

The Golden Age of Sail on the Great Lakes: Underwater Archaeological Investigations of Wisconsin's Sailing Fleet 2010-2011



**State Archaeology and Maritime Preservation Technical
Report Series #12-002**



**W I S C O N S I N
H I S T O R I C A L
S O C I E T Y**

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Funded by grants from the University of Wisconsin Sea Grant Institute, National Sea Grant College Program, and the Wisconsin Department of Transportation's Transportation Economics Assistance program. This report was prepared by the Wisconsin Historical Society. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the University of Wisconsin Sea Grant Institute, the National Sea Grant College Program, or the Wisconsin Department of Transportation.



The *Walter B. Allen* was listed on the National Register of Historic Places on 10 November 2011.

The Jacksonport Wharf Archeological District was listed on the National Register of Historic Places on 28 February 2012.

The schooners *Silver Lake* and *Island City* are listed on the State Register of Historic Places, and pending listing on the National Register of Historic Places.

Cover photo: The *Silver Lake* lies in 200 feet of water off Sheboygan.

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ACKNOWLEDGEMENTS

The projects within this report span two years of maritime field work conducted by the Wisconsin Historical Society. The successful completion of these projects relies heavily on the hard work and dedication of many different people and institutions. Major funding for these projects was provided by the University of Wisconsin Sea Grant Institute and the Wisconsin Department of Transportation. John Karl of the University of Wisconsin Sea Grant Institute deserves special thanks for providing consistently valuable insight and support over the program's many years. Additionally, the University of Wisconsin Sea Grant Institute has provided invaluable support by allowing us the use their research vessel *Dawn Treader* and its tow vehicle. Evan Kovacs and Bill Lange from the Woods Hole Oceanographic Institution's Advanced Imaging and Visualization Laboratory provided cutting-edge technology to create the stunning ultra-high resolution photo mosaics of the *Silver Lake* and *Walter B. Allen*.

Steve Radovan provided valuable information on the history of the *Walter B. Allen*. Few people maintain such meticulous records of their discoveries and diving, and time and again Steve's notes have provided valuable information that it not recorded elsewhere. Steve was also invaluable for pointing out where many of the *Walter B. Allen*'s artifacts are now on display.

Matt Carter deserves special recognition for all the time he donated during the summer of 2010. Matt came to Wisconsin from New Zealand as an unpaid intern to learn about Great Lakes maritime history and archaeology. When Keith Meverden was suddenly deployed for five months by the Coast Guard Reserve to work on the Deepwater Horizon oil spill, Matt stepped up to the plate and assisted Tamara Thomsen with completing all the scheduled fieldwork and site descriptions for the *Walter B. Allen*, *Island City*, and Jacksonport Wharf Complex surveys.

None of these projects would have been successful without the many hours donated each year by our field volunteers. These dedicated individuals return year after year to burn in the hot summer sun, freeze in the Great Lakes' frigid depths, and stoically face the occasional wrath of the seas. They continue to volunteer many hours knowing their only compensation is the satisfaction of helping preserve Wisconsin's rich maritime past. These individuals include Paul Bentley, Jason Dostal, Bob Jaeck, Steve Hubbard, Russell Leitz, Dan Lewandowski, Paul Lothary, George Mayhew, Jeff Milbrath, Tom Milbrath, Bob Nelson, Matt Schultz, Jon Van Harpen, and Christa Waller.

CHAPTER ONE INTRODUCTION

Archaeological surveys conducted by the Wisconsin Historical Society are a joint effort of several organizations and many individuals. The surveys conducted in this report are the result of a cooperative effort between the Wisconsin Historical Society, the University of Wisconsin Sea Grant Institute, and the Wisconsin Department of Transportation. Project funding was provided by grants from the University of Wisconsin Sea Grant Institute and the Wisconsin Department of Transportation. The surveys were organized and staffed by the Society's Maritime Preservation and Archaeology program staff and volunteers and were conducted over the 2010 and 2011 field seasons.

The Wisconsin Historical Society is the State of Wisconsin's principle historic preservation agency and charged under state statutes (44.02 and 44.30-44.31) with the research, protection, restoration, and rehabilitation of historic properties within Wisconsin. Under Wisconsin statute 44.47, the Society is also charged with the identification, evaluation, and preservation of Wisconsin's underwater archaeological resources, including submerged prehistoric sites, historic shipwrecks, and aircraft on state-owned bottomlands. Recognizing the multiple-use value of underwater archaeological sites to scientists, historians, and recreationalists, these underwater remnants of our past are broadly termed "submerged cultural resources". Submerged cultural resource management goes beyond the scope of traditional historic preservation programs, encountering diverse multiple-use concerns such as recreation and commercial salvage.

The State of Wisconsin has additional management responsibilities for submerged cultural resources under federal law, including the National Historic Preservation Act of 1966 and the Abandoned Shipwreck Act of 1987 (Public Law 100-298). State legislation (1991 Wisconsin Act 269) and modifications to state law in adherence with federal guidelines issued under the Abandoned Shipwreck Act has provided Wisconsin with a more formalized and rational framework for underwater archaeological resource management. This legislation also authorizes the Society and the Wisconsin Department of Natural Resources to designate underwater preserves for the preservation and recreational development of underwater archaeological sites.

Created in 1988, the Society's Maritime Preservation and Archaeology program works to survey, inventory, and evaluate Wisconsin's underwater archaeological resources, develop preservation strategies, administer field management practices, and enhance public appreciation and stewardship for Wisconsin's precious and fragile maritime heritage (Cooper 1992; 1993). The program is within the Society's Division of Historic Preservation – Public History, Office of State Archaeology and Maritime Preservation. To encourage preservation and visitation of these unique resources while fostering wider public appreciation for Wisconsin's maritime cultural heritage, the Society began the Wisconsin's Maritime Trails initiative in July 2001. Winding above and below the waves, the Maritime Trails encompass five stretches of Wisconsin's coastline and inland river ways and links shipwrecks, lighthouses, historic waterfronts, historic vessels, museums, shore-side historical markers, and attractions. When viewed as a metaphorical "trail", these resources illustrate the state's diverse maritime heritage and connect them within the overall context of Wisconsin's, as well as the greater Great Lakes region's, maritime heritage (Green and Green 2004).

The Maritime Trails initiative has become the Society's strategic plan for managing the state's diverse submerged cultural heritage while encouraging preservation and promoting public awareness and visitation. Initiatives aimed at identifying, managing, and interpreting Wisconsin's coastal cultural resources must consider these resources at both a local and regional level. The sheer length (approximately 860 miles), as well as the geographical, social, and cultural diversity of Wisconsin's Great Lakes coastline makes this essential. The Maritime Trails initiative encourages both divers and non-divers to consider each unique maritime property within the broader context of Wisconsin's maritime history. Through websites, interpretive materials, and public presentations, the Maritime Trails initiative integrates archaeological research and public education to encourage visitors to responsibly visit maritime cultural heritage sites. Wisconsin's Maritime Trails' major elements include:

Archaeological Research. The documentation of Wisconsin's submerged cultural resources, primarily historic shipwrecks, is the foundation of the Maritime Trails initiative. Beyond academic and resource management applications, archaeological research results form the basis of interpretation and outreach projects.

Shipwreck Moorings. With volunteer assistance, the Society maintains permanent moorings on 28 historic shipwrecks statewide. These moorings facilitate recreational access, provide a means of interpreting the wreck sites to visitors, provide a safe point of ascent and descent for divers, and eliminate anchor damage from recreational boaters anchoring into the site.

Dive Guides. Designed with divers, boaters, and kayakers in mind, these rugged, waterproof guides place each vessel within its historical context and highlights unique site features that might otherwise go unnoticed. In partnership with the University of Wisconsin Sea Grant Institute, the Society has produced guides to 25 Wisconsin shipwreck sites.

Public Presentations. Given at a variety of venues throughout the state, public presentations provide a direct, personal connection between the Society and the general public. The Society's underwater archaeologists and volunteers have reached thousands of people via public presentations since the Maritime Trails' inception.

Interpretive Signage and Kiosks. As of January 2012, the Society has installed shore-side informational markers for 34 historic shipwrecks and waterfronts. Utilizing an identical template that unifies the signs as attractions and information points within the statewide Maritime Trails program, the markers emphasize the broader connection between Wisconsin's many coastal historic resources. Five interactive touch-screen kiosks that highlight Wisconsin's historic shipwrecks are installed at the Wisconsin Maritime Museum, the Kenosha Public Museum, the Door County Maritime Museum, the Society's Madeline Island Museum, and the History Museum at the Castle. The kiosks reach an estimated 368,000 museum visitors annually and make archaeological research results available in a fun, interactive format while educating visitors on the importance of Wisconsin's coastal cultural resources.

Websites. Two websites dedicated to Wisconsin's historic shipwrecks, underwater archaeology, and maritime history ensure the general public has access to timely and useful information. The gateway to these sites is the Wisconsin's Maritime Trails website (www.maritimetrails.org), which serves as a unified "maritime resource" information point for Wisconsin's residents and visitors. Unveiled in 2003, this website features a statewide database of shore-side maritime-related resources and over 700 historic Wisconsin shipwrecks. A searchable database includes contact information, Web links, and maps for historical maritime venues, as well as location and historical data for shipwrecks. An updated version of the website debuted in the summer of 2011. Wisconsin's Great Lakes Shipwrecks (www.wisconsinshipwrecks.org) is a collaborative effort between the Society and the University of Wisconsin Sea Grant Institute that began in 1996. Making underwater archaeological research results accessible to the public, this site features detailed information on historically and recreationally significant shipwrecks in Wisconsin's Great Lakes waters. Each shipwreck profile includes information about the ship's archaeology, history, final voyage, sinking, and current condition.

Partnerships. The Maritime Trails program partners with federal, state, and local agencies, chambers of commerce, non-profit organizations, and individuals. With several core partners, dozens of volunteers, and a growing list of project-specific partners, this aspect of the initiative ensures that everyone with a stake in Wisconsin's maritime heritage shares in its management and interpretation.

Research Design and Methodology

Nineteenth-century Great Lakes wooden ship construction and operation is poorly understood. Little is known about vessels built and operated during the first half of the nineteenth century, especially the smaller sailing craft that continued sailing through the century's end. As the nineteenth century progressed, most contemporary authors focused their attention on the rapidly advancing steam technology and its ever-increasing share of the Great Lakes merchant trade. As a result, much of what we know about Great Lakes sailing craft has come from the archaeological record of vessels laid on the Great Lakes' bottomlands. The archaeological surveys within this report were designed to provide a better understanding of nineteenth-century Great Lakes merchant sail.

Field survey methods included traditional baseline surveys aided by digital photo and video documentation. Archaeological documentation was conducted along guidelines established by the Natural Park Service for submerged cultural resource survey and evaluation in determining site eligibility for the National Register of Historic Places. Research designs were directed toward formulating site descriptions and archaeological assessments with a package of management questions, some specific to the site itself (i.e. location, environment, parameters, integrity, extant features, and artifacts), as well as more general questions that place the site within its broader historical context (i.e. historical significance, archaeological potential, recreational potential, and management requirements). Research objectives included:

1. Determine the site location, environment, and parameters through visual survey of extant elements, features, and artifacts.

2. Document and map exposed remains using trilaterated survey points and an onsite (submerged) datum.
3. Document the site using photographs, video, and measured sketches of those architectural and archaeological elements that are diagnostic of a) vessel type, b) vessel age, c) vessel construction style and method, d) vessel propulsion, e) vessel use, f) vessel identification, g) vessel cargo, and h) shipboard human activity broadly indicative of occupation, status, ethnicity, subsistence or other questions allied with the study of maritime anthropology and Great Lakes social and economic history.
4. Provide assessment of a site's environmental and cultural context for determining its historic significance and archaeological potential according to the National Register of Historic Places criteria, recreational potential, and management requirements.

Site evaluation and documentation was conducted using open- and closed-circuit scuba technology. Documentation included digital photo mosaics, measured sketches, construction schematics, digital still and video imagery, and scaled site plans for National Register-level documentation. Analysis was conducted using comparative evidence obtained from archaeological surveys of similar sites, and augmented by historical documentation relating to individual sites and general Great Lakes maritime history. Where artifacts were encountered, material culture was interpreted in the context of its relevance to shipboard activities, shipboard hierarchy, shipboard activity/use areas, and other aspects of maritime anthropology.

This submerged cultural resource survey report serves as a source document for site description, analysis, interpretation, and management recommendations used in cultural resource management planning, recreational development, and public education. It also serves as the source document for eligibility determination and nomination for listing on the National Register of Historic Places. Inclusion of these sites on the National Register and state resources management plans is an important step in achieving long-term site preservation. Suggested plans for management include mooring buoys to facilitate recreational access (where appropriate) and alleviate damage caused by on-site boat anchoring. Other possibilities include site interpretation for visitors through self-guided site maps and Web-based pages. Site preservation ensures availability both as a future recreational resource and as an important and nonrenewable source of scientific data relating to Great Lakes underwater archaeology, maritime history, marine architecture, and maritime anthropology.

