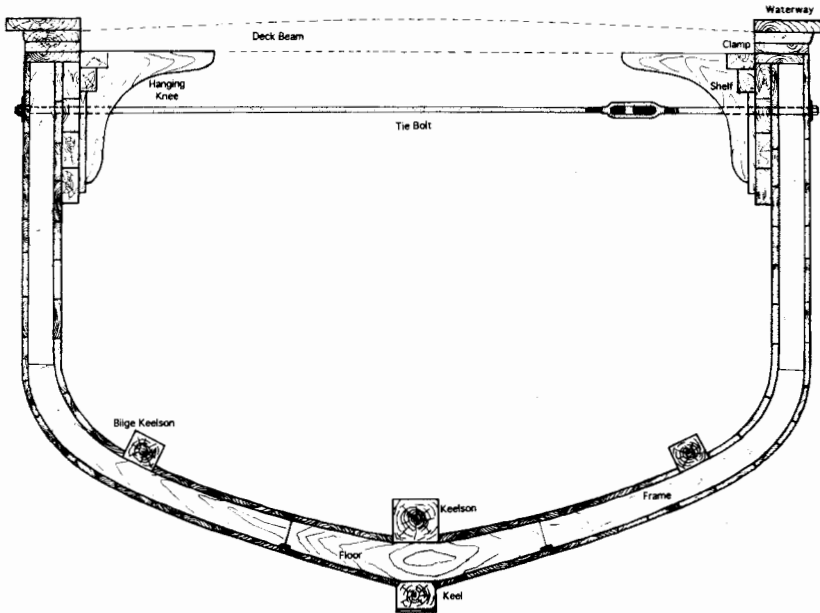


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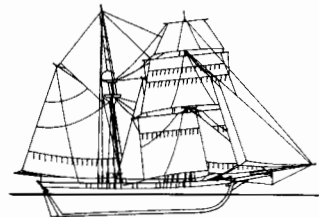


The 1995 Predisturbance Wreck Site Investigation at Claflin Point, Little Sturgeon Bay, Wisconsin



Bradley A. Rodgers

Program in Maritime History and
Nautical Archaeology
East Carolina University
Greenville, North Carolina



State Underwater Archaeology Program
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Illustrations: David Beard, Frank Cantelas, Wendy Coble, David Cooper, Jeff Gray,
Nathan Henry, Bradley A. Rodgers, Hans Van Tilburg

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1

Introduction

Sometime near the turn of this century a once proud wooden steamship, turned stone barge, gave up the fight to remain afloat and settled to the shallow bottom of Little Sturgeon Bay, Wisconsin, near Claflin Point. Nearly one hundred years later archaeologists returned to the site for a preliminary investigation. Though speculation concerning the ship placed it as a possible shallow water abandonment, or purposeful sinking, field research hints at a far more dramatic story, and a possible red letter date in the history of Little Sturgeon Bay. Evidence suggests that the ship may have wrecked during a violent storm while tied to the ship loading wharf in Little Sturgeon Bay. And while the wrecking event itself likely caused no casualties, it nonetheless may have directly disrupted the lives and livelihood of hundreds of people. For this ship's destruction in the loading slip appears to have snuffed out Little Sturgeon Bay's remaining industrial spark, blocking and closing forever its only deep water ship loading wharf, and consequently ending an important chapter in the historical and industrial development of Door County.

Not only has this investigation changed our view of the history of Claflin Point and Little Sturgeon Bay, but the wreck's tentative identification as a passenger freight-propeller may give archaeologists one of their first interior views of this important late-19th century vessel type. This variety of ship performed the important task of extending passenger and freight service to areas not connected to rail lines, yet, as it made up only a small fraction of the ship classes sailing the lakes, it is not well represented in the archaeological record. Therefore, each of these vessels scientifically studied becomes a singularly unique and important find.

Archaeologists began the Claflin Point Survey using a number of different technical research methods. However, simple interviews with local residents have proven to be one of the more important sources of survey information. The Claflin Point project proved no exception. Long time inhabitants of the point remembered as children playing on a rock crib pier that extended from the point. They also remembered seeing the sunken hulk next to the wharf. It was believed at the time to have been the remains of a three-masted schooner, said to have been built in the last century at the bustling shipyard in Little Sturgeon Bay. By the time of the 1995 archaeological survey there was no visible indication that the pier ever existed and few easily identifiable ruins to reveal the area's industrial background.

This survey was not the first exploration of the wreck site at Claflin Point. The vessel was first discovered by scuba divers in the 1970s. The shallow, easily accessible nature of the site made it ideal for scuba certification dives and the wreck was undoubtedly frequented by many subaqueous visitors. Even this popularity waned, however, as the diving fad disappeared along with most of the easily removable artifacts. Yet the ship remained in its last resting place, preserved by the cold fresh water of Green Bay.

In the 1990s the site became known to the Wisconsin State Underwater Archaeology Program in its attempt to catalogue the submerged cultural resources of

the state. Archaeologists and historians there recognized the shipwreck for its true historic value, correctly theorizing that the site may serve as a time capsule of information concerning the area's history. Though a preliminary reconnaissance conducted by state archaeologists confirmed the wreck's location, it added to the mystery by identifying the wreckage as an unusually built steamship, not as oral legend suggested, a three-masted schooner. At this point it became obvious that more information was needed to properly interpret the Claflin Point wreck site.

To this end, archaeologists from East Carolina University's Program in Maritime History and Nautical Archaeology and the Wisconsin State Underwater Archaeology Program, designed a field semester project around an investigation of the Claflin Point wreck site. The project combined both expertise and equipment from the two programs while optimizing manpower through use of graduate students and volunteers. The agreed upon research design called for a Phase II predisturbance archaeological survey of the wreck site and its surrounding vicinity. This type of survey (conducted without artifact collection or excavation) promised to yield the most information for the least cost and impact upon the site itself. In September of 1995, the archaeological team arrived for the project and worked throughout the month. During this project survey archaeologists collected drawings and photographs, "and left only bubbles."

Project Location and Environment

Door County, Wisconsin, is a rocky conical peninsula that stretches some 65 miles northeastward into Lake Michigan, separating it from the waters of Green Bay to the west. Its rich and varied maritime tradition is largely a result of its location. Vessels traveling in and out of the large urban areas of Green Bay, Milwaukee, and Chicago often had to pass around or through Door County via the Death's Door Passage or the Sturgeon Bay Ship Canal. Storms, currents and the peninsula's rugged coastline inflicted many marine casualties, creating an excellent area for the archaeological study of early Great Lakes vessel types. Shipwreck preservation is enhanced by the cold freshwater environment of the Great Lakes.

The main focus of this archaeological research project is a shipwreck site that lies in Little Sturgeon Bay, Wisconsin, near historical Claflin Point. Little Sturgeon Bay is located on the Green Bay side of the Door County Peninsula, just a few miles south of the entrance to the Sturgeon Bay Ship Canal, a natural and man-made fissure that virtually cuts the county in half (Figure 1). Claflin Point is an outcropping in Little Sturgeon Bay, made more prominent in historical times by the construction of a large rock crib pier for local industry. The crib stones covering Claflin Point and the quarried rocks laying on the wreck itself tell much about the area's geology while also shedding light on its history (Figure 2).

Door County is part of the Niagara Escarpment, a geologic formation of dolomitic limestone stretching in an arc from the western shore of Lake Michigan to upstate New York. Dolomitic limestone, or dolomite, is metamorphosed limestone, much harder and denser than its sedimentary forbearer. Though it possesses many of the qualities of limestone, this mineral's hardness is responsible for its resistance to weathering and erosion, as proven by the great cataract of the Niagara Falls. This stone makes useful building material and can be crushed and baked to produce quicklime (mortar before the advent of portland cement). Much of the industrial history of Door County is linked to this geologic resource, as large quantities of quicklime and stone were quarried for building materials and shipped via the freshwater seas to the large growing urban areas on the Great Lakes. The shipwreck at Claflin Point is likely related to quarrying activity, as its hold still contains a large quantity of quarried dolomitic limestone.

The Claflin Point wreck lies in 5 to 15 feet of water. Its proximity to the surf zone subjects it to water turbulence. Northeasterly winds greatly disturb bottom sediments and make diving difficult. The bottom of Little Sturgeon Bay near the wreck is mostly sand and silt. It becomes increasingly rocky as it nears the point, although it is clear that most of the crib stone lying in great heaps has been brought in from elsewhere. The wreck itself and the freshwater flora growing on or near the wreck provide a home for abundant freshwater fish species.

Zebra mussels have also made a home on the Claflin Point wreck, covering 25 to 30 percent of the wreck. These freshwater mussels, imported from the Baltic Sea in the bal-

