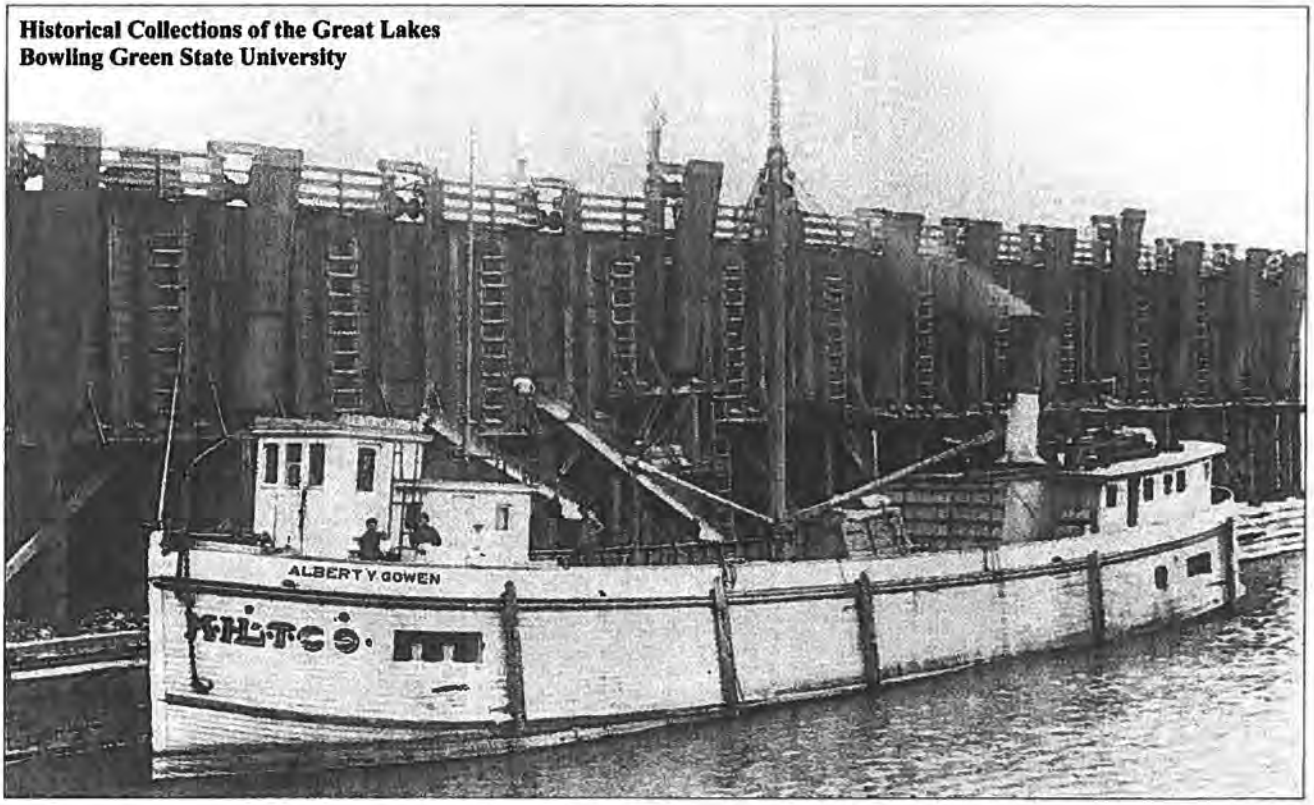


Figure 22. Steamer ALBERT Y. GOWEN. Originally built as a bulk freighter for the Kelleys Island limestone trade, this vessel was later used in the Lake Erie sand trade.

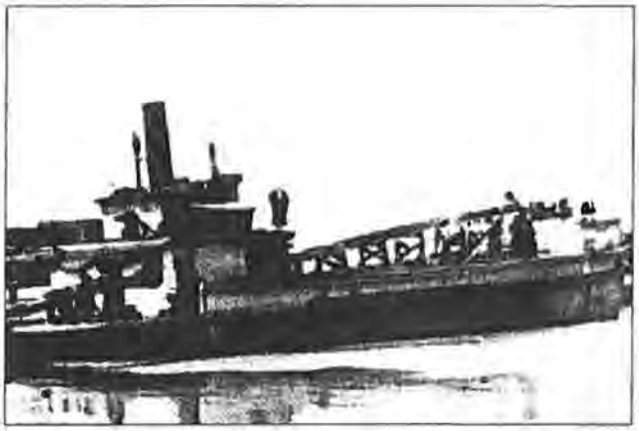


Figure 23. Sand dredge PROTECTION (John Greenwood Collection).

Ohio began collecting a royalty of $0.03 per cubic yard of commercially dredged sand in 1935. By 1965 this rate had risen to $0.15 per cubic yard; in that year 390,196 cubic yards were removed from within Ohio waters yielding royalty payments of $58,529.42 to the State (Herdendorf 1979:17-19). Since 1949, when the Ohio Department of Natural Resources began administering commercial extraction, more than 23.5 million tons of sand and gravel were removed from the bed of Lake Erie for the next 40 years, yielding royalty payments in excess of $2.1 million (Liebenthal 1990:2). Typically the Lorain-Vermilion areas accounted for 53% of the production, followed by 20% each for the Maumee Bay and Fairport areas. The Cedar Point area, which was discontinued in the 1970s, contributed about 7% up until that time.

SAND DREDGING VESSELS

Clean sand and gravel deposits, washed by lake currents, have been extracted commercially from the Sandusky -Lake Ere Islands region for over 120 years. John Homegardner initiated the Sandusky sand trade in 1881 with the scow schooner *MARY ELLEN*. This vessel was originally built for Homegardner by G. Jackson of Sandusky in 1863 to serve in the lumber trade. Her dimensions were 61'9" in length x 16'7" in breadth of beam x 3'2" in depth of hold with a tonnage of 28.27. Homegardner brought sand from Cedar Point to Sandusky where he stockpiled it on the east pier at the foot of Wayne Street. This is the first known marine transport of sand in the area (Wendt 1984:6).

By 1889, Homegardner owned the steam barges *EMPIRE* and *JOSEPHINE* which carried sand as well as wood. Later he owned and operated the sand boats *ELLA G.* and *MARY H.* The latter steamer was rebuilt from the *CITY OF NICOLLET* in 1897 at the Sandusky Dry Dock Company and was named for Mary Homegardner, wife of John. The *MARY H.* in one of the vessels that came to the assistance of the burning sand dredge *F. H. PRINCE* in 1911 off the east side of Kelleys Island (Figure 12).

The largest sand trade operator in Sandusky from the late 19th to the mid-20th centuries was the Kelley Island Lime & Transport Company (KIL&T Co.) which operated from the west pier at the foot of Perry Street [present location of the Sandusky Yacht Club], later from the foot of McDonough Street, and still later from the Baltimore & Ohio Railroad (B&O) pier near Franklin Street (Wendt 1984:7). Through the years from 1886 until 1955, when the sand operation was sold to Erie Sand & Gravel Company of Erie, Pennsylvania, KIL&T co. operated at least 12 sand dredges including: *ALBERT Y. GOWEN*, *ROLAND*, *ALVAH S. CHISHOLM*, *PROTECTION*, *KELLEY ISLAND*, *PENOBSCOT*, *ALICE M. GILL*, *CLINTON*, *W. R. STAFFORD*, *JOHN M. McKERCHEY*, *HYDRO*, and *ROCKWOOD* (Figures 14, 22-28).

Figure 24. Sand dredge KELLEY ISLAND operating in an ice storm (Karl Beatty Collection).

The remains of two of these vessels can still be seen in Sandusky harbor. The *ALICE M. GILL* and *W. R. STAFFORD* burned and rotted in the harbor and their sunken bones remain there—the former at the foot of Shelby Street and the latter in the western slip of the former B&O dock [now Shoreline Park]. The *ALVAH S. CHISHOLM* also burned at Sandusky and was towed up Sandusky Bay to Gypsum to rot (Wendt 1984:7). The *ALBERT Y. GOWEN* and the *PROTECTION* also came to the assistance of the burning sand dredge *F. H. PRINCE* in 1911 (Figure 14). In 1924 the sand dredge *PROTECTION* capsized

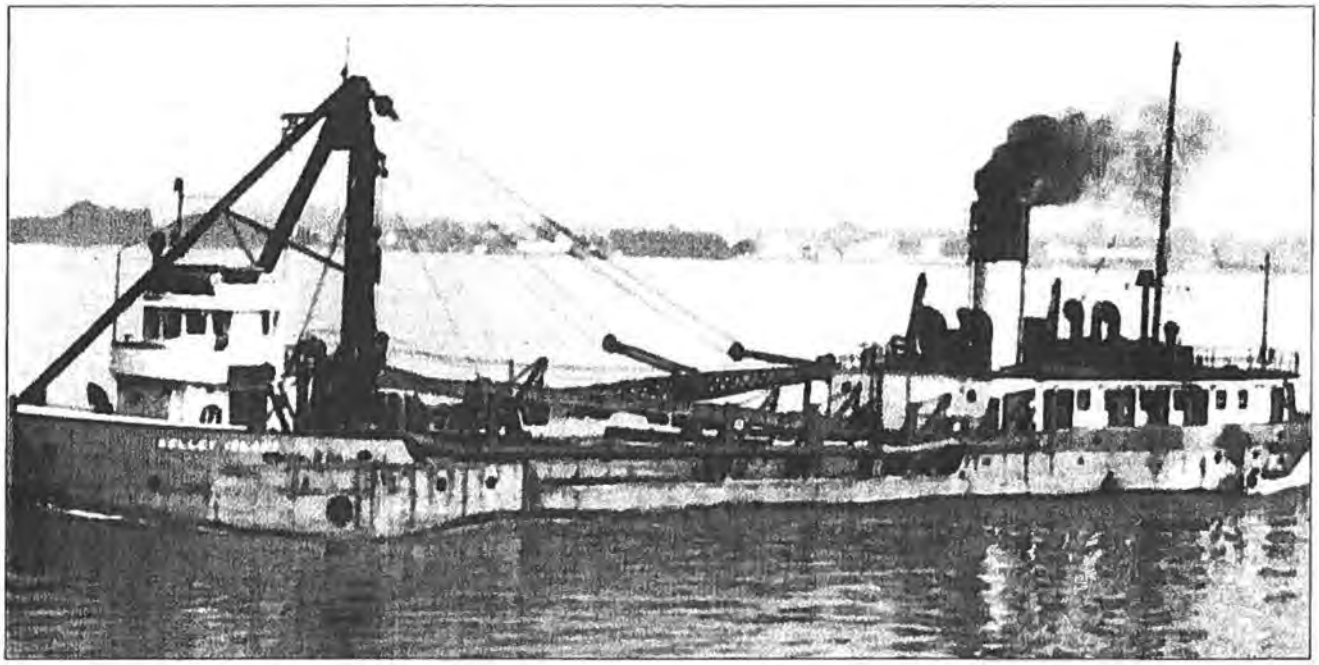


Figure 25. Sand dredge KELLEY ISLAND showing hatch near port bow that was not sealed allowing vessel to fill with water and sink on May 2, 1925 with the loss of 9 crewmen (John Greenwood Collection).

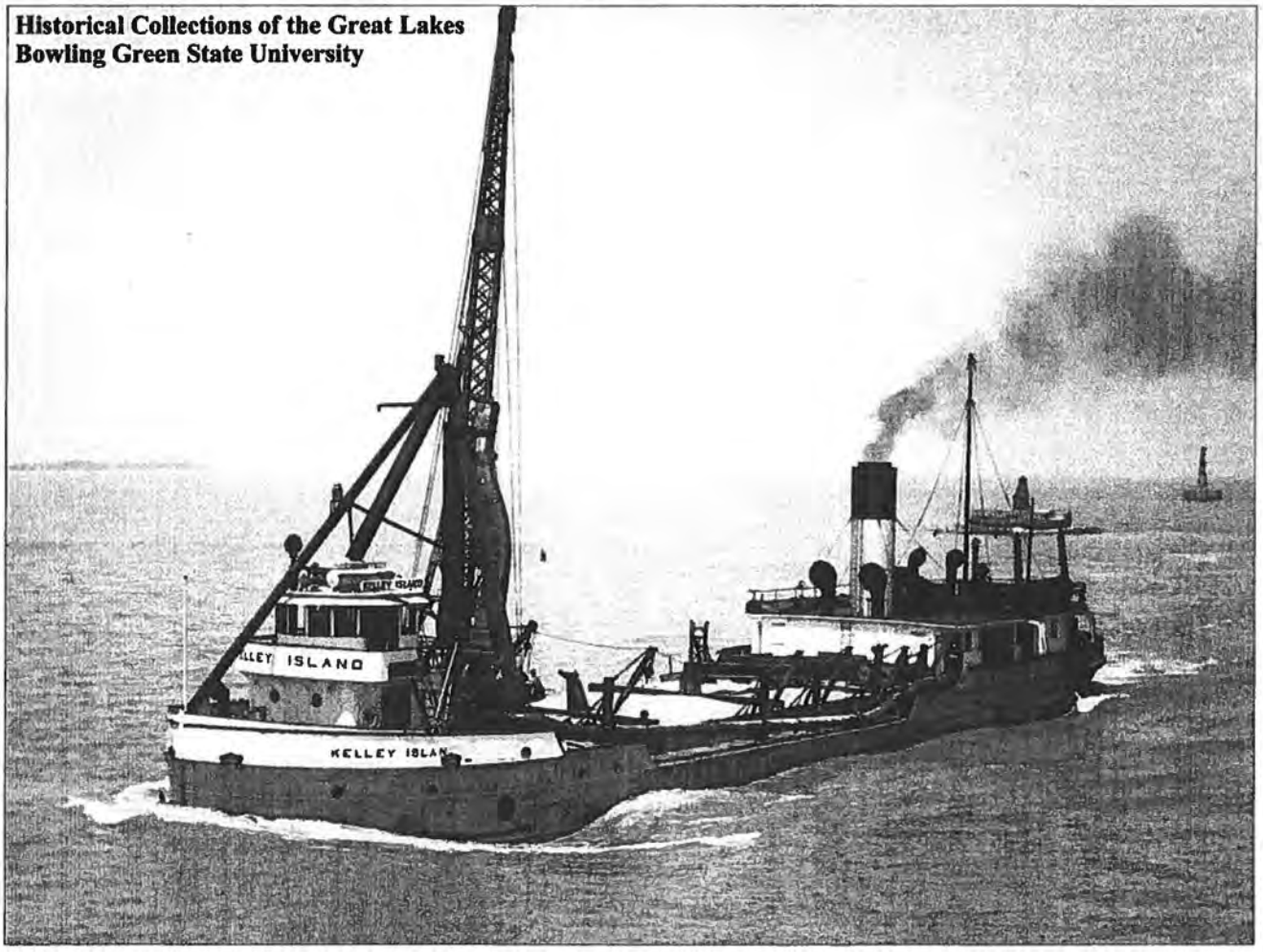


Figure 26. Sand dredge KELLEY ISLAND showing self-unloading boom installed in 1936.

and sank near the Sandusky entrance channel off Cedar Point with the loss of several men. The 186-foot dredge *KELLEY ISLAND* (Figures 24-26) capsized and sunk of Pelee Island in May 1925 due to an error in stowing her sandsucking equipment. A port was left open, allowing the vessel to quickly fill with water. Although later recovered and put back into service, 9 crewmen lost their lives in the accident (Greenwood 1981:292).

The steamer *CLINTON* was originally built as a steam barge bulk freighter in 1898 at Mt. Clemens, Michigan by Remande Chabideaux. Her dimensions were 104' in length x 25' in breadth of beam x 6' in depth of hold. She was of wooden construction, mostly oak (Greenwood 1984:188). In 1913 she was converted to a sandsucker at the Lake Erie Dry Dock & Mill Company in Sandusky, Ohio (Figure 27). She served the KIL&T Co. for about 15 years, extracting sand from shallow nearshore deposits. In 1929 she was abandoned for age and condition. Most of the sand dredges of her period had a very similar appearance, especially the bow boom which supported a suction pipe fitted with an extraction hood at its forward end. This was true of the 180-foot-long sand dredge *JOHN M. McKERCHEY*, which unfortunately foundered off Lorain, Ohio on October 16, 1950 with the loss of one crewman (Figure 28).

In the 1930s, the *RELIANCE* served in the sand trade as a tug for the Home Sand Company of Fremont, Ohio (Wendt 1984:51). She was originally built for ferry service at Sandusky in 1911 by Christ Hansen for John Neuman. Her dimensions were 51'7" in length x 15'2" in breadth of beam x 2'5" in depth of hold with a tonnage of 8.0 and was powered by a 45 horsepower Regal engine. In her early years she operated for charters and as a back-up ferry for the *ARROW* on Lake Erie islands run. John Neuman sold her to George Maley in 1921 to serve as the Sandusky to Bay Point ferry, providing a connection with the electric rail line from Toledo and Port Clinton. Later, after a decade of service in the sand trade, the *RELIANCE* was abandoned in 1941 due to advanced age.

In the early years of the last century, Edward Lamp—an entrepreneur from Vermilion, Ohio, reasoned that he could find a deposit of red clay in Lake Erie on a submerged mound that was known to lies several miles off Vermilion harbor (personal

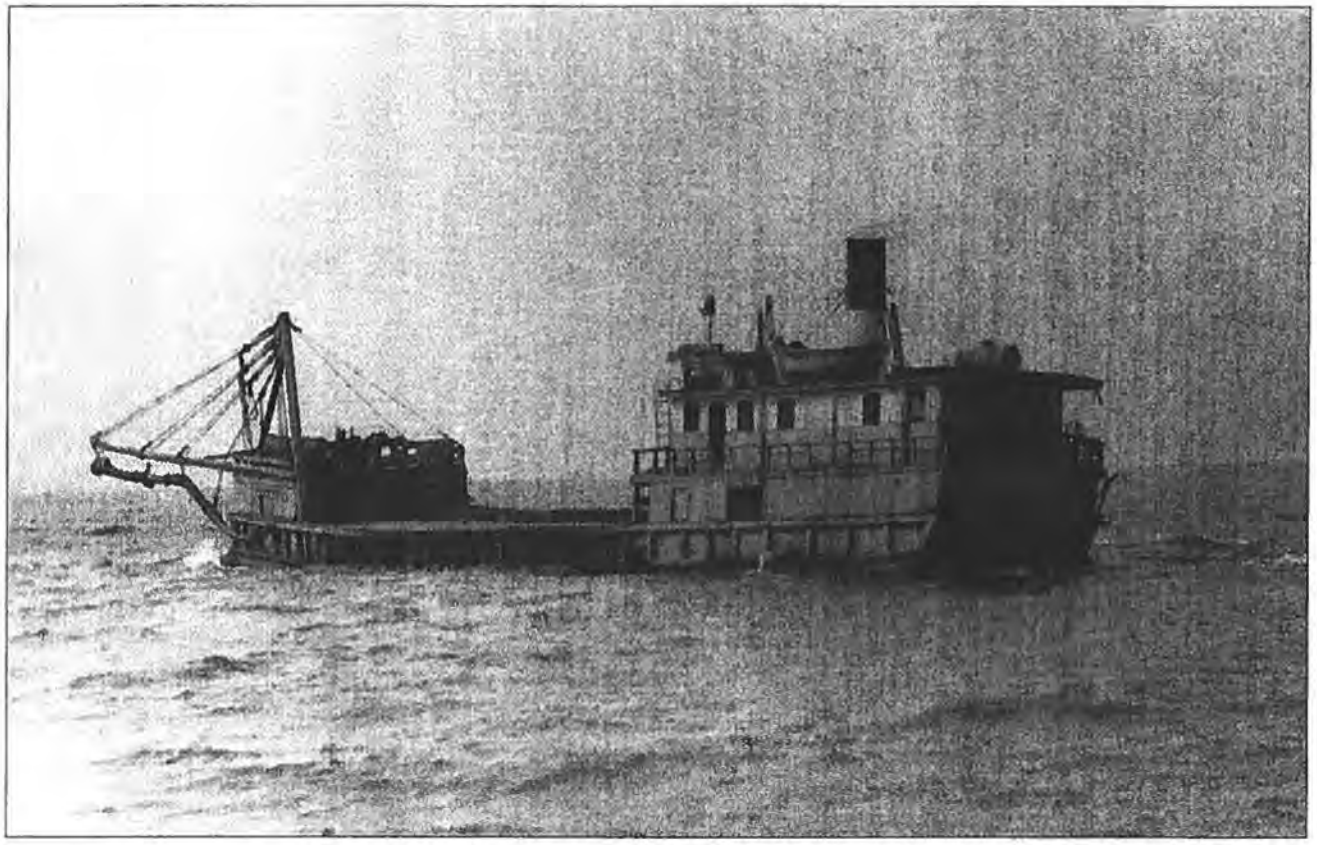


Figure 27. Sand dredge CLINTON showing distinctive square bow (Karl Beatty Collection).

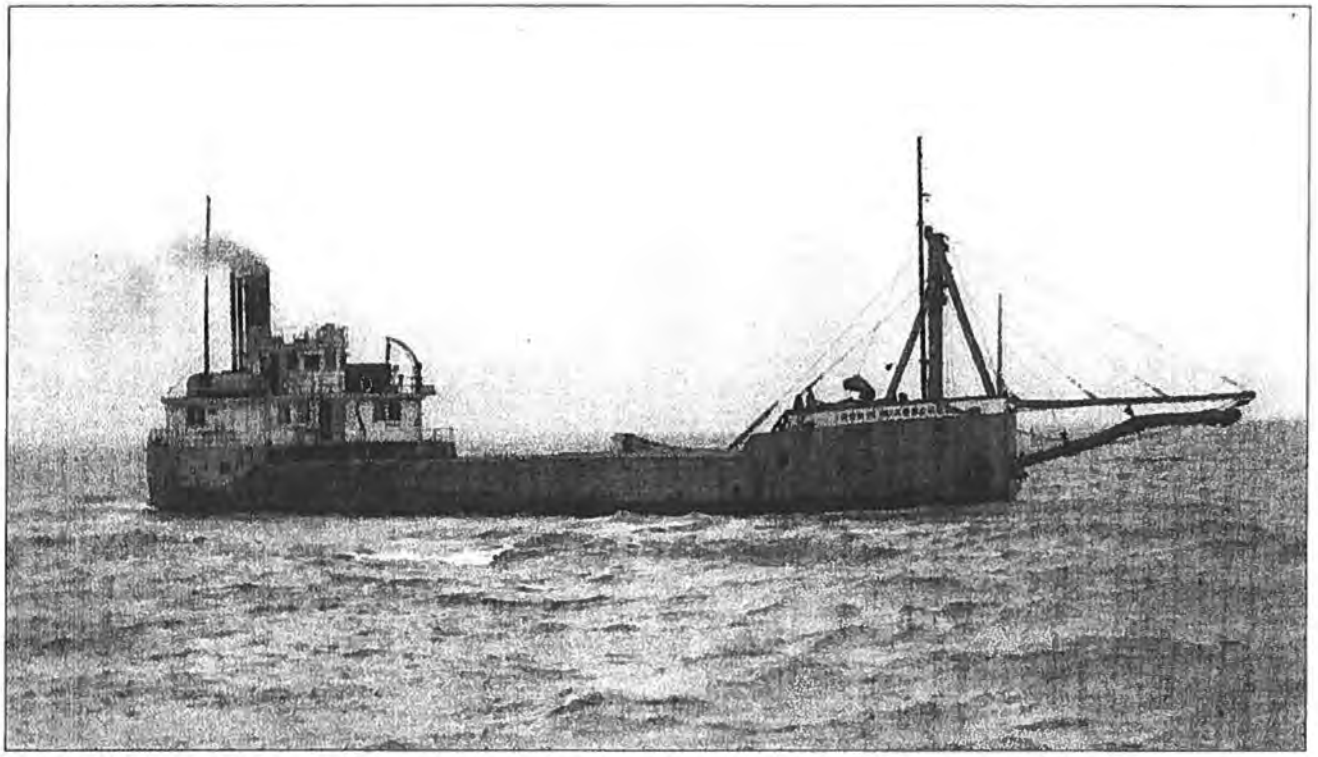


Figure 28. Sand dredge JOHN M. McKERCHEY showing suction pipe and hood (Karl Beatty Collection).

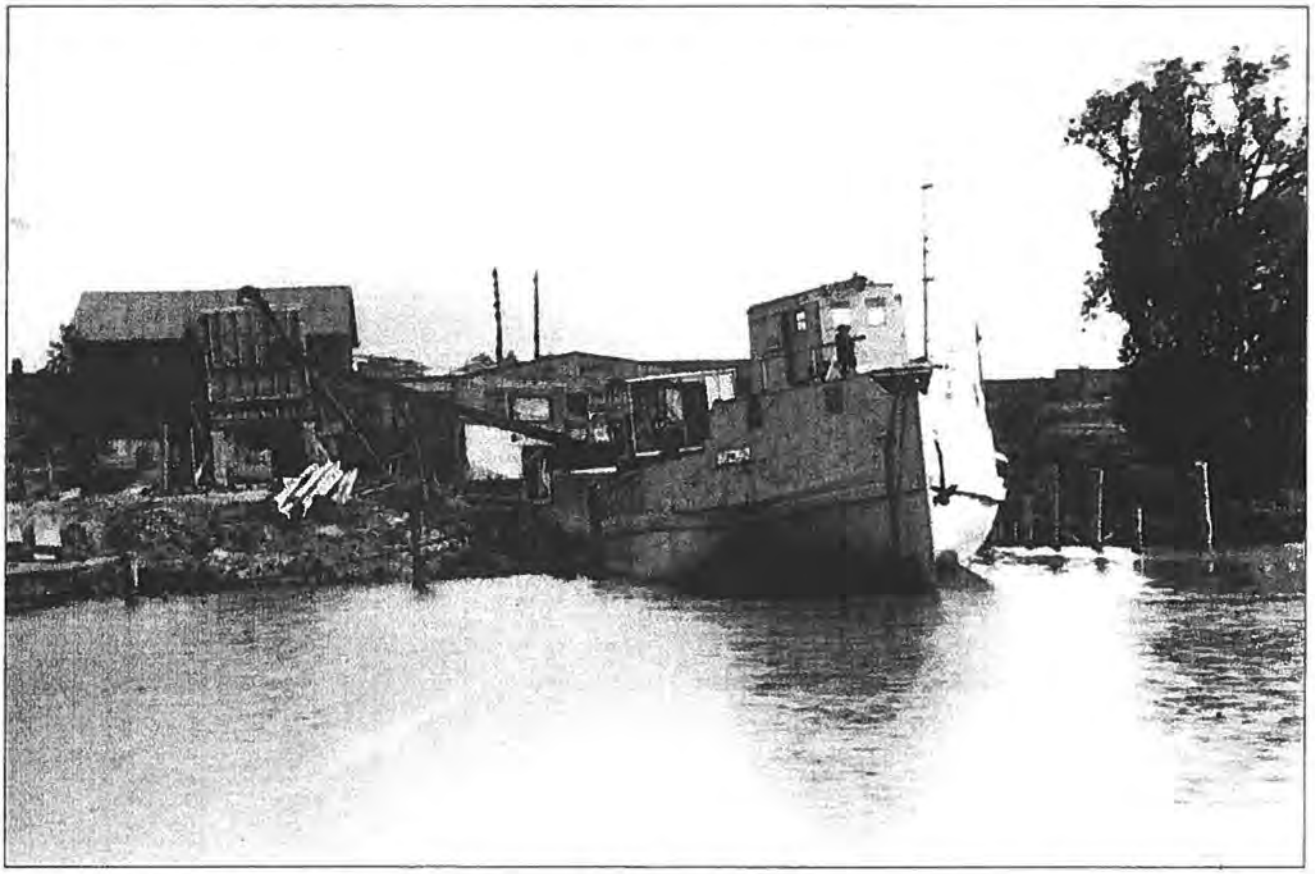


Figure 29. Sand dredge VERMILION, first vessel to work the Point Pelee-Lorain Ridge (Karl Beatty Collection).

communication, Karl Beatty, Sandusky Maritime Museum, February 2, 2002). He had the idea that the red clay could be used in the manufacture of rouge cosmetics, polishes, and pigments. He constructed a wooden steamer, *VERMILION* (Figure 29), to extract the deposit. Interestingly, the mound turned out to be a glacial end moraine composed largely of sand and gravel. Rather than totally abandoning his plan, Lamp proceeded to extract sand and gravel to be used as aggregate for the emerging construction industry. Lamp was the first to produce sand from what is now know as the Lorain-Vermilion dredging area—the largest source of commercial sand and gravel in the Ohio waters of Lake Erie (Figure 18).