CHAPTER TWO

SCOW SCHOONERS *LADY ELLEN* AND *SILVER LAKE*

In the nineteenth century, the scow schooner provided a vital connection between smaller Lake Michigan communities and the larger Great Lakes regional market. The flat-bottomed scow was well-suited to shallow, unimproved harbors, rather inexpensive to build and maintain, and could carry a large amount of cargo relative to hull size. For these reasons, the scow schooner became the life-blood of many lakeshore communities and provided an entry point for many immigrants into the Great Lakes maritime trade as sailors, masters, and vessels owners.

Scows were used in great numbers throughout North America - wherever there was need for low-cost, shoal-draft transportation. Scows saw use along the Atlantic Coast from the Maritime Provinces to Mexico, the Great Lakes, the Gulf Coast, San Francisco Bay, and on nearly every river large enough for small craft (Bureau of Navigation 1885a; Chapelle 1951; Merriman 1997). Despite its proliferation, or perhaps as a result of it, it is difficult to trace the scow's introduction to the New World. It is also unknown when the term "scow" came into popular usage, but it was likely derived from the Dutch term "schouw" that indicated a square-ended hull that possessed a flat, or nearly flat, bottom. The first recorded use of the term scow appears well into the eighteenth century (Chapelle 1951). Flat-bottomed craft were numerous for several reasons. One was that vessels with flat bottoms and sides were easily constructed by people with limited shipwright skills who worked under primitive conditions. Flat surfaces and angular corners did not require the advanced woodworking skills necessary to construct vessels with round hulls and fine lines. An equally important reason was that flat-bottomed craft could easily navigate shallow water with little difficulty. If they ran aground they were easily refloated and less likely to sustain damage. They were also a very stable craft that was able to carry large cargoes relative to their size.

Little recorded information has been discovered for colonial flat-bottomed craft. Considering that planked canoes and scows were the easiest boats to build with the least skill, scows were numerous in the New World by 1670. Nearly every community used the scow or some other form of flat-bottomed boat (Chapelle 1951). There were several variants of flat bottom boats common to the New World, but differentiation in lineage is often blurred, as there were more similarities than differences between vessel types. The scow-type hull appeared under several names, including punt, flat, radeau, periaugua, gondalow, and gondolo. Sloop-rigged scows were common as early as 1725, and by the time of the American Revolution the scow rig had expanded to schooners and even the occasional square-rigger (Chapelle 1951).

Prior to the war of 1812, few commercial craft sailed the western Great Lakes. Following the war, the scow schooner made its appearance alongside more conventional sailing craft and quickly expanded onto the western lakes (Inches and Partlow 1964). The Great Lakes scow schooner's earliest record appears in the mid-1820s, with reports of several scows on Lake Ontario and New York's Finger Lakes, as well as the 60-ton *Bolivar* that was constructed at Erie, Pennsylvania, in 1825. By the 1840s, scows were common throughout the Great Lakes and continued sailing into the twentieth century and the last days of lake sail (Labadie and Herdendorf 2004; Martin 1991).

Other North American regions mirrored the scow's Great Lakes expansion, including the Atlantic coast, Gulf coast, and San Francisco Bay. The scow eventually reached the Pacific

Islands, and if imitation is the highest form of flattery much can be said by the fact that New Zealand scows were descendants of those on the Great Lakes. New Zealand's first scow was built in 1873 and named *Lake Erie*, followed by the *Lake Superior* in 1875, and the *Lake St. Claire* and *Lake Michigan* in 1876 (Hawkins 1987; McGregor 1982). Even today, the ubiquitous "jon boat" can be found throughout the shallow waters of the United States. Built of aluminum, the jon boat's lines closely match those of early colonial flat bottom craft.

The term "scow" refers to hull form rather than the rig type, resulting in the terms "scow schooner" or "scow sloop" to describe these vessels. Despite a wide range of regional variation, the scow is defined as a vessel with a flat bottom, vertical sides, and a hard chine. Their hull shape more closely resembles a modern barge than conventional sailing craft. Conventional sailing vessels had rounded bottoms and sides with a relatively gentle curve at the turn of the bilge, where the hull bottom and sides met.

As in other regions, there was wide variation in Great Lakes construction techniques, and the term "scow" was used to describe a variety of vessels. One of the clearest contemporary definitions is found in *Merchant Vessels of the United States* (Bureau of Navigation 1885b):

Scows are built with flat bottoms and square bilges, but some of them have the ordinary schooner bow....The distinctive line between the scow and the regular-built schooner is, in the case of some larger vessels, quite obscure but would seem to be determined by the shape of the bilge, the scow having in all cases the angular bilge instead of the curve (futtock) bilge of the ordinary vessel.

As the above definition points out, there was occasional difficulty in distinguishing scows from conventional craft, and this problem was not limited to Great Lakes vessels. A dispute arose in New Zealand's Auckland Anniversary Day scow race in 1884 when scow captains refused to race until the *Vixen* - a round-bilged vessel over which there was some dispute as to whether or not she was indeed a scow - withdrew from the competition (Hawkins 1987).

Despite the occasional confusion, however, there are several characteristic traits that usually differentiate scows from conventional vessels, and these traits are most easily understood when viewed in cross section. Scows are boxy vessels with a flat bottom and sides that are connected by a hard chine, or a nearly ninety-degree angle where the hull bottom meets the hull side (Figure 1). Conventional sailing vessels, whether flat-floored or with deadrise¹, possess a soft chine, or a smooth, rounded edge where the hull bottom and hull sides meet (Figure 2).

Scow construction varied from hull to hull as well as from region to region. This variation included readily visible features such as sheer lines, transoms, and bows, in addition to less obvious features like cross or diagonal planking and longitudinal framing. Several different bow variations are visible in historic photographs, including the square butt-end bow with little or no forward projection of the stem, the pointed flat-iron bow that produced a finer entry (similar to conventional craft), and the rounded spoonbill, swim-headed, or barrel-shaped ends (Labadie and Herdendorf 2004).

¹ Due to the shallow nature of many Great Lake harbors, as well as the Welland Canal locks, wooden vessels on the Great Lakes developed flat floors as they increased in size. Flat floors, or a flat hull bottom, allowed greater cargo capacity while limiting draft, but retained conventional soft hull lines.

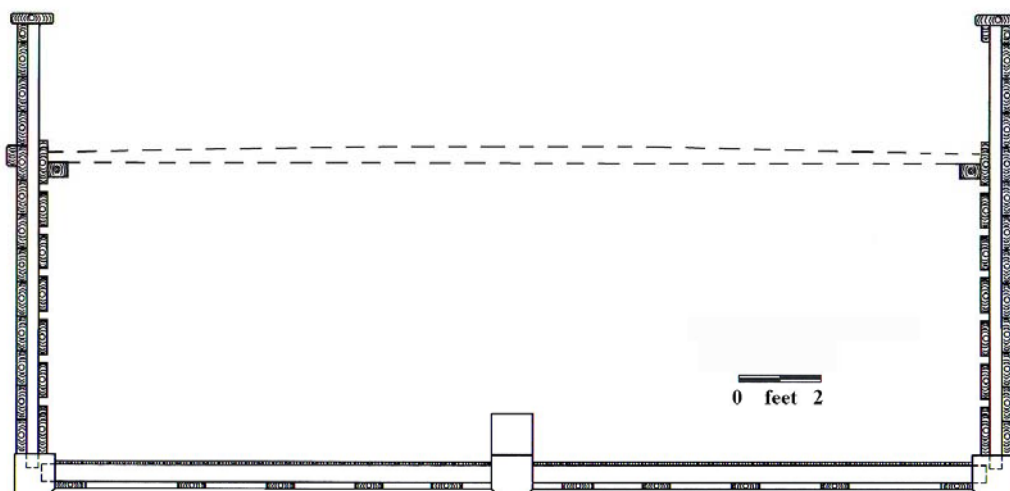


Figure 1. Scow schooner cross section. Note flat bottom and hard chines with chine log. Adapted from Rodgers and Corbin 2003.

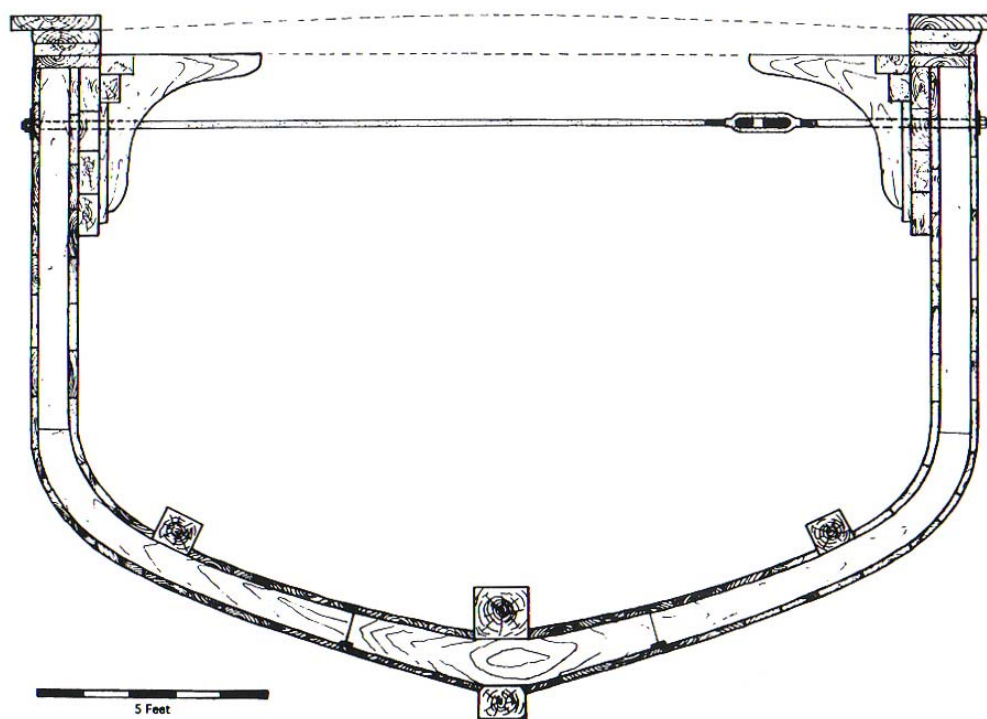


Figure 2. Cross section of conventional vessel. Reprinted, by permission, from Rodgers 1995.

Martin (1991) categorizes scows into three distinct types: (1) full scow with angular bilge along its entire length, (2) half scow with angular bilge along only part of its length with the bow and stern being similar to that of a conventional hull, and (3) a less defined category for hulls not clearly exhibiting an angular bilge, but flat-bottomed enough to be considered scows by contemporaries. Martin supports this classification with evidence from insurance registers that list both “scow” and “half scow” hulls as well as vessels with a “scow stern” or “scow bottom” (Martin 1991). This model illustrates the large variation within the scow vessel type, but may be too simplified. Problems arise when attempting to define a vessel with a bow or stern more similar to a conventional hull. The flat-iron bow, while having a fine entry not unlike a conventional vessel, remains an obvious scow with an angular joint where the bow meets the hull side. More historical and archaeological research is needed to determine the extent of variation within the scow vessel type, and how dissimilar from a conventional hull a scow needed to be in order to be classified as a scow. This may be a daunting task, as many contemporaries appear to have been as confused as modern researchers.

Variation in the bottom planking on scow hulls included longitudinally, cross, or diagonally planked, with the latter two methods requiring nontraditional framing. Hull sides planking also varied from the traditional frame-on-plank construction to the scow-specific “gunnel-built” sides. Gunnel-built scows were constructed with thick longitudinal hull planks edge-bolted with iron drift bolts that ran through two or more side planks (Inches and Partlow 1964). These edge bolts not only clamped the side hull planking together, but served as reinforcement against horizontal forces and often eliminated or reduced the need for frames as in conventional hulls. The planks in gunnel-built sides averaged four inches in thickness in vessels between sixty to ninety feet in length. Inches and Partlow (1964) suggest that gunnel-built construction with few, if any, frames, was one characteristic that was common to nearly all Great Lakes scows.

Another trait that was unique to scows, and perhaps equally as common as the gunnel-built side, was the use of a chine log inside the turn of the bilge. Because the scow’s hard chine was a weak point in the vessel’s hull, additional strength was added by incorporating a heavy longitudinal timber – the chine log. These six- to eight-inch stringers were often the principle framing members of the hull and were fitted along either side for the entire length of the bilge (Inches and Partlow 1964).