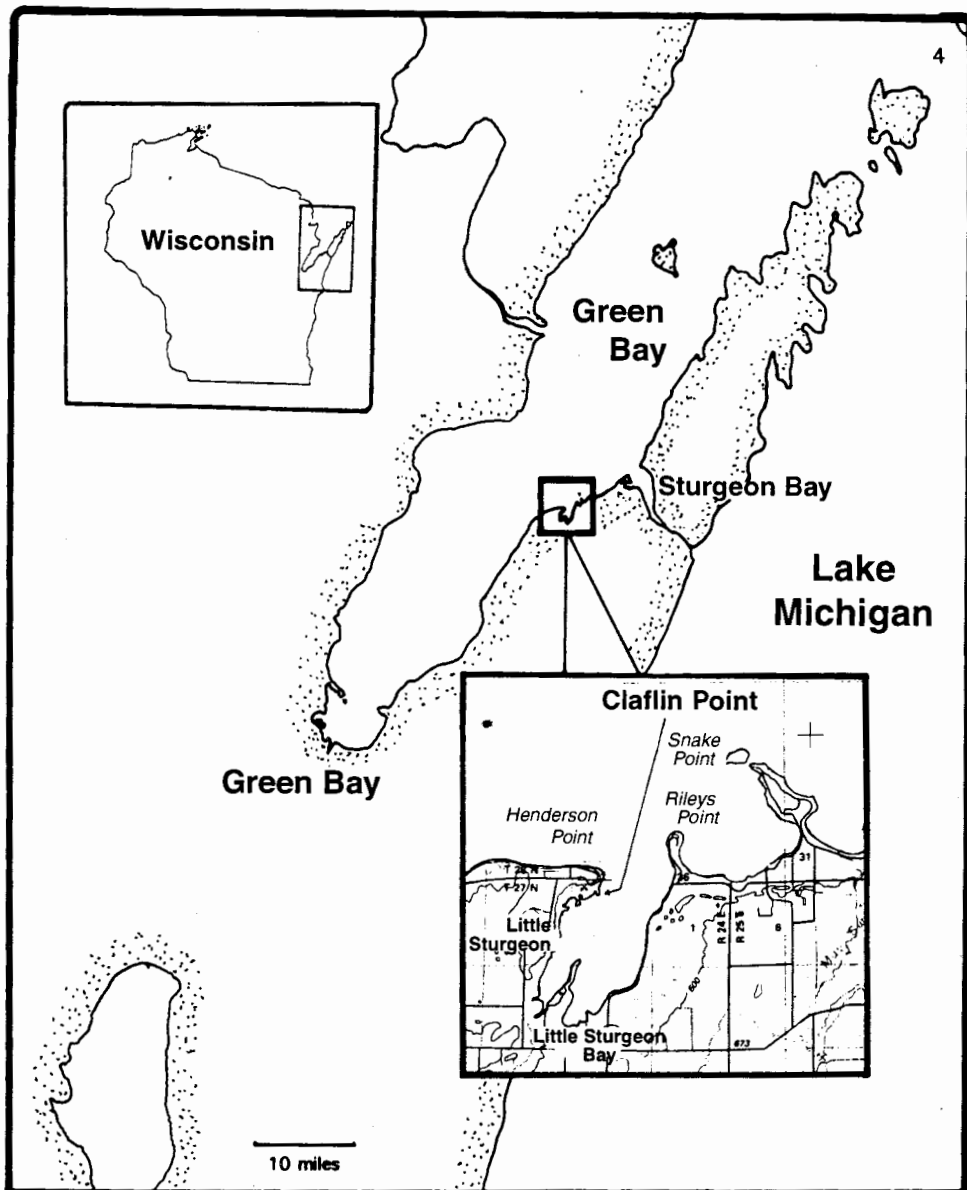


Figure 1. The Claflin Point Shipwreck is located in Little Sturgeon Bay on the west side of the Door Peninsula.

Clafin Point

Little Sturgeon Bay, Wisconsin

Starboard Fantail

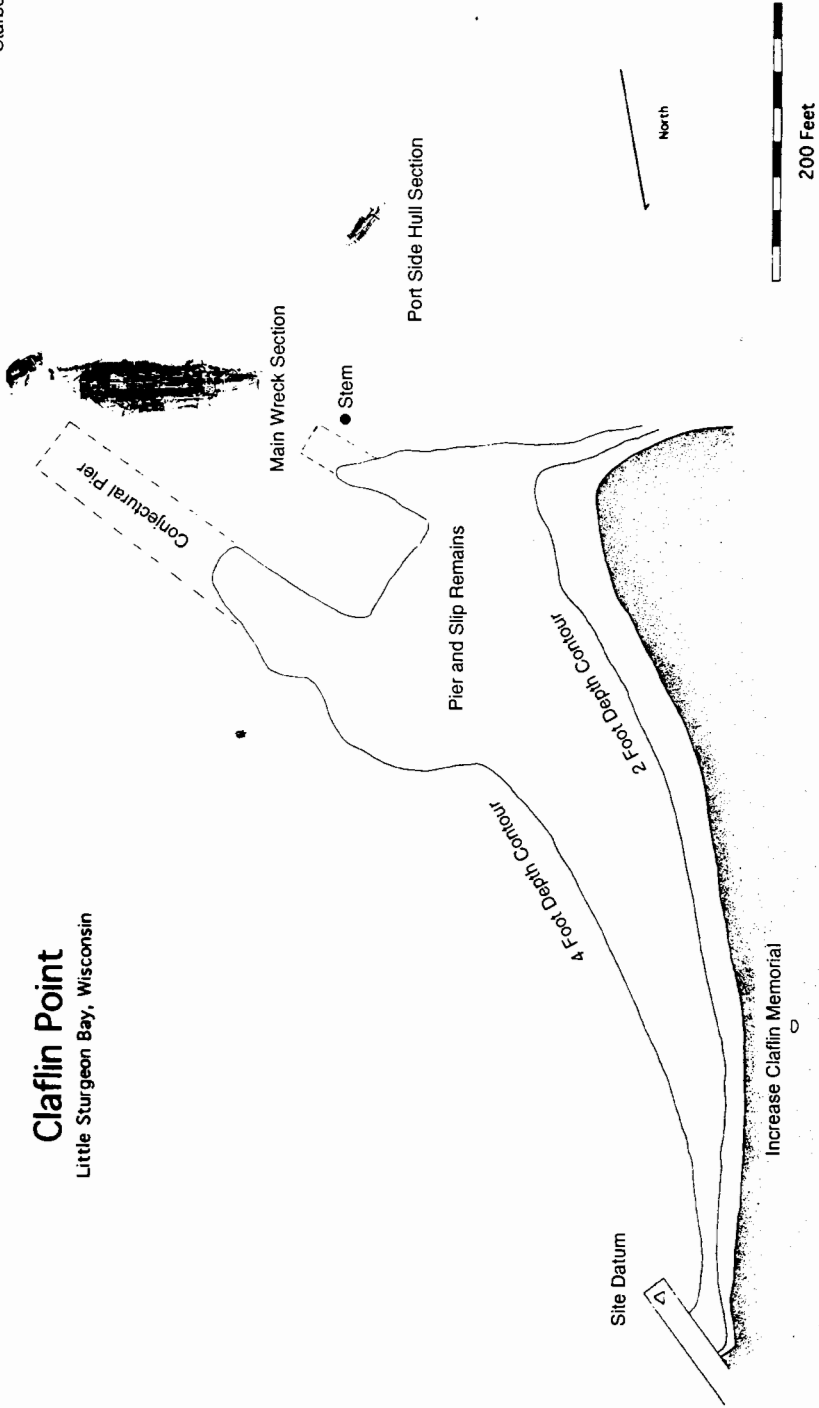


Figure 2. The bathymetric map of Clafin Point shows the distinct outline of a wharf along the four foot depth contour. The main section of wreckage blocks the entrance to the wharf while two smaller sections rest farther south.

last tanks of seagoing ships, have adapted to and thrive in the Great Lakes environment. The prolific mussels attach themselves to nearly any smooth surface, often building up a layer several inches deep. They have created problems on the lakes, covering and clogging municipal and industrial water intakes.

The short-term impact of zebra mussel infestation on archaeological sites is unclear. Overall the wreck site is fairly obscured. Detailed examination of parts of the ship necessitated scraping the mussels from that area, a difficult and time consuming task. Yet, zebra mussel activity has greatly increased water clarity, a byproduct of their filter feeding metabolism. Visibility underwater at the Claflin Point site has increased to as much as 15 or 20 feet on calm days.

Though a nuisance in the detailed examination of ship parts, long-term zebra mussel infestation may prove beneficial to the preservation of submerged freshwater archaeological sites. The analogy can be made to an oceanic reef system. Quite often the only wreck sites preserved in the ocean are those covered by reef building organisms whose calcareous shells and skeletons form a protective layer over the site. In like manner, zebra mussel shells may create a calcareous buffer between wreck sites in the Great Lakes and the environment. The difficulty encountered by archaeologists, is that liberating an artifact from these coatings can cause surface damage.

Winter ice and storms may also impact the Claflin Point wreck site. The scattered nature of the wreck remains indicate that Claflin Point is, at times, a high energy environment. Vessel sections have been moved several hundred feet, either by the wreck event itself, or afterward by ice and storms. Indeed, some missing wreck sections may have moved beyond the range of the 1995 investigations altogether.

Historical Background

Archaeology is the science of reading artifact clues much as a historian reads a manuscript. In most instances, however, and especially in the field of historical archaeology, any site interpretation must begin with a historical background. This background lays the groundwork for an interpretation of artifacts, that in turn may add detail and color to history. This is especially true of the Claflin Point wreck site, where the economic activities that fueled the area's early development may help explain its material remains.

The history of Door County is inextricably linked to nautical interests. Lack of roads and railroads in the region during the mid-19th century and its easy access to the navigable waters of the Great Lakes made marine transportation an easy and natural choice for inhabitants interested in marketing hardwood lumber, shingles, quicklime, and agricultural commodities. Later in the century, ice and quarried stone were added to the list of exports from the Door Peninsula, often carried in locally built ships. Interestingly, Little Sturgeon Bay was an early leader in the industrial development of the Door.

Door County's first white settler, Increase Claflin, arrived at Little Sturgeon Bay in 1836. Though he apparently stayed only long enough to lend his name to a nearby point, his homesteading of that tract indicated its potential value. Others were quick to recognize Claflin Point's advantages of a sheltered harbor with easy deep water access to Green Bay, surrounded by a cheap and seemingly inexhaustible supply of hardwood timber. By the mid-1850s a sawmill was constructed on Claflin Point, by entrepreneur Freeland B. Gardner. A dock on or near the point allowed the mill owner to ship shingles and lumber to any of the growing urban areas on the Great Lakes. Sawmill construction was a common first step in the formation of many of the small communities in the area, however, unlike their landlocked neighbors, Little Sturgeon's harbor proved an equally valuable resource (Hirthe 1986:15).

Ship construction at Little Sturgeon Bay began immediately after the Civil War. The shipways, as is often the case, were located next to the sawmill for easy transportation of the sawn scantling timbers. Shipbuilding knowledge for the yard was supplied by Thomas Spear, a native of Maine who moved to Little Sturgeon Bay in 1857. In all, nearly a dozen ships were built or modified at the shipyard facilities on Claflin Point between 1866 and 1874 (Hirthe 1986:15-17). No historical information suggests that any of these vessels was abandoned in the bay.

Little Sturgeon prospered for a decade following the Civil War. However the timber and shipbuilding business trailed off during an economic slowdown in 1875. Finally, a fire swept through the mill at Little Sturgeon Bay on 22 February 1877, ending for all practical purposes the lumber and shipbuilding businesses at Claflin Point. In 1879 the property, minus its mill, was sold to A. S. Piper and Company for ice production and storage. The ice company took over the boarding house, warehouses, and dock facilities used by the lumber mill and shipyard to begin ice production and storage (Hirthe 1986:30).