The *SAND MERCHANT*, built in 1927 at the Collingwood Shipbuilding Company in Collingwood, Ontario, was one of the few vessels on Lake Erie that was built to be a sand dredge rather than being converted from another type of vessel (Figure 30). Her dimensions were 252' in length x 43'6" in breadth of beam x 17'5" in depth of hold with a gross tonnage of 1981. She was constructed with two open-hopper holes. Sand and gravel materials were pumped onboard by two centrifugal pumps. Mounted aft of the forecastle and forward of the stack were two derricks each with a bucket capable of holding 2 cubic yards. These were used for off-loading sand until they were replaced in 1930 by an elevator–conveyor belt system (Wachter and Wachter 2001:167-169). In the early 1930s she was operated on Lake Erie by the National Sand and Materials Company, Ltd. of Toronto, Ontario. On October 17, 1936, while enroute from Point Pelee to Cleveland with a load of sand, the *SAND MERCHANT* enountered 10– to 12–foot waves. The ship began to take on water faster than her pumps could get rid of it allowing water to mix with her sand cargo. The ship was riding low in the water from the weight of her sand and as the load shifted the vessel began to lean to one side. The crew worked desperately to right her, but she capsized 17 miles from Cleveland (Liebenthal 1990:3,4). Only 7 of her original crew of 26 were rescued. the wreck of this vessel lays on the lakefloor 4 miles north of Avon Point, Ohio.

Figure 30. Sand dredge SAND MERCHANT. This vessel had only been in service for nine years when she capsized northwest of Cleveland, Ohio. Eighteen men and one woman perished in the sinking. The captain and two crew members were rescued by the steamer THUNDER BAY QUARRIES and four other crewmen were hauled aboard the MARQUETTE & BESSIMER NO. 1 (Wachter and Wachter 2001:167–169).

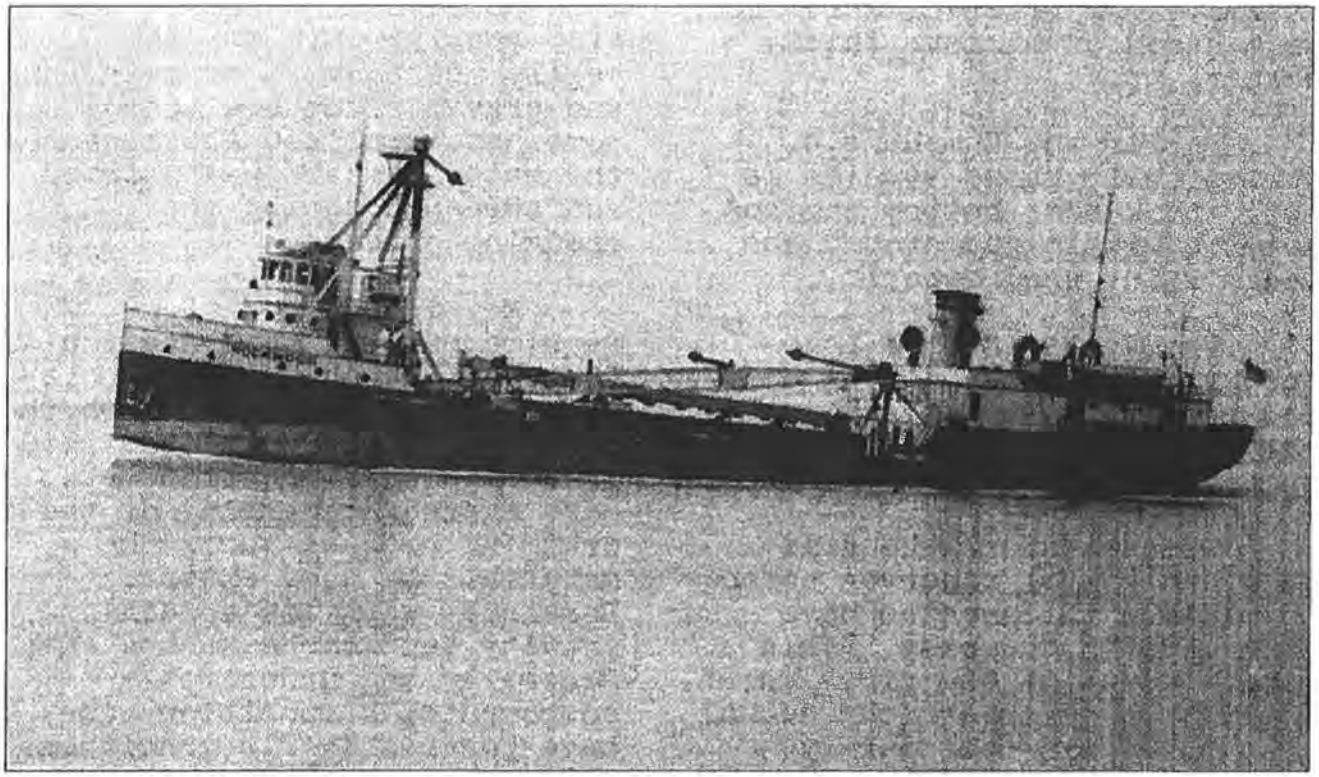


Figure 31. Sand dredge ROCKWOOD (Hartley 1960:3). This vessel was operated by the Erie Sand Steamship Company in the 1950s, working the Lorain-Vermilion dredging area.

In 1966 the Ohio Department of Natural Resources, Division of Geological Survey conducted a measurement inventory of all the commercial dredging vessels operating in the Ohio portion of Lake Erie (Herdendorf 1966:1-36). At that time 7 companies, operating 12 vessels, were engaged in sand extraction from the bed of Lake Erie within Ohio waters:

- Erie Sand Steamship Company of Erie, Pennsylvania

LAKEWOOD (built 1903) 390' x 48' x 28'; 5,000 tons; sand capacity: 3,450 cubic yards

NIAGARA (built 1897) 249'5"' x 42' x 20'; 2,000 tons; sand capacity: 1,600 cubic yards

JOSEPH S. SCOBELL (built 1891) 266' x 38' x 24'; 3,200 tons; sand capacity: 1,850 cubic yards

ROCKWOOD (decommissioned 1962) (Figure 31)

- Erie Navigation Company of Erie, Pennsylvania

JOHN R. EMERY (built 1905) 155' x 33' x 9'3"; 550 tons; sand capacity: 450 cubic yards (Figure 31)

- Lorain-Elyria Sand Company of Lorain, Ohio

LESCO (built 1910) 150' x 29' x 11'3"; 217 tons; sand capacity: 361 cubic yards

- Lake Erie Sand & Transport Company of Lorain, Ohio

ERIE (built 1906) 145' x 29' x 8'; 300 tons; sand capacity: 297 cubic yards (Figure 32)

- National Sand & Gravel Company of Lorain, Ohio

JAMES B. LYONS (built 1948) 114' x 23' x 11'; 133 tons; sand capacity: 334 cubic yards

- Toth Transportation Company of Toledo, Ohio

LIL'ROCK (built 1942) 120' x 32' x 6'; 203 tons; sand capacity: cubic yards

IRONWOOD (sand processing plant)

R. W. HOLST (built 1929) 120' x 28' x 6'6"; 184 tons; sand capacity: cubic yards

SANDCRAFT (built 1942) 120' x 32' x 5'6"; 173 tons; sand capacity: cubic yards

- White Sand & Gravel Company of Toledo, Ohio

SANDRA (built 1942) 105' x 37'6"' x 9'3"; 294 tons; sand capacity: 238 cubic yards

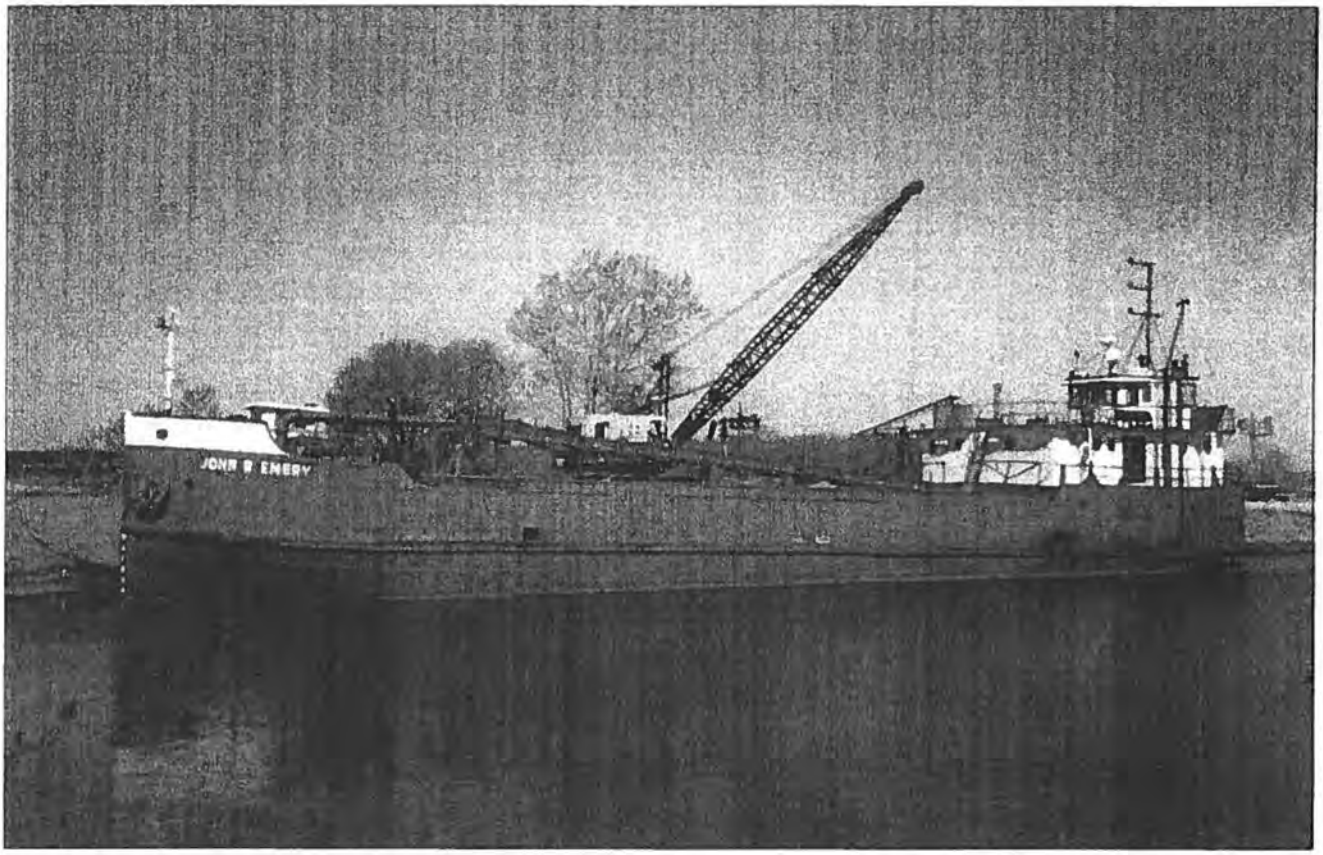


Figure 32. Sand dredge JOHN R. EMERY (photo by Karl Beatty). This vessel operated out of Sandusky until 1999.

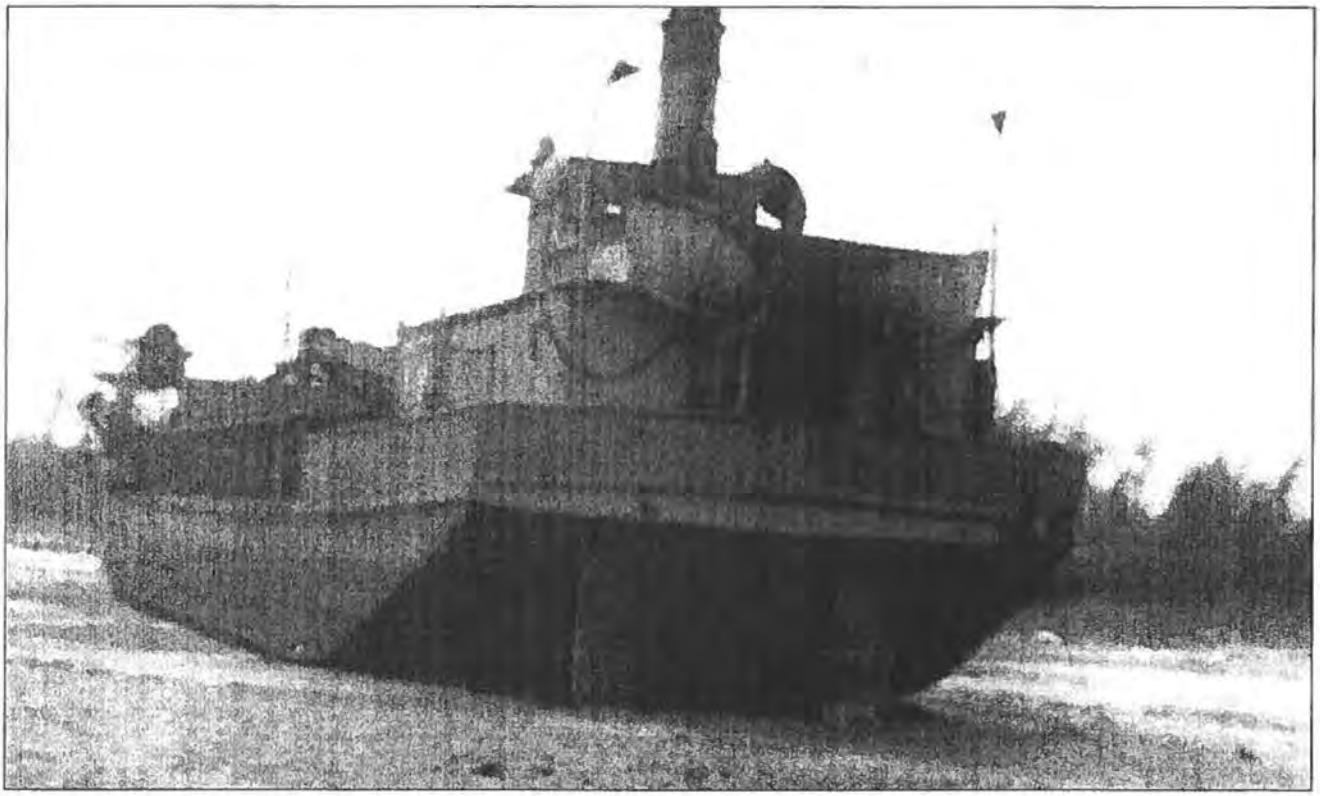


Figure 33. Sand dredge ERIE aground in Maumee Bay during a southwest storm which lowered the water level several feet (Karl Beatty Collection).

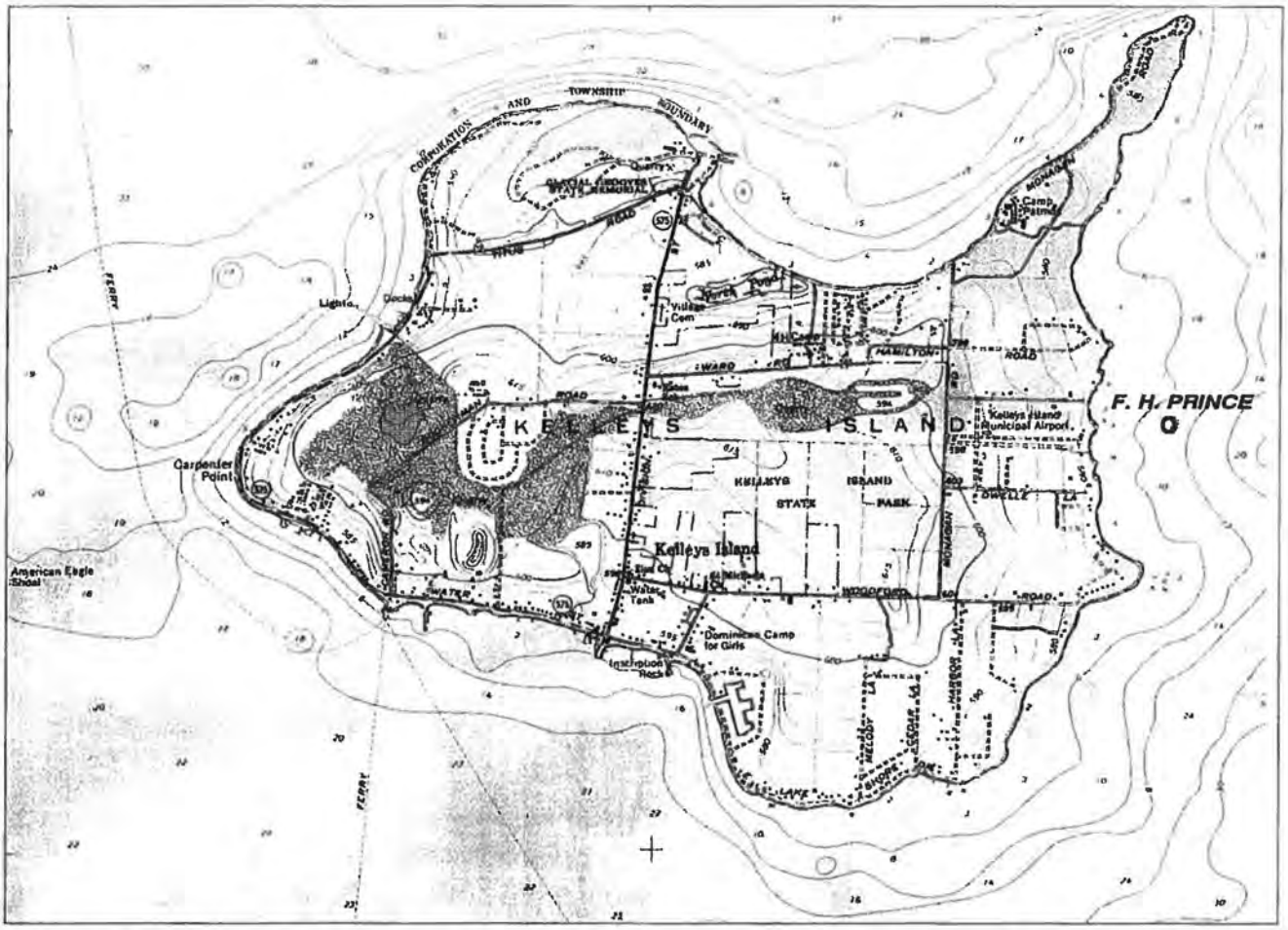


Figure 34. Topographic map of Kelleys Island and surrounding lakefloor of Lake Erie (U.S. Geological Survey, Kelleys Island Quadrangle, Ohio, 1979).

ENVIRONMENTAL SETTING

The physical and biological setting of Lake Erie surrounding Kelleys Island, and particularly the setting at the *F. H. PRINCE* shipwreck was an important component of the overall archaeological investigations (Figure 34). An understanding of the physical setting can help explain how and why the grounding and eventual loss of the vessel occurred. Likewise the biological aspects of the environment has and will continue to have an influence of the condition and appearance of the wreck. An additional benefit of documenting the site's setting is that observations of geological, botanical, and zoological phenomenon can also make for a fascinating and enlightening experience.

GEOLOGY

Lake Erie is underlain by middle Paleozoic sedimentary rocks deposited some 450 to 350 million years ago. These rocks are composed of limestones, dolomites, shales, and sandstone that form bedrock outcrops on the lake floor. At the time when these rocks were being deposited as soft sediments in a tropical sea, the area we now know as Ohio was then located about 20° south of the equator, near the latitude of present day Tahiti. The depositional environments ranged from a tropical barrier reef habitat at the beginning of this interval to deltas and black, muddy bottoms at the end, as mountain building episodes to the east (the result of tectonic plate collisions) delivered sands and silts to the sea. Regional uplift following these episodes initiated in a long period of erosion which resulted in the excavation of a major stream system down the long axis of the present lake. Ice sheets of the Pleistocene continental glaciers further sculptured this valley system by riding up over the Niagara Escarpment and excavating most deeply in the eastern end of the lake, moderately deep in the central portion, and least deeply over the limestone bedrock at the western end of the lake, forming the distinctive three basin that characterize Lake Erie. This process created the impressive glacial grooves of Kelleys Island.

The most recent glacial advance (Wisconsinan) extended as far south as the Ohio River (about 18,000 years ago), and as the ice mass receded in pulses, moraines were deposited south of the present lake and at least two prominent end moraines were formed near the junctions of the basins. These ridges of sand and gravel, mixed with finer sediments, are now the main sources of commercial sand from Lake Erie and are dredged extensively for industrial and construction aggregate. As the ice melted back into the basins, large glacial lakes were formed between the moraines and the ice front. As the ice progressively retreated, new and lower outlets were uncovered and new lake stages were formed at successively lower elevations except were minor readvances of the ice temporally reversed this trend. Massive sand ridges and dunes were deposited along each of these shores and thick glaciolacustrine sediments were deposited in the lakes. When the last glacier retreated from the Niagara Escarpment and the Niagara River outlet was final opened, but greatly depressed by the weight of the ice, much of the lake drained and smaller lakes were present only in the eastern and central basins. Isostatic rebound eventually brought the lake to near is present level about 5,000 years ago and the present shoreline landforms, including islands, embayments, estuaries, beaches, bluffs, dunes, spits, and barrier bars began to form. Lake processes and erosion continue to modified these landforms, often resulting in dramatic changes during violent storms.

The bedrock in the islands area of western Lake Erie was deposited as lime muds in shallow, warm Silurian and Devonian seas, that covered the region some 350 to 400 million years ago. The warm, clear conditions of the Devonian sea can be inferred from the abundant fossil corals and other invertebrates found in the rocks on Kelleys and Middle Islands. The existence of evaporite beds such as halite (rock salt) and gypsum indicate that several isolated basins occurred at this time. Enclosed by barrier reefs, the waters were repeatedly evaporated to form the massive salt deposits. Gypsum beds are being quarried at the surface near Port Clinton, while halite deposits are mined 2,000 feet below the lake bottom at Cleveland. Although these beds were deposited at approximately the same time and at the same elevation, the collision of tectonic plates to the east tilted the beds so that they now dip to the east-southeast at a rate of about 30 feet per mile.

While the shallow Devonian sea occupied the Kelleys Island area, the Appalachian Mountains were being built to the east. The collision of the northwest

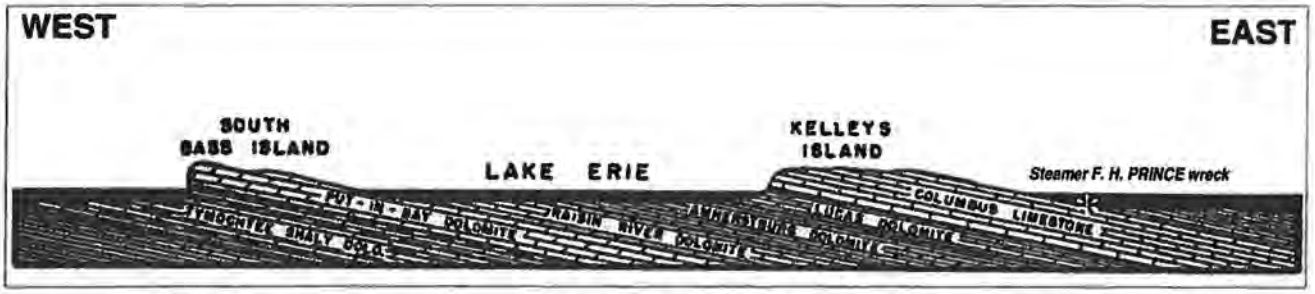


Figure 35. Geological cross-section through the islands of western Lake Erie, showing the bedrock formations and shoal water on the eastern sides of the islands (modified from Carman 1946:282).

coast of Africa with the east coast of North America caused the sediments in the Appalachian trough (ancestral Atlantic Ocean) to be folded into a formidable mountain chain which reached all the way to the Lake Erie islands. Erosion of these newly formed mountains resulted in the deposition sediments which are now the shales and sandstones which cover the limestones east of the islands. The turbid water associated with this deposition brought an end to the clear environment required to sustain coral reefs. The results of the folding can also be observed at Kelleys Island and many of the other islands in western Lake Erie. An uplifted fold to the west, known as the Cincinnati Arch, gives the rock formations of the islands their eastward dip. As a result the islands have a *cuesta* or hogback-shape with steep cliffs on the side toward the arch and a gentle, shoaling coast away from the arch. Kelleys Island exhibits this phenomenon well—high cliffs at the northwest shore and deep nearshore water while the west shore is low with a broad, shallow shelf offshore (Figure 35). In 1911, it is on this shoal east coast that the *F. H. PRINCE* grounded and burned.

Limestone formations are exposed on Kelleys Island and in the nearshore waters and reefs surrounding the island. The Columbus Limestone underlies the major portion of the island and consists of light-gray to buff colored, fossiliferous beds that are moderately thin bedded near the surface and massively bedded below 10 feet. This formation has been quarried extensive for building stone, lime, and crushed stone. Starting in 1830s, these products have been transported from Kelleys Island by sailing vessels and steamers, several of which have wrecked near the shore or on the reefs and shoals surrounding the island. As erosion-resistant rock, it forms a chain of headlands and islands that traverses western Lake Erie from north to south—Marblehead Peninsula, Kelleys Island, Middle Island, and Pelee Island. The relatively deep water north of Kelleys Island appears to be near the junction of several preglacial streams that had cut deeply into the bedrock. Thus, Kelleys Island is the remnant of a Devonian limestone reef that once formed a divide between preglacial valleys.