It is open to debate whether the scow’s development and subsequent popularity resulted from the need for a vessel that was capable of both transiting shallow water and carry a large amount of cargo, or because their unsophisticated hull form was economical to build and maintain (Inches and Partlow 1964; Labadie and Herdendorf 2004). It is certain, however, that scows required the simplest construction techniques of any freight-carrying vessels. The great variation in construction and appearance that we see today is likely a result of varying shipwright skills between builders, the type and quality of construction materials available, and available funding to procure such materials.

Variation in construction technique was also affected by the regional differences between where the vessels were constructed. Despite the fact that New Zealand’s scows were based on a Great Lakes model, there were many adaptations to fit local needs. For example, New Zealand scows carried all of their cargo above decks. While proportional in length and beam to Great

Lakes scows, the New Zealand models carried half the depth of hold with no provisions for internal cargo. Examples of New Zealand registration documents state that “no cargo is to be carried below deck, everything carried above; in fact, no hatchways are provided” (Hawkins 1987).

New Zealand saw several variations in hull framing as well. New Zealand scows utilized either a “post and rail” construction that used longitudinal stringers and stanchions, or a “solid partition” construction that utilized longitudinal bulkheads that partitioned the vessel into compartments. Additionally, centerboards were not as common as on the Great Lakes, and both the drop keel and pivoting centerboard was used (Hawkins 1987).

Scows of the San Francisco Bay were more similar to the Great Lakes’ scows than they were to New Zealand’s, but even they exhibited an equal amount of variation in both construction and hull lines. San Francisco Bay had both longitudinal- and cross-planked hulls, but the latter was less common. Longitudinally-planked hulls were framed similarly to conventional vessels with transverse floors scarphed into frames at the chine, which precluded the need for a chine log. Ceiling planking was usually longitudinal, as was the outer planking on both the hull bottom and the sides.

San Francisco’s cross-planked scows were of an entirely different construction, called “log built” in local vernacular. These vessels used several longitudinal floor keelsons with heavy outer hull and ceiling planks that were edge-bolted. The hull sides were sometimes stiffened with widely spaced frames. The most noticeable difference between longitudinal- and cross-planked vessels, however, was the angle of the bow and stern ramps. Longitudinally-planked vessels required steaming of the bow and stern planks that resulted a more gradual upward curve of the bow and stern ramps. Cross-planked vessels did not require steamed hull planks, which allowed a more abrupt angle where the bow and stern ramps met the bottom. This created a more boxy hull with nearly vertical bow and stern ramps. Local opinion held that the boxy cross-planked hulls were less handy and slower than the finer longitudinally-planked ones. Many builders, however, opted for the cross-planked construction as it was cheaper to build and provided more cargo carrying capacity (Olmsted 1988).

In general, scows were usually considered good sailors and were as fast, or faster, than conventional schooners with the exception of sailing in heavy seas. Their shallow draft and flat bottom created little water drag. Sailing to windward was their worst point of sail, as their wide, flat bow took a beating in head seas and their shallow draft allowed considerable leeway in a strong wind (Chapelle 1951; Inches and Partlow 1964; Kristiansen 1981; Olmsted 1988). Despite how seaworthy a scow may or may not have been, however, insurance companies held little faith in the scow’s seaworthiness and even less confidence in cross-planked bottoms and gunnel-built sides. Construction rules for 1866 noted:

Frame built scows, well-constructed and of good material, with fore-and-aft bottom planking, may be entitled to Class B1, [for] five years, but in no case will scows be entitled to the B1 grade if built with gunwale sides or athwartships bottom” (Board of Lake Underwriters 1866).

Vessels built according to the underwriters’ rules were given a classification rating that determined a vessel’s insurance premium. Ratings of A1, A2, B1, B2, C1, C2, or “not insurable”

were assigned, A1 being the highest rating with the lowest premium - a rating scow schooners never achieved. In 1876, the Board of Lake Underwriters (1876) categorized scows with barges and even described them as “of unseaworthy form.”

The *Lady Ellen*

On 17 June 1875, the *Ahnapee Record* (1875a) announced that Captain John McDonald was awarded a contract to refill five sections of the government pier at Ahnapee’s harbor, and the work was to begin immediately. McDonald, a 40 year-old was a Civil War veteran, had lost his left arm in the war was receiving a small monthly pension for his injury (*Ahnapee Record* 1878e; United States Census Bureau 1880g; United States Pension Bureau 1883). Born in New York to parents of Irish descent, Captain McDonald supported a growing family in the village of Ahnapee along with his 35-year-old wife Mary. Their seven children included a fifteen-year-old daughter Mary, a twelve-year-old son Elmer, eleven-year-old son Andrew, seven-year-old daughter Elizabeth, five-year-old son George, one-year-old daughter Nellie, and a newborn son named John (United States Census Bureau 1880g). The harbor contract was a boon for McDonald and was his springboard into a career of managing and transporting supplies for harbor improvements. McDonald owned and skippered the scow schooner *Whiskey Pete*, aboard which he transported provisions and goods to and from his hometown village. In addition to the *Whiskey Pete*, McDonald had commissioned a new vessel that was under construction at the village shipyard (*Ahnapee Record* 1875b).

McDonald’s new vessel was launched early in the afternoon on Tuesday, 27 July 1875 (Figure 3). The vessel slid down the ways into the Ahnapee River without incident and was said to “sit gracefully upon the water and...give a dignity to the stone trade hitherto not dreamed of” (*Ahnapee Record* 1875b). The 68-foot scow schooner had been constructed by Captain William Henry, a 57 year-old Scottish shipwright, and her cabin and rigging was fitted out by the local business Elliott & Thain (*Ahnapee Record* 1875b; 1875c; United States Census Bureau 1870h). The yet-unnamed vessel made her maiden voyage on Sunday, 15 August 1875 under the command of Captain John McDonald himself, while his brother Michael McDonald took command of the *Whiskey Pete*. The two vessels immediately began hauling and discharging cargoes of approximately twelve cords of stone each into the Ahnapee harbor for improvements (*Ahnapee Record* 1875d).

Nearly two months after her launch, the new scow remained unnamed and for that reason had become the subject of Ahnapee scuttlebutt. On 23 September 1875, the *Ahnapee Record* (1875e) suggested the new vessel be named *Tangel* in honor of her builder, Capt. Wm. Henry, which was apparently his nickname. Shortly thereafter, however, Captain McDonald finally decided upon the name *Lady Ellen*, and the 7 October issue of the newspaper lists her by name along with *Whiskey Pete* – both were in Ahnapee harbor awaiting favorable weather to resume hauling stone for the harbor’s piers (*Ahnapee Record* 1875e; 1875f).

As Ahnapee’s harbor improvement project neared its end, Captain McDonald began looking for other work to keep his scows employed. He soon landed a contract to provide stone to fill the cribs of the government piers at the east end of the Sturgeon Bay Ship Canal. This work kept his scows employed through the end of October 1875 (*Ahnapee Record* 1875g; 1875h; 1875i). While McDonald was busily hauling stone, Ahnapee’s first wheat shipment departed the



Figure 3. The scow schooner *Lady Ellen* in the ice in the Ahnapee River. Wisconsin Maritime Museum Collection, P92-08-01.

harbor on 30 September 1875 aboard the schooner *Glen Cuyler*. This shipment marked a turning point for Ahnapee's vessels in a transition from strictly lumber and stone cargoes to include more agricultural commodities (Neuschel 1992). Several weeks later, the *Lady Ellen* carried her first grain cargo. In early November 1875, the *Lady Ellen* sailed for Horn's Pier at Clay Banks (Door County). A storm had passed through the area on Friday, 5 November 1875, that sank the schooner *Sea Bird* while she was loading wheat at Horn's Pier, and the *Lady Ellen* was contracted to recover the wet wheat from the wreck (*Ahnapee Record* 1875j; 1875k).

The *Lady Ellen* then made her last trip of that season the first week in December, after which she returned home to Ahnapee and laid up for the winter. On 9 December 1875, however, after being stripped and put into winter quarters, Captain McDonald ordered both the *Lady Ellen* and *Whiskey Pete* to be refitted for sailing. It is uncertain what business he engaged in with his vessels that winter, as no accounts have been located detailing the scows' winter operations. It is noted, however, that Captain McDonald opened an ice harvesting business during the winter of 1875-1876 (*Ahnapee Record* 1875l; 1875m; 1875n).

At the opening of the 1876 shipping season, Captain McDonald announced that he would again employ both the *Whiskey Pete* and *Lady Ellen* in the stone trade, and the *Lady Ellen* made her first arrival at Ahnapee during the second week in May. She was loaded with Door County limestone that was used to begin construction of the city's new piers (*Ahnapee Record* 1876a;

1876b). The two vessels continued carrying limestone for the Ahnapee piers throughout the summer months, but by the end of August Captain McDonald struck a deal with Captains J. Scott and Alex Doak to hire out the *Whiskey Pete* for the “iron and rag trade around the islands” (*Ahnapee Record* 1876c; United State Census Bureau 1870g; 1880g).

On 23 September 1876, the *Lady Ellen* cleared Ahnapee with supplies and materials for a new mill that was being built at Jacksonport. She again cleared Jacksonport on Monday, 26 September, this time en route to Horn’s Pier at Clay Banks; the *Lady Ellen* made the twenty-six mile trip in only two hours and forty-five minutes. At Horn’s Pier she loaded lumber for a new bridge that was being constructed over the Ahnapee River in Ahnapee (*Ahnapee Record* 1876d). The *Lady Ellen* made several subsequent trips to Horn’s Pier for bridge materials in addition to several more trips to supply Hall’s Mill, the new mill at Jacksonport. In addition to lumber and hay, the *Lady Ellen* also carried the mill’s engine and other machinery northward from Kewaunee (*Ahnapee Record* 1876e; 1876f; 1876g).

The *Lady Ellen* joined Chicago’s Christmas tree fleet for her final trip of the 1876 season. One of only two Ahnapee vessels that ventured into the trade in 1876, John McDonald cut trees and packed the *Lady Ellen* with evergreens during the last week in November. Fully loaded, the *Lady Ellen* cleared for Chicago on 2 December 1876. In addition to Christmas trees, she also carried a cargo of fish for George McDonald, the captain’s brother (*Ahnapee Record* 1876h; 1876i; Neuschel 1992).

Before arriving at Chicago, the *Lady Ellen* made a brief stop at Milwaukee to be officially measured and documented (*Ahnapee Record* 1877a). She was assigned the official number 140208. Her enrollment document detailed that the vessel was owned and captained by John McDonald, but erroneously listed him as the builders as well. The enrollment describes the *Lady Ellen* as a scow schooner of one deck and two masts, 55 feet in length, 18 feet in beam, and a 4 foot depth of hold. Her capacity was calculated at 38 25/100 gross tons with a 35 20/100 ton capacity under the tonnage deck and a 3 5/100 ton capacity in the deck enclosures (*Ahnapee Record* 1877a; Bureau of Navigation 1876a; Merchant Vessels of the United States 1881a; Milwaukee Public Library 1959a).

Captain McDonald’s first venture into the Christmas tree trade proved to be a failure. The Chicago market was flooded with trees by the time the *Lady Ellen* arrived and he was unable to sell his cargo of trees. To add insult to injury, the ensuing winter conditions made it impossible for Captain McDonald to depart Chicago and he was forced to leave the *Lady Ellen* in Chicago for winter lay up (*Ahnapee Record* 1877a; Neuschel 2007).

Captain McDonald and his brother George McDonald finally returned to Chicago on 19 March 1877 to begin fitting out the *Lady Ellen* for the 1877 season. The process took nearly two weeks, but the *Lady Ellen* finally arrived back at Ahnapee on 6 April with 8,000 board feet of lumber, 5 tons of feed, and 20 bundles of merchandise (*Ahnapee Record* 1877b).

The *Lady Ellen* cleared Ahnapee on 11 April 1877 for Manitowoc, where she loaded 29 barrels of flower, 35 barrels of land plaster, 80 doors, and other merchandise that was delivered to Ahnapee on 15 April 1877 (*Ahnapee Record* 1877c; 1877d). She made one more trip to Manitowoc in late April for 50 barrels of flour and another 25 barrels of land plaster (*Ahnapee Record* 1877e). The *Lady Ellen* cleared Ahnapee on 6 May 1877 for Two Rivers for 15,000 board feet of lath, 3,000 board feet of siding, and 19 doors for Ahnapee resident John Meverden (*Ahnapee Record* 1877f). Johan “John” Meverden was a 41-year-old Prussian farmer who was

building a new home in Ahnapee, and several of his children later sail as crew aboard the *Lady Ellen* (United States Census Bureau 1880g).