Ice production reportedly involved hundreds of workers. The ice was sawn out

of the bay during the winter and transported to storage sheds at the point where it was covered with sawdust for insulation. During navigation season the ice was loaded on board ship for transit to Chicago. Ice harvesting was a profitable business at Claflin Point, particularly with the opening of the Sturgeon Bay Ship Canal in 1879. The ship canal greatly shortened shipment time and risk to vessels that were previously required to negotiate Death's Door passage in order to sail from Little Sturgeon Bay to Chicago.

In 1898, after nearly twenty years of ice production at Little Sturgeon Bay, A. S. Piper and Company was absorbed by the Knickerbocker Company. Historians report that ice production ceased at Little Sturgeon Bay that same year, with the Knickerbocker facilities being moved to Sturgeon Bay (Hirthe 1986:31). Though there is no mention why ice production was discontinued at Little Sturgeon Bay, it appears that the Knickerbocker Ice Company retained ownership of the wharf at Claflin Point. Late in 1905 the quay at Claflin Point was reportedly damaged beyond repair in a storm. It was therefore unlikely to undergo costly repairs since it was not needed "at present" (Door County Advocate, 28 December 1905), confirming that ice shipments out of Little Sturgeon Bay had ceased prior to this time.

Those shore facilities that were not moved to Sturgeon Bay in 1898 soon went to ruin at Little Sturgeon. The dock structure, made of quarried dolomitic limestone contained in log cribs, can be seen in outline in the depth contours of Figure 2. This must have been an impressive wharf, over 400 feet in length and angled to withstand northeasterly storm winds (just as docks located there today). The wharf contained a rectangular slip to accommodate and protect loading ships. The constant pounding this wharf must have taken over the years eventually destroyed the log cribbing at its foundation, allowing the loosely piled rock to spill out and spread over the bottom, submerging the structure itself.

Today little remains to remind people that Little Sturgeon Bay was once a thriving port town with an industrial base. Marinas filled with pleasure boats and the odd fishing tug are all that is left of Little Sturgeon Bay's seafaring heritage, all that is, except ruins and the wreck lying submerged at Claflin Point.

Description of Field Research

The Claflin Point survey was designed as a Phase II predisturbance archaeological survey of the shipwreck lying near Claflin Point. Predisturbance survey work involves recording the site as it lies, with no excavation or retrieval of artifacts. Diagnostic artifacts that may indicate the site's age or cultural delineation were examined, recorded (photographed or sketched), and left in place. Predisturbance work, though not new to archaeology, has gained momentum over the years as a legitimate information retrieval method, particularly on exposed sites. Just as the name implies, predisturbance surveys have very little physical impact on a site. They are also relatively cheap compared to Phase III excavation work in both labor and equipment.

Logistical considerations for the work planned at Claflin Point began months in advance for both the State Underwater Archaeology Program of Wisconsin and East Carolina University. Boats and equipment were gathered and prepared for the upcoming field season, while efforts were made by the Wisconsin program to procure lodging, docking, and fuel. East Carolina's graduate students were briefed on the area's history and prepared for the diving and archaeological techniques that would be employed.

Actual fieldwork at Claflin Point began with the relocation of the main wreck section on 12 September 1995. Following this, a baseline was established at the bow (Plate 1) and positioned over the centerline of the main wreck segment, angling off to nearby wreckage. The scaled baseline gave archaeologists a reference while at the same time acting as a tool to coordinate all measured sketches and photographs. Trilateration, or measurement of a feature from two known places on the baseline, allowed archaeologists to accurately plot any artifact or construction detail on the site plan.

Diving operations were conducted from the research vessel *Orion* (Plate 2), a 22 foot Boston Whaler equipped with surface-to-diver communication gear, VHF radio, and a global positioning system (GPS). The GPS allows for extremely accurate navigation and plotting of points on the earth's surface utilizing orbiting satellite transponders and computer calculated trilateration. An inflatable boat was used to ferry shore parties and equipment. Divers were equipped with diver-to-diver, and diver-to-surface communication equipment. Underwater communication greatly enhanced the efficiency of the underwater survey while at the same time it improved diving safety by putting each diver in direct communication with other divers and the diving safety officer.

A datum was set up nearby to coordinate all offshore activities and orient the site with the shoreline and point. The datum was located on the seaward end of a concrete pier, having been picked for its panoramic view of the site. A transit with a red light distance measuring device was set up at the datum allowing archaeologists to create a sophisticated and accurate map of the shoreline, plot a two foot and four foot water depth contour (critical to mapping the old pier structure), and coordinate all disarticulated wreck sections. In this way the orientation of the wreck to the submerged wharf structure was clearly defined (see Figure 2).



Plate 1. The bow section looking aft along the baseline. Note the iron keel shoe and the rabbet notched into the keel to admit the garboard strake. The stem of the ship would have attached in this area.

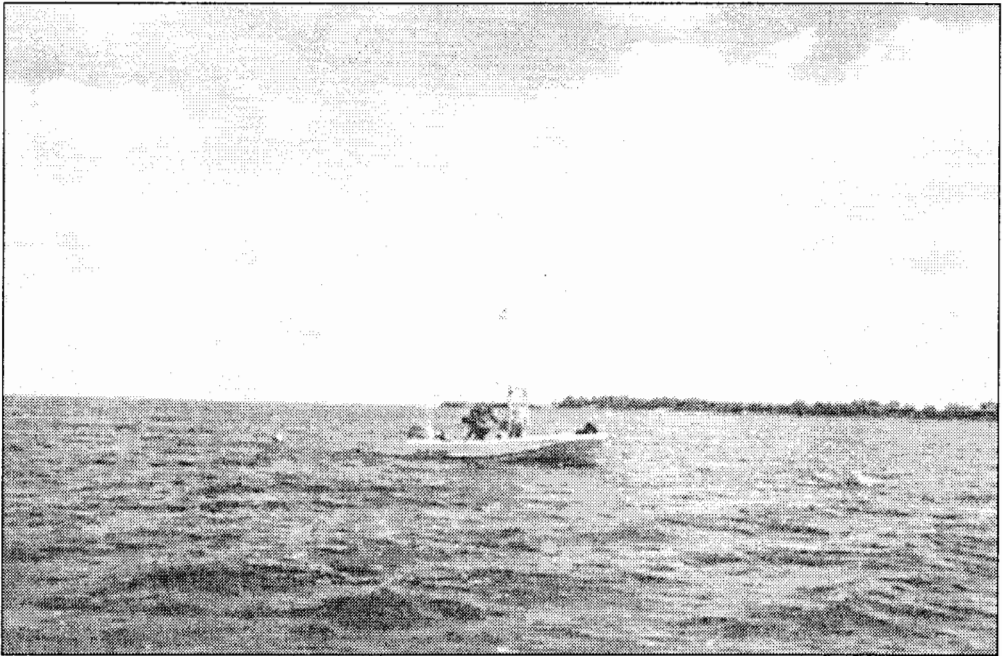


Plate 2. Research vessel *Orion* on site in Little Sturgeon Bay, Wisconsin. The buoys delineate the disarticulated wreck sections.

Once the entire site was coordinated from the datum, the tedious and time consuming underwater work of measured sketching the entire site began. Technicians were assigned ten foot by ten foot grid sections to sketch on either side of the baseline. All drawings were oriented to the baseline, and when finished, were laid together like pieces of a jigsaw puzzle. In this manner the entire wreck was accurately mapped though visibility never exceeded ten or twenty feet. A humorous, but accurate, analogy has been made comparing measured sketching techniques on wreck sites, to fleas mapping an elephant.

A detailed cross-sectional sketch (Figure 9) was also created by recording components of the flattened bottom and sides of the ship and fitting them to the cross-sectional shape obtained from the faired lines projection (Figure 6). Faired lines were archaeologically calculated by stretching a level line perpendicular to the keelson and measuring down systematically with a plumb bob to the ceiling. In this way the curvature of the bottom of the ship, or deadrise, could be plotted. This procedure was made difficult by the large amount of crib stone resting on the wreck site. Photographs and a video pass, or "fly over," oriented to the baseline completed the predisturbance survey.

While fieldwork and logistics occupied the greatest share of archaeological field time, interviews with long time local residents proved helpful in filling gaps in the immediate area's history. Often the answers to the most perplexing archaeological questions were simply a matter of asking people who remembered the event.

Some of the map work, such as the main wreck site map (Figure 3) and the Claflin Point map (Figure 2), were initiated at the base camp near Sturgeon Bay. In this way gaps or errors in the data could be verified the next day. Most of the drawings were completed, however, at the archaeology laboratory at ECU from data collected during the three week field research segment.

Description of Findings

The Phase II survey of Claflin Point allowed archaeologists to identify and record (in plan view) the overall underwater site (Figure 2). At the same time, enough wreckage detail was chronicled for substantial archaeological interpretation (Figures 3-9). As is true of most archaeological surveys, only about one fourth of the archaeological work took place in the field. Most of the detailed analysis and examination of data took place in the laboratory long after fieldwork ended.

The Claflin Point Survey was originally designed to answer several questions posted as part of an overall research design. The first objective was to verify whether all of the wreckage found near the point represented a single vessel or multiple vessels. The research design also called for an identification, possibly by name or class, of the ship or ships represented by the wreckage. As is generally the case, the examination of archaeological evidence generated and answered other questions we did not have the foresight to ask. This section will begin with overall archaeological findings and proceed toward a detailed description of the wreck, concluding with a postulation of what the Claflin Point wreck site represents.

The archaeological research work did indeed yield some unexpected results, particularly in regard to the ship type represented by the wreckage and the spatial relationship of the main wreck section with the submerged rock crib pier. The pier structure is now submerged but represents an impressive artifact. Originally constructed of log cribs filled with quarried dolomitic limestone, it must have extended over 400 feet into Little Sturgeon Bay. It is apparent from the four foot depth contour line that part of the pier at Claflin Point contained a slip large enough to admit ships. The pier was angled to protect vessels moored there from northeasterly winds (see Figure 2). The northeast is Little Sturgeon Bay's only unprotected direction. Winds from the northeast have a long fetch across Green Bay and can blow straight into the mouth of Little Sturgeon Bay, creating havoc with anchored vessels. This large quay was reportedly damaged in 1905 and submerged during the great Armistice Day storm 11 to 13 November 1940 (Door County Advocate, 28 December 1905; Norm Gustafson 15 September 1995, pers. comm.; Marie Kiedrowski 15 September 1995, pers. comm.).