BATHYMETRY

Water depths range from nil at the Kelleys Island shoreline to 54 feet below Low Water Datum (LWD) in a narrow depression south of Gull Island Shoal. Away from the islands and shoals, depths generally ranges from 30 to 40 feet. Middle Passage, with a minimum depth of 25 feet, runs from west to east between Kelleys Island and Gull Island Shoal. Similarly, South Passage within a minimum depth of 15 feet, passes between Kelleys Island and Marblehead Peninsula. Immediately east of the island the bottom is a shallow shelf of limestone, etched with glacial grooves and striation, that is littered with blocky bedrock boulders that are clearly visible in side-scan sonar images (Figure 36). The remains of the *F. H. PRINCE* are lodged among these boulders. During the survey in June 2001 the wreck was submerged under 3 feet of water at the stern and 18 feet near the bow.

The lake surrounding Kelleys Island is dotted with bedrock reefs and shoals. These features are defined as elevations of rock, either broken or in place, or gravel shown on current NOAA navigation charts to be above the common level of the surrounding bottom. Most of the reefs are conical in shape and elongate, as is Kelleys Island, in a northeast–southwest direction. Two factors have influenced this elongation: (1) vertical joint systems in the bedrock oriented parallel to the elongation and (2) northeast to southwest movements of glacial ice as inferred from grooves, striations and scour marks cut into the bedrock of the islands and lakefloor. These reefs also qualify as "coral reefs"—albeit fossil ones—in that they were formed

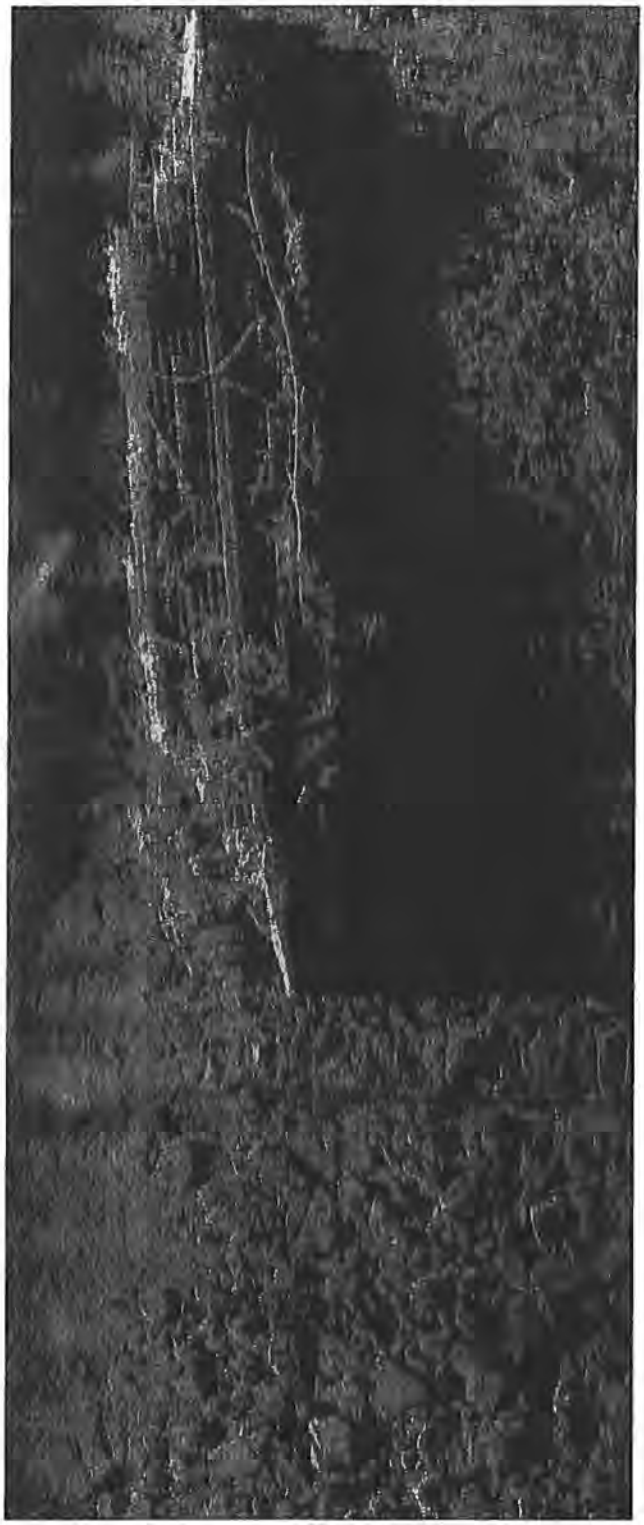


Figure 36. Side-scan sonar image of the F. H. PRINCE wreck in 2000, bow toward top of page (imaging by Bill Kaman and Greg Millinger). Note rocky bottom and boulders off the stern and to the starboard side of the shipwreck.

by these Cnidarian organisms some 380 million years ago. The offshore reefs and the abandoned North Quarry in Kelleys Island State Park are excellent sites for fossil collecting and have yielded over 70 species of Devonian marine organisms. Useful guides to these fossils are published by the Ohio Sea Grant College Program at The Ohio State University (Bowe 1985) and the Ohio Department of Natural Resources, Division of Parks (Bowe and Herdendorf 1984, 1990) and Division of Geological Survey (Feldmann and Hackathorn 1996).

Typically the reefs and shoals consist of limestone or dolomite bedrock and associated rock rubble and gravel. The topography of their tops ranges from rugged surfaces caused by bedrock pinnacles and large boulders to smooth slabs of horizontally bedded rock. In places the submerged bedrock has the appearance of a set of low stairs, with the steps dipping slightly to the east from the crest to the fringe of the reef. Because the bedrock is calcareous ($CaCO_3$), and therefor susceptible to solutioning, many cavities (1/4- to 3/4-inch diameter) have formed on the rock surface. These cavities are often sites of fish egg deposition, particularly walleye. The bedrock cores of some of the reefs and shoals are masked by rubble composed of the local bedrock and glacial erratics transported by the ice sheets. The rubble can range from small pebbles to boulders over 5 feet in diameter. On the upper portions of the reefs and shoals, isolated patches of sand and gravel commonly fill joint cracks and shallow depressions in the rock; at the fringes sand and gravel or glacial till clay lap over the rock. Wave action is generally sufficient to sweep the reef tops free of silt and clay deposits, except during periods of prolonged quiescence.

BOTTOM SEDIMENTS

The softer sediment flanking or overlying the bedrock areas was either deposited by glaciers, in prehistoric lakes (12,000 to 5,000 years ago), or in modern Lake Erie (5,000 years ago to present). The continental ice sheets deposited a heterogeneous mixtures of clay, silt, sand, and gravel known as glacial till. Geologically, the term "gravel" includes a wide range of particle sizes including pebbles, cobbles, and boulders. The granitic and metamorphic rocks found along the shore and on the lakefloor were derived from the Canadian Shield in this fashion. These glaciers also cut the spectacular grooves at North Bay quarries in

Kelleys Island State Park and numerous striations and shallow grooves along the island's east shore that extend well offshore, appearing much like a paved underwater highway. Sediments deposited in the glacial lake stages and in modern Lake Erie now cover much of the glacial till. The glacial lakes sediments (known as glaciolacustrine clays) lack the larger-sized components of till and occur as firm, blue-gray to reddish in colored bottoms near the shoreline and fringes of the reefs.

The more recent deposits are less consolidated and consist mainly of sand, mud (semi-fluid silt and clay particles), and organic deposits such as peat. Surrounding Kelleys Island for a distance of about 3 miles, bedrock accounts for about 12% of the lake bottom; glacial till 2%; gravel 3%; sand 8%; sand and gravel mixture 10%; mud 20%; sand and mud mixture 45%. A geological study of North Bay in 1988 showed that about 6% of the bottom was cover with boulders greater than 10 inches in diameter (Herdendorf 1988:1-10). Much of the bedrock area also contains a significant amount of rock rubble and various sizes of gravel. The nearshore lake bottom surrounding much of Kelleys Island consist of three primary types: (1) glaciolacustrine clay, (2) shelving bedrock, and (3) mixtures of sand, gravel, cobbles, and boulders over rock or clay. Only the latter type appears to support abundant growths of submerged aquatic vegetation and only in protected areas such as North Bay or around shallow shipwrecks. The clay areas appear either too soft, erodible, or turbid while the rock outcrops are too smooth to permit adequate attachment for these plants.

WATER CLARITY

Using a Secchi disc is an easy but reliable way to gauge water clarity. Employed since 1865, this simple 8-inch metal disc painter in black and white quarters is lowered into the water until the observer can no longer distinguish its outline. The length of line from the water surface to the disc is then measured to determine the water's transparency. The past decade has seen a remarkable improvement in the clarity of Lake Erie waters. In the Islands Region, typical underwater visibility was under 3 feet in the 1980s, largely due to turbidity cause by dense populations of floating algae and suspended sediment particles. Today, it is not unusual to observe submerged objects at a distance of 10 to 20 feet or more. This change was brought about by years of efforts to reduce phosphorus pollution and by the collective filtering of billions of zebra mussels that have recently colonized the lake's bottom. As the waters have become clearer and clearer, recreational divers have taken to the Lake in greater and greater numbers. Underwater exploration has become a popular sport, particularly with the lure of the up to 40 shipwrecks near Kelleys Island, many of them yet to be discovered and explored. During the survey of the *F. H. PRINCE* in June 2001, visibility varied from less than 5 feet to about 15 feet.

FLORA AND FAUNA

The shoreline of Long Point and the east shore of Kelleys Island consist of low limestone cliffs, table rocks (Figure 37), and shelving bedrock. This type of landform is known as an "alvar"—a horizontal limestone terrain, laid bare by glacial action, which is maintained as a natural opening by constant waves and ice scour, and characterized by rare plants capable of coping with this harsh environment. An endangered Ohio species, northern bog violet (*Viola nephrophylla*), and a threatened Ohio species, balsam squaw-weed (*Senecio pauperculus*), are found on the alvar, growing in a base created by lichens and mosses. At the base of Long Point on the shore of North Bay, lays North Pond, a 36-acre marsh that occupies a depression underlain by the non-resistant Lucas Dolomite. North Pond is separated from Lake Erie by a barrier beach, but is open to the Lake during periods of high lake levels and severe northeast storms. The marsh is a haven for migrating birds and home to the endangered aquatic plant, pond arrowleaf (*Sagittaria cuneata*).

Figure 37. Shoreline of Long Point, Kelleys Island, showing a table rock alvar (Ross 1949:34).

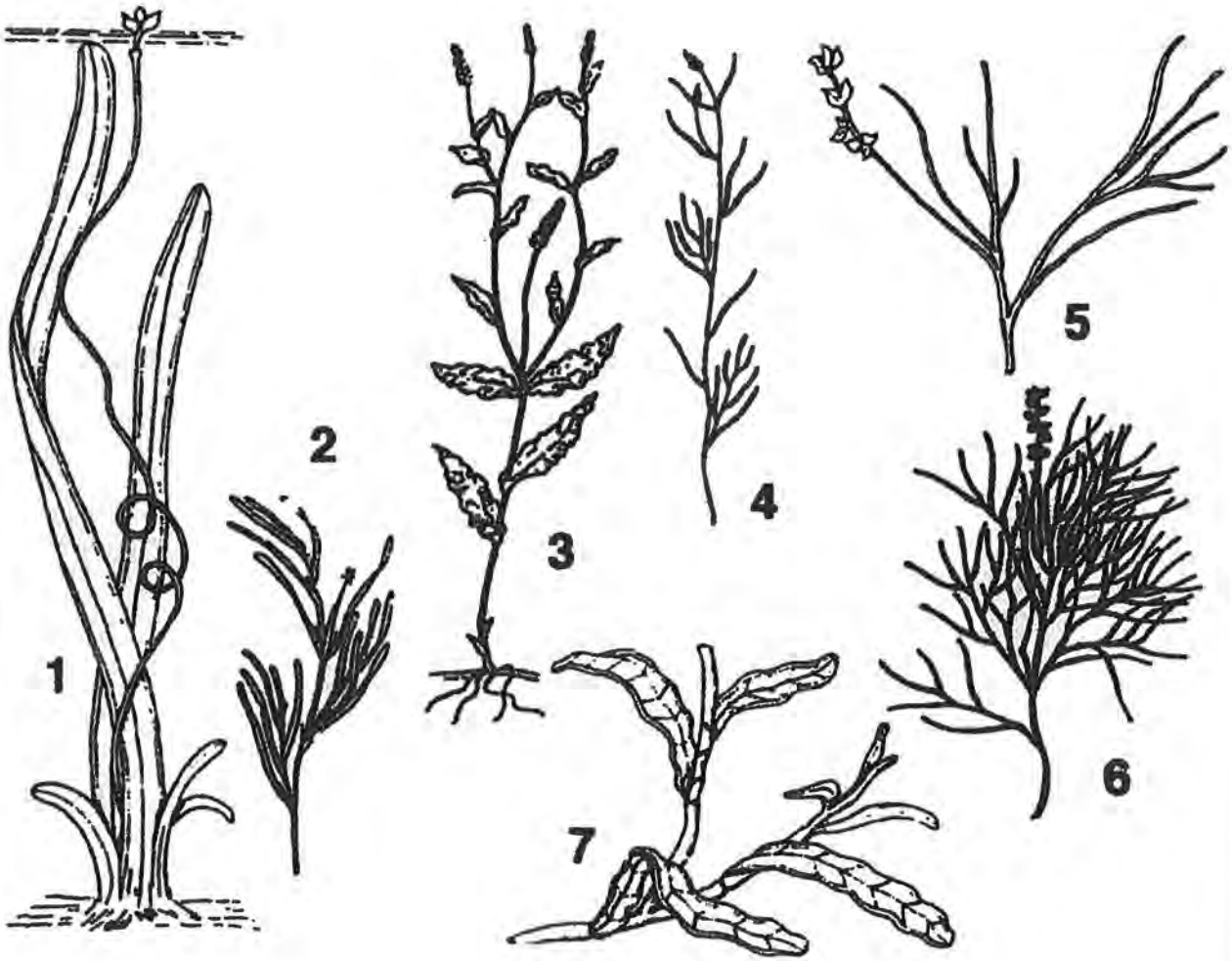
Aquatic botanists working in Lake Erie islands region in the early 1900s found that submerged plants occupied by far the largest segment of the aquatic vegetation; although not so conspicuous as floating leaves plants (such as water lilies), they covered a greater area and comprised the bulk of the plant biomass. Up to the mid-1900s the bottoms of bays and inlets, where water was not over 10 to 12 feet in depth, were almost completely covered with vegetation (Core 1948:11-24). A dramatic decline in the abundance of these plants was noted in the 1960s and 1970s. As the lake once again cleared, as a result of phosphorus reduction and zebra mussel colonization, attached submerged plants once again became abundant in the nearshore water of the islands By 1998 most of the plant species reported by the early botanists had returned to the bays and protected shores. Currently they are perhaps more abundant and growing at deeper depths than in the first half of the century owing to the greater water clarity presently enjoyed by the lake.

In recent years the water clarity of western Lake Erie has improved to the point where sunlight now reaches to the crests of some of the reefs and the nearshore bottom with enough intensity to simulate the growth of submerged vascular (flowering) plants as well as algae. Off Kelleys Island, the attached green algae, *Cladophora glomerata*, is the dominant photosynthetic organism in the nearshore waters in late spring and early summer, followed by short blades of wild celery (*Vallisneria americana*) offshore. By August this algae diminishes in importance and is replaced by several species of submerged flowering plants that can be observed in water up to 15 feet deep. Typically these plants grow attached to the bottom, but rarely protrude above the lake's surface.

Off the east shore of Kelleys Island the bottom consists of limestone bedrock and boulders, at places thinly covered with silty sand and some gravel, limestone cobbles, and large glacial boulders. On this material, the remains of the *F. H. PRINCE* lay. A thin layer of zebra mussels (*Dresissena polymorpha*) and quagga mussels (*Dresissena bugensis*) have colonized most of the exposed surfaces of the wrecks, and small freshwater sponges (*Eunapius fragilis*) in cracks and crevices. Patches of wild celery (*Vallisneria americana*) and coontail (*Ceratophyllum demersum*) abound at the sites, most of it 4 to 6 feet tall, as well as some thin growths of attached green algae (*Cladophora glomerata*). In protected areas around the Lake Erie islands, wild celery can forms dense beds out to a depth of 8 feet (up to about 500 feet offshore) with occasional open areas within these beds. Other aquatic plants associated with the wild celery include water-milfoil, sago pondweed, small pondweed, and curly pondweed. Beyond 500 feet offshore the wild celery becomes much less abundant and is replaced by Richardson's pondweed and water star-grass. These plants can dominate to a depth of 12 feet at some 800 feet offshore. In order of abundance, the following aquatic plants are common in the protected waters and on shallow shipwrecks (Figure 38):

1. Wild celery (*Vallisneria americana*)
2. Water star-grass (*Heteranthera dubia*)
3. Richardson's pondweed (*Potamogeton richardsonii*)
4. Small pondweed (*Potamogeton pusillus*)
5. Water-milfoil (*Myriophyllum spicatum*)
6. Sago pondweed (*Potamogeton pectinatus*)
7. Curly pondweed (*Potamogeton crispus*)
8. Coontail (*Ceratophyllum demersum*).

In addition to the zebra mussels and freshwater sponges mentioned above, many other bottom-dwelling invertebrates are found on bedrock area and on shipwrecks Other noteworthy members of the bottom fauna commonly observed by divers on rock or gravel, especially areas with aquatic vegetation, include the rusty crayfish (*Orconectes*), busy sideswimmers (*Gammarus*), and several species of caddiflies (Trichoptera). On sandy bottoms the once common freshwater clams are greatly diminished but can still occasionally be observed. One species is particularly fascinating; the female pocket-book or fatmucket clam (*Lampsilis ventricosa*) is capable of extending and pulsating its mantle in such a way as to resemble an injured minnow. This activity attacks fish species such as bluegill, yellow perch, and smallmouth bass which increases the opportunity for juvenile clams (glochidia) to attach themselves to a host fish after they have been ejected from the parent. The larvae are released by the parent when its light sensitive spots are stimulated, such as by the shadow of a passing fish. The pollution sensitive mayfly (*Hexagenia*) has made a remarkable recovery in recent years. These burrowing mayflies are native to western Lake Erie and were abundant until the early 1950s when they disappeared for 40 years as a result degraded water and sediment quality. Nymphs are now recolonized the mud bottoms in the Islands Region with typical densities of 5 per square foot. However, the soft bottoms of the Lake



AQUATIC PLANTS LISTED IN GENERAL ORDER OF ABUNDANCE:

1 Wild celery (*Vallisneria americana*)
2 Water star-grass (*Heteranthera dubia*)
3 Richardson's pondweed (*Potamogeton richardsonii*)
4 Small pondweed (*Potamogeton pusillus*)
5 Water-milfoil (*Myriophyllum spicatum*)
6 Sago pondweed (*Potamogeton pectinatus*)
7 Curly pondweed (*Potamogeton crispus*)
8 Coontail (*Ceratophyllum demersum*)

Figure 38. Common Lake Erie submerged aquatic plants of the nearshore waters of Kelleys Island (courtesy of Franz Theodore Stone Laboratory, The Ohio State University at Put-in-Bay, Ohio).

continue to be dominated by less sensitive organisms, including red worms (oligochaetes) and midge larvae (chironomids).

The islands and surrounding waters are extensively utilized as a route and stopover site by waterfowl, shorebirds, raptors, and passerine (perching) birds. Mallards (*Anas platyrhynchos*), black ducks (*Anas rubripes*), and blue-winged teal (*Anas discors*) breed in nearby marshes. Sizable populations of great blue herons (*Ardea herodias*), great egrets (*Ardea albus*), black- crowned night-herons (*Nycticorax nycticorax*), double-crested cormorants (*Phalacrocorax auritus*) and several gulls (*Larus*) have established rookeries and nesting sites on the Sister Islands to the west of Kelleys Island.

The western Lake Erie, and in particular the Islands Region, has long been considered the most valuable fish spawning and nursery in the Lake. At least 95 species of fish have been reported from the waters surrounding the Erie Islands. This diversity and abundance of fishes for can be attributed to: (1) southernmost (warmest) position in relation to the other Great Lakes, (2) shallow, nutrient rich waters, and (3) variety of aquatic habitats, especially the rocky reefs and adjacent coastal wetlands. Many of the predator fish species of the Islands Region, particularly walleye (*Sander vitreus*), smallmouth bass (*Micropterus dolomieui*), and white bass (*Morone chrysops*), rely on sight to find their prey. Efficient sight feeding, especially for large fish seeking moving prey, requires clear water to discern their prey at relatively long distances. The clear water found over the reefs and shoals provides such conditions. Also reefs also foster beds of aquatic plants and attached green algae, such as *Cladophora*, which harbor emerging insects and small crustaceans which attract small fish, usually shiners (*Notropis*) upon which walleye prey.

Research divers in western Lake Erie have reported walleyes lying motionless on rocky bottoms during daylight hours. This daily "resting requirement" also tends to concentrate walleye around the reefs and shoals. The deeper mud bottoms with higher organic contents typically have lower oxygen levels. This is especially true during calm periods when currents and water mixing are diminished. Walleyes appear not to prefer mud bottoms as resting areas because of the lower oxygen concentration found there. Walleyes commonly spawn over rock, rubble, or gravel in streams tributary to large lakes, but in Lake Erie major spawning grounds occur on the reefs and shoals. These rocky projections are swept free of mud by breaking waves which might otherwise smother spawned eggs. Waves and currents acting on the reefs also simulate the riffle habitat of which may serve to attract walleyes to them. Once spawning begins on a particular reef, fry imprinting would favor continued utilization of the reef a returning population.

Several fish species frequent the shipwreck sites and are fascinating to observe (Figure 39). Some 25 species of fishes are commonly present in the waters near Kelleys Island. Recent studies show smallmouth bass (*Micropterus dolomieui*) to be in greater density off Long Point than anywhere else in the islands (personal communication, David Kelch, Ohio Sea Grant, February 5, 2002). This inquisitive species, along with rock bass (*Ambloplites rupestris*) and yellow perch (*Perca flavescens*) are among the most common fishes seen on shipwrecks.

Recently round gobies (*Neogobius melanostomus*) have invaded the bottom waters of western Lake Erie and are frequently seen perched on rock or darting away from an approaching diver. Kelleys Island and the nearshore water is also home to a federally threatened reptile, the Lake Erie water snake (*Nerodia sipedon insularum*). These snakes can frequently be seen fishing for yellow perch and other species in the nearshore waters.

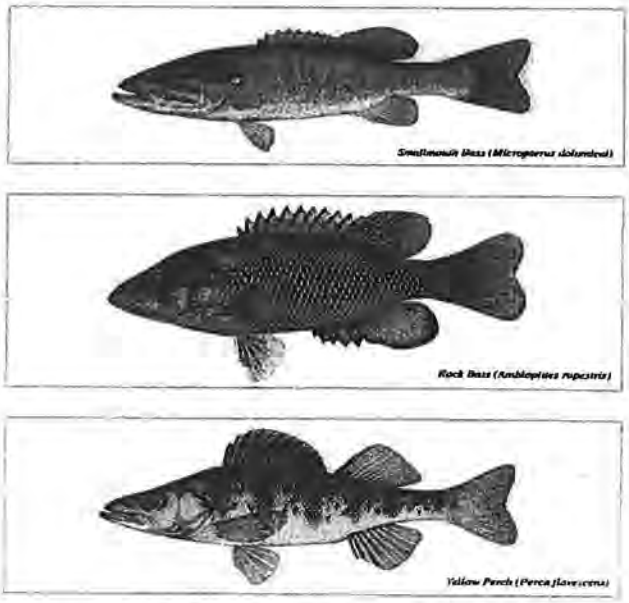


Figure 39. Common fishes on Kelleys Island shipwrecks (courtesy of Ohio Division of Wildlife).

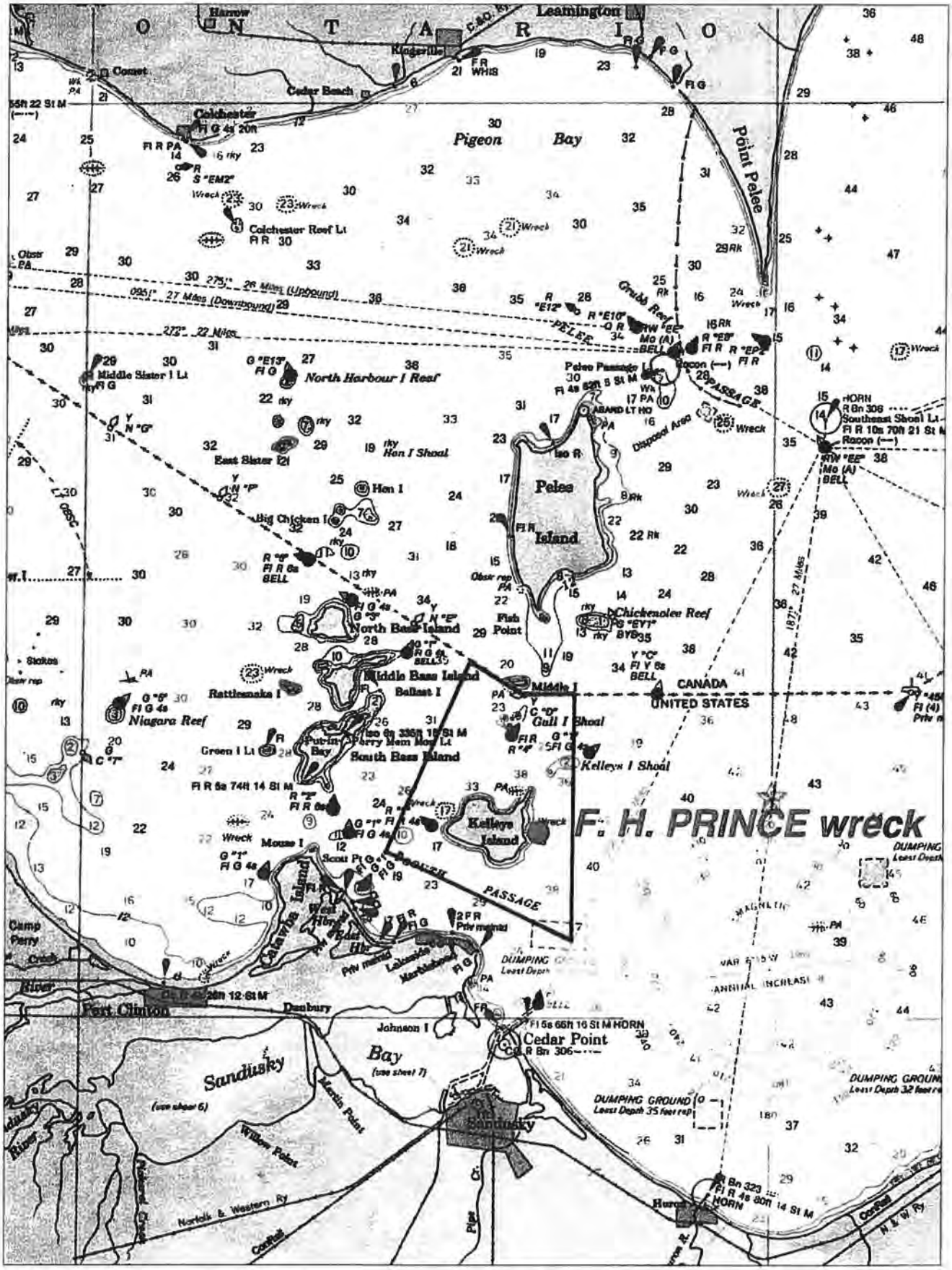


Figure 40. The Lake Erie Islands (base map from chart no. 14842, National Ocean Service, NOAA).