On 10 May 1877, the *Ahnapee Record* reported that two of Ahnapee's scows, the *Hinsdale* and *Lady Ellen*, would be employed hauling stone for the harbor project in Manitowoc (*Ahnapee Record* 1877f). The *Lady Ellen* cleared Ahnapee with between 10-12 cords of stone for Manitowoc on 11 May, 26 May, 8 June, and 15 June (*Ahnapee Record* 1877g; 1877h; 1877i). Bad weather hampered more frequent trips, and twice the *Lady Ellen* had to retreat to the safety of the harbor during this period. In June 1877, William Henry, son of the *Lady Ellen*'s builder, quit the commercial fishing business and joined the crew of the *Lady Ellen* (*Ahnapee Record* 1877i). Shortly after, the *Lady Ellen* made a short side trip in the middle of the Manitowoc harbor project, sailing to Jacksonport on 18 June 1877 to load 14,500 board feet of lumber and 143,000 shingles. She returned to Ahnapee the following day and unloaded the cargo for Halle & Company (*Ahnapee Record* 1877j). She made two final trips to Manitowoc with stone on 21 June and 25 June, returning from each voyage with goods consigned to Ahnapee merchants (*Ahnapee Record* 1877j; 1877k).

With the Manitowoc harbor contract complete, Captain McDonald fitted the *Lady Ellen* with a new topmast and jib topsail and quickly found new work carrying stone for a Two Rivers harbor improvement project (*Ahnapee Record* 1877l; 1877m). The majority of limestone and lumber used in constructing the Two Rivers harbor was acquired from Door County quarries in Stoney Creek, Portage (Sturgeon Bay), Bloodsucker Bay, Death's Door, and Horn's Pier. Trips to these locations were made on 16 July, 19 July, 26 July, 1 August, and 4 August respectively, which brought between 9-12 cords of stone and 5,000 board feet of lumber to Two Rivers. On each return trip from Two Rivers, the *Lady Ellen* carried merchandise consigned to Ahnapee clients (*Ahnapee Record* 1877n; 1877o; 1877p; 1877q; 1877r).

Business had slowed considerably by the end of August 1877. With the *Lady Ellen* sitting idle due to low freight rates and a general lack of cargoes, Captain McDonald contemplated stripping the *Lady Ellen* and laying her up until next year's season (*Ahnapee Record* 1877s). A few more trips carrying stone to Two Rivers kept the *Lady Ellen* out of layup, however, and the *Lady Ellen* returned to Two Rivers with loads of 8-12 cords of Ahnapee-quarried limestone on 18 August, 18 September, 21 September, and 23 October 1877 (*Ahnapee Record* 1877s; 1877t; 1877u; 1877v).

The *Lady Ellen* made only two trips in November 1877. On 2 November and again on 15 November she sailed to Clay Banks to deliver merchandise for Paarman & Kesner (*Ahnapee Record* 1877w; 1877x). Due to a general lack of late-season business, Captain McDonald decided to give the Christmas tree trade another try. McDonald cut and loaded 1,300 evergreens aboard the *Lady Ellen* and departed for Chicago on 6 December 1877 (*Ahnapee Record* 1877y; 1877z). The venture proved more successful than the previous year, and the newspapers reported that "the scow *Lady Ellen* is an insignificant looking craft, yet she has cleared \$650 for her owner Captain John McDonald and her canvass is on yet" (*Door County Advocate* 1877b; *Ahnapee Record* 1878a; 1878b). Taking advantage of the late season's fair weather, the *Lady Ellen* departed Chicago and returned to Ahnapee on 16 January 1878 where she laid up for the winter (*Ahnapee Record* 1878c; 1878d).

Captain McDonald worked in his ice business over the winter months and reportedly sprained his right wrist in late February (*Ahnapee Record* 1878e). As the spring shipping season

neared, the *Lady Ellen* was hauled out of the Ahnapee River in late March for an overhaul. Her stern was extended four feet, her cabin was moved aft, and she received new caulk and a fresh coat of paint (*Ahnapee Record* 1878f; 1878g). The work took less than a month and she was relaunched on Tuesday, 23 April 1878. A few weeks later on 13 May 1878, she departed on her first trip of the season to Jacksonport for a cargo of lumber (*Ahnapee Record* 1878h; 1878i). A subsequent trip to Jacksonport for more lumber products was made on 31 May (*Ahnapee Record* 1878j; 1878k).

The following month the E. Decker & Company hired the *Lady Ellen* to carry several cargoes of lumber to Sheboygan. The *Lady Ellen* cleared Ahnapee with 50,000 board feet of lumber on 9 June, and 25,000 board feet of lumber and 55,000 shingles on 18 June (*Ahnapee Record* 1878l; 1878m; 1878n). On 30 June, the *Lady Ellen* sailed for Clay Banks, but it is uncertain what business Captain McDonald had at that port (*Ahnapee Record* 1878o).

In early July, the *Lady Ellen* made two back-to-back trips to Sheboygan for merchandise for Sam Perry's store (*Ahnapee Record* 1878p). Sam Perry was a 43-year-old Irish-born general store owner and political figure in Ahnapee (United States Census Bureau 1870h; 1880g). On the *Lady Ellen*'s next trip from Jacksonport on 17 July, she was caught in a storm with a load of 30,000 board feet of lumber for A. Hall & Company. The crew had not secured the hatch covers, and waves washed over her deck, filling her hold and nearly filling her cabin. Each of her crew worked for several hours to pump her clear of water as she sailed for Ahnapee, but the pump gave out when they were 3 miles from the harbor entrance. Captain McDonald weighted his options and considered beaching the *Lady Ellen*, but he ultimately succeeded in sailing his half-filled scow safely into port (*Ahnapee Record* 1878q). Captain McDonald rounded out his July schedule with trips to Kewaunee, returning with 14,000 board feet of lumber to build Ahnapee's new Episcopal Church. As July turned to August, McDonald made several trips to Whitefish Bay (Door County) for Boalt & Stebbins, who were constructing a new pier at Casco (*Ahnapee Record* 1878r). Supplies he carried included hay, lumber, and a steam pile-driver carried on trips on 29 July, 1 August, and 8 August (*Ahnapee Record* 1878s).

In August 1878, Captain McDonald put in a bid to win the job of hauling stone for the construction of the Sturgeon Bay Ship Canal piers at Portage [the site of the current Sturgeon Bay Coast Guard station]. Although the contract was not finalized until October of that year, Captain McDonald began advertising for ten men to crew his scows *Lady Ellen* and *Whiskey Pete* as early as 15 August (*Ahnapee Record* 1878t; 1878u; 1878v). The scows departed for the canal on 8 October 1878 and were engaged in canal construction for the remainder of the season (*Ahnapee Record* 1878w; 1878x). The *Lady Ellen* made a stop at Horn's Pier on her way home to Ahnapee on 13 November, and she was stripped and laid up for the winter on 5 December 1878 (*Ahnapee Record* 1878y; 1878z).

Captain McDonald began refitting the *Lady Ellen* during the last week in March 1879. The *Lady Ellen* departed Ahnapee on her first trip of the season on 7 April, when she sailed for Manitowoc to load a cargo of land plaster and hay for the F. Swaty & Son general store in Ahnapee (*Ahnapee Record* 1879a 1879b; 1879c; *Door County Advocate* 1879a). According to newspaper advertisements, F. Swaty & Son featured dry goods, groceries, provisions, boots and shoes, hats and caps, hardware, crockery, paints oils, ties, posts, wood, bark, and all kinds of farm produce (*Ahnapee Record* 1879c).

In late April, Sam Perry opened another lumber yard at Ahnapee and the first load of 35,000 board feet of lumber was brought in from Jacksonport on Monday, 28 April 1879 aboard the *Lady Ellen*. The *Lady Ellen* then departed on 30 April for Whitefish Bay with lumber, lathe, singles, and brick. The scow returned with another 35,000 board feet of lumber for Perry on 5 May and again on 17 May (*Ahnapee Record* 1879d; 1879e). The desire for lumber products was strong that spring and most of the winter stockpiles of ties, posts, and other lumber were cleaned out during the first few weeks following the opening of navigation (*Ahnapee Record* 1879e; 1879f).

On 24 July, the *Lady Ellen* departed Ahnapee to continue her work in constructing the Sturgeon Bay Ship Canal. The *Ahnapee Record* (1879g) announced:

Big Jon – Capt. John McDonald has secured a contract to supply all the stone required at the Sturgeon Bay Canal, which will amount to 1,300 cords. He has four scows from Manitowoc, his own scows – two in number – and one small schooner at work for him, with a full complement of men. The rock is got from the quarry at Sherwood’s Point. John has a world of enterprise in him, and when he undertakes anything he makes a success of it.

After a month of constructing stone cribs at Sturgeon Bay, the *Lady Ellen* returned to Ahnapee on 2 September, but she returned to Sturgeon Bay the following week. The last crib to be constructed during the 1879 season on the Sturgeon Bay Ship Canal project was filled the week of 18 September. The completion of that crib ended McDonald’s seasonal contract for both the *Lady Ellen* and *Whiskey Pete*, and they returned to Ahnapee on 23 September 1879 (*Ahnapee Record* 1879i; 1879j).

For much of October 1879, the *Lady Ellen* was wind-bound in the harbor waiting for fair seas and weather. During this time sailor’s wages were raised by the sailor’s union from \$2 per day in September to \$2.50 in mid-October. Wages were again raised to \$3.50 per day in mid-November (*Ahnapee Record* 1879h; 1879k; 1879l; 1879m). Increased wages, coupled with a downward trend in freight rates, compelled many vessels to lay up for the winter (*Ahnapee Record* 1879n). In early December, however, Captain McDonald agreed to carry two loads of lumber aboard the *Lady Ellen* from Kewaunee to Two Rivers at a rate of \$1.75 per thousand board feet. The lumber was consigned to George Grimmer, a 52-year-old Kewaunee lumberman (*Ahnapee Record* 1879o; United States Census Bureau 1880g).

Just as the *Lady Ellen* was preparing to lay up for the winter, a late season gale caught the schooner *Belle Laurie* off Two Rivers on Tuesday, 13 January 1880 as she was making her way north to Ahnapee. The *Belle Laurie* attempted to anchor in the lee of Two Rivers point, but her cable parted and she was forced to continue running northward. While attempting to enter the Ahnapee harbor, she struck bottom outside the piers and smashed her yawl on the davits. The *Belle Laurie* made it inside the north harbor pier, but was unable to clear the citizens’ pier, where she grounded and began pounding until she sank in shallow water. She was loaded with a cargo that included 17 tons of coal, 18 tons of feed, 1 ton of hay, and 125 barrels of salt consigned to Tiff & Hay, F. Swaty & Son, Boalt & Stebbins, McDonald & Dagnean, and Dr. Barran of Ahnapee, as well as A. W. Lawrence & Co. of Sturgeon Bay and James H. Lockhart, of Forestville. The *Belle Laurie*’s cargo was removed by the *Lady Ellen* on the morning of

Thursday, 15 January, and the *Belle Laurie* was pumped out and refloated without much difficulty (*Ahnapee Record* 1880a).

After a short winter layup, the *Lady Ellen* was fitted out and recommissioned in March. On the morning of 29 March 1880 she cleared for Kewaunee to load lumber for bound for Two Rivers (*Ahnapee Record* 1880b). The *Lady Ellen* again cleared Ahnapee on 15 April with a load of piles for the construction of the Whitefish Bay Pier. She again cleared Ahnapee with piles for the pier on 20 April 1880; on each return voyage the *Lady Ellen* returned with lumber for Sam Perry (*Ahnapee Record* 1880c; 1880d; 1880e).

The spring of 1880 was a stormy one. On 10 April, the *Lady Ellen* was forced to take shelter from a gale in Manitowoc harbor. The following week she was forced to anchor off Ahnapee harbor because she was unable to find the harbor entrance in a blinding snowstorm. The storm raged throughout 16 and 17 April 1880 and claimed several shipwrecks and lives throughout the lakes. On the morning of Saturday, 1 May 1880, the *Lady Ellen* loaded lumber at Kewaunee alongside the schooners *Belle Laurie* and *Mary R. Ann*. Each vessel cleared Kewaunee bound for Two Rivers, but high winds forced all three vessels to run north and shelter in Ahnapee harbor until the winds abated (*Ahnapee Record* 1880d; 1880e; 1880f).

The 20 May 1880 edition of the *Door County Advocate* (1880b) announced that Captain McDonald had again won the seasonal construction contract to build the Sturgeon Bay Ship Canal piers. The newspaper stated: “The scows *Lady Ellen* and *Whiskey Pete* are carrying stone from the government bluff to the harbor at the lake end of the canal which will be used on the harbor piers as soon as the cribs are ready to receive them”.

During this time Captain McDonald spent much of his time in Sturgeon Bay. The 1880 census indicate that McDonald lived in Sturgeon Bay with his family and nine additional boarders that included three carpenters, two men working on the canal, one man working in an ice house, one fisherman, and two sailors (United States Census Bureau 1880i). Captain McDonald’s employment is listed as Superintendent of Harbor Work on the Canal. It is uncertain, however, if McDonald made Sturgeon Bay his permanent residence as he still conducted much of his business out of Ahnapee.