As can be seen in Figure 2, the main wreck section at Claflin Point is nearly aligned with the slip in the rock crib pier. This alignment seems more than mere coincidence, as the cribbing of the northeastern arm of the slip extends to the wreck itself. Any vessel blown into Little Sturgeon Bay from Green Bay would have had to pass over this jetty in order to sink in its present location. It seems much more plausible that the ship sank tied to the pier, inside the protected slip. The bow seems to have swung a bit southward (away from the northeastern arm of the slip), possibly during the sinking process.

The wooden hull of the Claflin Point vessel was carefully documented archaeologically (Figure 3). All nearby wreckage was also meticulously plotted and sketched.

Clafin Point Wreck Site

Plan View 1995

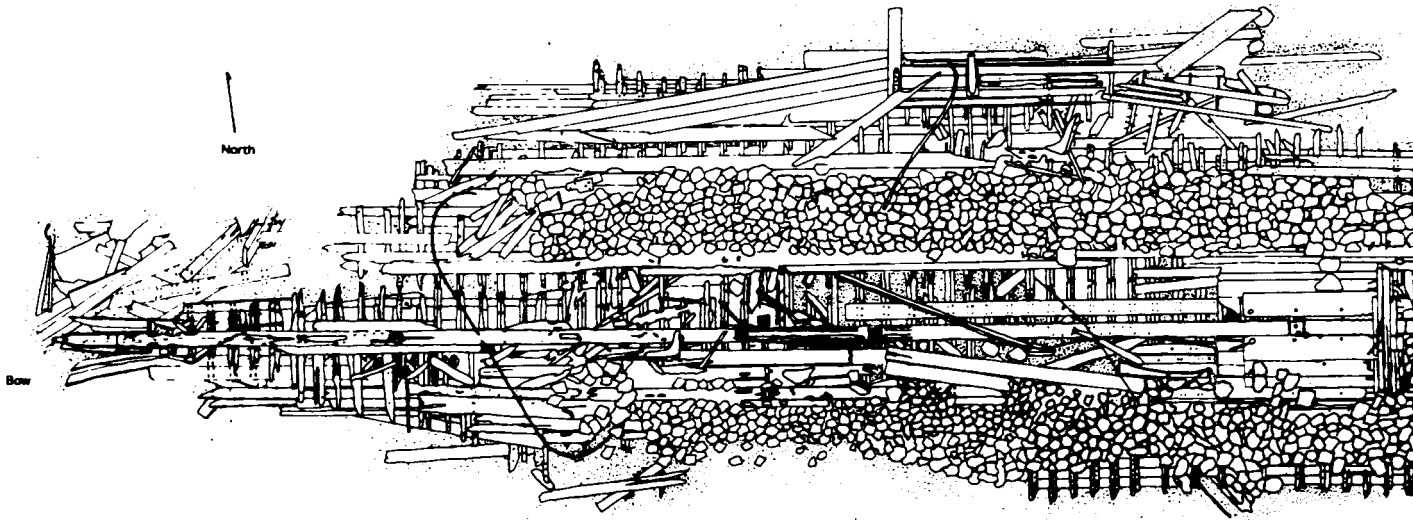
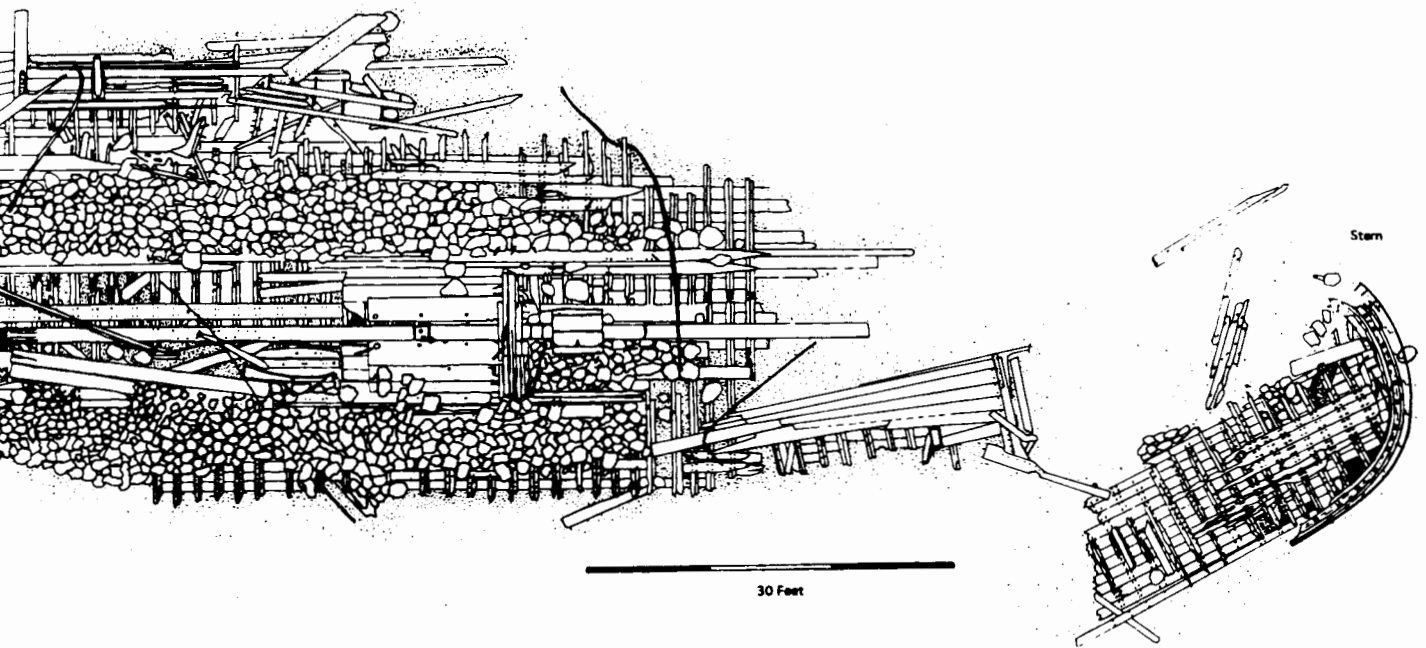


Figure 3. The main section of the Clafin Point Wreck includes the lower hull, stern fantail and stern deadwood. Two linear

Wafflin Point Wreck Site

Plan View 1995



stern fantail and stern deadwood. Two linear piles of rock laying parallel to the keelson are the remains of the crib stone cargo.

These disarticulated pieces of wreckage were shown to be part of the same ship using a comparison of scantling measurements and construction details. Some of these ship segments, namely the starboard section of the fantail (Figure 4) and the port side of the hull (Figure 5), have moved hundreds of feet from the main wreck section. Other main features of the Claflin Point wreck site include engine and boiler mounts (Plate 4), plus a through-hull propeller bearing (Figure 8). These features indicate that this ship was originally built as a propeller (a 19th century term for a steam powered, propeller driven ship).

Yet, there is no machinery present to indicate that the Claflin Point vessel was being used as a steamer at the time of its sinking (Plate 3). In fact, since all orifices in the main hull section are plugged with wooden stoppers and secured, including the through-hull propeller shaft bearing, it seems likely that the machinery had been removed from this ship prior to its sinking. This is consistent with the hull being used as a barge. As the hold of the ship still contains a large quantity of quarried dolomitic limestone it is logical to assume it was being used as a rock transport barge at the time of its sinking. Archaeological evidence, however, decisively demonstrates that this was not its original purpose.

Construction details paint the picture of a once fast, purpose-built steamship. Deadrise profiles (Figure 6) taken at the few areas inside the ship not filled with rock, demonstrate the graceful sharp lines of a vessel designed for speed and economy. These are not the boxy lines of a typical Great Lakes steam barge or bulk freight carrier. The profiles, combined with length and beam measurements recorded off the main wreck section, allow for a theoretical projection of hull shape (Figure 7) with dimensions. The plumb bow, wall sides, and fantail were typical of late-19th century Great Lakes steamships.

The propeller lying at Claflin Point had an original length of 168 to 173 feet (depending on the overhang of the fantail) and a beam of 22 to 24 feet. This gives the ship an extraordinary seven to one length to beam ratio. Extremely long, narrow wooden hulls were not possible until the advent of iron strapping and hogging arches used to minimize hogging and sagging. Hogging occurs when the ends of a ship droop because they displace less water than the amidships section, leaving them relatively unsupported. The Claflin Point wreck carried a strong ceiling arch (Figures 5 and 9) and evidence of iron deck strapping (folded ends of this strapping were located near the fan tail).

The wrecking process at Claflin Point follows a similar pattern to other Great Lake's wreck sites. A disintegration of the deck beams allowed the ship's sides to fall outward (broken at the turn of the bilge) to be flattened and held in place by its cargo of stone. It was, therefore, possible to measure and record the vessel from its centerline all the way to its main deck level. This also made it possible to reconstruct the vessel's cross section allowing for a calculation of its depth of hold at approximately 12 feet 6 inches (Figure 9). These measurements give the ship lying at Claflin Point a gross registered tonnage of 275 to 300 or approximately 500 tons burthen.