ARCHAEOLOGICAL DOCUMENTATION

OBJECTIVE

The *F. H. PRINCE* wreck has been a popular fishing and dive destination for years (Figure 40), but no archaeological work had been conducted. The goal of the project was to document the shipwreck and to use this information to educate the diving and non-diving public via dive slate and report production.

FIELD METHODOLOGY

Since Great Lakes vessels were built using standard measurements, the underwater workshops in which MAST members originally participated focused on a measuring system based on inches and feet, therefore this method of measurement was utilized to map the site. The survey method employed was triangulation. Participants used fiberglass tape reels and plumb bob markers to take measurements. In order to streamline and error-proof data collection as much as possible, pre-made underwater datasheets (Figure 41) were provided at the start of each dive and were affixed to the dive slates with duct taped (Figure 42). A lead pencil or grease pencil was used for information documentation. The recorded information was later transposed onto 4 squares to the inch graph paper. The baseline was attached using galvanized nails and electrical tie wrap. Datum points were marked using 2 inch square plastic tags and numbered using water resistant markers. They were also affixed with galvanized nails, electrical tie wraps, or clothes pins.

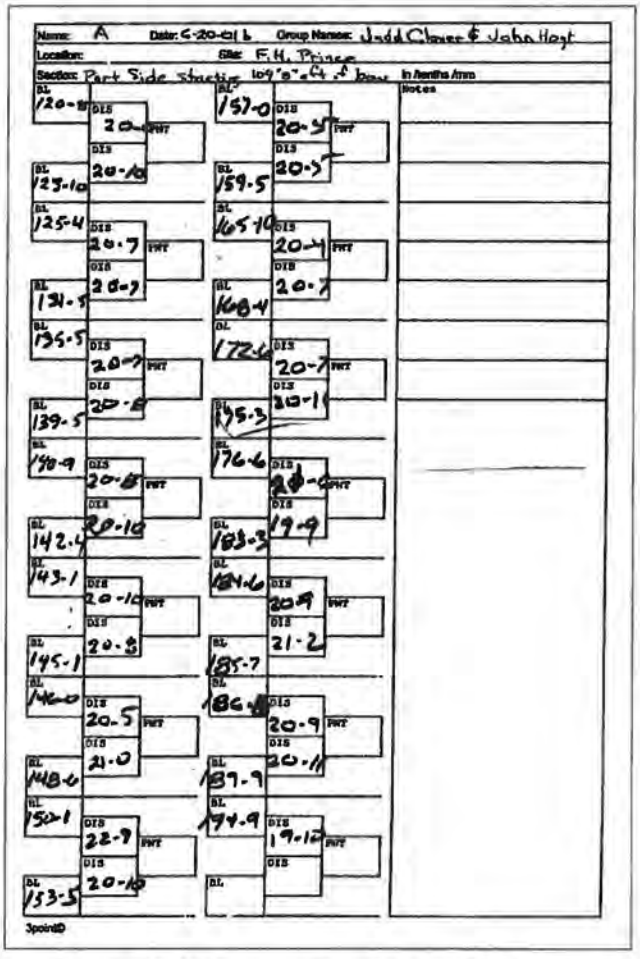


Figure 41. Underwater datasheet used by divers.

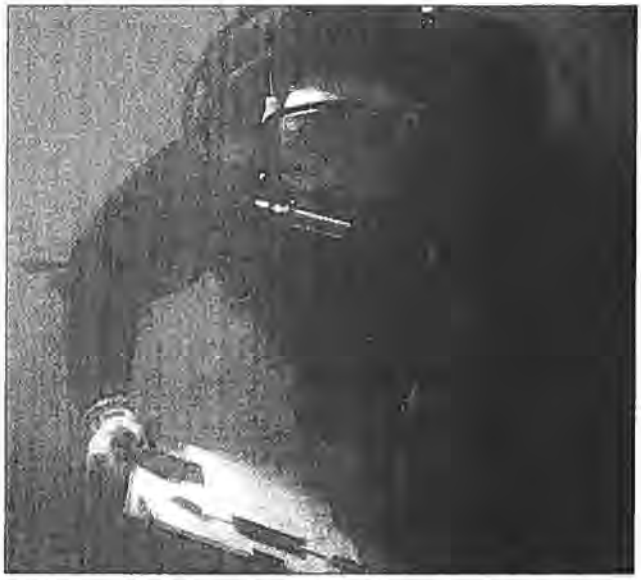


Figure 42. MAST diver ready to document the F. H. PRINCE site (photo by Scott Pansing).

SAFETY

In any underwater archaeology project safety is a primary consideration. We were very fortunate that Kelleys Island resident, Kris Leonhardt, graciously offered the use of his property for our operation land base (Figure 43). This base was manned during diving operations and communicated with the dive boats via radio. We also contacted the Kelleys Island police office to inform them of the project and our use of Mr. Leonhardt's property as a land base. Small rubber boats (zodiacs®) were used to transport people and equipment to and from shore. Important emergency phone numbers were at the land base just in case an emergency arose and the police, coast guard or nearest hospital needed to be reached. Each morning we evaluated the weather and the decision to dive was based on the determination of the group. Dives could also be called if dive conditions worsened once on site.

Figure 43. Shoreline at land base showing shelving bedrock with glacial striations, accumulations of zebra mussels, and mats of the green algae Cladophora glomerata (photo by C. E. Herdendorf).

STATE LAW COMPLIANCE

According to Ohio Revised Code Sections 1506.30-1506.99, the State holds title to all abandoned submerged property in Ohio waters of Lake Erie. The law prohibits the removal of artifacts from shipwrecks, so in accordance with the law no artifacts were removed from the site.

After consultation with Ohio Department of Natural Resources representative, Mike Colvin and The Ohio Historic Preservation Office representative, Franco Ruffini, MAST obtained permission to remove zebra mussel encrustation in order to obtain detailed drawings and measurements. During prior archaeological surveys permission was granted to use galvanized nails to affix baselines or datum points if needed. This survey did not include invasive removal of sediment, only visible sections of the wreckage were documented.

PROJECT

June 18, 2001. On the first day of operation Dr. Charles E. Herdendorf, professor emeritus at The Ohio State University; C. Patrick Labadie, maritime historian; Linda Pansing PLESRC staff archaeologist and Scott Pansing, MAST dive supervisor, acting on the request of Craig Morton, Director of the Kelleys Island State Park, looked at a couple pieces of wood, which washed up onto park property. The first had been moved to the Director's residence. This piece measured 9 inches in diameter by 22 feet 2 inches long and had a hole at each end and one in the center (Figure 44). There was a circular wear-pattern at mid-length measuring approximately 24 inches in diameter. This oak piece, because the dimension, holes, and wear pattern, appeared to be a yard for a square topsail. The second item, located on shore near the State Park boat dock, measured 12 inches in diameter at center and 15 feet, 4-1/2 inches long. It

had a hole at one end and appeared to be made of cedar (Figure 45). The function of the second spar (?) is uncertain.

Figure 44. C. Patrick Labadie inspecting a square topsail yard which had washed up on the north shore of Kelleys Island (photo by Linda Pansing).

Figure 45. Researchers taking measurements of and artifact (spar ?) on the beach at Kelleys Island State Park (photo by Linda Pansing).

It is not surprising ship parts would be found on and surrounding the park because the Kelley Island Lime and Transport Company (KIL&T Co.) North Bay docks were once located on the property (Labadie and Herdendorf 1998:18-24). Here were lime kilns, a cooperage, offices, stables, shops, and housing for workers. Foundations of some of these buildings are still visible today.

Later in the day, Dave Kelch of Ohio Sea Grant joined Herdendorf, Labadie and Scott Pansing on a reconnaissance dive and video documentation of the *F. H. PRINCE*. The purpose of this was to familiarize themselves with the layout of the wreck in order to a) decide on where to lay the baseline, b) chose datum locations, and c) decide on the best ways in which the site could be mapped.

a) It was decided that the main baseline was to be placed on the keel since it runs the whole length of the vessel. The port bulwark, which lies to the side of the vessel, would be assigned a sub baseline. Its position would be triangulated off of the main baseline.

b) Significant items located on the wreck were assigned datum points (i.e., rudder shoe, shaft log, boiler saddles, iron strapping, hold flooring, pin rail, strap piles, starboard bulwark and port bulwark, and other items which are still pending identification).

c) Mapping of the *F. H. PRINCE* was broken down into four main tasks. The first was to measure in the futtocks (ribs) of the vessel, which would give us a large-scale view of the wreck. Next, datum points would be assigned to specific items and then detailed drawings would be created. Finally, triangulation of the sub-baseline and an outer sweep of the vessel to look for additional wreckage would be completed.

June 19, 2001. The main task this day was to lay the baseline and set up markers along the periphery of the wreck. We arrived at noon and finished at 4:30. The lake was calm with a Southwest wind under 10 knots. Water bottom temperature was around 63° and visibility was about 8 feet. Large amounts of algae were present on the wreck and suspended in the water.

Even though the baseline tape had to be cut in order to accommodate the changes in ship elevation, there was no degradation in accuracy of the overall measurement for the length of the ship (Figure 46).

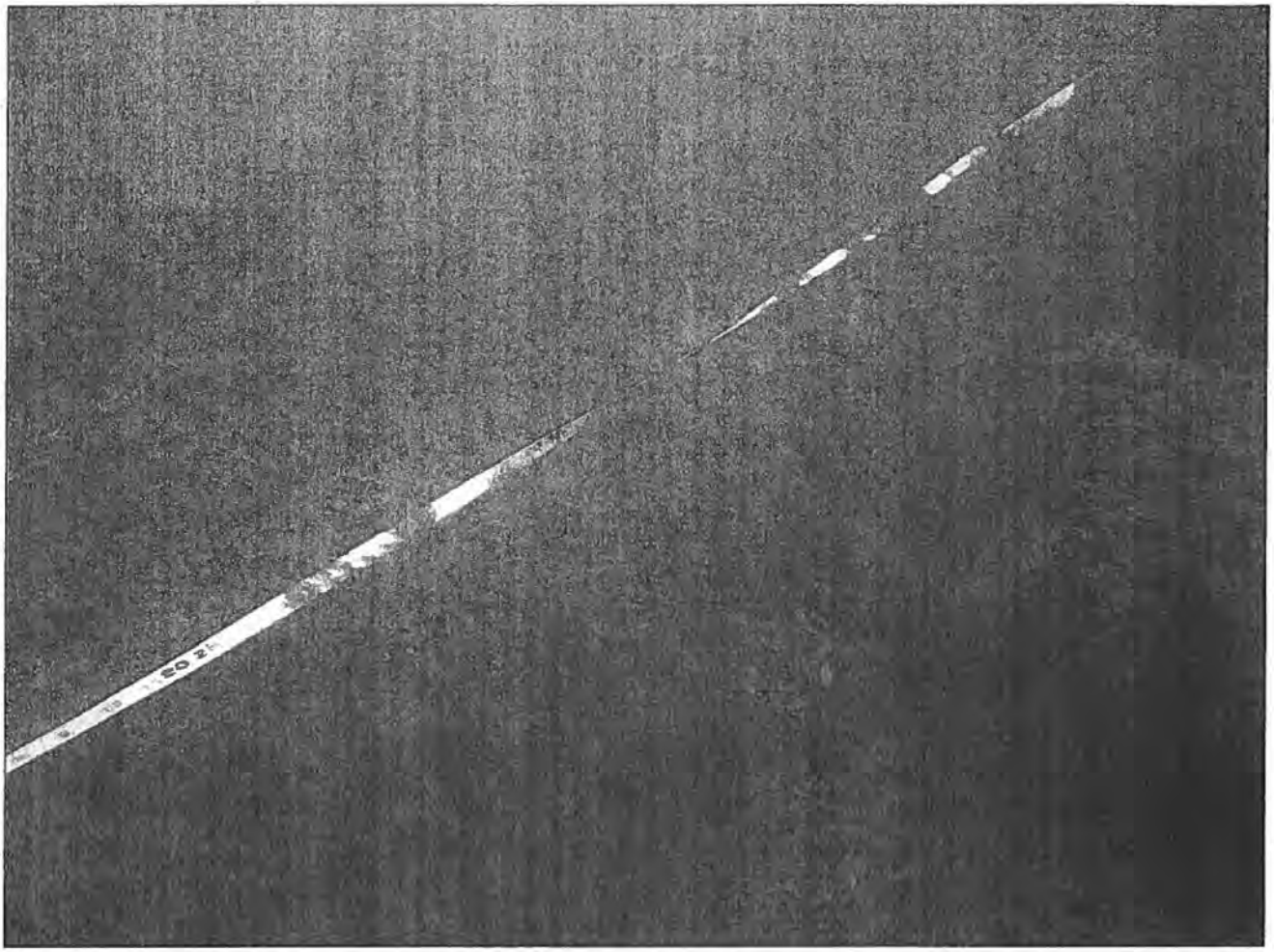


Figure 46. Keelson of the F. H. PRINCE wreck showing the position of the baseline tape (photo by Roger Franklin).

Molly Kavanaugh, a reporter from the *Cleveland Plain Dealer*, and a photographer went to the site to observe the divers in action and to conduct interviews (Figure 47). The story on our research efforts ran in the June 22, 2002. They were transported to the land base via zodiac® at 3:30.

Cleveland Plain Dealer, June 22, 2001

"Underwater preserve proposed in Lake Erie
By Molly Kavanaugh

Kelleys Island – For ages shipwrecks like the F. H. Prince have lain silently in Lake Erie hidden from everyone but the hardy divers who swim their decks.

Now they may show up on placemats and T-shirts. And that's OK with the people on Kelleys Island.

State and local officials want to create Ohio's first underwater preserve here, a historical site beneath the waves that would tell the stories of lost ships and crews.

They would include, for example, the Prince, which traveled the lake the turn of the century, first as a freighter, then as a sand dredge. On the morning of Aug. 8, 1911, it caught fire. Asecond blaze a few days later destroyed the 240-foot vessel. All 18 crew members survived.

The size and location of the preserve must be decided, said Mike Colvin, manager of the state's Coastal Management Program. About 20 shipwrecks lie near Kelleys Island, but organizers are unsure whether all would be included.

This is all new to Ohio. In Michigan and other Great Lakes states, many shipwrecks have been protected and promoted with brochures, museum exhibits and glass bottom boat tours.

'There are so many people who don't realize what's in the water and the connection it has to the people who live here,' said Linda Pansing, who leads the group of sport divers trained in underwater archaeology.

Since Monday, members of the Maritime Archaeological Survey Team have been surveying the Prince, a half-mile off the eastern shore. This is the group's third survey; the first two were of the steamship Adventure and a small schooner, W. R. Hanna, both in North Bay.

All that is left of the prince is its hull, which sits upright in about 15 feet of water.

'Ninety percent of the wrecks are upright. Most ships sink that way,' said C. Patrick Labadie, a retired museum director from Minnesota, and the team's consultant.

Equipped with underwater pencils and paper and waterproof tape measurers, the divers jumped into 15 feet of water and swam across the burned hull. They were lokking for the ship's centerline, a large square timber that runs from bow to stern.

Once that was marked and measured, buoys were set on the surface. During successive dives the divers noted twisted metal, weathered oak and a tool mark on the hull. They often had to first brush off zebra mussels.

The survey is evolving. 'It keeps getting refined,' Labadie said.

Each night the divers gathered at the village's municipal building, where Pansing and others entered data into a computer. The goal is to have enough information by Sunday to create a dive slate, a sort of blueprint of what the Prince looks like underwater.

This information, along with design drawings of the ship and stories about the crew, might end up on an interpretive road marker, a museum exhibit and restaurant placemats and T-shirts in Island gift shops.

Shipwrecks are also popular fishing spots because they shelter bass and other species and would continue to be so in a preserve, Colvin said.

'The community is behind it,' and Leslie Korenko, a member of Village Council and the underwater preserve's planning team. Eco-tourism is high among the village's priorites, she said.

Korenko joked about how the divers' work could lead to tourist promotions. 'They're coming up with sayings,' she said."

Participants: Jeff Malcolm and Tim Musolf (boat providers); Judd Clover, John Hoyt, Patrick Labadie, Mike Musolf, Linda Pansing, and Scott Pansing.

Figure 47. MAST diver entering the water at the F. H. PRINCE shipwreck site (photo by Scott Shaw, Cleveland Plain Dealer, June 22, 2001).

June 20, 2001. Met at the Pavilion by the municipal building at 10:00 a.m. so incoming participants could join the planning meeting. We discussed the objectives for the project and looked at the original ship building blueprints. Because the blueprint scale was available, this gave us a distinct advantage and we decided to use the same scale for the site plan. A side scan of the *F. H. PRINCE* was provided by Bill Kaman and Greg Millinger (Figure 48). This greatly aided in participant orientation and initial mapping decisions.

Members were assigned to dive teams and given specific tasks to complete. Major object for the day was to get futtock (rib) measurements. Dives commenced on site around noon and finished by 3:30 so the tanks could be taken to the dive shop for filling before it closed. Patrick left the dive boat at 1:30 and was transported to shore via zodiac®. The lake was calm and skies were partly cloudy. Air temperature was 80° and water temperature varied from 70° on the surface to 65° on the bottom. Visibility was 10 feet. It rained heavily that evening. At 7:00 p.m. we moved to the municipal building to transfer data onto the site plan. Calm night, wind from the Northeast at 10 knots.

Participants: Jeff Malcolm and Tim Musolf (boat providers); Judd Clover, George Eastman, Rick Hackel, John Hoyt, Patrick Labadie, Mike Musolf, Linda Pansing, and Scott Pansing.

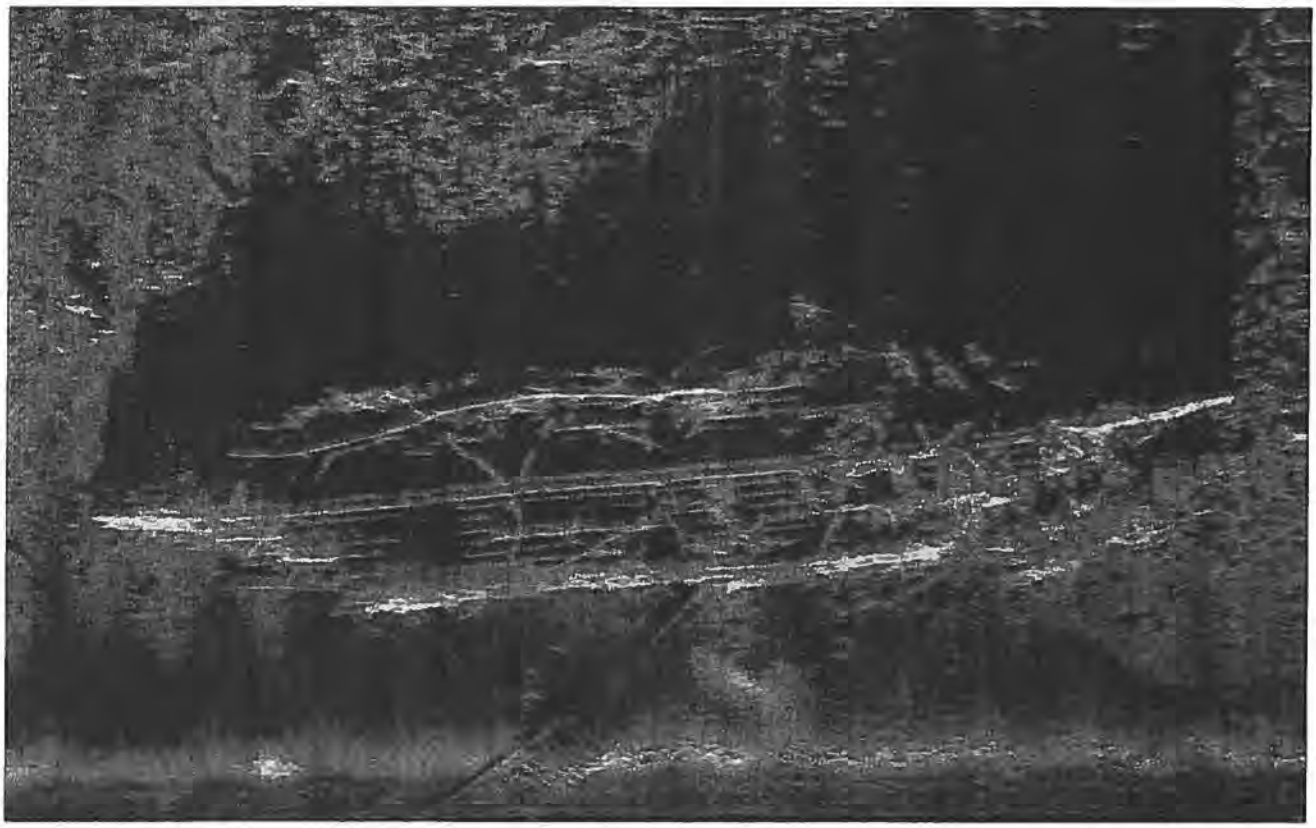


Figure 48. Side-scan sonar image of the F. H. PRINCE shipwreck (imaging by Bill Kaman and Greg Millinger, courtesy of Peachman Lake Erie Shipwreck Research Center).

June 21, 2001. Diving activities started at 10:00 a.m. and were called at 1:00 p.m. due to poor site conditions. Visibility ranged from 0 to 10 feet with the average being 2 to 4 feet. Surge was rough and because of this, one member became sea sick and needed to be transported to the land base via zodiac®. The surge also dislocated the baseline in sections of the keel, which were reaffixed with no degradation to accuracy using electrical tie wrap. Datum points were tagged, sub-baseline established and additional futtock measurements were accomplished. We met at the municipal building at 7:00 p.m. and mapped the day's data (Figure 49). Since the weather had worsened, we decided to meet at the municipal building at 10:00 a.m. the next morning to evaluate weather/dive conditions at that time.

Figure 49. MAST members plotting their measurements from the shipwreck site (photo by Linda Pansing).

Participants: Jeff Malcolm and Tim Musolf (boat providers); Judd Clover, George Eastman, Rick Hackel, Wiley Manning, Mike Musolf, Linda Pansing, and Scott Pansing.

June 22, 2001. We met at the municipal building at 10:00 a.m. After evaluating weather conditions we decided to dive. At the beginning of the day the sky was cloudy, air temperature was 70°, winds were 19 knots North-northwest, and waves were 1 to 2 feet. The *F. H. PRINCE* was in the lee of the island so wind and wave action didn't greatly affect diving. Diving activities started at 11:30 and finished up at 4:30. As the day progressed what waves were present died down and visibility increased. Water bottom temperature was 64° and visibility ranged from 6 to 10 feet. All datum points were measured, and some of the detailed drawings were completed. Sub-baseline mapping

continued. Dave Kelch and Joe Lucente from Ohio Sea Grant arrived at 11:50 a.m. and started video documentation of the site.

Participants: Jeff Malcolm and Tim Musolf (boat providers); Judd Clover, George Eastman, Dave Kelch, Joe Lucente, Ken Marshall, Mike Musolf, Linda Pansing, Scott Pansing, and Marcia Wilson.

While manning the land base Linda Pansing met Jack Wade, a Kelleys Island police officer, who is part of the Ohio Underwater Research Association. Jack informed her that prior to the passing of the shipwreck legislation, several artifacts were removed from the *F. H. PRINCE*, some of which we could gain access to. Linda made arrangements to meet him on Sunday to see some of the recovered material.

That evening there was a Town Hall meeting regarding a proposed Kelleys Island Underwater Preserve (Figures 50 and 51). Kelleys Island Historical Society, ODNR, Ohio Sea Grant, New Wave Dive Center, PLESRC, and MAST had booth space. In order to give the attendees an idea of the recording process, mapping of the day's activities was done at the meeting. Linda spoke about a product of mapping; dive slates that include information on the ship along with a picture and site plan. PLESRC and MAST members were interviewed by Brenda Culler for an article that appeared in the June 23, 2001 edition of the *Sandusky Register*.

Sandusky Register, June 23, 2001
"Survey team maps *F. H. PRINCE* for underwater preserve
By Brenda M. Culler

A shipwreck preserve based upon what the community thinks is important which will not interfere with boaters', fishermens', swimmers' or divers' rights is headed for Kelleys Island.

This is how officials from the Ohio Department of Natural Resources, Kelleys Island Village and Ohio's Maritime Archeological Survey Team (MAST) explained Ohio's first underwater shipwreck preserve which is being planned for the waters surrounding Kelleys Island.

About 40 island residents heard this explanation during an open house at the Old Town Hall Friday.

"When I learned that the navigational rights, fishing swimming and skiing rights would be unaffected by the preserve I was honored that the shipwrecks around Kelleys Island were selected for the state's first preserve project," said Mayor Tony Kuchar. "This will also protect the shipwrecks from scavengers."

Kuchar said the project could benefit the island by bringing in additional tourism. At the same time, Village Councilwoman Leslie Korenko said when the preservation is complete, residential land rights will not be affected. Korenko and other members of the preservation planning committee are creating the guidelines for the preserves.

"There is no preconceived idea about what an underwater preserve should be," said ODNR's Coastal Management Program Administrator Mike Colvin who is also a member of the preservation planning team. "We want to take the time and do it right. So the study (denoting which ships will be included in the preserve) may be done within a year from now or it may take longer."

As part of the planning process and Ohio Archeology Week which concludes today, MAST is mapping the F.H. Prince, a propeller steamer which sank about a half mile off the eastern shore of Kelleys Island.

"The biggest benefit of mapping boats and creating apreserve is that a diver could swim over a boat from bow to stern and not know what they are looking at," said Scott Pansing, one of the eight divers who has been mapping the Prince.

According to Pansing, mapping involves divers taking measurements from the center line of the sunken ship to the ship's edge on both the port and starboard sides. Divers denote interesting objects on the ship, such as the engine, drive shaft, anchor, propeller and ribs.

Divers write the measurements of these objects on "no-tear" plastic paper using a common mechanical pencil while still underwater.

When back on the surface, they will chart the measurements on an outline of the ship's original design tosee what effect the sinking and water pressure had on the layout of the vessel.

"Sometimes Lake Erie is clear and sometimes there is only four feet of visibility. If divers can take slates down with them when diving they'll know what they are looking at."

A slate, as explained by MAST member Linda Pansing, who is also the Staff Archaeologist

of the Lake Erie Shipwreck Research Center in Vermilion, is like a city map for sunken ships.

Slates include an outline of the sunken vessel with numbers on the mapped vessel, Pansing said. A key below the waterproof drawing tells what the objects are.

Some people attending the meeting said they were glad the preservation project was occurring because if the shipwrecks are marked with buoys they will be easier to locate when diving."

Figure 50. Scott Pansing explaining mapping process to reporter Brenda Culler (photo by Debbie Paul).