Throughout the 1880 season the *Lady Ellen* made several trips to Ahnapee to load construction materials for the canal piers. Cargoes of lumber, sheet pilings, and stone were loaded in Ahnapee on 25 May, 2 June, 7 September, 23 September, and 7 October 1880 (*Ahnapee Record* 1880g; 1880h; 1880i; 1880j; 1880k; 1880l). On the night of Tuesday, 23 November 1880, the *Lady Ellen* went ashore on the beach at Foscoro. She had been moored to the pier at Foscoro when a heavy sea arose and began pounding the *Lady Ellen* into the pier. Afraid that both the *Lady Ellen* and the pier would be lost due to the severe pounding, the crew cut the vessel free. Captain McDonald, who was not aboard the vessel at the time of the incident, left for Foscoro the next morning to survey the damage and decided to have the vessel hauled further ashore and spend the winter layup on the beach (*Ahnapee Record* 1880m).

On Monday, 28 February 1881, Captain McDonald arrived at Foscoro to chip the *Lady Ellen* free of ice. In the process of refitting her foremast toppled due to rot. Fortunately, the accident did not result in any damage to the vessel, but in the process of cutting the mast free William Henry (the son of the builder) badly cut his foot with an axe. The *Lady Ellen* was launched on 8 April and sailed to Ahnapee to receive a new mast, have the damage repaired from her grounding the previous fall, and to receive a fresh coat of paint (*Ahnapee Record* 1881a;

1881b). After the repairs were completed the *Lady Ellen's* the *Lady Ellen* was described as presenting a "neat and tidy appearance", and her homeport was changed to Manitowoc (*Ahnapee Record* 1881c).

On 20 April 1881, the *Lady Ellen* cleared for Kewaunee with 500 bushels of wheat from L. J. Conway that was consigned to W. Seyk & Company. At Kewaunee, she loaded timber bound for Sturgeon Bay that was to be used in the canal's construction. Captain McDonald had been unable to complete his 1880 season contract due to the *Lady Ellen* running ashore, and his contract was extended to allow him to complete the work 1 July 1881. McDonald hired a crew of workers in Kewaunee and they traveled to the canal aboard *Lady Ellen* (*Ahnapee Record* 1881d).

After McDonald completed his 1880-contracted canal work he and the *Lady Ellen* continued to support the construction effort at the Sturgeon Bay Ship Canal with an occasional side trip whenever the canal work slowed. On 7 July, the *Lady Ellen* arrived at Two Rivers with a cargo of bark for the Wisconsin Leather Company (*Ahnapee Record* 1881d). On 3 August, after battling a squall on Lake Michigan, she arrived at Ahnapee to load a rock-drilling rig bound for the Sturgeon Bay for canal work (*Ahnapee Record* 1881e).

After delivering the rock-drilling rig, Captain McDonald sold the *Lady Ellen* to 31 year-old William Henry, the vessel's former first mate and son of the ship's builder, and 23 year-old Orrin Vose, a laborer from Maine. The new owners' first hire was a subcontract from McDonald to continue filling the cribs at the Sturgeon Bay, which required an additional 400 cords of stone (*Ahnapee Record* 1881e; *Door County Advocate* 1881b; Milwaukee Public Library 1959a; United States Census Bureau 1870h; 1880g; 1900). Shortly after the sale, a fast moving squall caught the canal workers off their guard on 10 August while filling cribs. The *Lady Ellen* had her sails ripped from her spars and another scow, presumably the *Whiskey Pete*, sank in deep water with twenty cords of stone aboard (*Door County Advocate* 1881b). After hauling a total of 345 cords of stone, the *Lady Ellen* completed McDonald's contracted work to build the superstructure, riprap, and guard pilings on the Sturgeon Bay ship canal (*Ahnapee Record* 1881f).

On 19 September 1881 the *Lady Ellen* cleared Ahnapee with 10 cords of stone bound for Sheboygan. After unloading at Sheboygan, the *Lady Ellen* sailed for Milwaukee where the vessel was registered under her new owners and Master (*Ahnapee Record* 1881g; 1881h; Bureau of Navigation 1881b; Milwaukee Public Library 1959a). Her new enrollment was entered at the Port of Milwaukee on 22 September 1881 and listed Orion (sic) Vose and William Henry, both of Ahnapee, as equal owners. The *Lady Ellen's* homeport was changed to Milwaukee and William Henry was listed as Master. The *Lady Ellen* was also officially measured for the first time since her lengthening. Her new official measurements were now 55 feet in length, 16 feet in beam, and a 4 foot depth of hold. Her tonnage was 38 25/100 tons with 35 20/100 capacity under the tonnage deck, and 3 5/100 capacity of enclosures (Bureau of Navigation 1881b).

On her return trip the *Lady Ellen* stopped at Kewaunee on Sunday, 25 September, to load lath consigned to W.F. Palmer at Two Rivers (*Ahnapee Record* 1881i). Business was slow for the remainder of the season, and it was nearly a month before the *Lady Ellen* delivered another cargo, a load of lumber for a new boarding house in Whitefish Bay on 20 October 1881. The following week, the *Lady Ellen* delivered 30,000 brick at Sturgeon Bay for E. N. Anderson on 31 October 1881 (*Ahnapee Record* 1881j; 1881k).

On 23 November 1881, Captain Henry attempted to sail the *Lady Ellen* with a load of furniture from Two Rivers to Ahnapee, but the wind was so strong he could not make headway.

The *Lady Ellen* had departed Two Rivers at 1:00 PM, but by 5:00 PM she still had not cleared Two Rivers Point (Rawley Point), and so came about and ran for the shelter of Two Rivers harbor. The Life-Saving Station's crew assisted with mooring the *Lady Ellen* to the pier, and several of her sailors received medical attention for frostbite (United States Life Saving Service 1881). The *Lady Ellen* waited for calmer weather at Two Rivers and finally delivered the furniture to Kumbalek & Pies, H. Detjen, and E. Suchanek on 25 November (*Ahnapee Record* 1881l). The *Lady Ellen* was supposed to be laid up for the winter with her arrival in Ahnapee. During the storm, however, the schooner *Julia Smith* was wrecked near Ahnapee and her owner, Marshal J. H. Johnson, persuaded Captain Henry to use the *Lady Ellen* to help salvage the rigging, anchor, and any other valuables that could be salvaged before the *Lady Ellen* was finally laid up for the winter (*Ahnapee Record* 1881m).

At the end of March 1882, the *Lady Ellen* was hauled out of the water to be lengthened for the second time in her career (*Ahnapee Record* 1882a; 1882b). With much fanfare, the Village of Ahnapee celebrated as the scow was relaunched at 9:30 AM on 5 June 1882, and Captain Henry and Orrin Vose repeatedly toasted their improved vessel (*Ahnapee Record* 1882c; 1882d; *Door County Advocate* 1882a). In addition to hull improvements, the scow had also received new canvas (*Ahnapee Record* 1882e).

On 22 June, the *Lady Ellen* cleared for Sturgeon Bay running light and took on a cargo of 45,000 board feet of lumber for Swaty & McDonald. She arrived back at Ahnapee on Sunday 25 June 1882 and cleared the following day with a cargo of shingles bound for Manitowoc (*Ahnapee Record* 1882e; 1882f). From Manitowoc, the *Lady Ellen* again made her way to Milwaukee to be surveyed, readmeasured, and registered after her rebuild. Her new measurements were 61 1/10 feet in length, 18 1/16th feet in beam, and 5 feet depth of hold. Her gross tonnage was 44 25/100 tons, including 41 65/100 tons capacity under her tonnage deck and 2 60/100 capacity of enclosures on her upper deck. Her net tonnage was registered at 42 04/100 tons (Milwaukee Public Library 1959a; Bureau of Navigation 1882c).

On her return trip from Milwaukee, the *Lady Ellen* stopped briefly at Manitowoc and arrived at Ahnapee on Sunday, 2 July 1882. There she loaded 40,000 bricks for F. Swaty & Son and departed for Manistee, Michigan. At Manistee, the *Lady Ellen* took on a cargo of lumber, lathe, and shingles for Swaty & McDonald, but did not arrive back at Ahnapee until nearly two weeks later due to adverse winds. She then sailed light for Sturgeon Bay on Monday, 24 July to pick up a cargo of lumber for Swaty & McDonald (*Ahnapee Record* 1882g; 1882h; *Door County Advocate* 1882c).

The *Lady Ellen* departed Ahnapee for Milwaukee on 19 August with a cargo of wood for F. Swaty & Son. Unfavorable winds kept the scow from returning north for the rest of the month, and she did not make it back to Ahnapee until 3 September. The following day she sailed light for Manistee to pick up a cargo of lumber and shingles for Swaty & McDonald (*Ahnapee Record* 1882i; 1882j). The scow then took a cargo of brick to Sturgeon Bay for F. Swaty & Son, departing Monday, 11 September 1882 and returning light (*Ahnapee Record* 1882k).

The *Lady Ellen*'s next trip was to Milwaukee with an unknown cargo, and she returned from Milwaukee on 24 September and departed that same day for Clay Banks to load cargo for Swaty and Fellows (*Ahnapee Record* 1882l). On 12 October 1882, she arrived at Ahnapee with wood for F. Swaty & Son. On 19 October, she brought in a cargo of coal for Tift and Hay, and took on 30 tons of hay for Mrs. H. Fax bound for Menominee (*Ahnapee Record* 1882m; 1882n).

Anna and Henry Fax were farmers that also owned a dry goods store in Ahnapee (United States Census Bureau 1880g) On her return from Menominee, the *Lady Ellen* brought back a cargo of lath and lumber for Swaty and McDonald (*Ahnapee Record* 1882n; 1882o). On her final trip of the 1882 shipping season, the *Lady Ellen* sailed to Milwaukee on 13 November with a cargo of wood posts and 100 barrels of fish for F. Swaty & Son. She returned on 26 November loaded with coal, apples, and merchandise (*Ahnapee Record* 1882p; 1882q).

The *Lady Ellen* came out of winter lay up the first week in May 1883 and started her season by transporting cargos for Henry Garicke (*Ahnapee Record* 1883a). She returned to Ahnapee on 3 June and departed the next day for Sturgeon Bay to take on a cargo of stone and lumber for Kewaunee (*Ahnapee Record* 1883b). On 16 June 1883, the *Lady Ellen* picked up a cargo of hay at Samuel Perry's hay press bound for Manistee. She returned from Manistee on 25 June with lath and shingles for Swaty & McDonald and Samuel Perry. She then took on a cargo of posts for Stern & Woerfel and departed for Racine on 5 July (*Ahnapee Record* 1883c; 1883d; 1883e). The *Lady Ellen* returned to Ahnapee light and again loaded lumber for Swaty & McDonald, but this time the cargo was consigned to Sheboygan parties and departed on 16 July (*Ahnapee Record* 1883f; 1883g).

The *Lady Ellen* cleared Ahnapee only once in August 1883. On 13 August she departed for Sheboygan with a cargo of wood and bark for Samuel Perry (*Ahnapee Record* 1883h). September 1883, however, was a rather busy month for the little scow. She hauled posts and bark for Kwopil & Bruemmer to Milwaukee on 3 September, returning to Ahnapee with merchandise and coal on 21 September (*Ahnapee Record* 1883i; 1883j). The vessel cleared Ahnapee again for Milwaukee on 25 September with a mixed cargo owned by Captain Henry (*Ahnapee Record* 1883k). She did not return to Ahnapee during the month of October 1883. It is uncertain if unfavorable winds prevented the vessel from returning, or if she conducted business between other southern Lake Michigan ports. When she did return to Ahnapee on 1 November, she brought with her a load of coal from Milwaukee (*Ahnapee Record* 1883l). The *Lady Ellen* made one more trip to Milwaukee to take on a load of salt and coal – supplies needed for Ahnapee's cold winter ahead. By the end of November 1883, only two Ahnapee vessels were still in operation: Captain August Scheunemann's scow *Sea Star* that was loading a cargo of Christmas trees for the Chicago market, and the *Lady Ellen*. The *Lady Ellen* was to make one final trip of the season to take a cargo of wood south for Captain Henry. For this final trip, Captain Henry employed only one sailor to assist him - or perhaps he could only find one man willing to brave the gales of November - the 30 year-old seaman C.F. Bacon. The *Lady Ellen* returned on 5 December from her trip south and was to be laid up for the winter. On 27 December, however, Captain Henry decided to attempt one more trip to pick up a partial load of salt from Sheboygan. On her return the *Lady Ellen* was finally laid up for the winter (*Ahnapee Record* 1883m; 1883n; 1883o; 1883p; United States Census Bureau 1880g).