Details of the construction techniques employed on the Claflin Point vessel can be gleaned from the cross-section (Figure 9) and the main site plan (Figure 3). Longitudinal support for the ship was supplied by the keel/keelson structure down the centerline of the ship. The keelson is slightly larger than the keel at 13 inches sided and molded to the keel's 12 inches sided and 10 inches molded. The ship was double framed and butt-scarfed, with the frames lying on two foot centers. Floor spacing decreased to almost nil under the boiler beds for added support of the heavy machinery. The frames were uniform (mill cut), 8 to 10 inches molded and 4 to 5 inches sided. Outer hull plank-

Clafin Point Starboard Fantail Section
Plan View 1995

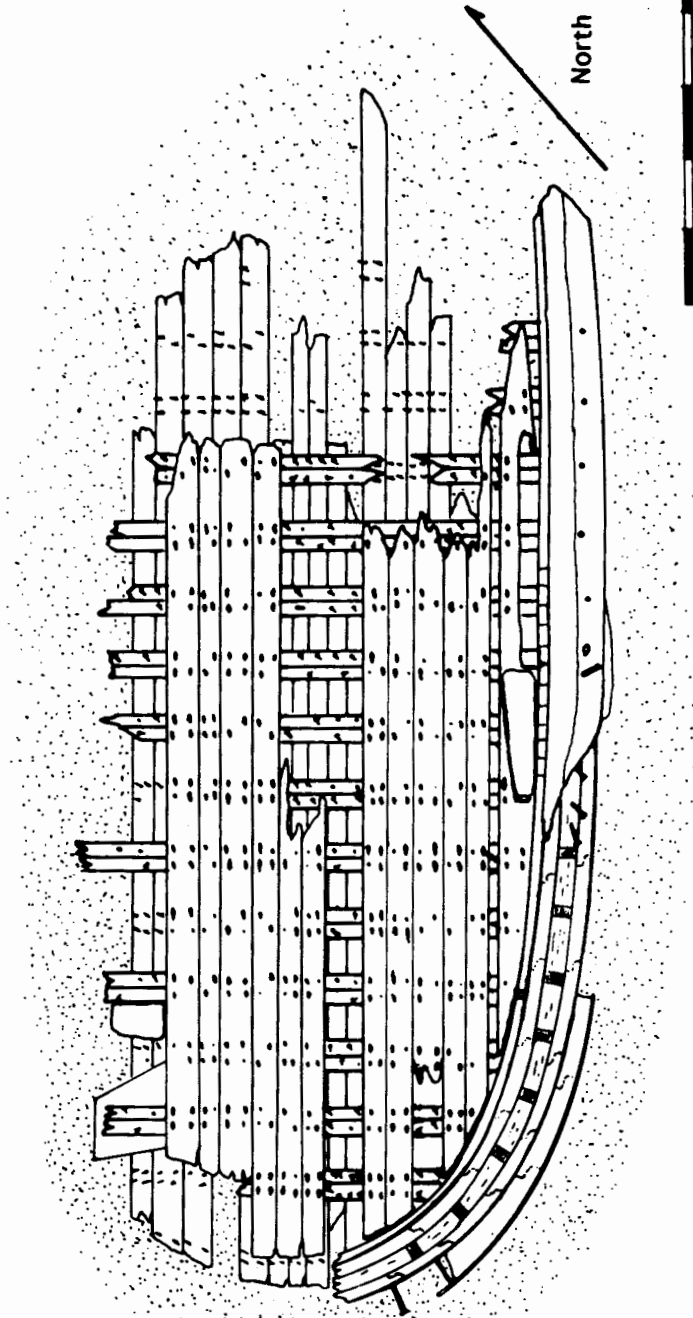


Figure 4. A broken section of the stern fantail is south of the main wreck section.

Clafin Point Port Side Hull Section
Plan View 1995

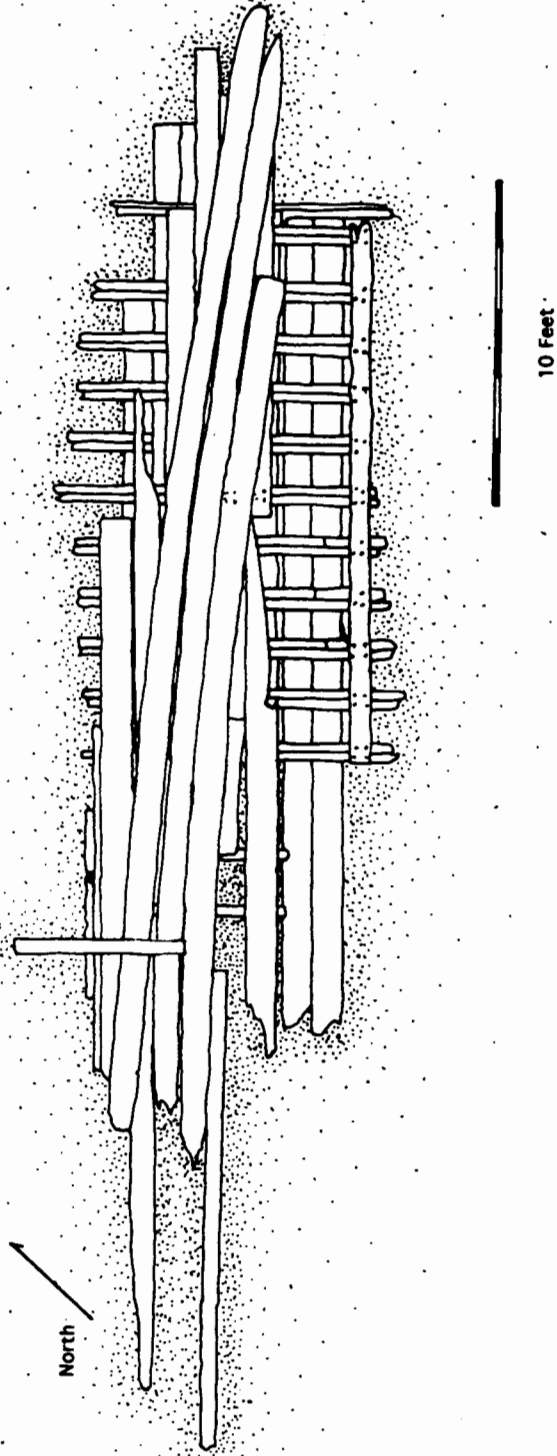


Figure 5. A section of the port side, found southwest of the main wreck section, includes a partially intact ceiling arch.

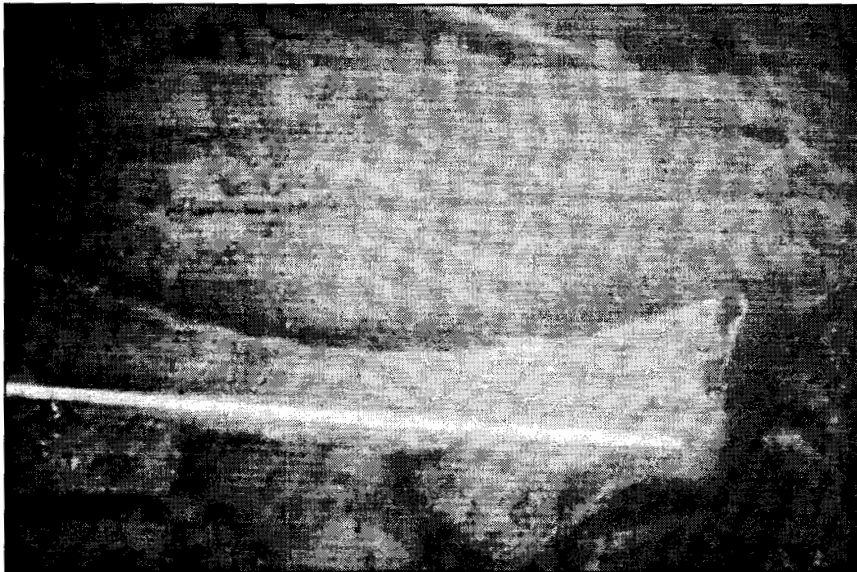
Plate 3.

Archaeological technician Wendy Coble produces a measured sketch of the engineering area in the main wreck section.



Plate 4.

A boiler saddle represents one of the few remaining diagnostic artifacts left in the engineering section.



Clafin Point Vessel Lines

Repositioned and Justified
Archaeological Data

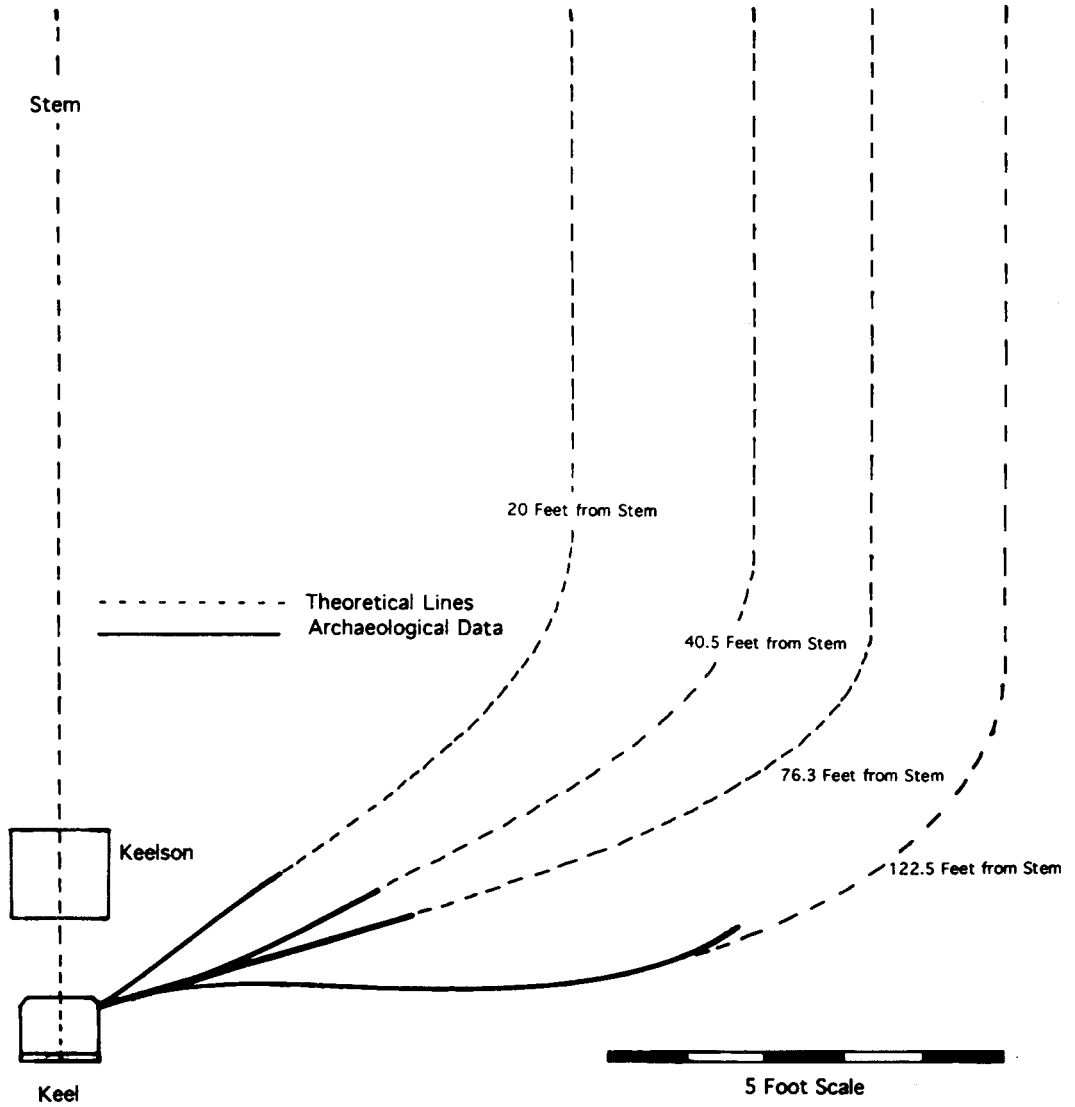


Figure 6. Reconstructed vessel lines from the Clafin Point Shipwreck based on archaeological data and theoretical projections.