Figure 51. Linda Pansing explaining the purpose of a dive slate to attendees of the proposed Kelleys Island Underwater Preserve general information meeting (photo by Joe Hoyt).

June 23, 2001. Met at the pavilion by the municipal building at 10:00 a.m. so incoming participants could join the planning meeting (Figure 52). Northeast wind created waves on site and surge underwater; visibility was 1 to 7 feet. Diving commenced at 12:00 p.m. and ended at 5:30 p.m. At 2:00 p.m. Jim Maurer came to the land base and was transported to the site via zodiac®. Dive teams measured additional material. They also and conducted a sweep 120 feet from the stern, starboard stern 100 feet, and port stern 70 feet looking for the rudder. It was not located within the search area.

Divers also triangulated off-site features, which can be used to reset baseline for future work. Northwest of the stern of the wreck is a large, smooth, square limestone rock (16 inches x 22 inches) with a possible man made indentation in the top-center which is 3/4 inch deep. From here we measured the distance to the baseline: 6 feet 9 inches at a 90° angle reaching the baseline at 267 feet 11 inches (Figure 53). Southeast of the bow of the *F. H. PRINCE* is a large rock which measures 2 feet in circumference. It also has an indentation similar to the first rock mentioned, but our team placed this one there. The distance from this rock to the to the baseline is 2 feet 7 inches at a 90° angle reaching the baseline at 15 feet (Figure 54).

Roger Franklin did underwater photography. Dave Rausch flew over the work site to get aerial shots. We met at the municipal building at 7:00 p.m. and plotted in the day's data (Figures 55 and 56).

Participants: Roger Franklin, Jeff Malcolm, Tim Musolf, (boat providers); Judd Clover, George Eastman, Joe Hoyt, John Hoyt, Ken Marshall, Jim Maurer, Mike Musolf, Linda Pansing, Mark Pansing, Scott Pansing, Dave Rausch, Annette Soule, Dave Soule, Georgann Wachter, and Michael Wachter.

Figure 52. Meeting of MAST members at Kelleys Island pavilion to plan the day's diving activities and assign projects to the individual dive teams (photo by Linda Pansing). Meetings such as these were held each day before proceeding to the shipwreck site to make the assigned measurements and other observations.

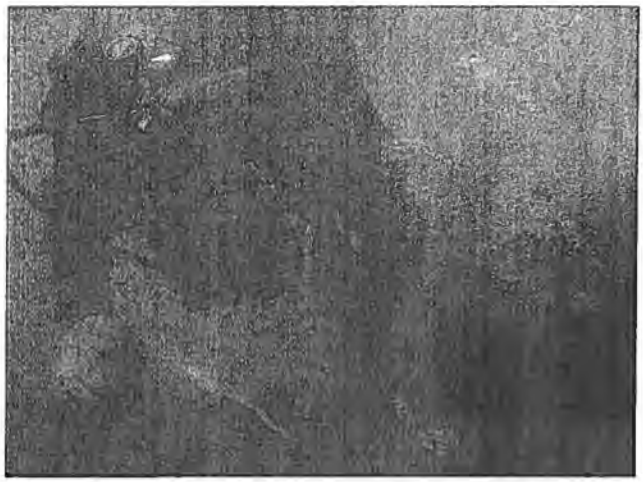


Figure 53. MAST divers making measurements from the baseline on F. H. PRINCE shipwreck (photo by Scott Pansing).

Figure 54. MAST diver gives an account of his dive observations on the F. H. PRINCE shipwreck site (photo by Scott Pansing).

Figure 55. MAST members working on the site plan for the wreck of the F. H. PRINCE (photo by Linda Pansing). The Village of Kelleys Island graciously provided MAST with facilities in the Village's service building to plot daily field measurements.

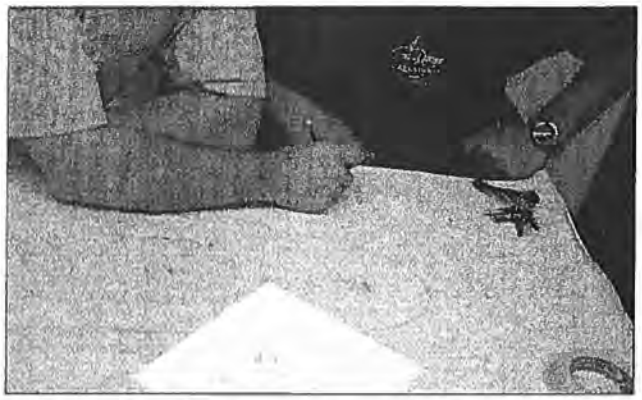


Figure 56. MAST members completing the site plan for the wreck of the F. H. PRINCE (photo by Linda Pansing).

June 24, 2001. Last day of the project and we had clear skies, warm light winds from the West and visibility was 15 feet. Diving started at 10:00 and finished at 12:30. Since today was the last day it was geared toward collecting remaining information on the sub-baseline, datum points, and getting ship orientation to magnetic north. Time was also used to clean up the work area and land base. Scott Pansing took underwater pictures of the site and Jim Maurer took video. Linda met with Jack Wade and looked over material that had been removed from the waters around Kelleys Island prior to the enactment of Ohio's shipwreck legislation. Many types of artifacts were made available for photography but it could not be said with certainty which material may have come from the site (Figures 57 and 58).

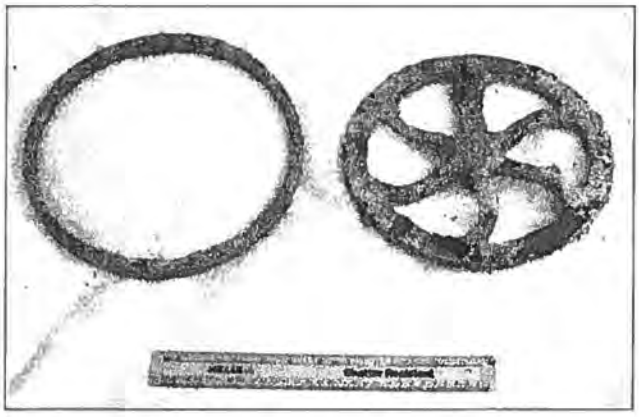


Figure 57. Ring and Pulley (?) that may have been removed from the F. H. PRINCE shipwreck site (photo by Linda Pansing). Artifacts shown on Figures 57 and 58 were made available through the courtesy of Jack Wade of the Ohio Underwater Research Association.

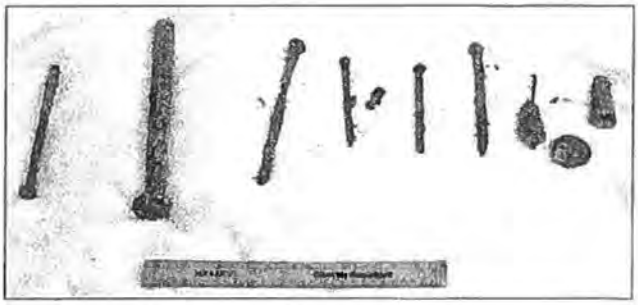


Figure 58. Fasteners that may have been removed from the F. H. PRINCE shipwreck site (photo by Linda Pansing).

After leaving Kelleys Island, Linda and Scott Pansing inspected the propeller and propeller shaft of the *F. H. PRINCE* which is on display at Neil Shrock Towing and Salvage, Inc. on North Shore Boulevard in Marblehead, Ohio (Figures 59 and 60). These artifacts are believed to have been salvaged from the shipwreck several decades ago.

Participants: Roger Franklin, Jeff Malcolm, Tim Musolf, (boat providers); Judd Clover, Ken Marshall, Jim Maurer, Liz Musolf, Matt Musolf, Mike Musolf, Linda Pansing, Mark Pansing, and Scott Pansing.

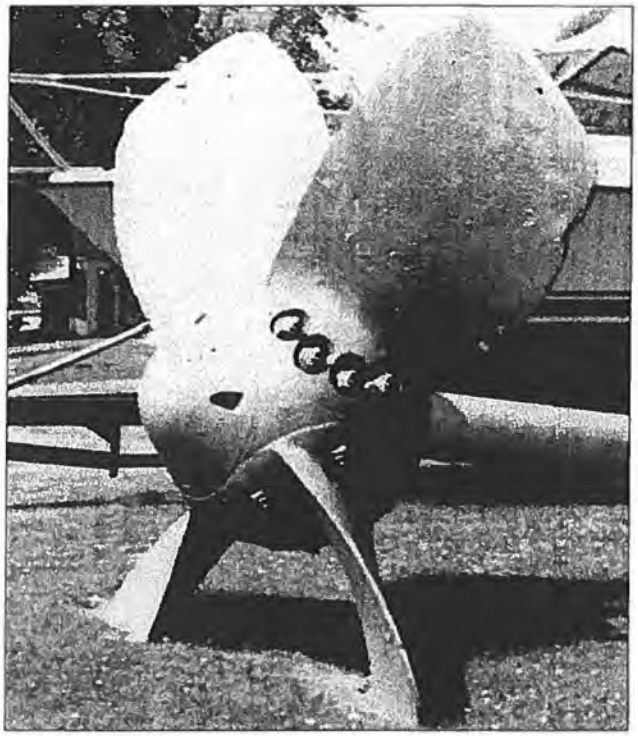


Figure 60. Propeller salvaged from the F. H. PRINCE shipwreck (photo by Linda Pansing).

Figure 59. Propeller and shaft salvaged from the F. H. PRINCE shipwreck (photo by Linda Pansing).

June 26, 2001. Since visibility was so poor during survey operations, Joe Hoyt returned to the *F. H. PRINCE* and created a detailed drawing of the remaining engine mechanics (Figure 61).

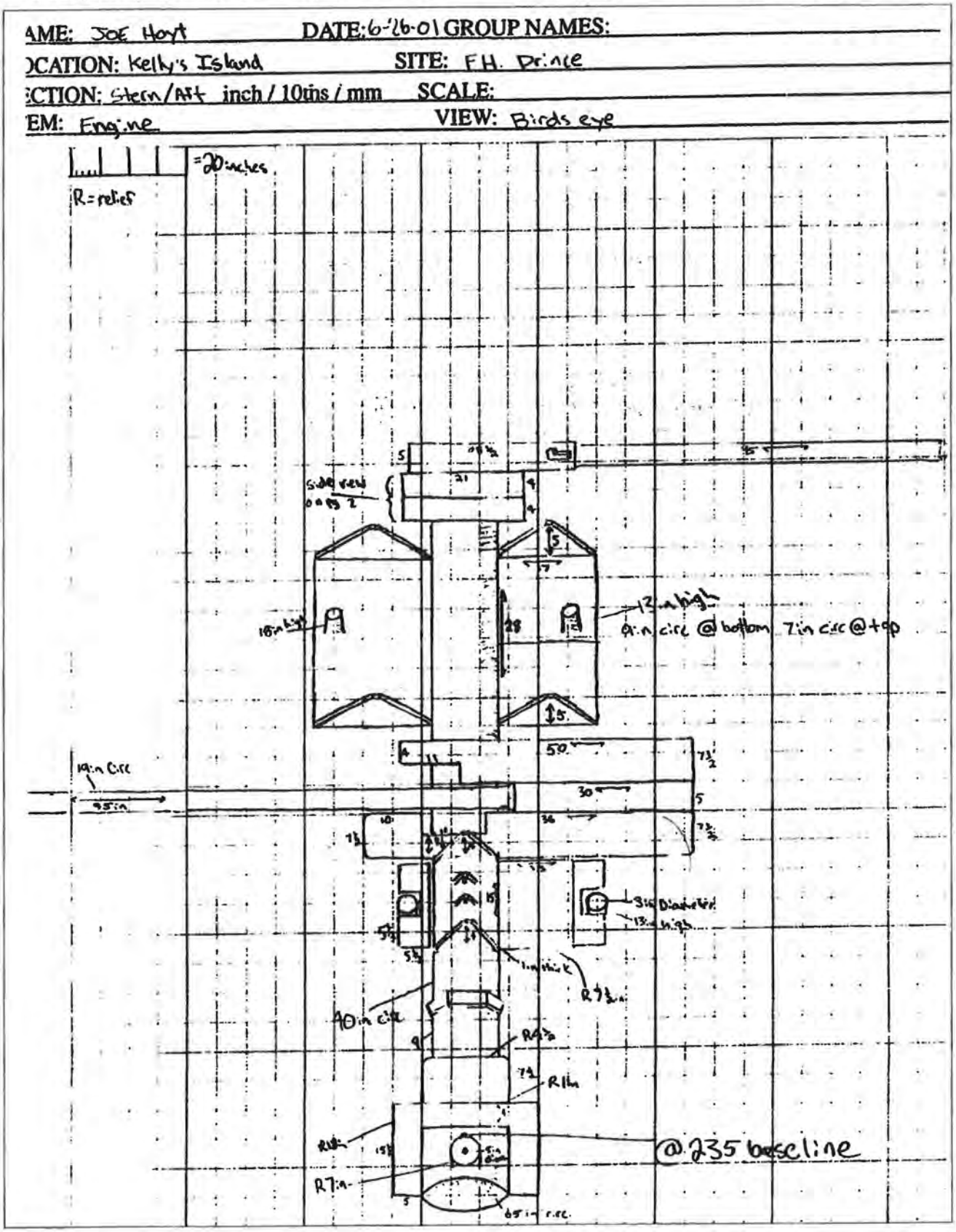


Figure 61. Detailed drawing of the extant engine works by MAST diver Joe Hoyt.

FIELD RESULTS

The MAST field survey formally ended on June 26, but on July 13, 2001 Mark Pansing, Scott Pansing, and Jeff Malcolm returned to the site to get detailed dimensions of bottom planking and to double check ship orientation to magnetic north. Also at the stern of the *F. H. PRINCE*, these divers did a 50-foot sweep looking for additional shipwreck debris.

The *F. H. PRINCE* is located in Lake Erie on the east end of Kelleys Island about 1/2 mile out from the airport at latitude N 41·36' 240" and longitude E -82°40'520". The vessel lays under 3 to 18 feet of water on Devonian limestone bedrock with its stern oriented 20° to the north. Limestone boulders are associated with the starboard side of the vessel, while the benthic make-up of the port side is primarily gravel and sand. Gravel and sand are also found within the body of the wreck. The wreck is in the leeward side of the island and measures 247 feet long and 42 feet at its widest point (Plate 1). A second section of the wreck, the 104 foot long port bulwark, extends diagonally from the wreck starting at the 160 foot mark of the base line to the 67 foot mark. What exists of the *F. H. PRINCE* is fairly low in profile and bears evidence of the fires, which destroyed her (Figure 62). While the remaining engine works come within 3 feet of the surface, the keel extends the length of the vessel and offers the highest consistent profile. The wreck lies flat on the lake bottom, with the stern being slightly higher than the bow.

At the time of survey water visibility was poor, varying from 0 to 15 feet. This could have been caused by various factors; wind/wave action, underwater currents, boaters and divers stirring up silt, blue-green and green algae blooms, zebra mussel fecal matter and/or spawning. Although visibility was poor during the time of the survey, this is not always the case. Within 30 days after the project several MAST members returned to the site and experienced 30-foot visibility.

The *F. H. PRINCE* was constructed primarily out of oak. This was not unusual for Great Lakes vessels of this time since it was relatively plentiful in the eastern United States and was very durable (Desmond 1919:14).

Keel and Keelsons. The keel is often called the "backbone" the ship. It is composed of several large pieces of wood which are joined together by scarphing

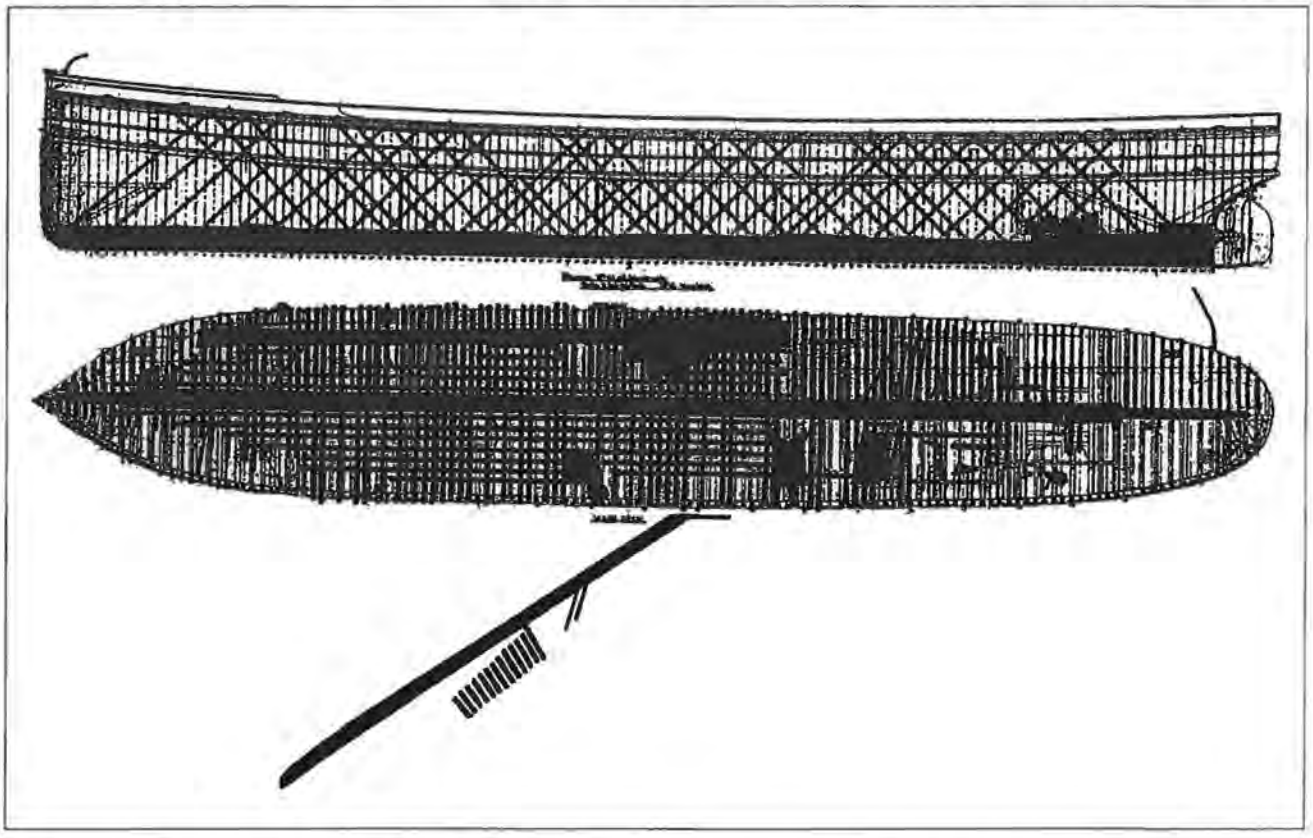


Figure 62. Surviving features of the F. H. PRINCE (darkened) as compared to original blueprints.

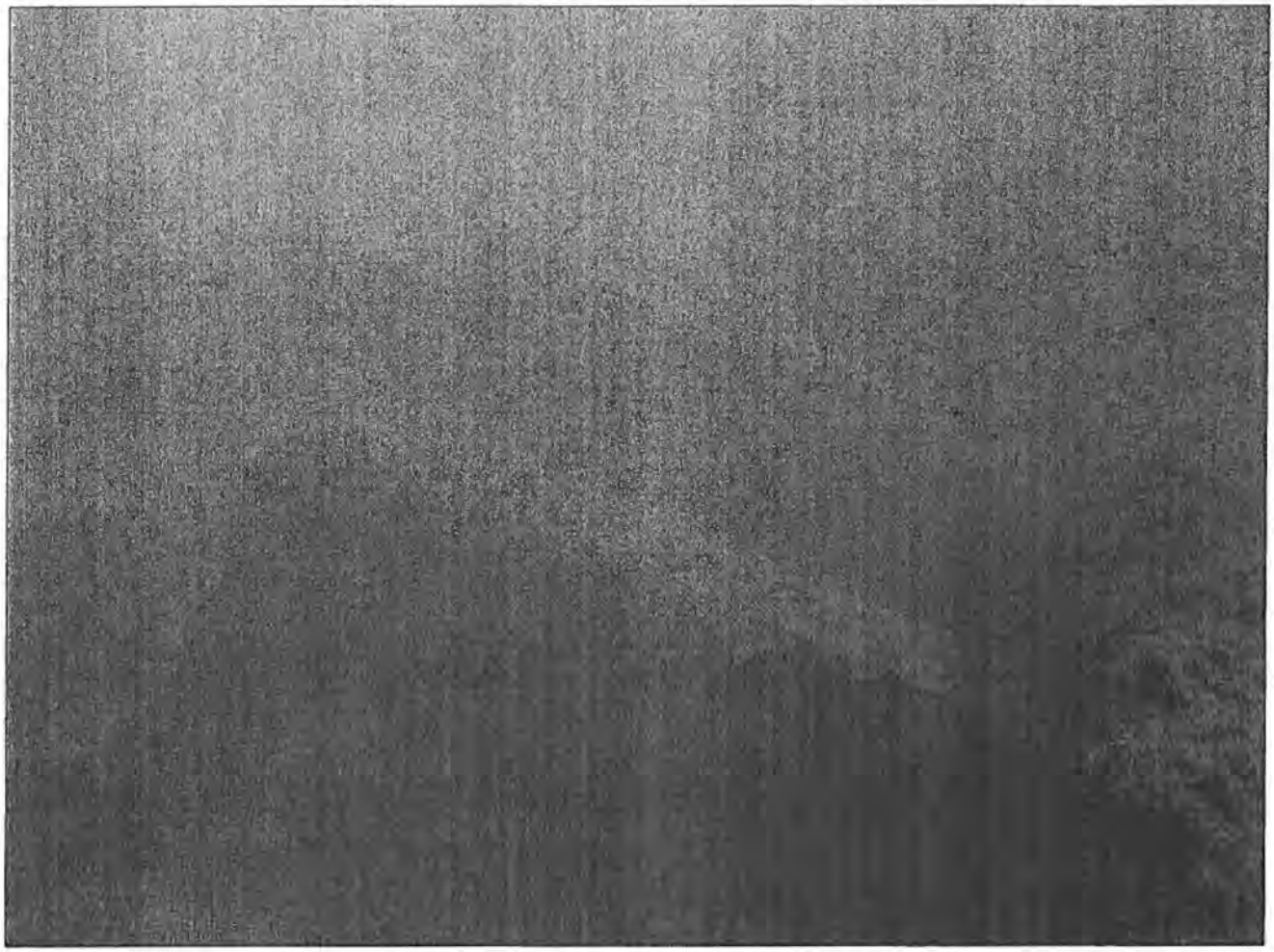


Figure 63. Futtocks (left) and plank (right) on the F. H. PRINCE shipwreck (photo by Roger Franklin).

(Desmond. 1919:206). Unfortunately keel measurements for the *F. H. PRINCE* could not be obtained since it was not within view. However when considering the dimensions of the *PRINCE*, the keel is most likely 18 x 22 inches (Desmond 1919:22). Six keelsons (2 sets of 3) are present and measure 9 inches wide and 12 inches deep, 8 inches wide and 12 inches deep, and 10 inches wide and 14 inches deep. The top set (9 inches by 12 inches) are joined by a 4 inch by 4 inch block which are spaced about a two feet apart evenly down the length of the keel (Figure 46). The keelsons were fixed together using 1 inch diameter bolts. Keelsons were very important in adding strength to the centerline of the vessel.

Futtocks and Ceiling. The futtocks, commonly called "ribs", are composed of 2-6 inch wide sections that are joined together to form a 1 foot wide unit which are spaced at 1 foot increments along the length of the vessel (Figure 63). The sections of wood composing each futtock are joined together by metal treenails, bolts and nails. Futtocks are noticeably absent in the stern, which may be related to fire in the boiler area. Many futtocks also appear to be burned down to the same elevation. This could be because the fire was stopped at the waterline.

Several sections of ceiling planking are present on the *PRINCE*. Each individual plank is 6 inches wide (Figure 63). This planking covered the interior of the hull.

Exterior Hull Planking. In certain areas of the *PRINCE*, sand and gravel were absent, allowing for a good inspection of the exterior hull planking. Exterior planking located towards the keel appears more intact and measures 12 1/4 inches wide. In addition, some large sections of the hull are present (between 11 and 15 feet long) and do not exhibit great fire damage. This is most prevalent mid-ship fore on both the starboard and port side. Planking was attached to the the vessel with iron treemails and spikes.

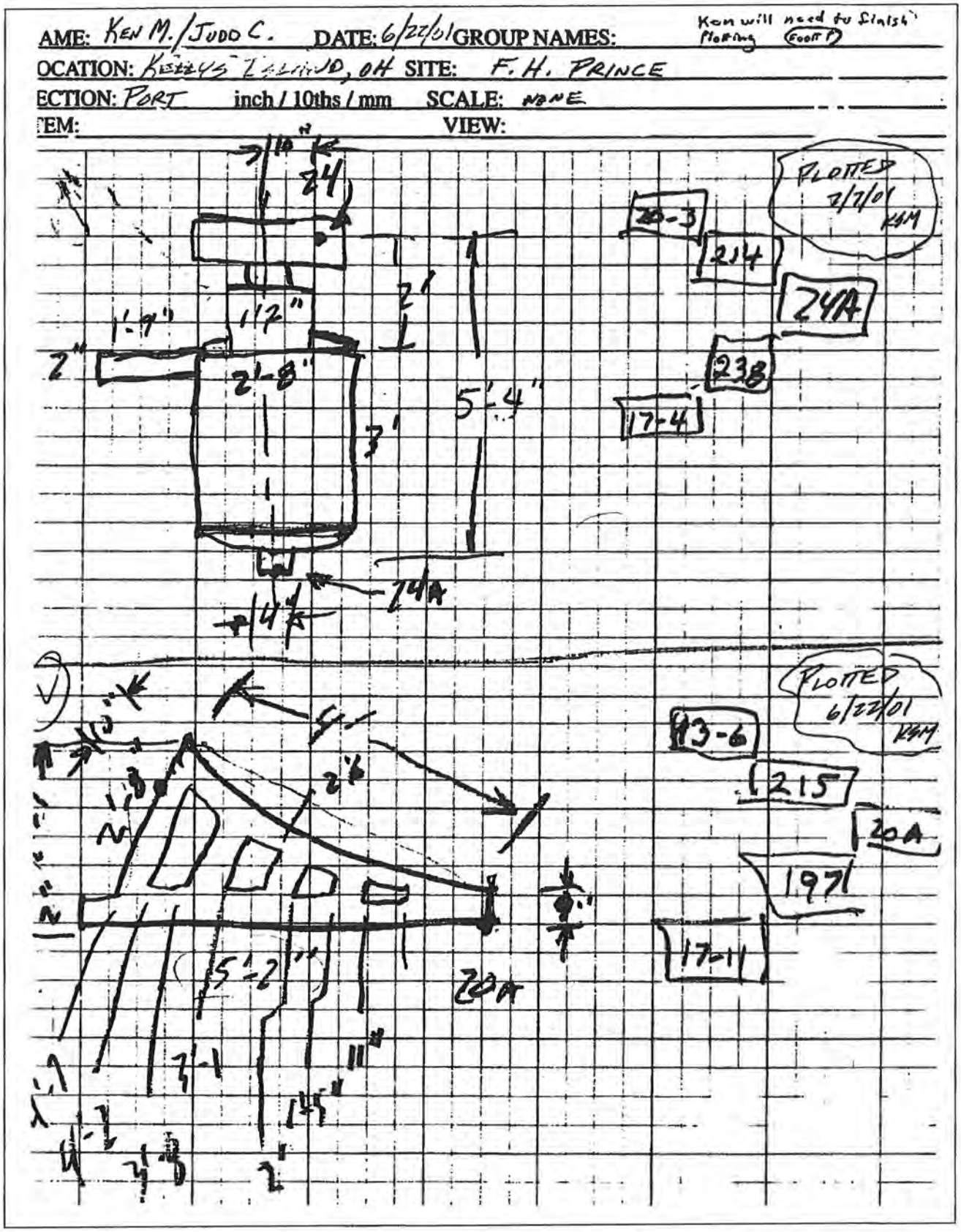


Figure 64. Drawings of engine cylinder (above) and a boiler saddle (below) from the F. H. PRINCE shipwreck by MAST divers Ken Marshall and Judd Clover.