The *Lady Ellen* came out of winter storage the first week in April 1884, and for many of her early season trips she carried Ahnapee-produced products that had been stockpiled over the winter months, each time returning light to Ahnapee. On 1 April she cleared for Manitowoc with a cargo of lumber for Bottkel Bros; on 10 April and 18 April she cleared for Milwaukee with cargoes of wood for Samuel Perry; and on 28 April she cleared for Sheboygan with wood for Samuel Perry (*Ahnapee Record* 1884a; 1884b; 1884c; 1884d). From Sheboygan, she sailed to

Clay Banks on 30 April and loaded wood for A.J. Fellner & Co., bound for Ahnapee (*Ahnapee Record* 1884e).

On the night of 20 May 1884, the *Lady Ellen* cleared Ahnapee for Milwaukee with lumber for Anton Woerfel (*Ahnapee Record* 1884f). She returned light, but loaded a cargo of lumber at Ahnapee that was delivered to Clay Banks on 4 June. When she returned to Ahnapee on 19 June, she brought a cargo of lumber for Henry Geier. For much of July 1884, the *Lady Ellen* remained in port at Ahnapee due to lack of cargo (*Ahnapee Record* 1884g; 1884h; 1884i; 1884j). On 16 August, the *Lady Ellen* made a trip south to pick up a cargo of coal, and on 30 August she brought in a cargo of oil (*Ahnapee Record* 1884k; 1884l).

There was only one mention of the vessel in September 1884, when she arrived at Ahnapee on 11 September and again cleared 14 September with wood. The *Ahnapee Record* (1884m) does not mention where she came from or where she was headed. The last week of September, the *Lady Ellen* laid in Ahnapee awaiting winds favorable to sail to Clay Banks, and she finally cleared early in October. At Clay Banks she loaded wood for Milwaukee (*Ahnapee Record* 1884n).

On 5 November, the *Lady Ellen* cleared Ahnapee for Sheboygan with a load of lumber for Anton Woerfel. She then sailed to Kewaunee and took on a cargo of coal and arrived back at Ahnapee on 9 November. After unloading, she returned to Kewaunee on 10 November to load a cargo of salted fish bound for Milwaukee, where it was sold for \$3.00 per package. On her return from Milwaukee she was laid up for the winter in Ahnapee (*Ahnapee Record* 1884o; 1884p; 1884q).

On 1 April 1885, the *Lady Ellen* was hauled out of the water for an overhaul and repainting that took nearly the entire month to complete. On 25 April, she took on her first cargo of the season: potatoes and empty barrels being shipped to Milwaukee (*Ahnapee Record* 1885a; 1885b). On her return trip she carried iron and coal for Tiff & Hay, as well as a large amount of various other back freight (*Ahnapee Record* 1885c). The *Lady Ellen* then proceeded to Clay Banks where she loaded a cargo of lumber that was needed for John McDonald, her former owner's new ice house. (*Ahnapee Record* 1885d; 1885e).

28 April 1885 was Decoration Day in Ahnapee, and both Captain William Henry and Orrin Vose attended the services to honor their newly-restored vessel. Much of the month of May was spent tied in the Ahnapee harbor either waiting out storms or waiting on cargoes (*Ahnapee Record* 1885d; 1885e). Storms continued to plague the vessel into June and she was forced to stay in port on several occasions (*Ahnapee Record* 1885f; *Door County Advocate* 1885a). On 7 July and again on 14 July, the *Lady Ellen* loaded bark for Henry Gericke, but the destination of both cargoes is uncertain (*Ahnapee Record* 1885g; 1885h). After loading shingles at Ahnapee, the *Lady Ellen* was again forced to wait out a storm in the harbor on 25 July (*Ahnapee Record* 1885i).

Throughout the months of August and September 1885, the *Lady Ellen* continued working in the lumber trade. On 2 August, she loaded bark for August Froemming, a Prussian owner of a dry goods store, and Henry Gericke; on 17 August, she took out a cargo of cedar posts for unmentioned parties; on 21 August, she hauled bark to Sheboygan for Henry Gericke and wood for Samuel Perry, and returned from Sheboygan with salt. On 28 August, the *Lady Ellen* took out a cargo of lumber for unmentioned parties. On 10 September, she loaded wood and bark for Sam Perry bound for Sheboygan, but this trip was interrupted by heavy seas that forced the *Lady Ellen* back to the Ahnapee harbor after sailing as far south as Kewaunee. Her next trip was

to Clay Banks on 22 September to load a cargo of posts that ended in a similar fashion with the scow running back to the safety of Ahnapee's harbor (*Ahnapee Record* 1885j; 1885k; 1885l; 1885m; 1885n; 1885o; 1885p; United States Census Bureau 1880g).

In October and November 1885, the *Lady Ellen* made several trips to Milwaukee to haul coal and general merchandise back to Ahnapee. On 20 October, she arrived with 66 tons of coal. She then loaded cedar posts from Henry Gericke to be taken south and returned on 7 November with coal and 45 tons of hardware and other freight for Tiff & Hay (*Ahnapee Record* 1885q; 1885r; 1885s). On 18 November, she departed again for Milwaukee with a cargo of wood for Bassford & Noble that she had loaded at Sturgeon Bay along with several thousand pounds of fish from Ahnapee (*Ahnapee Record* 1885t; *Door County Advocate* 1885b). On 4 December, she made her last trip of the season to Milwaukee and returned to Ahnapee on 15 December "loaded down to the water's edge with freight" for Ahnapee merchants. The Ahnapee River had already iced over by the time the *Lady Ellen* arrived and proved impassable. It took two men nearly two days to saw a channel wide enough to allow the vessel to enter the river. Finally in the river, the scow discharged her freight and laid up for the winter along Samuel Perry's dock (*Ahnapee Record* 1885u; 1885v).

In the spring of 1886, there was talk that the *Lady Ellen* needed to be hauled out again and placed in dry dock for repairs, but come 1 April 1886 Captain Henry began fitting out his vessel and no such repairs were undertaken (*Ahnapee Record* 1885u; 1886a). By 7 April, the *Lady Ellen* was loaded with wood bound for Milwaukee and was the first vessel to depart the Ahnapee River that season. It was nearly three weeks before the scow returned to Ahnapee with an unknown cargo. On 23 April, both the *Lady Ellen* and the schooner *Gladiator* departed for Milwaukee loaded with ties, but when they arrived at Milwaukee they were greeted by a raucous dock laborers strike. Despite a bit of stress and a small delay, however, the vessels were soon unloaded. For her return trip, the *Lady Ellen* loaded a considerable amount of freight for Ahnapee merchants (*Ahnapee Record* 1886b; 1886c; 1886d; 1886e; 1886f).

Once unloaded at Ahnapee, the *Lady Ellen* loaded a cargo of posts for L.J. Conway & Son on 14 May 1886 that was bound for an unknown destination. On 23 May she was back at Ahnapee and loaded posts for Samuel Perry that were bound for Milwaukee (*Ahnapee Record* 1886g; 1886h). On 1 June 1886 she loaded ties for Samuel Perry with a destination unknown (*Ahnapee Record* 1886i). The *Lady Ellen* continued hauling wood out of Ahnapee throughout the summer, clearing the port on 7 June, 7 July, 14 July, 12 August, and 19 September (*Ahnapee Record* 1886j; 1886k; 1886l; 1886m; 1886n).

In mid-September, the *Lady Ellen* began making trips to southern lake ports to stock Ahnapee with coal for the winter. She arrived at Ahnapee from Milwaukee on 13 September with coal for Ahnapee's residents, and on 9 October she arrived with coal for the city's merchants (*Ahnapee Record* 1886o; 1886p). She made another run for coal on 22 October, hauling a load of wood to Milwaukee on her upbound trip (*Ahnapee Record* 1886q; 1886r). On 31 October, the *Lady Ellen*, along with the schooners *Fearless*, *Belle*, and *Bluebell*, were taken in tow of the tug *George Nelson* off the Sturgeon Bay canal. The schooners were having trouble making the canal entrance due to the winds and hired the tug to tow the consort through to Green Bay (*Door County Advocate* 1886b).

For most of November 1886, the *Lady Ellen* lay in port at Ahnapee awaiting a weather window to make one more run to Milwaukee before navigation closed for the season (*Ahnapee*

Record 1886s). She finally cleared Ahnapee on 28 November with a cargo of wood, and returned on 11 December loaded with freight city merchants. Upon her return, she found the river had frozen over and a channel needed to cut that allowed her to reach her dock to unload and lay up for the winter. Ahnapee was home to only three vessels over the winter of 1886-1887 winter, the scow *Lady Ellen*, the schooner *Tempest*, and the tug *Commodore Nutt*. Other vessels that usually had wintered over in the Ahnapee harbor had been forced to lay up elsewhere due to an early cold snap and thick ice (*Ahnapee Record* 1887a).

Although the *Lady Ellen* was reported to be in need of repairs before being commissioned for the 1887 season, the vessel was put directly in service with no repairs having been made (*Ahnapee Record* 1886t; 1886u; 1887b). She cleared Ahnapee for her first trip of the season on 16 April 1887 with 2,000 posts from Samuel Perry that were bound for Milwaukee. She again repeated the trip on 5 May, but on this trip she needed to take refuge from a storm at Manitowoc from 7-11 May before she could continue southward (*Ahnapee Record* 1887b; 1887c; 1887d). The trip to Milwaukee must have been a rough one for the *Lady Ellen*, because when she returned to Ahnapee her Mate Will Meverden immediately resigned, stating “The briny deep and the sturdy planks of a gallant ship business is all very nice and proper to read about, but henceforth [I] don’t desire any brine in [mine] and an eight-foot plank sidewalk is good enough [for me]”. The vacant Mate’s position was filled by Dan Henry, the brother of Captain William Henry (*Ahnapee Record* 1887e; United States Census Bureau 1900).

Sometime during the spring of 1887, Orrin Vose sold his share in the *Lady Ellen* and purchased the schooner *Industry*, but this sale is not reflected in the *Lady Ellen*’s enrollment documentation (*Ahnapee Record* 1887g). Despite the sale, the *Lady Ellen* continued business as usual and hauled wood and posts for Samuel Perry on 23 June, 12 July, and 28 July (*Ahnapee Record* 1887f; 1887h; 1887i). The 28 July trip was made to Milwaukee, and she returned with merchandise consigned to Ahnapee merchants (*Ahnapee Record* 1887j; 1887k). She made two more trips to Milwaukee for back freight and arrived at Ahnapee on 9 August and 29 August, but it is uncertain what, if any, cargo she carried upbound to Milwaukee (*Ahnapee Record* 1887k; 1887l). On 11 September, she carried a mixed cargo of posts and bark from Samuel Perry, and when she returned to Ahnapee on 20 September she was loaded with a large cargo of fruit that Captain Henry sold directly to the citizens of the village (*Ahnapee Record* 1887m; 1887n). It seems that Will Meverden’s resignation from the lake service was short-lived indeed, and after some time ashore he had regained his desire to sail the “briny deep” - when the *Lady Ellen* arrived on 20 September, Will was sailing aboard her (*Ahnapee Record* 1887n).

When the *Lady Ellen* arrived into Ahnapee from Milwaukee on 3 October, Captain Henry had aboard 30 tons of coal that he sold directly to village residents for \$7.50 per ton. In addition to the coal, he also carried a considerable quantity of back freight (*Ahnapee Record* 1887o). When she arrived on 16 October, she had aboard fifty barrels of oil in addition to the regular freight for the local merchants, and when she arrived on 15 November she carried a cargo of sundries (*Ahnapee Record* 1887p; 1887q). She arrived again at Ahnapee on 16 December with merchandise after a brief stop at Sheboygan, where she had sustained a large hole in her bow due to a collision with ice. Due to the damage, it was determined that was her last trip of the 1887 season and the *Lady Ellen* was laid up for the winter (*Ahnapee Record* 1887r).

The *Lady Ellen* was fitted out the first week of April 1888. She loaded 2,500 posts for Henry Gericke and was again the first vessel to clear Ahnapee that season when she sailed for

Milwaukee on 19 April (*Ahnapee Record* 1888a; 1888b). The *Lady Ellen* made several more trips to Milwaukee, the next trip departing on 30 April with 20 cords of wood for Henry Gericke and bark for Captain William Henry; the scow returned to Ahnapee with miscellaneous cargo on 17 May. She unloaded, again loaded posts and cleared that same day. The *Lady Ellen* was back at Ahnapee on 20 May to load more posts for Samuel Perry, and again departed for Milwaukee that same day (*Ahnapee Record* 1888c; 1888d; 1888e). Her next trip, on 6 June was made with 5,000 paving posts loaded in her hold for Conway & Son, and 20 tons of pressed hay for her owner were stacked on her deck (*Ahnapee Record* 1888f).