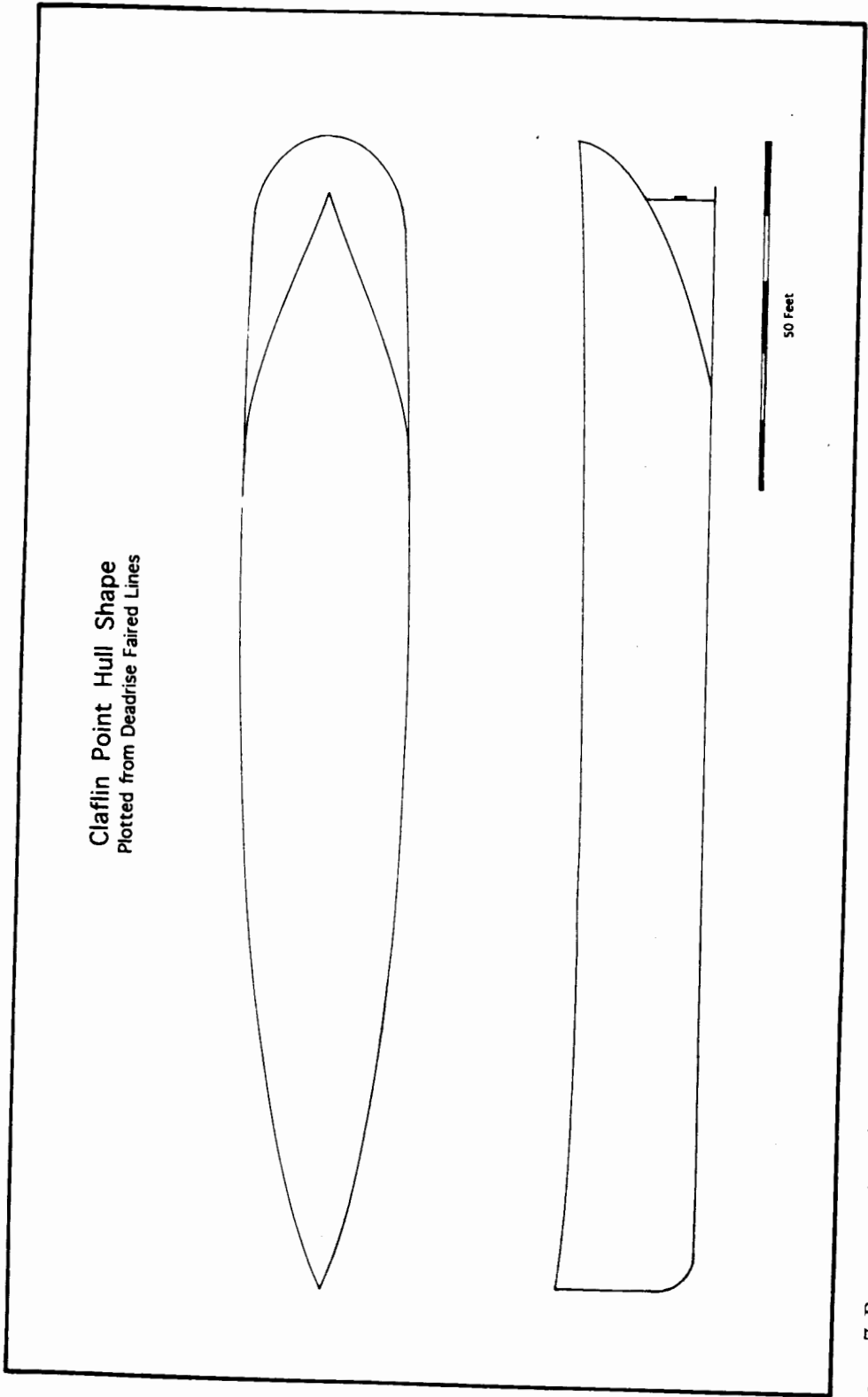
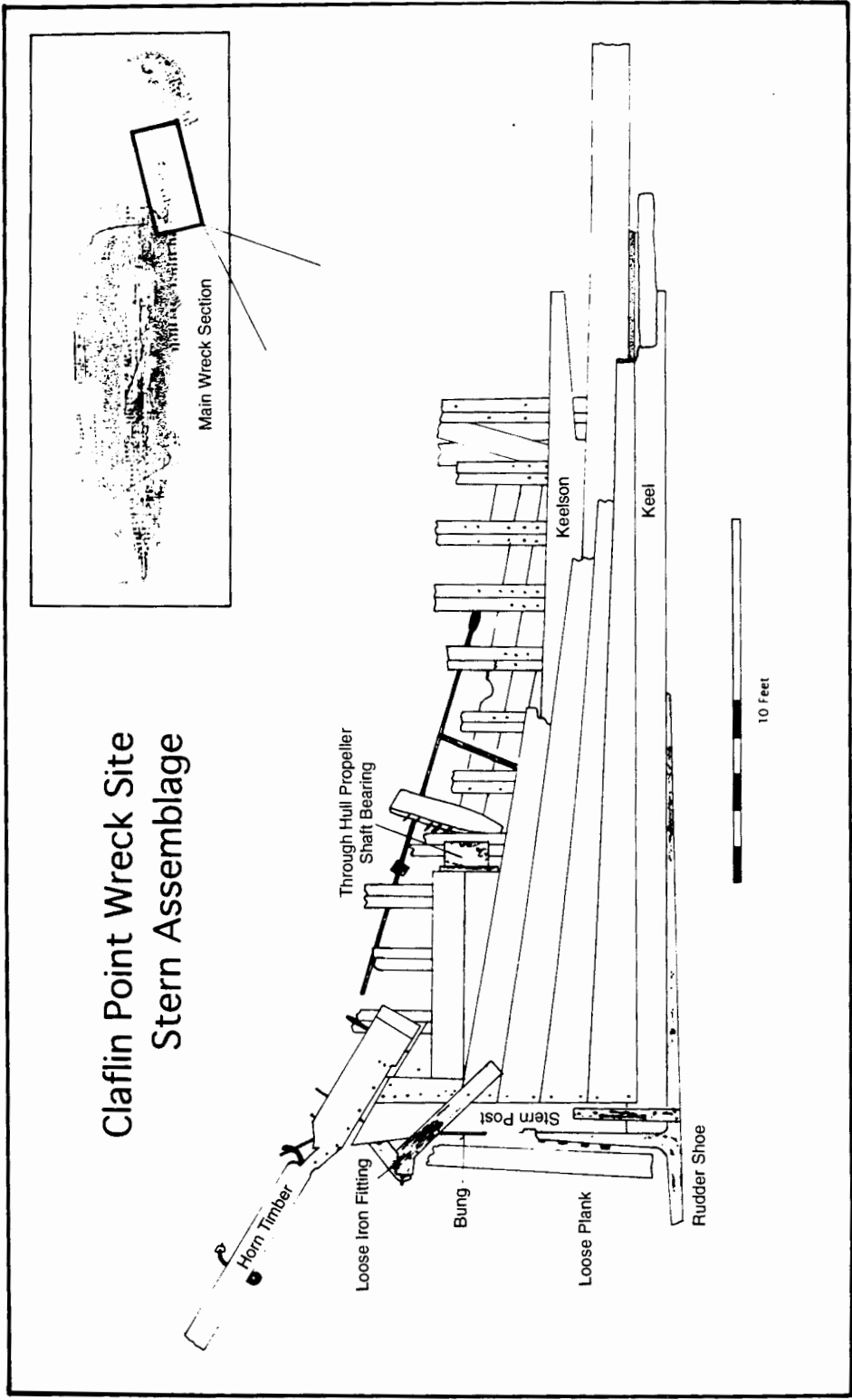


Figure 7. Reconstruction of the Claflin Point Shipwreck's hull shape.



Clafin Point Wreck Site Stern Assemblage

Figure 8. Construction details of the stern assembly.