Metal Strapping. Metal hull reinforcement straps litter the site but due to time constraints, and thick algae cover, only those visible and measuring at least 5 feet long were mapped. The straps measure on average 6 inches wide and 1/2-inch thick. These measurements closely correspond with guidelines set forth in the Lloyd's Rules and Dimension of Material Table. According to Lloyd's the dimensions for these steel straps are 6 1/2 inches wide inches by 7/8- inch thick. The straps were arranged at 45 degree angles (Figure 15) and attached to the vessel with bolts (Desmond 1919:21). The size variance we noticed could be the result of the fire and/or decay over time.

Engine Works. The engine bed for the motor works is intact. A cylinder (Figures 64 and 65) is separate and lies just to the port side of the crankshaft (Figure 66) and its overall size is 5 feet 4 inches x 3 feet. During the preliminary survey, the cylinder was mistaken for a boiler, due to zebra and quagga mussel encrustation. Other parts of the power plant still attached include the main bearing (Figure 67) and one eccentric lying toward the starboard side. The other eccentric lies toward the port with what appears to be two crank webs (Figure 68), which act as counter weights when driving the crankshaft. Frame mount castings are present throughout out the machinery. The over all length of the crankshaft and housing is 16 feet. Also at the stern is the v-shaped propellor support.

Boiler Saddles. In 1914 the two 12 foot x 11 foot scotch boilers were removed, but 6 boiler saddles still remain (Figures 64 and 69). The oblong boilers were set on the iron saddles to help keep them in place. It is presumed that 8 saddles were originally on the *F. H. PRINCE* (4 for each boiler, 2 in front and 2 placed in back). The saddles are roughly triangular in shape and measure 4 feet x 2 foot 8 inches x 5 feet two inches x 8 inches. They are not solid, but have 4 rectangular cut outs that are evenly spaced along the length of the

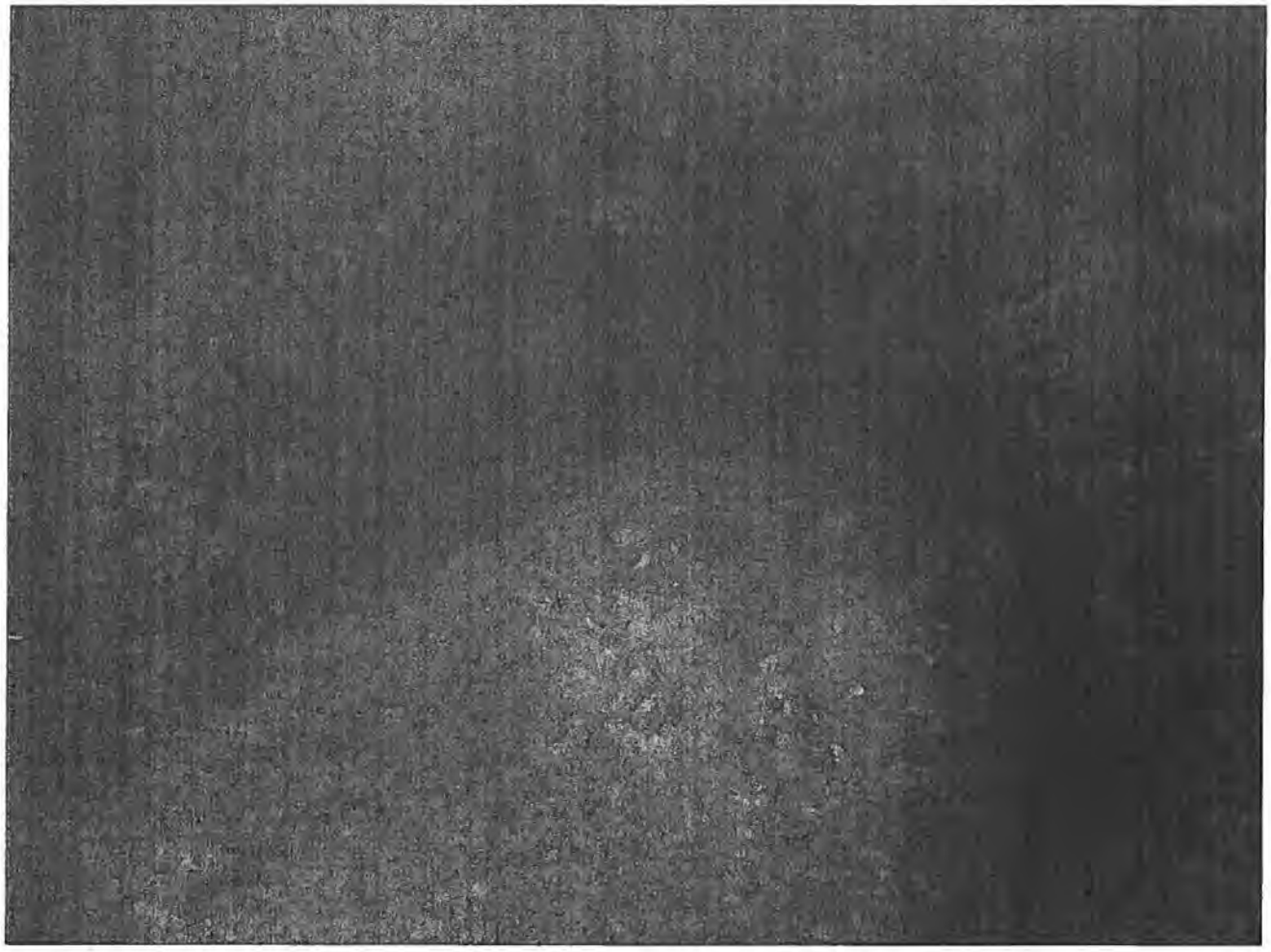


Figure 65. Engine cylinder of the F. H. PRINCE (photo by Roger Franklin). Shown is the "body" of the cylinder that measures 2 feet 8 inches long, and a portion measuring 1 foot 2 inches long emerging from the center.

Figure 66. Crankshaft assembly on the wreck of the F. H. PRINCE showing the main bearing (photo by Roger Franklin). The crankshaft extends to the upper left.

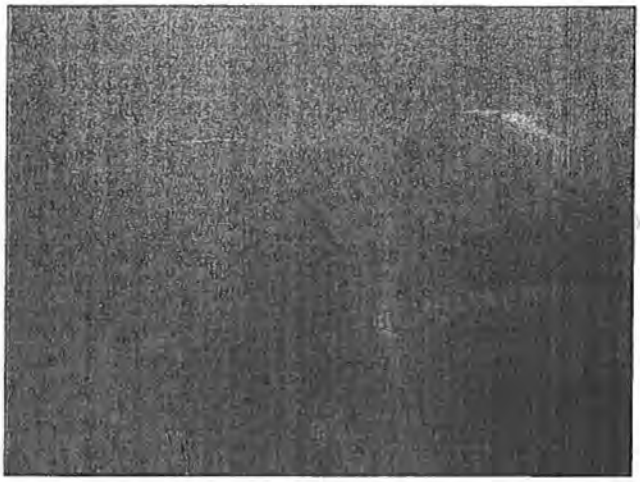


Figure 68. Crankshaft (right) and two crank webs (center and left) on the F. H. PRINCE shipwreck (photo by Roger Franklin). The connecting rod journal can be seen at the lower left.

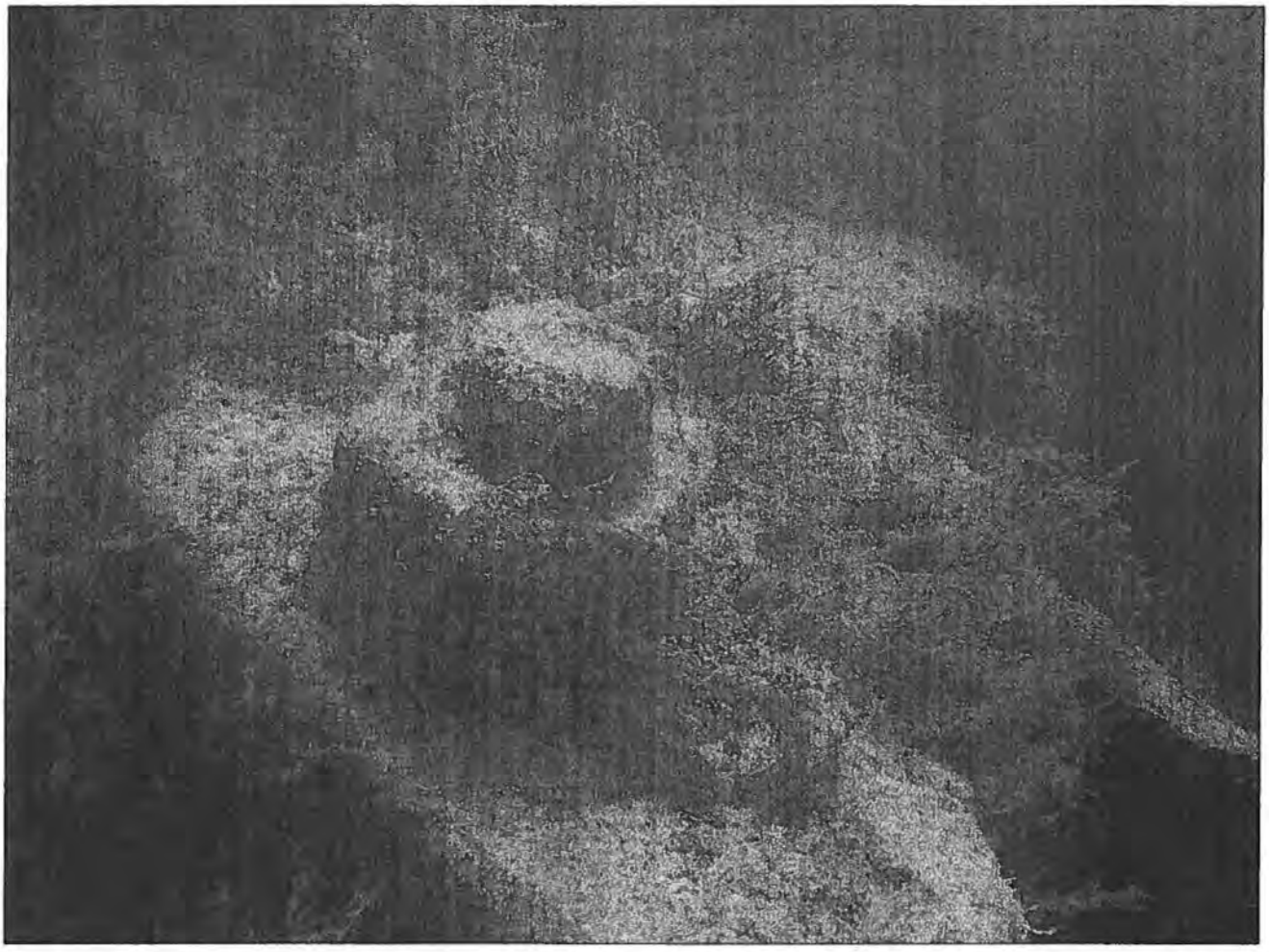


Figure 67. Close view of the crankshaft assembly on the wreck of the F. H. PRINCE showing a large nut which holds the cap on the main bearing (photo by Roger Franklin). An eccentric lays to the starboard (right) side.

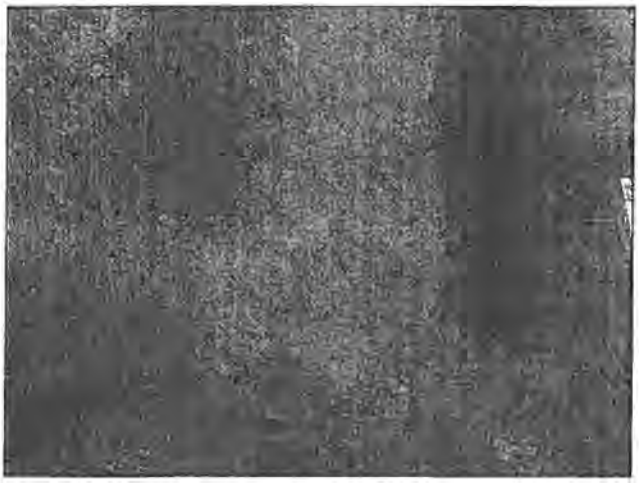


Figure 69. One of six boiler saddles found on the wreck of the F. H. PRINCE (photo by Roger Franklin).

saddle and decrease in size as the size of the saddle decreases. The 6 saddles are divided in to 2 sets of 3, which are located in relatively the same area on the starboard and port sides. Two of the saddles are still attached on the 8 inch end by a connecting metal strap.

Bulwarks. Also present are the port and starboard bulwarks. The starboard bulwark, measuring 120 feet long and 3 feet wide, lies on the body of the vessel while the port, measuring 104 feet long and 3 feet wide, extends diagonally off the port side from midship. Along with the port bulwark are what appear to be 13 pair of side frames. These frames may have come loose when the bulwark separated from the body of the vessel. Many metal fixtures are present with the frames.

Coil Piles. There are two distinct coil piles that measure 2 1/2 and 3 1/2 feet in diameter (Figure 70). They are located toward the bow on the starboard side between the bulwark and side of the wreck. These piles look similar to a ball of string that had been flattened. The coils are composed of many separate pieces rather than one large piece per pile. Perhaps they were long pieces that had been damaged by the fire.

Biological Observations. The *F. H. PRINCE* had gone through many transformations during its working life, from package freighter to sand dredge. Now the vessel serves as a dynamic artificial reef, home to many kinds of plant and animal species.

The *F. H. PRINCE* was covered with zebra mussels (*Dreissena polymorpha* [non-native])and quagga mussels (*Dreissena bugensis* [non-native]). Also, in growing numbers were clusters freshwater sponges (*Eunapius fragillis*). Small mouth bass (*Micropterus dolomieu*) and rock bass (*Ambloplites rupestris*) were present in large quantities.

Other fishes found in the area were freshwater drum (*Aplodinotus grunniens*), common carp (*Cyprinus carpio*), bullhead catfish (*Ictalurus nebulosus*) and channel catfish (*Ictalurus punctatus*), pumpkinseed sunfish (*Lepomis megalotis*), lake or emerald shiner (*Notropis atherinoides*), spottail shiner (*Notropis hudsonius*), yellow perch (*Perca flavescens*) logperch darter (*Percina caprodes)* and round goby (*Neogobius melanostomus* [non-native]).

Flora associated with the *F. H. PRINCE* were american elodea (*Elodea Canadensis*), coontail (*Ceratophyllum demersum*), cladophora (*Cladophora glomerata*), eurasian watermilfoil (*Myriophyllum spicatum*), eelgrass (*Vallisneria americana*), and numerous varieties of pondweed (*Potamogeton* sp.).

The non-native zebra mussel, quagga mussel and round goby are indigenous to Europe and were introduced to the Great Lakes in ballast water of transoceanic vessels. Mussels encase the *PRINCE* and gobies are being seen in higher frequencies (personal communication, David Kelch, Ohio Sea Grant, January 15, 2002).

Figure 70. Metal coil pile or possible reinforcing straps found on the wreck of the F. H. PRINCE (photo by Roger Franklin). Note the dense mats of algae and other aquatic plants that obscured large poitions of the shipwreck.

CONCLUSIONS

The *F. H. PRINCE* rests in shallow water off the east shore of Kelleys Island (Figure 71). Through the efforts of this survey and those of the *ADVENTURE* and *W. R. HANNA*, strides are being made towards the documentation of submerged vessels within the Islands Region. By providing site maps of the wrecks, the diving and non-diving public are given another facet of Kelleys Island history to appreciate.

As stated in the report, visibility was as issue during the project and valuable time was lost due to inclement weather. Owing to the size and complexity of the *F. H. PRINCE* shipwreck, this survey can be considered only the first step toward understanding this site, thus, further research is recommended.

In 1911 when the *F. H. PRINCE* was active in the sand trade, numerous vessels with a variety of designs were engaged in extracting sand and gravel from Lake Erie. Currently only two companies are engaged in this industry, each operating only one vessel in Ohio waters. Like many other maritime activities on the Great Lakes, the sand trade appears to be passing into out maritime heritage.

All project correspondence, daily dairies, data sheets, dive logs, pictures/slides, site plan, and videos [by Rod Althaus (1), Dave Kelch (2), Jim Maurer (1) and Mark Thomas (1)] are housed at the Peachman Lake Erie Shipwreck Research Center of the Great Lakes Historical Society in Vermilion, Ohio.

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PLESRC and MAST also wish to recognize the following establishments and individuals for their support of this project:

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Island Café & Brew Pub, Kelleys Island, Ohio
Island Divers Charter, Genoa, Ohio
Kelleys Island State Park, Kelleys Island, Ohio
Neuman Ferry Line, Marblehead, Ohio
New Wave Dive Shop, Port Clinton, Ohio
Ohio Sea Grant Extension Office, Elyria, Ohio
Seaway Marina, Kelleys Island, Ohio
Village of Kelleys Island, Kelleys Island, Ohio
Charlie Grass, Kelleys Island, Ohio
Bill Kaman, Huron, Ohio
Kris Leonhardt, Kelleys Island, Ohio
Greg Millinger, Port Clinton, Ohio
Jack Wade, Kelleys Island, Ohio

Individuals participating in the week-long project did so on a volunteer basis. Without their skills and dedication this project could not have succeeded:

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Judd Clover, Lancaster, Ohio
George Eastman, New London, Ohio
Roger Franklin, Huron, Ohio
Rick Hackel, Middlebury, Indiana
Dr. Charles E. Herdendorf, Sheffield Village, Ohio
Joe Hoyt, Marblehead, Ohio
John Hoyt, Marblehead, Ohio
Dave Kelch, Grafton, Ohio
C. Patrick Labadie, Alpena, Michigan
Jeff Malcolm, Norwalk, Ohio
Ken Marshall, Eastlake, Ohio
Jim Maurer, Columbus, Ohio
Liz Musolf, Genoa, Ohio
Linda Pansing, Delaware, Ohio
Tim Musolf, Genoa, Ohio
Mark Pansing, Columbus, Ohio
Scott Pansing, Delaware, Ohio
Annette Soule, Lorain, Ohio
Dave Soule, Lorain, Ohio
Georgann Wachter, Avon Lake, Ohio
Mike Wachter, Avon Lake, Ohio
Marcia Wilson, Columbus, Ohio

Volunteers:
Joe Lucente, Oregon, Ohio
Wiley Manning, Columbus, Ohio
Matt Musolf, Genoa, Ohio
Mike Musolf Genoa, Ohio
Dave Rausch, Newark, Ohio

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GLHS Volunteers. Russ Bearss, John Lopatkovich, Diana Szambecki, Pam Hinman, David Scali, Bette Lou and Michael Higgins, Docents: Pam Seymour, Andy Bodrock, Jay Reeb, and Judy Kienzle.

Peachman Lake Erie Shipwreck Research Center Board Members. Michael Schaffer, Dr. Charles E. Herdendorf, Alexander Cook, Captain Wayne Bratton, William D. Carle III, and David Lawler.

Peachman Lake Erie Shipwreck Research Center Technical Advisory Committee. Bob Graham, Bill Kaman, Chris Kohl, Joyce Hayward, Patrick Labadie, Russ MacNeal, Sue MacNeal, Greg Millinger, Jack Ott, Scott Pansing, Jim Paskert, Annette Soule, Dave Soule, Georgann Wachter, and Michael Wachter.

GLHS Board of Trustees. Howard Baxter, Daniel Beifuss, Laurence Bettcher, Captain Wayne Bratton, William D. Carle III, Alexander Cook, Kenneth Dickson, Robert Dorn, Julia Ecker, Dr. John C. Fakan, David Ford, RADM Anthony Fugaro, Alfred Hart, Dr. Charles E. Herdendorf, Frederick Hunger, James Karpinski, David Lawler, Nancylee Malm, Frank Samsel, Ronald Sarstedt, Michael Schaffer, Robert Smith, Todd Sommer, William Stark, Rita Summers, Thomas "Andy" Sykora, Anthony Szambecki, Stuart Theis, Theodore Wakefield II, and Cliff Wolfe.

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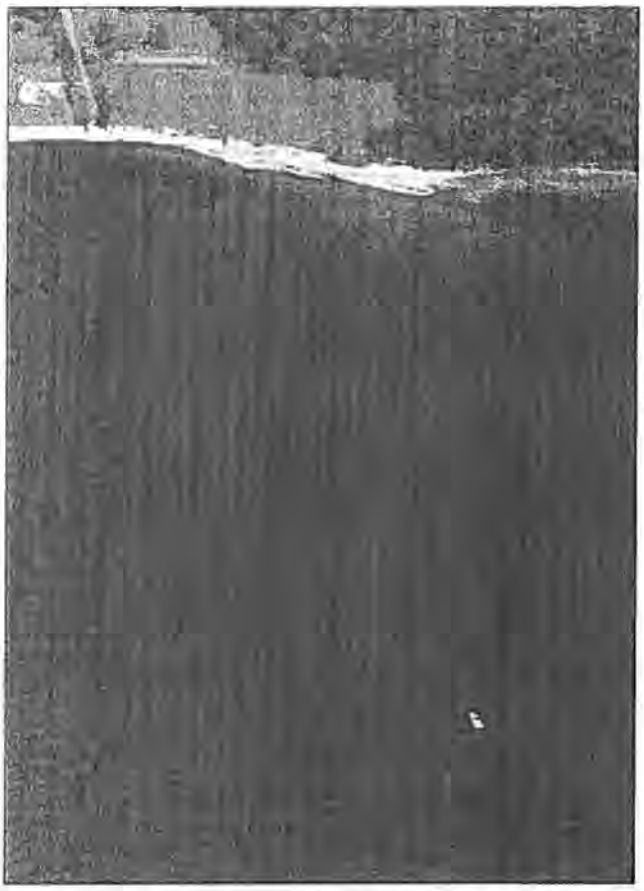

Figure 71. Aerial Photograph of F. H. PRINCE shipwreck site (photo by Dave Rausch).

ABOUT THE AUTHORS

LINDA L. PANSING

Ms. Pansing, a diver since the 1980's, started along her career path by attending workshops in underwater archaeology. She obtained a B.A. in anthropology from The Ohio State University and served as staff archaeologist for the Peachman Lake Erie Shipwreck Research Center at the Great Lakes Historical Society and technical specialist at the Ohio Historical Society, Archaeology Collections Department. She has conducted fieldwork on both underwater [shipwrecks: *ADVENTURE* (33-ER-481), *W. R. HANNA* (33-ER-488), *F. H. PRINCE* (33-ER-496), *VALE*, Gulf of Mexico, Florida; submerged prehistoric sites J & J Hunt and Locus T, Gulf of Mexico, Florida] and terrestrial sites [Carty Site (33-PI-646), Flint Ridge State Memorial (33-LI-1078), Fort Meigs State Memorial (33-WO-3), and the Thomas Worthington Estate (33-RO-853)].

Linda Pansing has served as an instructor for several Nautical Archaeology Workshops offered by the Great Lakes Historical Society in conjunction with Firelands College of BGSU; Ohio Department of Natural Resources, Ohio Historical Society; and Ohio Sea Grant College Program. Through these workshops, she has organized a volunteer group of divers, known as MAST (Maritime Archaeological Survey Team), which has mapped three Lake Erie shipwrecks in the vicinity of Kelleys Island.

CHARLES E. HERDENDORF

Dr. Herdendorf is Professor Emeritus of Geological Sciences and Zoology at The Ohio State University. Dr. Herdendorf started his Great Lakes career as a geologist with the Lake Erie Section of the Ohio Geological Survey in 1960. He joined the faculty of The Ohio State University in 1971 where he was the founding director of the Center for Lake Erie Area Research (CLEAR) and the Ohio Sea Grant College Program; from 1973 to 1988 he also directed the Theodore Stone Laboratory, Ohio's biological field station on Lake Erie at Put-in-Bay.

Dr. Herdendorf is a certified geologist, fisheries scientist, and underwater archaeologist; he served as science coordinator of the SS *CENTRAL AMERICA* Project, a 5-year expedition to explore the 1857 shipwreck of the gold-rush steamship that sank in a hurricane nearly 200 miles off the Carolina coast, in water 8,000 feet deep. He teaches courses in oceanography, marine biology and geology, Great Lakes studies, and nautical archaeology. He currently serves as trustee of the Great Lakes Historical Society and coordinator of its Peachman Lake Erie Shipwreck Research Center in Vermilion, Ohio. He also operates a Great Lakes and oceanographic consulting firm, EcoSphere Associates, located at Garfield Farms in Sheffield Village, Ohio.

Historic Glacial Grooves on Kelleys Island (courtesy of Ohio Historical Society).