During a trip to Milwaukee on 6 July, Captain Henry obtained a new enrollment for the *Lady Ellen*, reporting that he had lost the original. The new enrollment indicated that William Henry and Orrin Vose remained equal owners despite earlier newspaper reports of a sale and split in the partnership; William Henry remained listed as Master. The vessel was readmeasured for the new document, and the changes indicated the extent of the 1882 improvements: she now measured 61 1/10 feet long, 18 1/16 feet wide, and had a 5 foot depth of hold. Her capacity was 44 25/100 tons, with 41 65/100 tons under the tonnage deck and 2 60/100 tons capacity of enclosures on the upper deck (Bureau of Navigation 1888c; Milwaukee Public Library 1959a).

The *Lady Ellen* arrived back at Ahnapee on 11 June loaded with miscellaneous merchandise for the city's merchants (*Ahnapee Record* 1888g). Another trip was made to Milwaukee at the end of June, returning to Ahnapee on 2 July. Upon unloading, she immediately loaded bark at Henry Gericke's dock and departed for a return trip to Milwaukee (*Ahnapee Record* 1888h). The *Lady Ellen* arrived into Ahnapee again on 6 August, again carrying back freight for local merchants (*Ahnapee Record* 1888i). The *Lady Ellen* then sat idle until 20 August, when she loaded lumber and bark at Gericke's dock bound for Milwaukee. Upset with the lack of cargo available, Captain Henry announced that when he returned from Milwaukee he would be flying the company flag of Harrison and Morton from the scow's masthead (*Ahnapee Record* 1888j).

The *Lady Ellen*'s next reported arrival at Ahnapee was on 27 September, when she entered the harbor from the south end of the lake and without cargo. She loaded cordwood for Samuel Perry and cleared on 2 October (*Ahnapee Record* 1888k). The next reported trip did not occur until 19 November when she cleared for Milwaukee and returned on 3 December with miscellaneous freight and a cargo of apples on the owner's account. This was the final trip of 1888 season recorded for the *Lady Ellen*, and she wintered over in Ahnapee harbor (*Ahnapee Record* 1888l; 1888m).

By the end of March 1889, Captain Henry was again preparing the *Lady Ellen* for the summer season, and she cleared Ahnapee on 4 April with her first cargo of the 1889 shipping season: wood for Samuel Perry bound for Milwaukee. She returned on 9 May with a cargo of back freight for the city's merchants (*Ahnapee Record* 1889a; 1889b; 1889c). It is uncertain if cargo was lacking that spring, if foul weather kept her in port, or the *Lady Ellen* found regular employment away from Ahnapee, but no record of her operation reappears until mid-July 1889, when she began making regular trips to and from Milwaukee. On 8 July 1889, the *Lady Ellen* loaded bark for Henry Gericke and cleared the same day (*Ahnapee Record* 1889d). On 19 July she carried 47 cords of bark for Henry Gericke, and on 26 August she loaded 50,000 feet of hardwood lumber for Zastrow & Company (*Ahnapee Record* 1889e; 1889f). On 3 September she cleared with wood for E. Zander & Company and bark for Henry Gericke (*Ahnapee Record*

1889g). On 18 October, the *Lady Ellen* unloaded coal and took on posts for Henry Gericke and August Froemming and departed the following day on 19 October (*Ahnapee Record* 1889h). On 25 October, she took on cedar ties and cordwood, and returned from Milwaukee on 3 November with a large cargo of back freight. She then loaded her hold with cordwood took on a deck load of 50 barrels of scrap iron for A. Hamacek & Company and departed that same day for Milwaukee (*Ahnapee Record* 1889i; 1889j). She returned to Ahnapee on 24 November with 80 barrels of winter apples. She quickly unloaded and took on a cargo of cordwood for her owners, and on her return trip she brought another cargo of apples. She made one more trip to Milwaukee during the 1889 season, carrying cordwood south and returning with coal and back freight for local merchants. When the *Lady Ellen* arrived back at Ahnapee on Christmas Eve morning the fog was extremely dense in the harbor and she collided with the south pier but sustained no damage. With her cargo discharged and the vessel laid up for the winter, it was speculated that come spring Captain Henry would haul the scow out of the water for a rebuild with the intention of adding eighteen feet to her length (*Ahnapee Record* 1889k; 1889l; 1889m).

The speculation regarding lengthening was just that, however, and the *Lady Ellen* went into service on 7 April 1890 without repairs or lengthening. Instead, she loaded posts and tan bark for Samuel Perry and cleared for Milwaukee (*Ahnapee Record* 1890a). She again cleared for Milwaukee on 29 April with cordwood and paving posts for Samuel Perry, on 16 May with posts for Henry Gericke, on 15 July with wood and bark for Henry Gericke, and on 24 July with wood for Henry Gericke. Each time the scow returned loaded with freight for Ahnapee's merchants (*Ahnapee Record* 1890b; 1890c; 1890d; 1890e). No trips were reported for the *Lady Ellen* for August 1890, but on 18 September the vessel loaded wood bound for Milwaukee. She was forced to wait, however, for favorable weather before she could clear Ahnapee (*Ahnapee Record* 1890f). There again were no documented trips in October or November 1890, but when the scow arrived at Ahnapee on 8 December along with the scow *William Finch*, once again a channel needed to be cut to allow the vessels to enter the harbor. It was reported that both vessel had ended with profitable seasons (*Ahnapee Record* 1890g).

The speculated repairs from the previous winter were finally carried out in 1891. In late March the *Lady Ellen* was hauled out of the water, but rather than lengthening the vessel a new mainmast was stepped and the scow was only repainted (*Ahnapee Record* 1891a). A familiar face was aboard the vessel for the start of the season as First Mate: Daniel Henry, brother of the Captain. The *Lady Ellen* took on the season's first cargo of wood for Samuel Perry and cleared for Milwaukee on 19 April 1891 (*Ahnapee Record* 1891b; 1891c; United States Census Bureau 1900). Additional trips to Milwaukee were made on 30 April with a cargo of wood for Samuel Perry, on 13 June with posts for Samuel Perry, and on 18 June with wood for Henry Gericke. Each time the scow returned to Ahnapee with her deck packed with back freight consigned to village merchants. Strong winds and foul weather plagued many of her trips and caused many delays throughout the spring of 1891 (*Ahnapee Record* 1891d; 1891e; 1891f; 1891g).

The *Lady Ellen* carried shingles to Racine for S. Hall throughout July 1891, clearing Ahnapee on 7 July, 16 July (also loaded with bark), and on 20 July. Each time she returned with general merchandise for the village store keepers (*Ahnapee Record* 1891h; 1891i; 1891j). In August, Decker & Decker of Ahnapee was building a new bank in Two Rivers, and the *Lady Ellen* carried hemlock lumber for its construction on 3 August and again on 11 August. During

the later trip, Daniel Henry took ill. When the scow returned to Ahnapee he came ashore and remained behind to recuperate (*Ahnapee Record* 1891k; 1891l; 1891m).

With Daniel Henry ashore, the *Lady Ellen* departed for Milwaukee. While in the harbor there, a small schooner was being towed upriver by a tug when the schooner swung off course and collided with the *Lady Ellen*, damaging her yawl. It must have been a slow summer in Ahnapee, as the incident was big news for the village residents and the source of much discussion. On 1 September, the *Lady Ellen* loaded a cargo of cedar posts for Samuel Perry that were bound for Milwaukee, and again she returned to Ahnapee with a full cargo of general merchandise on 11 September. Upon her arrival, the scow was treated to a new coat of paint, most likely to cover up the damage from the collision with the wayward schooner in the Milwaukee River. She then took on another cargo of wood for Samuel Perry, but was compelled to sit in the harbor for nearly two weeks while awaiting favorable winds (*Ahnapee Record* 1891n; 1891o; 1891p). On her return she arrived with more freight for the village merchants. On 15 October, the *Lady Ellen* loaded a cargo of bark and posts for J.H. Lockhart bound for Milwaukee, and returned on 30 October loaded with merchandise and coal. She next loaded posts and departed for Milwaukee on 5 November, and returned with a cargo of merchandise and a large quantity of fruit for the area merchants. As the weather remained favorable, the *Lady Ellen* made one more trip to Milwaukee the first week of December with a mixed cargo of timber products, and upon her return she was laid up for the winter (*Ahnapee Record* 1891q; 1891r; 1891s; 1891t).

By the last week of March 1892, Ahnapee's winter fleet was busily fitting out for the upcoming season, including the *Lady Ellen* who received minor repairs and a fresh coat of paint. She was ready to sail by 5 April and loaded bark at Henry Gericke's dock, but then waited nearly three weeks for favorable winds to clear for Milwaukee. She finally departed on 25 April for her first trip of the year (*Ahnapee Record* 1892a; 1892b; 1892c). She returned to Ahnapee on 16 May and immediately loaded bark for Samuel Perry bound for Milwaukee, but was again forced to wait out the weather and did not clear Ahnapee until 24 May (*Ahnapee Record* 1892d; 1892e). The *Lady Ellen* made her next trip on 6 June, again carrying wood to Milwaukee for Samuel Perry (*Ahnapee Record* 1892f; 1892g).

On 12 June the *Lady Ellen* was making a stop at Sheboygan after clearing Milwaukee loaded with merchandise for Ahnapee. She entered the Sheboygan harbor about 6 a.m. in a dense fog and proceeded to collide with the schooner *Wannette*, who was also navigating the harbor. The *Wannette* was loaded with wood and struck the *Lady Ellen* on her starboard side, splitting the *Lady Ellen*'s foresail, carrying away her main spar and rigging, and breaking her rail near the mainmast. The *Wannette* lost her bowsprit, jib boom, and forward canvas and stays. Both vessels made temporary repairs and continued on their way, and the damage sustained by the *Lady Ellen* was estimated at \$200 (*Ahnapee Record* 1892h).

By 23 June, the *Lady Ellen* was back in service and loaded a cargo of posts for Henry Gericke bound for both Sheboygan and Milwaukee (*Ahnapee Record* 1892i). When she arrived back at Ahnapee on 30 July, the *Lady Ellen* was quite a spectacle as she had an enormous new boiler for the Ahnapee Veneer & Seating Company's plant lashed to her deck (*Ahnapee Record* 1892j; 1892k). The *Lady Ellen* sailed twice more to Milwaukee that summer: on 19 August loaded with cedar and again on 30 August loaded with ties for Henry Gericke (*Ahnapee Record* 1892k; 1892l; 1892m).

In September the *Lady Ellen* began trading at Sheboygan. She departed on 16 September with posts for August Froemming, but also carried the stock of drugs and store fixtures owned by Mrs. S.E. Logencrantz. She made additional trips to Sheboygan on 29 September, 4 October, and 13 October with similar mixed cargoes of posts and merchandise. At Sheboygan, she would load coal and back freight consigned to Ahnapee merchants (*Ahnapee Record* 1892n; 1892o; 1892p; 1892q). The *Lady Ellen* finished out the 1892 season with three trips to Milwaukee. She cleared on 18 October, 30 October, and 11 November with ties for Henry Gericke, and then laid up for the winter in Ahnapee (*Ahnapee Record* 1892r; 1892s; 1892t).

As the *Lady Ellen* was fitting out for the 1893 season, Orrin Vose finally decided to sell his share of the vessel and Captain Henry bought him out to become the vessel's sole owner and Master. Captain Henry had completed all necessary repairs on the vessel the previous season and early in the winter, and to ready her in the spring all that was needed was adding a little paint to her hull (*Ahnapee Record* 1893a; 1893b). She was fully commissioned by 15 April and took on her first cargo for the season – bark for Henry Gericke bound for Milwaukee. April was fraught with storms, however, and she had to wait in port until 5 May for favorable winds to carry her southward (*Ahnapee Record* 1893c; 1893d; 1893e; 1893f). She returned on 22 May with back freight and then loaded posts for Samuel Perry, clearing for Milwaukee on 6 June 1893 (*Ahnapee Record* 1893g; 1893h). The *Lady Ellen* returned to Ahnapee on 24 June with general merchandise that she discharged at Henry Gericke's dock, but Captain Henry had a difficult time securing another cargo. The *Lady Ellen* lay idle in Ahnapee's harbor for nearly a month awaiting cargo. She finally loaded hemlock bark for Henry Gericke and cleared Ahnapee for Milwaukee on 21 July 1893 (*Ahnapee Record* 1893i; 1893j). Captain Henry met with the same problem at Milwaukee – he was unable to secure a return cargo – and he and the *Lady Ellen* arrived light at Ahnapee on 27 July. The *Lady Ellen* lay idle at Ahnapee until 18 August when she cleared light for Milwaukee. At Milwaukee she loaded a partial cargo of general merchandise and returned to Ahnapee on 28 August to unload at Henry Gericke's dock, where she then again lay idle while awaiting another cargo (*Ahnapee Record* 1893k; 1893l; 1893m).