Clafin Point Vessel Cross Section

At 70 Feet From The Stem

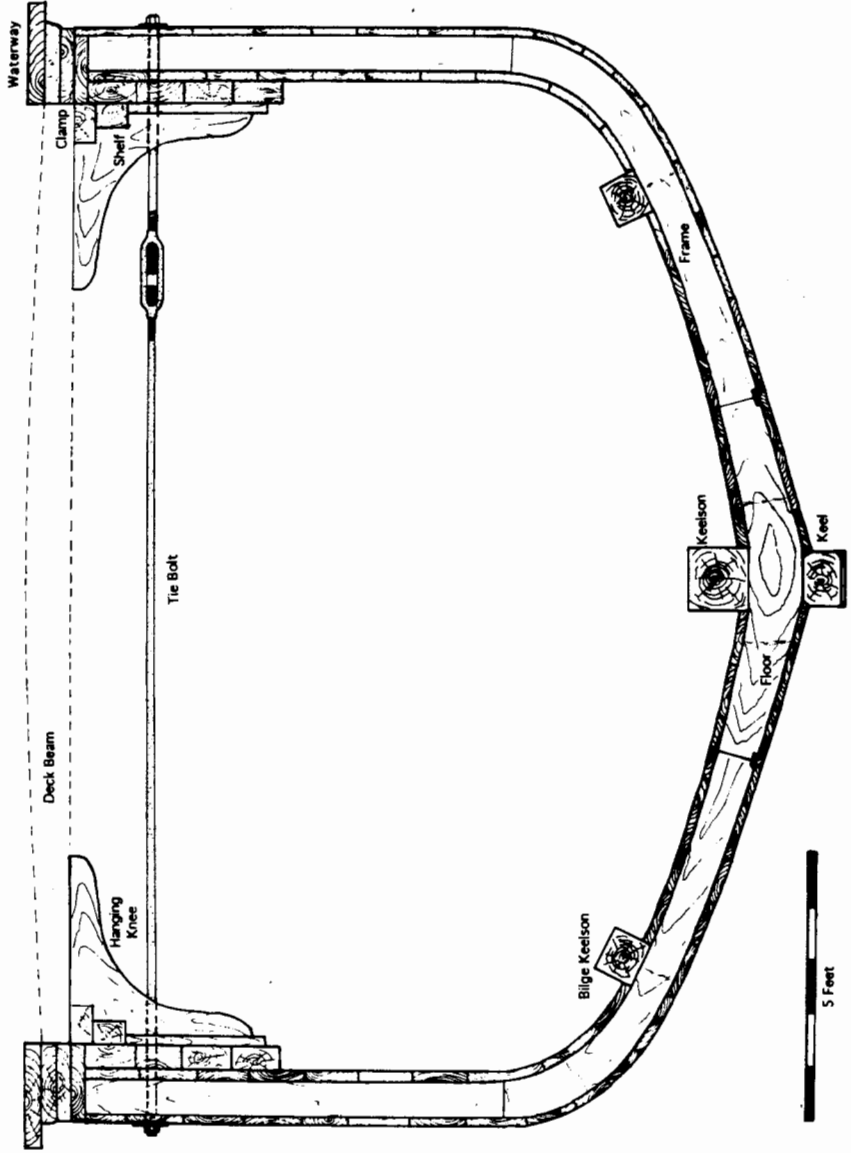


Figure 9. A reconstructed cross-section of the hull seventy feet aft of the bow.

ing was slightly thinner than the ceiling planking at 1.5 or 1.75 inches for the hull, to 2 or 2.25 inches for the ceiling. The hold was supported longitudinally by port and starboard bilge keelsons, 10 inches square. Preliminary observations show the ship to be of oak.

Some unusual construction details were evident on the Claflin Point vessel. Large timber chocks were found between many of the floors, seemingly to separate the port and starboard bilge. Intermittent blocks stepped into the top of the keelson seemed to form a bulkhead clamp. This may indicate that some sort of removable bulkhead was used to separate the port from the starboard side of the hold. Another unusual construction technique is the use of filler pieces to build the frame tops to the waterway. Though the tie bolt is not an unusual building technique (Figure 9) its use with a turnbuckle is indicative of latter 19th and early 20th century building practices.

The Claflin Point vessel's cargo carrying capacity is evidenced by its heavy ceiling planking and bilge keelsons intended for cargo support. In addition, its robust ceiling arch (4 large timbers under the hanging knee, clamp, and shelf structure, Figures 3 and 9) has traditionally been a key component in the construction of Great Lakes propellers from their advent in the 1840s (Dohrman 1979:17). Not only does the ceiling arch help prevent hogging and sagging in vessels with high length to beam ratios, but it helps defray the stresses placed on an empty propeller with its heavy machinery in the stern and the forward end of the ship riding light (the analogy can be made to the springing caused by a person standing on one end of a diving board). Had this ship been designed for passenger use only, or as an overly large tug, it is unlikely it could have been cheaply modified or strengthened internally to carry stone in its role as a barge.

Evidence, therefore, indicates that the Claflin Point vessel, though built for speed, also carried cargo. These design characteristics are consistent with that of late-19th century passenger and freight propellers. Just as their name implies, these ships carried roll on or package freight in their holds while passengers occupied deck cabins above. The freight and passengers carried on these vessels placed a premium on speed and promptness of service, hence they were built to be fast.

The very small amount of diagnostic evidence found at the site, namely a ceramic fuse buss and a brass lamp collar, seem to corroborate the late-19th century time frame suggested by the shipbuilding techniques. The fuse buss indicates the ship carried electric lighting. Electric lighting appeared on Great Lakes passenger and freight steamers in the early 1880s and likely became standard equipment by the mid to late-1880s (Murphy and Holden 1987:85).

The very high length to beam ratio of this ship also corroborates a late-19th century date of construction. By this time wooden ship construction techniques had reached their zenith and it became possible to build a ship of the dimensions of the Claflin Point wreck. The *List of Merchant Vessels in the United States* for 1885 lists nearly 6000 U.S. ships plus their dimensions. Of this list, only a dozen approach the dimensions of the Claflin Point wreck (none exactly). The 1895 list has even fewer examples of vessels that have this high length to beam ratio (see Appendix). However, the passenger freight propeller *Puritan*, operating on Lake Michigan in 1895, does match the dimensions of the Claflin Point wreck.

Evidence of the engineering originally employed on this ship can only be guessed at from the engine bed supports and apertures cut through the hull for machinery. There seem to be two main boiler feeds indicating the vessel originally had two boilers. This would have been typical for the time period. The engine would likely have been of the

vertical inverted cylinder type, probably by this date a compound, double or triple expansion design. The propeller shaft was 12 inches in diameter, based on the through-hull fitting, and likely turned a four-bladed Philadelphia wheel propeller. Four-bladed propellers were used exclusively on wooden hulled ships because they created only a slight vibration, generating less stress on hull seams than the two or three-bladed types (Dohrman 1977:16).

As mentioned previously, the *Puritan*, built for cross-Lake Michigan service in 1887 most closely resembles the design and dimensional parameters indicated by the archaeological work. The *Puritan* had a length of 172 feet and a beam of 23 feet. Its dimensions, including a 12.8 foot depth of hold are nearly identical (allowing for a certain amount of measurement error) to that of the Claflin Point vessel (Van der Linden 1979:331).

Conclusions and Recommendations

Stone Barge and Wharf

One possible explanation for the shipwreck lying at Claflin Point is that the Knickerbocker Company may have simply scuttled the barge or abandoned it to sink when they left the facilities at Little Sturgeon Bay. The barge, however, was carrying a load of crib stone and likely did not belong to the ice company. In addition, since Knickerbocker owned the property at least until 1905, it must have had a use for the slip even if that use was as a reserve to their facility in Sturgeon Bay. It makes no sense, therefore, for them to purposefully sink a barge in the slip, rendering it useless.

A more plausible explanation for the abandonment may be that the stone barge was left at Claflin Point after 1905, when the wharf became useless for commercial purposes. Once again, however, there had to be many places to abandon a barge without towing it all the way to Little Sturgeon Bay. In addition, though the crib stone contained in the barge was not a highly priced commodity, a barge load had to be worth more than most people would willingly throw away. Also, the stone's arrangement in the hold suggests that the vessel was being carefully unloaded; the rock was not haphazardly piled as it would have been if the vessel was to be intentionally scuttled.

Another possibility is that the cargo of crib stone may have been brought in to repair the wharf from the storm damage sustained in 1905. An accidental sinking in the slip at that time may have ended any hope of repairing the wharf. This possibility, however, contradicts a newspaper report that it was "extremely doubtful" that any repairs would be attempted (*Door County Advocate*, 28 December 1905). The ice company simply had nothing to gain from repairing the quay. In this same vein, the Knickerbocker Company likely spent few resources on the pier's upkeep while it lay idle between 1898 and 1905. It is even less likely that local fishermen, who reportedly tied their boats to the pier between the time of the ice company abandonment (sometime after 1905) and the pier's eventual demise in 1940 (Norm Gustafson 15 September 1995, pers. comm.), could have spent the sums necessary to repair the pier or bring in a barge load of crib stone.

Since repairs to the wharf were unlikely to be allocated by any party after 1898, a more probable sinking scenario begins in the fall of 1897 or possibly 1898, with the vessel tied bow foremost to the northeast breakwater inside the slip. Spring and summer were used to load ice. Therefore, a crib stone delivery would probably take place in the fall, a season known for unpredictably temperamental weather on the Great Lakes. The wreck event can be deduced from the position of the main wreck section to the stone crib pier. It appears that the barge had delivered most of its load of crib stone to the Claflin Point wharf but unloading this stone by hand was slow and backbreaking labor. Stevedores left the remaining stone in two troughs on either side of the centerline of the ship to keep it in trim (see Figure 3). Before the unloading could be completed, a storm descended on Little

Sturgeon Bay from the northeast. Though the barge was somewhat sheltered by the quay, its bow lines must have parted. The stem swung to the southwest pivoting on the stern quarter which came into contact with the terminus of the northeast pier. The length of the barge acted as a lever powered by the storm winds and surge, while the breakwater acted as a fulcrum. Before anything could be done the barge broke just forward of the fantail section and sank immediately. Broken pieces of the wreck were driven before the storm, coming to rest hundreds of feet from the main wreckage. As the stern quarter of the barge was literally broken off, there was no hope of raising the barge or easily removing the wreckage.

Several factors point to the fall of 1897 or 1898 as the probable *terminus post quem*, *terminus anti-quem*, or earliest and latest date of this vessel's sinking at Claflin Point. It is obvious from the archaeological survey work that the destruction of the barge completely blocked the loading slip of the quay, effectively eliminating the pier's usefulness for servicing large vessels. No other ships could be brought in past the stone barge and it was undoubtedly so badly damaged that it could not be profitably raised or easily removed. As no other pier or wharf in that immediate vicinity could handle a deep-draft vessel, it would have been exceedingly difficult, if not impossible, to ship ice out of Claflin Point after the sinking. Therefore, the barge could not have sunk long before the Knickerbocker Ice Company's withdrawal from Claflin Point in 1898 (*terminus post quem*).

The *terminus anti-quem* is also likely 1898. The 28 December 1905, issue of the *Door County Advocate* states that although the Knickerbocker Company still owned the wharf in 1905, "there is very little use for it at present. Neither is there likely to be any in the time to come." The pier was clearly all but abandoned in 1905, and had been since the cessation of ice production in 1898 (Hirthe 1986:31). It seems possible that the Claflin Point facility was kept in reserve in case the demand for ice taxed the resources of Knickerbocker's Sturgeon Bay establishment, or perhaps the ice company could not sell the facility with a wrecked barge blocking the slip. In any case it seems probable that the Knickerbocker Company would allocate expenses to remove the wreck only if the wharf was to make a profit.