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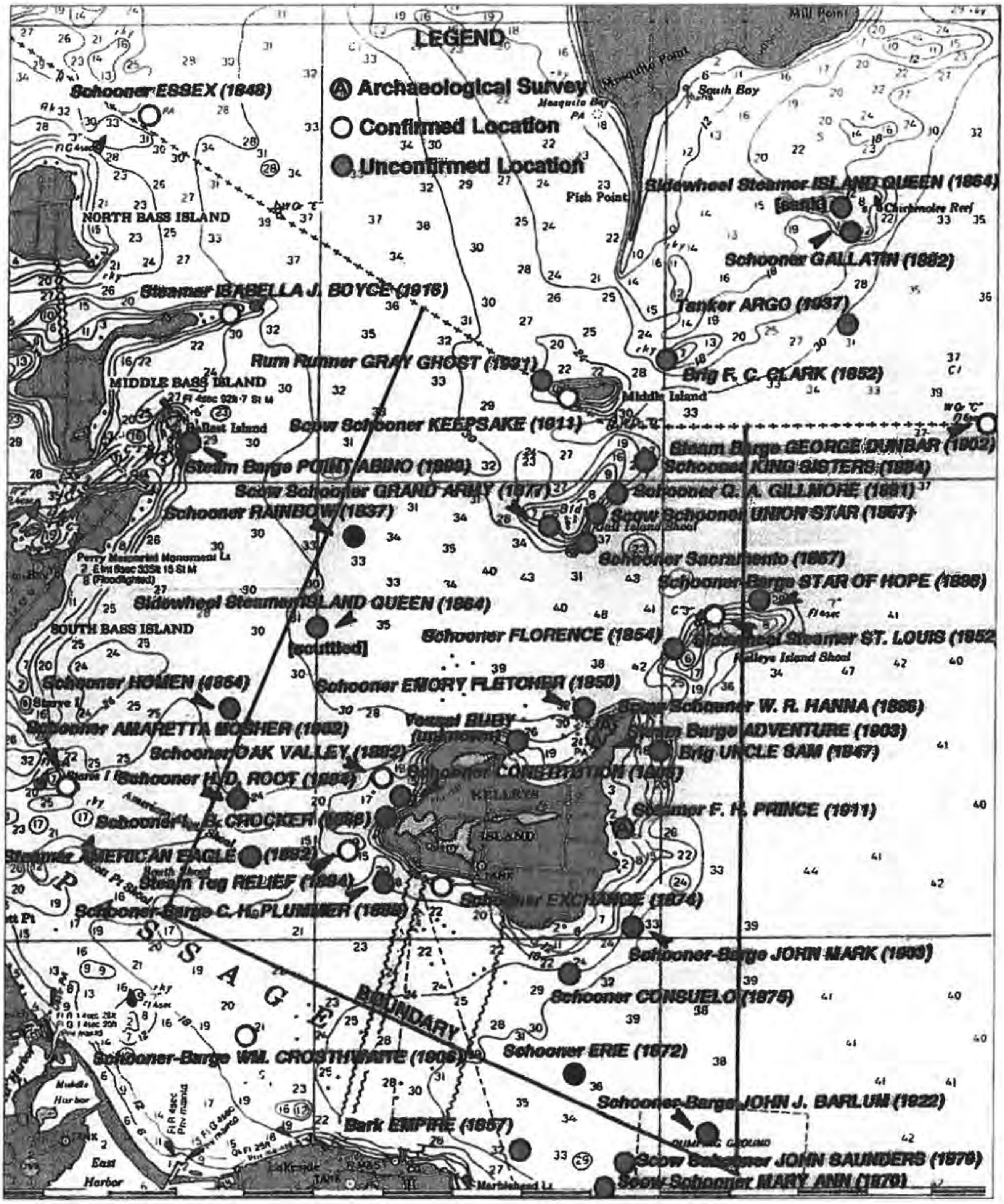
Heavy weather in the Lake Erie Islands (photo by Thomas H. Langlois).



Locations of shipwrecks and wrecking events in the eastern portion of the islands region of western Lake Erie, showing boundary of Kelleys Island Port Authority (base map from chart no. 14844, National Ocean Service, NOAA; illustration prepared by Charles E. Herdendorf).

APPENDIX
F. H. PRINCE TIME LINE

1890

Detroit Free Press
Marine News, March 28, 1890

"A Successful Launch. The Big Steamer *J. C. PRINCE* Slides Into The Water at Clark's Dry Dock.

All the available dock room immediately surrounding Clark's dry dock was filled yesterday afternoon with people who had come to see the large steamer launched. There were young and old, rich and poor, and all did their best to have everything carried out minus accident or hindrance of any kind. Hundreds ascended the incline walk and boarded the propeller so that they might say they were the first to take a ride on the boat. There were several cries of "there she goes" but at last she really did go. Shortly after 2 she slid gracefully and quietly down the ways and sailed out into the middle of the river. Those competent to judge say it was the prettiest launch they had ever seen. The boat was attired modestly in a coat of black and white, there being no bunting of any kind visible. After gracefully floating out into the steam she was picked up by a little tug which pulled and pulled and towed the helpless craft back to the dock."

The new steamer is of wood, iron strapped, and is owned by the Ogdensburg Transit Company. She is named the *J. C. PRINCE*, after one of the officers of the company, and will ply the freight business between Ogdensburg and Chicago. The cost of the boat was $130,000. She measures as follows: Length over all 254 feet; beam 42 feet; depth of hold 16 feet; 9 feet between decks. She will have a fore and aft compound engine and two Scott steel boilers. It is expected the boat will be ready for business in four weeks."

Detroit Free Press
Marine News, Marine Notes May 20, 1890

"The new Vermont Liner, *F. H. PRINCE*, launched about a month ago at the yard of the Detroit Dry Dock Company, at Springwells, was given a trial run yesterday afternoon. A large number of invited guests prominent among whom were many ladies were passengers. The engines worked satisfactorily. The noise made by the screw wheel which was partly out of water, rivaled that produced by the heavy paddles of a side wheel steamer."

Enrollment
May 20, 1890: Detroit Michigan

The *F. H. PRINCE* was enrolled as a propeller with a plain head and round stern, two decks and one mast. The vessel was built in 1890 by the Detroit Dry Dock Company, Detroit Michigan. Dimensions: 240' long x 42' wide x 23' deep. Measures 1547.007 tons; capacity under tonnage deck, 1928.70 tons; capacity of enclosures on the upper deck 1118.65 tons; gross tonnage 2047.35. Deductions under Section 4152, Revised Statutes as amended by Act of August 5, 1882, 499.65 tons, which leave a net tonnage of 1547.70. Master: D. A. Kiah.

Detroit Free Press
Marine News, Marine Notes May 23, 1890

"The new Ogdensburg line steamer *H. P. PRINCE* arrived at Buffalo from Detroit yesterday morning on her maiden trip. She loaded coal for Chicago with much trouble, owing to the great distance between her hatches."

Detroit Free Press
Marine News, Marine Notes May 27, 1890

"The new steamer *F. H. PRINCE*, on her arrival from Lake Erie Sunday, was found to be leaking, but not enough to require unloading and docking. A steam pump was put on board as a precautionary measure."

Detroit Free Press
Marine News, Vessel Passages, Detroit, June 7, 1890

Down bound, the *F. H. PRINCE* at 10:10 a.m.

Detroit Free Press
Marine News, Vessel Passages, Chicago, June 9, 1890

Down bound, *F. H. PRINCE*, Chicago to Ogdensburg.

Detroit Free Press
Marine News, Vessel Passages, the Straits, June 19, 1890

Down bound, the *F. H. PRINCE* passed by Mackinaw City at 11: a.m.

Detroit Free Press
Marine News, Lake Freights, June 21, 1890

Chicago "to Ogdensburg – Propeller *PRINCE*, corn and oats."

Detroit Free Press
Marine News, Arrivals and Clearances, July 4, 1890

Arrived in Cleveland July 3rd and unloaded merchandise brought from Chicago.

Detroit Free Press
Marine News, Vessel Passages, the Straits, July 7, 1890

Up bound, the *F. H. PRINCE* passed by Mackinaw City at 11:50 p.m. July 6th.

Detroit Free Press
Marine News, Arrivals and Clearances, July 9, 1890

The *F. H. PRINCE* arrived in Chicago on July 8th.

Detroit Free Press
Marine News, July 11, 1890

"Chicago, July 10...To Ogdensburg – Steamer *PRINCE*, oats."

Detroit Free Press
Marine News, Vessel Passages, the Welland Canal, August 6, 1890

Port Colborne, August 5, the *F. H. PRINCE* was down bound from Chicago to Ogdensburg.

Detroit Free Press
Marine News, Arrivals and Clearances, August 13, 1890

The *F. H. PRINCE* arrived in Cleveland on August 12th.

Detroit Free Press
Marine News, Arrivals and Clearances, August 20, 1890

The *F. H. PRINCE* arrived in Chicago on August 19th.

Detroit Free Press
Marine News, Vessel Passages, Detroit, August 23, 1890

Up bound, the *F. H. PRINCE* passed by Detroit at 10:30 a.m. on August 22nd.

Detroit Free Press
Marine News, Vessel Passages, the Welland Canal August 24, 1890

Port Colborne, August 23, the *F. H. PRINCE* was down bound from Chicago to Ogdensburg.

Detroit Free Press
Marine News, Arrivals and Clearances, August 31, 1890

The *F. H. PRINCE* arrived in Cleveland on August 30th.

Detroit Free Press
Marine News, Vessel Passages, the Straits, September 3, 1890

Up bound, the *F. H. PRINCE* passed by Mackinaw City at 7:15 a.m. September 2nd.

Detroit Free Press
Marine News, Vessel Passages, the Welland Canal, September 12, 1890

Port Colborne, September 11, the *F. H. PRINCE* was down bound from Chicago to Ogdensburg.

Detroit Free Press
Marine News, Arrivals and Clearances, September 26, 1890

The *F. H. PRINCE* arrived in Cleveland on September 25th.

Detroit Free Press
Marine News, Arrivals and Clearances, November 13, 1890

The *F. H. PRINCE* arrived in Cleveland on November 12th.

List of Merchant Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port [where permanent documents issued]:	Ogdensburg, New York

1891

Beeson's Marine Directory

– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Ogdensburg Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register

– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Bottom caulked:	1890
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$120,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1892

Beeson's Marine Directory

– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Ogdensburg Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register

– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Bottom caulked:	1890
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$120,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2, 047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1893

Inland Lloyd's Vessel Register

– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Bottom caulked:	1890
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$120,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1894

Detroit Dry Dock Company. *Around the Lakes: Containing a Full List of American Lake Vessels, and Addresses of Managing Owners, Condensed Statistics of the Lake Business, and a Historical Resume and Illustrations of the Plant, and Vessels Built by the Detroit Dry Dock Company, Detroit, Mich. ship and Engine Builders*

Ship Number:	102
Date:	1890
Length over all:	253'4"
Breadth:	42'
Depth:	25'6"
Gross tonnage:	2047.35
Net tonnage:	1547.70
Engines:	28, 52x40
Number of Boilers:	2
Boiler diameter:	12'
Boiler length:	11'
Pressure:	120

Beeson's Marine Directory

– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Ogdensburg Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register

– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$105,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1895

Beeson's Marine Directory

– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Ogdensburg Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register
– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Bottom caulked:	1890
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$100,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1896

Inland Lloyd's Vessel Register
– PROPELLERS

Net tonnage:	1553
Where Built:	Detroit
By Whom:	Detroit Dry Dock Company
When:	1890
Bottom caulked:	1890
Owners:	Ogdensburg Transit Company
Port of hail:	Ogdensburg, New York
Value:	$100,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.S.P.W. [iron boiler house, steam power for pumping and working ship, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2, 047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1897

Beeson's Marine Directory
– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Ogdensburg Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Door County Advocate, Sturgeon Bay, Wisconsin, January 30, 1897

"The Chicago Lumber Fleet.

The total number of Chicago winter moorings is 210, of this number 81 are steam vessels and 129 sail vessels of the lumber carrying fleet." [the *F. H. PRINCE* is in the steam vessel list]

Inland Lloyd's Vessel Register
– PROPELLERS

Net tonnage:	1553
Built of:	Wood
Where Built:	Detroit
When:	1890
Owners:	Ogdensburg Transit Company
Port of hail:	Ogdensburg, New York
Value:	
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.W. [iron boiler house, steam-pump well]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1898

Inland Lloyd's Vessel Register

– PROPELLERS

Net tonnage:	1553
Built of:	Wood
Where Built:	Detroit
When:	1890
Owners:	Ogdensburg Transit Co. [Through the "Owners" and "Port of hail" columns is stamped "Passed for Repairs"]
Port of hail:	Ogdensburg [New York]
Value:	$90,000 [strike through], $70,000 and Pass for repairs [handwritten]
Class:	A1* [strike through] [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.W.D.D. [iron boiler house, steam-pump well, double decked]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1899

Inland Lloyd's Vessel Register

– PROPELLERS

Built of:	Wood
Gross Tonnage:	2047
Where Built:	Detroit
When:	1890
Bottom caulked:	1897
Owners:	Ogdensburg Transit Co.
Port of hail:	Ogdensburg, New York
Value:	$75,000
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H. S.P.W. Rec. To. '97. Regg or Reqq [handwritten] [iron boiler house, steam-pump well, re-caulked topside 1897, symbol means approved system of water pipes, unsure of the handwritten translation]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1900

Beeson's Marine Directory

– List of American Steam Vessels of the Lakes

Class:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan

Name of owner or managing owner: Rutland Transit Company

Residence of owner or managing owner: Ogdensburg, New York

Beeson's Marine Directory
– Record of Engines and Boilers

Class:	do [ditto, Propr., Propeller]
Engine type:	Compound
Engine size:	28-52x40
Boilers, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Inland Lloyd's Vessel Register
– PROPELLERS

Built of:	Wood
Gross Tonnage:	2047
Where Built:	Detroit
When:	1890
Bottom caulked:	1897
Owners:	Rutland Transit Company
Port of hail:	Ogdensburg, New York
Value:	$85,000 [strike through] $75,000 [handwritten]
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Grain class:	
Remarks:	I.B.H. S.P.W. Rec. To. Ref. & Re.'97 Re. '99 [iron boiler house, steam-pump well, symbol means approved system of water pipes, re-caulked, topside, refastened, repaired 1897, repaired 1899]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
When built:	1890
Where built:	Detroit, Michigan
Home port :	Ogdensburg, New York

1901

Beeson's Marine Directory
– Record of Engines and Boilers

Class:	do [ditto, Propr., Propeller]
Engine type:	Compound
Engine size:	28-52x40
Boilers, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register
– PROPELLERS

Gross tonnage:	2047
Built of:	Wood
Where Built:	Detroit
When:	1890
Bottom caulked:	1897
Owners:	Rutland Transit Company
Port of hail:	Ogdensburg, New York
Value:	$75,000
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H.S.P.W. Rec. To. Ref. & Re. '97. Re. '99 [iron boiler house, steam-pump well, approved system of water pipes, re-caulked, top-side, refastened and repairs 1897, repairs 1899]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	Steamer, screw
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Service:	I. f. [Inland freight]
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1902

Beeson's Marine Directory

– Record of Engines and Boilers

Class:	do [ditto, Propr., Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Beeson's List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

List of Merchant Vessels of the United States

1902, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Service:	I. f. [Inland freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1903

Beeson's Marine Directory

- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Inland Lloyd's Vessel Register

– PROPELLERS

Built of:	Wood
Gross Tonnage:	2047
Where Built:	Detroit
When:	1890
Bottom caulked:	1900
Owners:	Rutland Transit Co.
Port of hail:	Ogdensburg [New York]
Value:	$65,000
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H. S.P.W. Rec. To. '03. Rec. Dk. & Re '02. [iron boiler house, steam-pump well, symbol means approved system of water pipes, re-caulked, topside, 1903, re-caulked, deck, repairs 1902]

List of Merchant Vessels of the United States
1903, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Service:	I. f. [Inland freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1904

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Door County Advocate, Sturgeon Bay Wisconsin, July 2, 1904

"The steamer *F. H. PRINCE* ran into the new pier under construction at the west of the breakwater, while trying to enter Cleveland harbor last week Thursday, and had to be beached to keep her from going to the bottom, a bad hole having been cut into her bow. She was raised Saturday, towed into port and docked. The *PRINCE* has on board a large quantity of rubber goods and books and was bound to Chicago. The loss on the cargo is almost total.

Inland Lloyd's Vessel Register
– PROPELLERS

Gross tonnage:	2047
Built of:	Wood
Where Built:	Detroit
When:	1890
Bottom caulked:	1900 [strike through] 1904 [handwritten]
Owners:	Rutland Transit Co.
Port of hail:	Ogdensburg [New York]
Value:	$50,000
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Grain class:	\ [handwritten]
Remarks:	D.D.I.B.H.S.P.W. Rec. To. '08 [strike through "08," handwritten "03"] Rec. Dk. & Re. '02., Rec. Cl. & Re. '04 [handwritten], [double-decked, iron boiler house, steam-pump well, approved system of water pipes, re-caulked, top-side, 1903, re-caulked, deck and repairs, 1902, re-caulked, ceiling and repairs, 1904]

List of Merchant Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Service:	I. f. [Inland freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1905

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory
– Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boilers, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Inland Lloyd's Vessel Register
– PROPELLERS

Gross tonnage:	2047
Built of:	Wood
Where Built:	Detroit
When:	1890
Bottom caulked:	1903
Last in Dry dock:	1904
Owners:	Rutland Transit Co.
Port of hail:	Ogdensburg [New York]
Value:	$50,000 [strike through] $45,000 [handwritten]
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Grain class:	IBD [no classification translation available]
Remarks:	D.D.I.B.H.S.P.W. Rec. To. 03, Rec. Cl. & Re. '04 [handwritten], [double-decked, iron boiler house, steam-pump well, approved system of water pipes, re-caulked, top-side, 1903, re-caulked, ceiling and repairs, 1904]

List of Merchant Vessels of the United States
1905, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Service:	I. f. [Inland freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1906

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory
– Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Inland Lloyd's Vessel Register
– PROPELLERS

Gross tonnage:	2047
Built of:	Wood
Where Built:	Detroit
When:	1890
Bottom caulked:	1903
Last in Dry dock:	1904
Owners:	Rutland Transit Co.
Port of hail:	Ogdensburg [New York]
Value:	$45,000
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H. D.D.S.P.W. Rec. Cl. '04 Re. '06 [iron boiler house, double-decked, steam-pump well, approved system of water pipes, re-caulked, ceiling, 1904, repairs, 1906]

List of Merchant Vessels of the United States
1906, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2, 047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

Detroit Free Press, June 19, 1906

"DOZEN BOATS CRASH

———

Latest Record for a Day on the Lakes

———

RYERSON, with Passengers, Cut in Two by *GEORGIA*

———

Dense Fog was Cause of Four Collisions

———

Twelve vessels were in collision Sunday on the great lakes. This would seem to be a record in this department of marine mishaps. Of the six collisions in which they took part, four were caused by fog, which for the last season or two has become a more frequent menace to sailors and owners.

Four vessels of the Gilchrist fleet were participants in three of the mix-ups, and three of the boats are seriously damaged, the *STEEL KING* being on the bottom in shallow water near Harbor Beach.

PASSENGERS ENDANGERED

Twelve passengers of the little steamer *CARRIE RYERSON* were in great danger when she was caught on the bow of the Goodrich liner *GEORGIA* in Lake Michigan, not far from Whitehall. The boat was almost cut in two, and at once began to sink. Lifesavers took the passengers off, and the little boat was raced for shore, where she was beached in about six feet of water.

The *RYERSON* runs out of Stony Lake, connecting with the Goodrich line, and was attempting to come alongside for a transfer of passengers when the accident occurred.

The *RYERSON* is 66 feet long and 17 feet beam, and was built at Grand Haven in 1883. She is a wooden boat.

The steamer *WAWATAM*, which arrived at Lorain yesterday, reports having been in collision with the steamer *GEORGE GOULD* on Lake Huron in a fog. The *WAWATAM* has three damaged plates, but it is not known how badly the *GOULD* suffered.

COLLIDED IN HARBOR

The steamer *MERIDA* and the schooner *ANTRIM*, both Gilchrist boats, collided at Duluth, and the two ships are badly damaged. The *MERIDA* was coming down from the Mesaba ore docks and the *ANTRIM* being towed to the docks by two tugs. The boats came together just north of the interstate bridge. The bulwarks on the port bow of the steamer were stove in and several plates on the port bows of the *ANTRIM* were broken. It will take ten days to repair the *ANTRIM*. The *MERIDA* will make temporary repairs and come to Lake Erie.

The steamer *F. H. PRINCE*, of the Rutland line, collided with the schooner *OLIVER MITCHELL* twenty miles from Thunder Bay early Sunday morning. The schooner was but slightly damaged, but the steamer's bulwarks and after gangway were stove in. The *MITCHELL* was towed to Port Huron by the *PRINCE*, which then continued her trip down, passing Detroit at 1 o'clock yesterday afternoon."

1907

Beeson's Marine Directory

- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory

– Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Inland Lloyd's Vessel Register

– PROPELLERS

Gross tonnage:	2047
Built of:	Wood
Where Built:	Detroit
When:	1890
Bottom caulked:	1903
Last in Dry dock:	1904 [strike though] 1907 Re. [handwritten]
Owners:	Rutland Transit Co.
Port of hail:	Ogdensburg [New York]
Value:	$45,000
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
Remarks:	I.B.H. D.D.S.P.W. Rec. To. & Re. '07 [iron boiler house, double-decked, steam-pump well, approved system of water pipes, re-caulked, top-side and repairs 1907]

List of Merchant Vessels of the United States

1907, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Ogdensburg, New York

1908

Beeson's Marine Directory

- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory

– Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
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Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port :	Ogdensburg, New York

1909

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do [ditto, Propr., Propeller]
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory
- Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

List of Merchant Vessels of the United States
1909, Merchant Steam Vessels of the United States

Official No:	120797
Rig:	St. s. [Steamer, screw]
Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port :	Ogdensburg, New York

1910

Beeson's Marine Directory
- List of American Steam Vessels of the Lakes

Rig:	do
Gross tons:	2047
Length:	240
Beam:	42
Depth:	23
Class:	A1 1/2* [metal banded and strapped, or arched on frame and ceiling]
When built:	1890
Where built:	Detroit, Michigan
Name of owner or managing owner:	Rutland Transit Company
Residence of owner or managing owner:	Ogdensburg, New York

Beeson's Marine Directory
– Record of Engines and Boilers

Class:	Propr. [Propeller]
Engine type:	Fore & Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Engine Builder number:	4 [Dry Dock Engine Works, Detroit, Michigan]

Detroit Free Press
Marine News, January 26, 1910

"Quits Vessel To Go Into Business

Cleveland, January 25. - Capt. H. H. Parsons, of Detroit, has resigned as master of the steamer *WILLIAM G. MATHER* of the Cleveland Cliffs Iron company's fleet. With H. K. Oakes, of Detroit, he will open a vessel brokers' office here."

Detroit Free Press
Marine News, Marine Notes, February 5, 1910

"H. K. Oakes and Capt. H. H. Parsons, who are leaving Detroit to become vessel brokers and managers in Cleveland. Will open offices on the ninth floor of the Rockefeller building."

Detroit Free Press
Marine News, Vessel Passages, Detroit, April 19, 1910

Down bound, the *F. H. PRINCE* passed by Detroit at 2:45 p.m. April 18th.

Detroit Free Press
Marine News, March 4, 1910

"The vessel and lake freighting agency formed by H. K. Oakes and Capt. H. H. Parsons will open offices this week at 903 Rockefeller building, Cleveland, under the name of the Great Lakes Freighting company.

Mr. Oakes will not, as has been reported, make his residence in Cleveland, but will remain in Detroit. The affairs of the Cleveland Office will be under the active charge of Capt. Parsons as vice-president and manager. The Great Lakes Freighting company will do a general vessel agency business and will act as Lake Erie representative for a number of ships of the Franklin and Fremont steamship companies, which are managed by Mr. Oakes.

Capt. Parsons is in Cleveland now and will move his family there next month. Capt. Parsons's broad acquaintance about the lakes and his familiarity with lake shipping equip him well for the management of the new office."

Detroit Free Press
Marine News, Vessel Passages, Mackinaw City, May 5, 1910

Up bound, the *F. H. PRINCE* passed by Mackinaw City, 4:40 p.m., May 4th.

Detroit Free Press
Marine News, Vessel Movements, May 8, 1910

The *F. H. PRINCE* arrived in Chicago on May 7th.

Detroit Free Press
Marine News, Vessel Movements, May 9, 1910

The *F. H. PRINCE* arrived departed from Chicago on May 8th.

Detroit Free Press
Marine News, Vessel Passages, Port Huron, May 12, 1910

Down bound, the *F. H. PRINCE* passed by Port Huron at 2:50 p.m., May 11th.

Detroit Free Press
Marine News, Vessel Movements, May 25, 1910

The *F. H. PRINCE* arrived in Chicago on May 24th.

Detroit Free Press
Marine News, Vessel Movements, May 26, 1910

The *F. H. PRINCE* was cleared to depart Chicago on May 25th.

Detroit Free Press
Marine News, Vessel Movements, May 29, 1910

The *F. H. PRINCE* was cleared to depart Chicago on May 28th.

Enrollment
Master abstract, Detroit Michigan, June 15, 1910

P or T:	P
Enrollment #:	106
Enrollment Date:	June 15, 1910
Official #:	120797
Rig:	2 St.s.
Name:	*F. H. PRINCE*
Managing Owner:	Herbert K. Oakes
Why issued:	R & Db
Description of former document:	
Kind:	DE
Number:	6
When issued:	4-16-1900
Where issued:	Ogdensburg
Gross tonnage:	2047
Net tonnage:	1547

Detroit Free Press
Marine News, Vessel Movements, June 27, 1910

The *F. H. PRINCE* arrived in Duluth Minnesota on June 26th.

Detroit Free Press
Marine News, Vessel Movements, July 1, 1910

The *F. H. PRINCE* was cleared to depart Duluth Minnesota on June 30th.

Detroit Free Press
Marine News, Vessel Movements, July 15, 1910

The *F. H. PRINCE* was cleared to depart Duluth Minnesota on July 14th.

Detroit Free Press
Marine News, August 4, 1910

"PRINCE to Receive Repairs
Special to The Free Press

Marine, City, Mich., August 3. – The Steamer *F. P. PRINCE* came in to Kenyon's ship yard here for a general overhauling today."

List of Merchant Vessels of the United States

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Gross tonnage:	2,047.35
Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Detroit, Michigan

1911

Beeson's Marine Directory
- American Steam Vessels on the Lakes

Rig:	Steamer
Gross Tons:	2047
Length & Beam:	240-42
When Built:	1890
Owners Name and Address:	Herbert K. Oakes, Detroit Michigan

Beeson's Marine Directory
- Record of Engine and Boilers

Engines class:	Propeller
Engine type:	Fore and Aft compound
Engine size:	28-52x40
Boiler, number:	2
Boiler type:	Scotch
Boiler size:	12x11
Number of Engine Builder:	4 [Dry Dock Engine Works, Detroit, Michigan]

Door County Advocate, Sturgeon Bay, Wisconsin, August 17, 1911

"Damaged to such an extent that the owners believe she cannot be repaired satisfactorily without more expense than the insurance would cover, the steamer *F. H. PRINCE* has been abandoned to the underwriters as a constructive total loss. She lies on the beach at Kelly's Island, Lake Erie, with the forward part of her hull burned almost to the water's edge. The vessel is insured for $35,000. The fire which caused Capt. H. H. Persons to beach the vessel at its way almost half way for the stern."

Door County Advocate, Sturgeon Bay, Wisconsin, August 24, 1911

"The steamer *F. H. PRINCE*, beached on the east shore of Kelly's Island, Lake Erie, last week Tuesday, to keep her from sinking after she had been swept by flames, was burned to the water's edge. A high wind late Tuesday night fanned some smoldering embers into a blaze that made a total loss of the boat."