With this in mind, the stone barge was probably brought in by one of the ice companies during the last year of their operation. Careful scrutiny of these historical and archaeological elements make it entirely plausible that the sinking of this luckless stone barge in the slip at Claflin Point in the fall of 1897, may have forced A. S. Piper and Company to sell out to the Knickerbocker Company. If the barge sank in 1898, the disaster perhaps became the final straw in the Knickerbocker Company's decision to move their franchise to Sturgeon Bay.

The Ship

If the passenger and freight vessel (turned stone barge) sunk at Claflin Point was constructed in the mid to late-1880s as indicated by construction details and diagnostic evidence, then it had a very short productive life. For by 1898, or the end of ice production in Little Sturgeon, it had become a stone barge and while in this service, sank to the bottom of Little Sturgeon Bay.

How then, did this once graceful steamship become a stone barge after only a decade or so of service in the passenger freight business? One clue lies on the timbers

exposed near the bow which show unmistakable charring. A possible explanation for this charring may be that after only a few years in the passenger freight hauling business this ship burned. Fires have often caused extensive damage to a vessel's upper works while leaving the hull intact. Written off as a total loss by insurance underwriters, the machinery would have been removed for reuse or scrap. The hull, on the other hand, would be sold to the highest bidder, which in all likelihood was the Leathem and Smith Company of Sturgeon Bay.

Shipyard workers John Leathem and Tom Smith originated their crib stone business in 1893. In a short time the company controlled a virtual monopoly of the crib stone business in Door County (Aerts 1993:5). Their shipbuilding background would have imparted a shrewd interest in purchasing inexpensive hulls for conversion to stone barges. Yet the propeller lying at Claflin Point, with its high length to beam ratio and low dead weight tonnage could not have been their first choice for conversion. The hull simply could not have carried a bulk commodity such as stone as cost effectively as a beamier barge. This suggests that the barge was purchased early on in the development of the business, before Leathem and Smith could afford to be too finicky concerning which vessels they converted to barges. This would fit the mid-1890s profile for this ship's conversion to a stone barge (Plate 5).

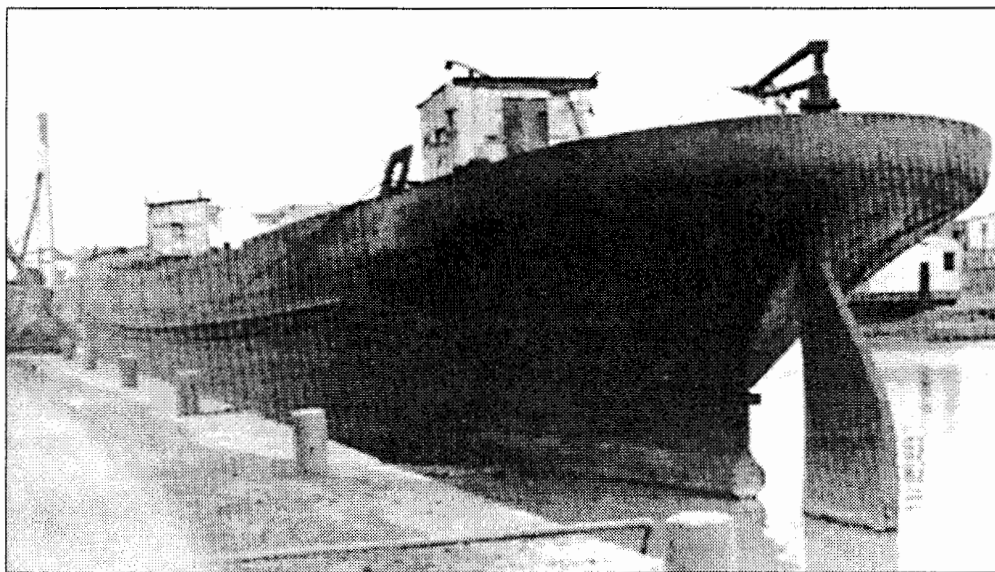
As mentioned, passenger freight propellers of the particular dimensions found on the Claflin Point wreck were unusual ships on the Great Lakes. Thus far research indicates that only the *Puritan* most nearly fits the physical description indicated by the historical and archaeological record. Interestingly, the *Puritan's* history also closely resembles our archaeological conjecture.

The *Puritan* (Plate 6) was a wooden passenger freight propeller, built in 1887 for the Graham and Morton Transportation Line of Chicago. Though sold several times the ship remained in the cross-Lake Michigan trade until burning from unknown causes at Manistee, Michigan, late in 1895. The ship was declared a total loss by the Steamboat Inspection Service in December 1895 (Van der Linden 1979:331). As Manistee lies directly across Lake Michigan from Sturgeon Bay, it is likely the hull became a prime target in Leathem and Smith's early search for stone barges. Certainly if the vessel lying at Claflin Point is not the *Puritan*, its story and its description must be nearly identical.

Recommendations

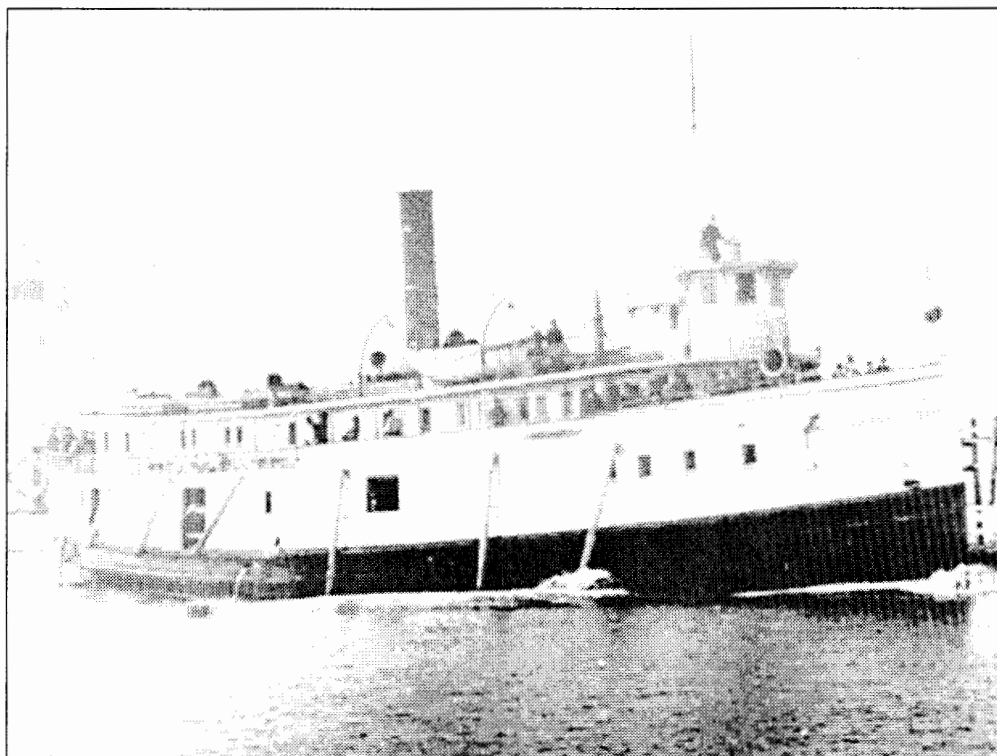
The archaeological information gathered thus far has been invaluable in deciphering both the historically unexplained abandonment of the ice business at Claflin Point, and the oddly dimensioned stone barge lying nearby. In addition, few if any passenger freight propellers have to this point been archaeologically recorded, greatly increasing the importance of this find.

Yet, although this survey has added a good deal of ship construction information to the public record, it is now up to historians to fill in the gaps and details which are now only archaeological conjecture. The historical trail should begin with the *Puritan*. Newspapers in Michigan no doubt recorded the ship's first demise by fire and may well state who, if anyone, bought the burned out hulk afterward. Should this trail lead to a dead end, Leathem and Smith records may in turn indicate where this barge came from and why it sank at Claflin Point, proving or disproving archaeological conjecture. The



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Plate 5. The passenger freight propeller *Puritan* (Van der Linden 1979:331).



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Plate 6. A typical ship-to-barge conversion as seen in this stern view of the *Alaska*. Note the through-hull shaft bung (Van der Linden 1979:11).

records of the A. S. Piper and Knickerbocker Company, should they be located, could also add to the history of Clafin Point and Little Sturgeon Bay. Finally, the newspapers in Door County should also indicate when and why the Knickerbocker Company moved to Sturgeon Bay from Little Sturgeon in 1898.

The Clafin Point archaeological survey was a beginning, but much historical research remains and many questions are left unanswered. Historical investigation will continue on the Clafin Point site in the form of masters thesis research at East Carolina University. It is hoped that graduate scholars can verify and expound upon the historical riddles posed by this important wreck site.

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Appendix

Length, beam and depth are the diagnostic dimensions used to correlate the Claflin Point wreck with similarly sized vessels of the period in an attempt to identify the shipwreck. Projections of the Claflin Point wreck's diagnostic measurements, listed below, are based on archaeological data. Hulls approximating the dimensions of the Claflin Point wreck site from the 1885 and 1895 *List of Merchant Vessels in the United States*, are listed in the following table.

Claflin Point wreck's projected diagnostic measurements in feet.

Length 168 to 173
 Beam 22 to 24
 Depth 12.3 to 12.8

List of Merchant Vessels in the United States, 1885.

Official Number	Name	Length	Beam	Depth	Gross Tons	Net Tons	Built	Home Port
379	<i>Allegheny</i>	167.2	28.3	10.5	401.84	267.37	Milwaukee	Tonawanda
298	<i>Atlantic</i>	176.5	28.4	10.7	656.26	556.79	Cleveland	Detroit
11579	<i>Huron City</i>	167.0	29.0	10.8	388.81	277.33	Sandusky	E. Saginaw
16314	<i>Missouri</i>	168.2	27.2	11.2	378.28	282.35	Buffalo	Port Huron
75154	<i>Joseph L. Hurd</i>	171.0	29.2	10.9	759.88	592.65	Detroit	Chicago

List of Merchant Vessels in the United States, 1895.

105784	<i>Arundell</i>	166.6	26.5	10.7	339.39	257.42	Buffalo	Detroit
150396	<i>Puritan</i>	172.0	23.0	12.8	289.67	163.09	Benton Harbor	Grand Haven