Lake Carriers Association, Annual Report
1911 - Steamers

Name of Vessel:	*PRINCE, F. H.*
Cause:	Fire
Where lost:	Near Kelly's [sic] Island, Lake Erie
Carrying Capacity, Gross Tons:	2,100

List of Merchant Vessels of the United States
1911, Merchant Steam Vessels of the United States

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Net tonnage:	1547.70
Length:	240
Breadth:	42
Depth:	23.4
Services:	Frt. [Freight]
Crew:	18
Indicated horsepower:	800
When built:	1890
Where built:	Detroit, Michigan
Home port:	Detroit, Michigan

Sandusky Register, Wednesday, August 9, 1911

"FIGHT FLAMES THREATENING BOAT FAR OUT IN THE LAKE

Captain and Crew of Steam Barge *F. H. PRINCE* Have Close Call Off East Shore of Kelley's Island – Sandusky Sandsuckers to Rescue

The steamer *F. H. PRINCE* of Detroit, Capt. Parsons in command and bound for Cleveland with a cargo of gravel was threatened with total destruction by fire and sixteen lives were jeopardized in Lake Erie about half a mile off the East shore of Kelley's Island, Lake Erie shortly before noon Tuesday. How the fire started no one knows. The *PRINCE* was proceeding on her way when all of a sudden the upper part of her bow was found to be in flames that at times shot as high as thirty feet and forced islanders assembled on the shore to the conclusion that the boat was doomed.

The sandsuckers *MARY H. CLINTON*, *PROTECTION* and *ALBERT Y. GOWAN* all of this port happened to be at work in the Lake off Cedar Point, and their captains and crew realizing the danger the burning craft faced, went to her assistance. They arrived none too soon. By pouring four streams of water upon the *PRINCE* they succeeded in saving her but not until after her pilot house and superstructure in the rear as far back as the No. 2 hatch, had been destroyed. When the flames were discovered the Captain of the *PRINCE* ordered the boat backed into a gale that was blowing from the northwest. This had the effect of carrying the flames over the bow and away from the stern and did more than anything else toward saving the boat from total destruction. Captain and crew remained aboard the threatened steamer until the fire was put out.

Although the lifesavers from the Marblehead station were summoned to the *PRINCE*, their services were not needed as the sandsuckers and a dozen smaller boats from Kelley's Island were ready to rescue captain and crew at a moments notice.

The *PRINCE* is a wooden vessel, is 240 feet long, is of 2047 tons gross and 1, 547 tons net. She was built in Detroit in 1890 and was originally owned by Ogdensport, N. Y. parties, although she is now owned by the Great Lakes Freighting Co.

The *PRINCE* was originally a package freighter but her upper deck works were nearly all removed for the trade she has recently been engaged in.

Late Tuesday afternoon word came from Kelley's Island that the *PRINCE* had been beached and that the flames were still raging in her hull. It was apparent then that there was a great danger of the total destruction of the boat, but at last reports Tuesday night it was believed that she could be recommissioned after receiving an overhauling."

Cleveland Plain Dealer, Thursday, August 10, 1911

"ABANDONED *PRINCE* AS TOTAL LOSS

Owners of Burned Boat Believed Damage Will Exceed 75 Per Cent. Of Value

Damaged to such an extent the owners believe, that she cannot be repaired satisfactorily without more expense than the insurance will cover the steamer *F. H. PRINCE* has been abandoned to the underwriters as a constructive total loss. She lies on the beach at Kelley's Island with the forward of her hull burned almost to the water's edge.

The vessel is insured for $35, 000. The fire which caused Capt. H. H. Persons to beach the vessel ate its way almost half way to the stern. Without the cost of releasing her and towing her to a dry dock where she can be properly repaired, it is thought the damage amounts to at least the 75 percent necessary to make the ship a total loss.

No arrangements were made by the managers of the *PRINCE*, H. K. Oakes and Capt. H. H. Persons, to obtain a temporary sand boat to take up the work in which the burned vessel was engaged. This will probably be given more serious consideration after the next day or two after the survey of the *PRINCE* is made and the full extent of the damage determined.

If the wreck can be repaired it will not require such a long service of a hired ship as if a new boat is built, a matter which must be determined before other arrangements can be finally made."

Sandusky Register, Friday, August 11, 1911

"STEAMER *PRINCE* NOW A TOTAL LOSS

Boat Burned Off Kelley's Id. Is Abandoned to Underwriters

Damaged to such an extent the owners believe, that she cannot be repaired satisfactorily without more expense than the insurance will cover the steamer *F. H. PRINCE* has been abandoned to the underwriters as a constructive total loss. She lies on the beach at Kelley's Island with the forward of her hull burned almost to the water's edge.

The vessel is insured for $35, 000. The fire which caused Capt. H. H. Persons to beach the vessel ate its way almost half way to the stern. Without the cost of releasing her and towing her to a dry dock where she can be properly repaired, it is thought the damage amounts to at least the 75 percent necessary to make the ship a total loss.

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If the wreck can be repaired it will not require such a long service of a hired ship as if a new boat is built, a matter which must be determined before other arrangements can be finally made."

Sandusky Register, Tuesday, August 15, 1911

"FLAMES LICK UP BOAT

Complete Destruction of the Str: *F. H. PRINCE*

The steamer *F. H. PRINCE* beached off the east shore of Kelley's Island a week ago today after she had been swept by flames, was totally destroyed and is now a total wreck, the fire having broken out when, it is believed, the high winds of Sunday night fanned smouldering embers into a blaze.

The *PRINCE* was seized by federal authorities last Saturday after the Homegardener Sand Co., of this city, had filed a claim for salvage against her owners.

Despite the fact that she was held by the government persons unknown are said to have rushed aboard and to have stripped the boat of about anything of any value when the fire that completed the destruction was discovered Monday."

The Marine Review
– Accidents to Lake Vessels, September 1911

Date:	August 8
Name of vessel:	Str. *F. H. PRINCE*
Nature of accident:	Caught fire and was beached on Kelley's Island: abandoned to underwriters as a constructive total loss: caught fire again August 12 and became a total loss.
Place:	Lake Erie near Kelley's Island

1912

Beeson's Marine Directory
- Vessels Lost, Season 1911

"Steamer *F. H. PRINCE*, 2,047 gross tons, built at Detroit, Mich., in 1890, and in the gravel trade, caught fire and was run ashore on the east end of Kelly's Island, Lake Erie, August 8, 1911, where the fire was put out after great damage. Later, on August 14 the wreck again caught fire and she burned to the water's edge. Herbert K. Oakes, of Cleveland, O., owned the steamer. The burned hull sold at marshall's sale for $180.00, at Cleveland, O."

2001

Kelleys Island Underwater Preserve Planning Team Newsletter, Vol. 1 Issue 1, June 2001

"Surveying the *F. H. PRINCE*

Among the 20 or so shipwrecks surrounding Kelleys Island is the *F. H. PRINCE*, a propeller steamer lost 1/2 mile off the east shore of Kelleys on August 8, 1911. The *PRINCE* had been a package freighter built at the Detroit Dry Dock in 1890. It was rebuilt as a sand dredge in 1910. The 240' vessel had a cargo of sand and gravel. It was lost due to an out-of-control engine-room fire. There was no loss of life. The captain and crew of 18 were all saved.

A popular wreck site for sport diving, the *PRINCE* is the next underwater archaeology survey project. MAST, Ohio's Maritime Archaeology Survey Team, will be conducting the survey to produce a detailed map of the *PRINCE* as it exists today. MAST is a volunteer organization of sport divers and other interested individuals with headquarters at the Lake Erie Shipwreck Research Center located next to the Inland Seas Maritime Museum in Vermilion. The *PRINCE* survey project is one of the special events of Ohio Archaeology Week, June 17-23. If you wish to learn more, contact Linda Pansing, Staff Archaeologist at 1-800-893-1485
or e:mail shipwreck@inlandseas.org."

Sandusky Register, June 14, 2001

"Sunken ship mapping project to begin Monday

By Brenda M. Culler

On Monday, Ohio's Maritime Archeology Survey Team will begin mapping its third Lake Erie shipwreck, the *F. H. PRINCE*, which lies a half mile off the eastern shore of Kelleys Island. 'When you're diving on an unmapped ship it looks like a barn that has blown over — pretty chaotic,' said Charles Herdendorf, a coordinator of the Great Lakes Lake Erie Research Center. 'We are mapping the ship because it is not at all obvious when you dive to know what it is you're looking at, for the inexperienced diver especially, a map of a sunken vessel will help point out the various sections of the ship.'

Mapping a shipwreck involves measuring the intact vessel and any parts that have separated from it — much the same way a dismantled car with its parts scattered around could be mapped. Herdendorf said it will take about a week to measure the *PRINCE* wreckage. The vessel, which sank Aug. 8, 1911, because of an out-of-control engine-room fire, was a 240-foot propeller steamer, a package freighter built at the Detroit Dry Dock in 1890 and converted into a sand dredge— a barge carrying soil and rock dredged from a lake or river bottom — in 1910. However, turning underwater field measurements into an accurate drawing and finalizing the report, which includes the history of the ship, may take up to a year, he said.

MAST's mapping of the *PRINCE* is being done in conjunction with Ohio Archeology Week, June 17-23. More information about the history of the *PRINCE* or other shipwrecks can be found at the Inland Seas Maritime Museum and the Lake Erie Shipwreck Research Center in Vermilion, said the museum's deputy director, Carla LaVigne. The museum and research center are located beside each other at 480 Main Street. LaVigne said the research center, which opened last June, consists of a database of information including scanned photographs, news clippings and divers maps of ships they've visited. The museum has artwork of ships, photographs, metals from the vessels, artifacts, lighthouse lenses and other nautical items. The museum is open daily from 10 a.m. to 5 p.m. and the research center is open from 10 a.m. to 5 p.m. Friday and Saturday."

Sandusky Register, June 14, 2001

"Sunken treasures: An underwater preserve containing 39 sunken ships is proposed for Kelleys Island.

By Brenda M. Culler

Unknown to some Ohioans, Uncle Sam lies east of Kelleys Island — all wet and without a life vest. In fact, a belle named Mary Ann and a gent by the name of F. H. Prince lie there, too.

But Relief is on the other side of the Erie County island, and underwater Adventure is just waiting to be rediscovered — rediscovered because the Uncle Sam, Mary Ann, F. H. Prince, Relief and Adventure are among the sunken vessels surrounding the Lake Erie islands.

Ohio Department of Natural Resources officials are focusing on turning the shipwrecks surrounding Kelleys Island into the state's first underwater shipwreck preserve project which would keep the vessels underwater forever.

An open house informational meeting on the proposed shipwreck preserve will be held at 7 p.m. June 22 at Kelleys Island Town Hall on Division Street.

Project developers said the goal of the shipwreck preserve is to establish basic rules for divers, boaters and fishermen that will not interfere with their recreational activities yet will still protect the shipwrecks.

Developers said other goals include protecting and preserving underwater resources such as fish spawning areas and promoting appreciation of Ohio's maritime heritage.

'The waters around Kelleys Island contain more than 20 shipwrecks, making this a prime location for an underwater preserve,' said Mike Colvin, administrator of ODNR's Coastal Management Program.

An Ohio law passed in 1991 allows for 10 percent of the 3,277 square miles of Lake Erie's submerged lands owned by the state to be turned into preserves.

The preserve has been under consideration with the state for more than a year and Kelleys Island Village Council approved the project last fall. A subcommittee comprised of members of the groups sponsoring the meeting have been working on the details since then.

'Although many other states, including Michigan, have shipwrecks designated as underwater preserves, this would be Ohio's first underwater preserve and could benefit the area's tourism industry by increasing the recreational opportunities for sport divers and non-divers,' ODNR Coastal Services Center Administrative Assistant Debbie Paul said.

Paul said meeting sponsors including ODNR, the Ohio Historical Society, Submerged Lands Advisory Council, Great Lakes Historical Society and Kelleys Island Village Council are hoping for a large turnout at the informational meeting so they can gather more public input on the project.

Charles Herdendorf, a coordinator of the Great Lakes Lake Erie Research Center and diving instructor, said of the 1,700 known shipwrecks in Lake Erie waters, the only two fully mapped wrecks lie off Long Point on Kelleys Island, making it a good place to start the preservation project.

'MAST (Ohio's Maritime Archeology Survey Team) picked the Adventure to map first because the ship is an ideal wreck for student teaching and you can access it without boats because it lies about 200 feet off the shoreline,' Herdendorf said.

Herdendorf said mapping solved the mystery of how Adventure sank, after a fire in her coal bunker.

And after looking at the Adventure's construction during the mapping, MAST, a volunteer organization of sport divers, realized there were actually two vessels side by side on the floor of Lake Erie. The other was the W.R. Hanna, the second ship MAST mapped, Herdendorf said.

Herdendorf said MAST will begin mapping a third vessel, the F.H. Prince, on Monday as part of Ohio Archeology Week.

'Making the shipwrecks part of a preserve will be a nice attraction and shouldn't limit anyone's boating or diving activities,' Herdendorf said addressing some area divers concerns that a preserve would limit their diving explorations.

'Mapping the vessels and preserving them are not to restrict use but to learn more about the shipwrecks and so inexperienced divers know what they are looking at' Herdendorf said.

Kelleys Island Underwater Preserve Planning Team Newsletter, Vol. 1 Issue 2, August 2001.
"Informational Meeting Update

The Kelleys Island Town Hall made its opening debut after being closed all winter for repair work. An informational meeting was held there, sponsored by the Kelleys Island Underwater Preserve planning team Friday June 22nd. Positive comments and support radiated throughout the Town Hall as the meeting progressed. During a question and answer period the most common questions were those involving potential restrictions of an underwater preserve. 'The preserve process would not limit any current activities on Lake Erie of affect uses of people's private property on Kelleys Island. An underwater preserve would provide protection to the shipwrecks and make diving safer. A preserve would add tremendously to our education and interpretation of lake Erie shipwrecks. This will also benefit non-divers' enjoyment of Kelleys Island and the region,' said Mike Colvin, Ohio Coastal Management Program administrator.

The meeting was a successful opportunity for the Kelleys Island residents and visitors to meet with the planning team members, five of whom are Kelleys Islanders, to make comments and ask questions about aspects of the preserve study. Displays were on hand from the Kelleys Island Historical Society, Inland Seas Maritime Museum & lake Erie Shipwreck Research Center, Ohio Coastal Management Program and the Maritime Archaeological Survey Team. Underwater video footage of the Adventure and the F.H. Prince was provided by Dave Kelch, a planning team member and representative of the Ohio Sea Grant College Program, and by Rod Althaus of New Wave Dive Center.

Linda Pansing, Staff Archaeologist for the Lake Erie Shipwreck Research Center, showed what the divers' slates would look like for the Adventure wreck. She explained how the mapping of the Prince would provide another such slate to guide divers on that wreck. Linda told the story of how the Adventure's propeller was removed from the wreck decades ago, but was located and returned to the wreck, narrowly escaping almost certain doom as scrap metal. 'This is the first major artifact to be returned to a shipwreck in Ohio,' said Ms. Pansing.

The planning team will continue to gather public input. The focus is on keeping the Kelleys Island community involved in the process, and in keeping it a community-based project. "Designation of a preserve is possible within a year's time. We will However take as long as necessary to make sure it's done right, " said Mike Colvin. The planning team welcomes all comments and concerns. Contact Debbie Paul with ODNR at 419-626-7980 x 222. A public meeting will be held Friday August 17, 2001 at 3:00pm at the Kelleys Island Village Hall Pavilion. All are invited to attend."

"The Mapping of the *F.H. Prince*

By Linda Pansing, Staff Archaeologist, LESRC

June 19 - 24, 2001, the Lake Erie Shipwreck Research Center (LESRC), fifteen members of the Maritime Archaeological Survey Team (MAST), and 4 volunteers participated in the survey of the shipwreck *F.H. Prince* (1890-1911).

The dive team worked from 10:00am to 9:30pm each day; diving and plotting out the data they gathered. The *Prince* was covered in a thick mat of green algae and diving was cut short one day due to bad visibility and an incoming storm. But in spite of this, the surveyors gathered a large amount of information.

LESRC and MAST both particiated in the Shipwreck informational meeting. MAST displayed shipbuilding plans of the *Prince* and used a table to plot out their day's measurements. We are presently working on the final site plan and hope to have it ready by the end of July so Sea Grant can produce underwater dive slates of the *Prince*, *Hanna* and *Adventure*. The dive slates, and our project report should be completed by the end of the year.

LESRC and MAST wish to thank the following for being supporting entities in this project: Casino, Island Café & Brew Pub, Island Divers Charter, Kelleys Island State Park, Neuman Ferry Line, New Wave Dive Shop, Seaway Marina, Sea Grant, Village of Kelleys Island, Charlie Grass, Kris Leonhardt, and Jack Wade."

Sandusky Register, June 23, 2001

"Survey team maps F.H. Price for underwater preserve

By Brenda M. Culler

A shipwreck preserve based upon what the community thinks is important which will not interfere with boaters', fishermens', swimmers' or divers' rights is headed for Kelleys Island.

This is how officials from the Ohio Department of Natural Resources, Kelleys Island Village and Ohio's Maritime Archeological Survey Team (MAST) explained Ohio's first underwater shipwreck preserve which is being planned for the waters surrounding Kelleys Island.

About 40 island residents heard this explanation during an open house at the Old Town Hall Friday.

'When I learned that the navigational rights, fishing swimming and skiing rights would be unaffected by the preserve I was honored that the shipwrecks around Kelleys Island were selected for the state's first preserve project,' said Mayor Tony Kuchar. 'This will also protect the shipwrecks from scavengers.'

Kuchar said the project could benefit the island by bringing in additional tourism. At the same time, Village Councilwoman Leslie Korenko said when the preservation is complete, residential land rights will

not be affected. Korenko and other members of the preservation planning committee are creating the guidelines for the preserves.

'There is no preconceived idea about what an underwater preserve should be,' said ODNR's Coastal Management Program Administrator Mike Colvin who is also a member of the preservation planning team. "We want to take the time and do it right. So the study (denoting which ships will be included in the preserve) may be done within a year from now or it may take longer."

As part of the planning process and Ohio Archeology Week which concludes today, MAST is mapping the F.H. Prince, a propeller steamer which sank about a half mile off the eastern shore of Kelleys Island.

'The biggest benefit of mapping boats and creating apreserve is that a diver could swim over a boat from bow to stern and not know what they are looking at,' said Scott Pansing, one of the eight divers who has been mapping the Prince.

According to Pansing, mapping involves divers taking measurements from the center line of the sunken ship to the ship's edge on both the port and starboard sides. Divers denote interesting objects on the ship, such as the engine, drive shaft, anchor, propeller and ribs.

Divers write the measurements of these objects on 'no-tear' plastic paper using a common mechanical pencil while still underwater.

When back on the surface, they will chart the measurements on an outline of the ship's original design tosee what effect the sinking and water pressure had on the layout of the vessel.

'Sometimes Lake Erie is clear and sometimes there is only four feet of visibility. If divers can take slates down with them when diving they'll know what they are looking at.'

A slate, as explained by MAST member Linda Pansing, who is also the Staff Archaeologist of the Lake Erie Shipwreck Research Center in Vermilion, is like a city map for sunken ships.

Slates include an outline of the sunken vessel with numbers on the mapped vessel, Pansing said. A key below the waterproof drawing tells what the objects are.

Some people attending the meeting said they were glad the preservation project was occurring because if the shipwrecks are marked with buoys they will be easier to locate when diving."

Historic Glacial Grooves on Kelleys Island (courtesy of Ohio Historical Society).

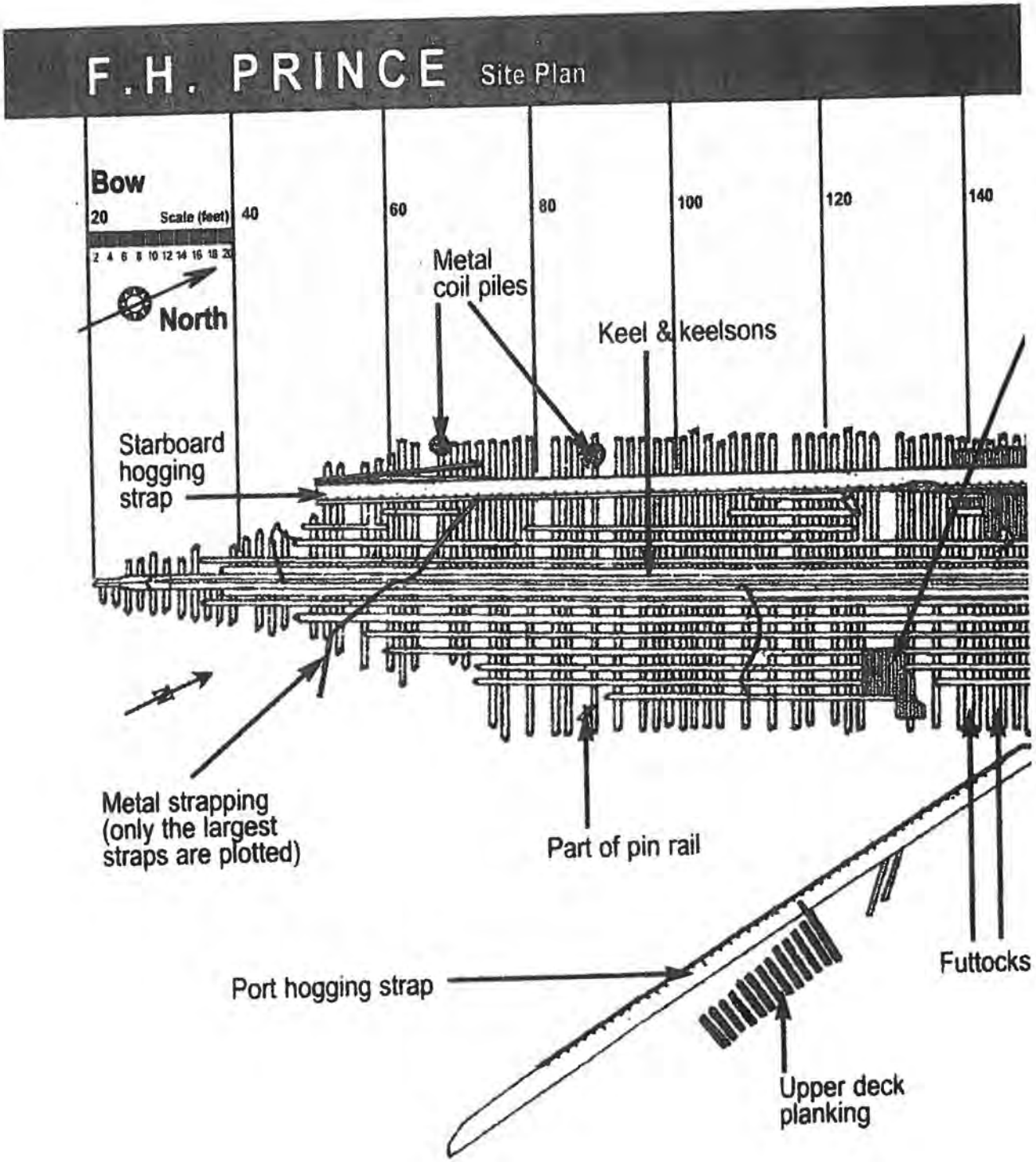
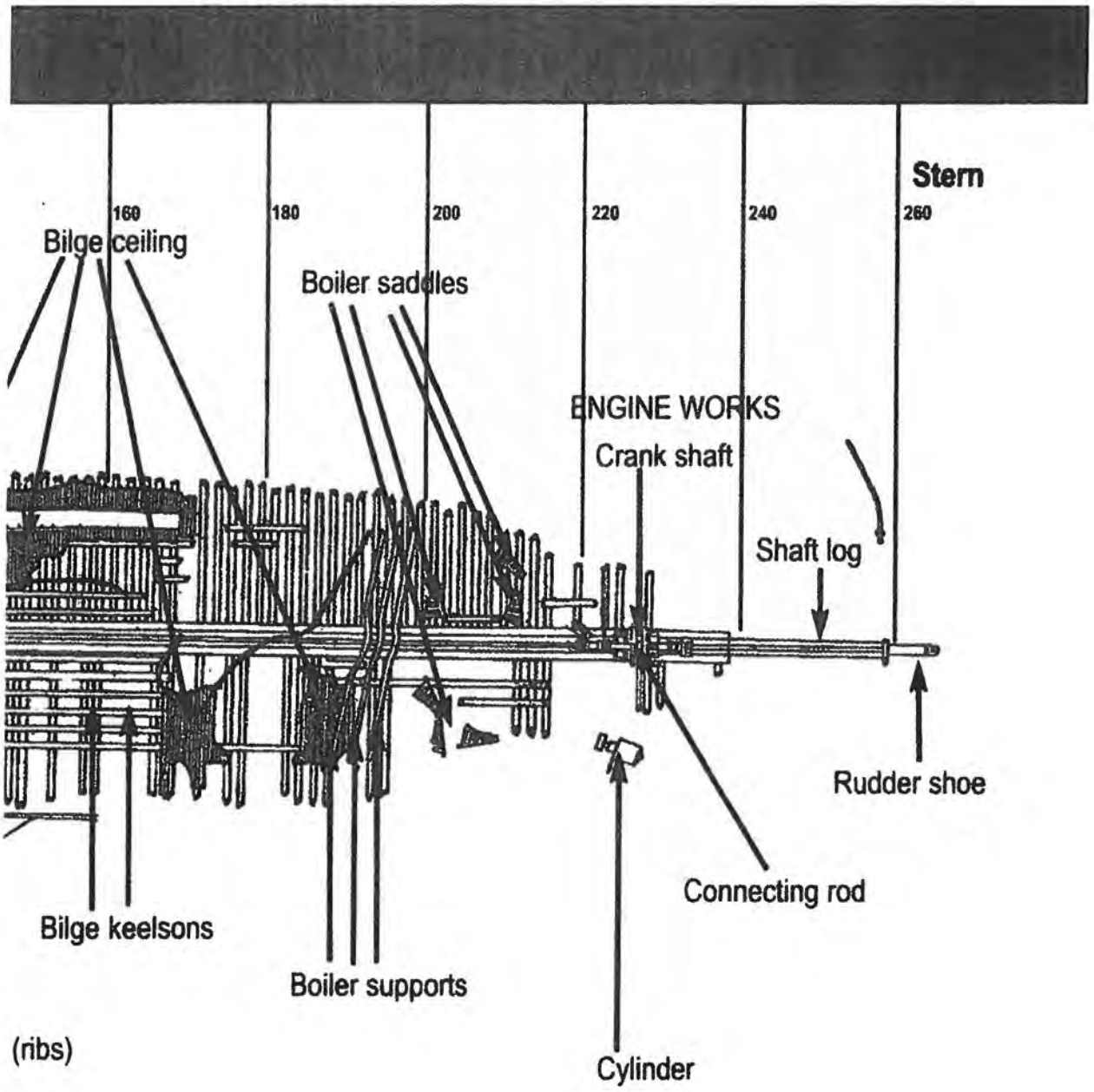


PLATE 1

SITE PLAN OF STEAMER *F. H. PRINCE*

Site Plan of Steamer F. H. PRINCE (1890-1911) Kelleys Island, Ohio. Dive Slate *Guides to Lake Erie's Historic Shipwrecks*, published in 2002 by the Great Lakes Historical Society in cooperation with the Ohio Sea Grant College Program (OHSU-GS-020).


Stern
160
180
200
220
240
260
Bilge ceiling
Boiler saddles
ENGINE WORKS
Crank shaft
Shaft log
Rudder shoe
Connecting rod
Bilge keelsons
Boiler supports
(ribs)
Cylinder