Opportunity arose on 1 September when the steambarge *Mary Mills* broke her shaft and was disabled about 6 miles off Ahnapee. Raising her canvas, the *Mary Mills* managed to sail into Ahnapee harbor. She was loaded with freight bound for Menominee, Michigan, and her Captain hired the *Lady Ellen* to carry his cargo to its consignees while the *Mary Mills* sailed to the drydock at Manitowoc for repairs. Having delivered the cargo, the *Lady Ellen* returned light to Ahnapee and again lay idle (*Ahnapee Record* 1893n; 1893o; 1893p). On 25 September the *Lady Ellen* loaded hemlock bark bound for Milwaukee for Henry Gericke, and she returned to Ahnapee on 11 October with a full load of coal and merchandise for the city's merchants. On 23 November, Captain William Henry made one final trip south to pick up freight before his scow was dismantled for the winter (*Ahnapee Record* 1893p; 1893q; 1893r; 1893s).

In early March 1894, it was time once again for Captain William Henry to begin fitting out the *Lady Ellen* for the upcoming season. The vessel needed minor repair and paint, and after having much difficulty obtaining cargo for his vessel the previous season Captain Henry debated whether or not he should continue in the lake trade. He finally decided to make the necessary repairs with the intention of keeping the vessel employed on the Ahnapee-Milwaukee route. Thus, the *Lady Ellen* was fitted with a new mainmast and was back in commission and awaiting cargo by the end of April 1894 (*Ahnapee Record* 1894a; 1894b; 1894c; 1894d).

She waited a month before she secured her first cargo. On 25 May she took on a partial load of cheese boxes from the factory of Paul Gablowsky & Company bound for Sturgeon Bay. After unloading at Sturgeon Bay, she sailed light for the Youngs & Fetzer's mill at Horseshoe Bay where she loaded lumber for Samuel Perry before returning to Ahnapee. Following this meager run, the *Lady Ellen* lay idle well into the summer. She was one of many ships that lay idle that summer and freight rates plummeted. When faced with the decision of sailing for little pay or not sailing at all, Captain Henry exclaimed that he did not intend for his vessels to "plow the deep without receiving suitable recompense for the danger and labor" (*Ahnapee Record* 1894e; 1894f). By the beginning of August, Captain Henry was worrying about a failed season as he sailed light to Milwaukee for a load of freight that needed to be carried north to the village. The *Lady Ellen* returned to Ahnapee on 11 August and after unloading took on posts for August Froemming, clearing for Milwaukee on 20 August. She returned to Ahnapee on 10 September light and tied up to a dock to wait for more cargo (*Ahnapee Record* 1894g; 1894h; 1894i).

On 18 September 1894, Captain Henry, First Mate John Culligan, and Stewart John Aleer sailed north to Horseshoe Bay to load hardwood slabs for Walt Youngs. Before they could return to Ahnapee, however, a steady gale blew over the lake on 22-23 September that forced the *Lady Ellen* to shelter at Sturgeon Bay. The storm forced so many vessels off the lake and into Sturgeon Bay that ships were moored three abreast at the docks. The *Lady Ellen* finally returned to Ahnapee on 24 September (*Ahnapee Record* 1894j; 1894k; *Door County Advocate* 1894c). The *Lady Ellen's* trip north was profitable enough that Captain Henry decided to keep his vessel in the lumber trade for the remainder of the season. The *Lady Ellen* returned Horseshoe Bay for slabwood on 29 September and took a cargo of lumber to Menominee on 6 October for Jas. Tufts (*Ahnapee Record* 1894l; 1894m).

On 20 November 1894, while en route to Horseshoe Bay to take on another cargo of lumber, the *Lady Ellen* was again forced to seek shelter at Sturgeon Bay. While moored to the upper mill wharf the temperature dropped so sharply that she became frozen in for more than a week before the temperatures moderated and the ice was broken up by a strong southerly wind. Finally able to depart the wharf, the *Lady Ellen* resumed her trip to Horseshoe Bay. While passing through the Sturgeon Bay drawbridge, however, her starboard bow was holed at the waterline by a sharp piece of ice. Just north of the bridge, Captain Henry stopped his vessel just long enough to patch his vessel from the inside and then continued on to Horseshoe Bay to load (*Ahnapee Record* 1894n; *Door County Advocate* 1894e).

On 2 December 1894, the *Lady Ellen* was again forced to stop at Sturgeon Bay while en route to Horseshoe Bay to wait out the weather. While moored to the pier she was struck by the steambarge *Joys*, who was sailing from Menominee with a load of lumber. The collision crushed the *Lady Ellen's* bulwarks on both sides near her main rigging, her starboard stanchions were broken, and her railing was split from amidships to her quarter. Captain Henry abandoned his trip to Horseshoe Bay and instead the *Lady Ellen* was towed through the bridge on 6 December and moored to the Merchants Wharf in Sturgeon Bay. While moored to the pier, about seven feet of her centerboard was down and became jammed with ice, making it impossible winch up the centerboard (*Ahnapee Record* 1894n; Bazzill 2006; Bazzill et.al 2007; *Door County Advocate* 1894e). By Christmas Eve morning, Captain Henry had repaired his vessel enough to allow him to limp back to Ahnapee, where he took her upriver and moored her to Henry Gericke's pier,

where she quickly sank. The *Lady Ellen* spent the rest of the winter laying on the bottom of the Ahnapee River (*Ahnapee Record* 1895a; *Door County Advocate* 1894fc).

On 18 April 1895, Captain Henry raised the *Lady Ellen* from the river bottom and began repairs and fitting out for the season, including a partial haul-out to allow the necessary repairs to her bow. The *Lady Ellen* was fully commissioned by 9 May 1895, but the very next night, 10 May, the scow's mainmast was struck by lightning while lying in harbor. The spar was considerably damaged, but not badly enough to prevent its repair and continued service that season (*Ahnapee Record* 1895b; 1895c; 1895d; 1895e; 1895f). With the repairs made, she departed Ahnapee on 17 May bound for Menominee to load lumber for Jas. Tufts. She arrived back at Ahnapee on 19 May. She made additional trips to Menominee, departing Ahnapee on 24 May with baled hay for George Bottkol & Brothers and returned to Ahnapee with lumber for Paul Gablowsky & Company on 27 May. She departed Ahnapee again on 21 July loaded with hay for Menominee (*Ahnapee Record* 1895g; 1895h; 1895i; 1895j).

During the first two weeks in August 1895, the *Lady Ellen* lay idle in Ahnapee harbor waiting on cargo. Many vessel owners complained of low freight rates, and at some of the larger lake ports many vessels were already laying up for the winter (*Ahnapee Record* 1895k; 1895l). On 10 September, Captain Henry finally brokered a cargo for his vessel and loaded baled hay for George Bottkol & Brothers bound for Menominee. Their departure was delayed by strong northerly winds, but the *Lady Ellen* finally cleared for Menominee on 16 September. She returned to Ahnapee on 1 October with lumber and immediately loaded hay for another trip north (*Ahnapee Record* 1895m; 1895n; 1895o). The *Lady Ellen* made four more trips to Menominee with hay, returning to Ahnapee with lumber on 20 October, 1 November, 7 November, and 29 November (*Ahnapee Record* 1895p; 1895q; 1895r; 1895s). The *Lady Ellen* again loaded hay for Menominee on 8 December, but the ice was already thickening in the harbor. One week later, she was loaded with hay but remained waiting for a change in the weather that would allow her to depart Ahnapee. By 18 December, hope was lost for her last trip of the season and all of her canvas was hoisted to allow it to dry completely before stripping and laying up for the winter (*Ahnapee Record* 1895t; 1895u).

The *Lady Ellen* was fitted out for the 1896 season during the first week of April, and she cleared for Egg Harbor on 12 April to load lumber at the Youngs & Fetzer's mill for Paul Gablowsky & Company (*Ahnapee Record* 1896a; 1896b; 1896c; *Door County Advocate* 1896a). The *Lady Ellen*'s next three trips were to Menominee to load lumber for Paul Gablowsky & Company. She returned to Ahnapee from those trips on 21 May, 6 June, and 16 July (*Ahnapee Record* 1896d; 1896e; 1896f; *Door County Advocate* 1896a). She sailed between Ahnapee and Menominee for two more trips that season, arriving at Ahnapee with lumber on 13 August and 13 October (*Ahnapee Record* 1896g; 1896h; 1896i). No other trips were recorded for the *Lady Ellen* during 1896, even though Ahnapee's other vessels continued sailing through the end of the season. Likewise, the *Lady Ellen*'s lay-up for the winter also went unnoticed by the local press.

The *Lady Ellen* was recommissioned in April 1897. Her first trip was recorded on 26 April when she cleared for Menominee at night to load lumber for Paul Gablowsky & Company. She continued sailing to Menominee throughout the summer of 1897, returning to Ahnapee with lumber for Paul Gablowsky & Company on 25 June. She cleared Ahnapee on 1 July light and returned on 6 July with lumber for Cmejla & Helebrant. She again cleared light on 24 July and

returned on 3 August with lumber for Paul Gablowsky & Company (*Ahnapee Record* 1897a; 1897b; 1897c; 1897d; 1897e).

In early September 1897, Captain William Henry took command of Samuel Perry's newly-overhauled schooner *Industry*. The *Industry* was previously owned by his former partner, Orrin Vose, and was a newer and sleeker vessel than the *Lady Ellen*. The *Lady Ellen* was unceremoniously towed up the Ahnapee River and abandoned in a slip between the Second and Fourth Street bridges. Although the *Lady Ellen* is listed as being in commission through the 1899 season, she did not move from her slip in the Ahnapee River after she was tied there on 9 September 1897 (*Ahnapee Record* 1897f; *Door County Advocate* 1898; Mansfield 1899a).

Over the next few years, the *Lady Ellen* quietly sank and began an increasing port list. On 10 November 1899, a dredge that was deepening the channel near the *Lady Ellen* got one of its spuds entangled in the *Lady Ellen*'s rigging. Fearful that her rigging would collapse, it was cut away. In the spring of 1900 her upper works were removed. Although there was some discussion of removing *Lady Ellen*'s hulk from the water in order to "clean up the riverfront", this never occurred and today her lower hull remains visible in the river where she was abandoned well over one hundred years ago (*Ahnapee Record* 1899a; 1899b; 1900).

Site Description

The *Lady Ellen* site lies in a small cove on the north side of the Ahnapee River, west of the 2nd Street Bridge and 0.46 miles from the entrance to the Ahnapee River at Lake Michigan (Figure 4). Water depth on the site ranges from a few inches of water on the site's western edge to approximately 4.0 feet of water on the site's eastern edge. The site may be exposed or submerged depending on water levels, which are affected by low or high pressure systems across the Great Lakes, winds, flood or drought conditions. During periods of low water, especially during winter months, the site may be exposed and dry for periods of several weeks or more. At mean water levels, the site is mostly submerged with the exception of several of the bottom planks on the starboard side turn of the bilge.



Figure 4. Location of the *Lady Ellen* site.

A preliminary survey of the *Lady Ellen* site was conducted by Mr. Patrick Labadie in April 2000. During this survey photographs, measurements, and site drawing were produced and filed with the Wisconsin Historical Society. In October 2011, as part of an ongoing survey of all scow sites within Wisconsin, the Wisconsin Historical Society returned to the *Lady Ellen* site to conduct a Phase II archaeological survey to document the vessel's construction details and record site changes that occurred between 2000 and 2011.

The *Lady Ellen* site has experienced considerable changes in the nearly twelve years between surveys (Figure 5). These changes are largely due to the site's shallow and exposed nature. Regular periods of wetting and drying have accelerated the deterioration of much of the hull structure, particularly for those structures that remain exposed during mean water levels. Many of the lower hull planks on the starboard side protrude above the water's surface at mean water levels. Where the planks rise above the surface they have eroded more quickly than those that remain submerged and are approximately one foot shorter in length than the submerged planks.

The most notable change is that the keelson has become detached from the lower hull and is now movable about the site. At the time of the survey it lay at an angle across the port side of the lower hull. Also, the bow and stern deadwood, which Labadie (2000) noted were still intact and attached to the keelson, are now disarticulated. The stern deadwood is extant, but now lies on the river bed east of the lower hull. The forward deadwood is no longer extant. Additionally, little of the mainmast step remains with the exception of a small fragment of wood between two of the step's iron bolts. In 2000, the foremast step included six iron bolts that had fastened the wooden step to the keelson, but in 2011 all that remained was one of the forward-most bolts with empty fastener holes marking the former locations of the others.

The vessel's bottom was reinforced by a keelson that ran from bow ramp to stern ramp. The keelson is 1.5 feet wide by 0.4 feet thick and is tapered towards the bow, forming a point immediately forward of the foremast step where the forward deadwood was fastened. At the stern, the keelson is cut on either side where it was scarphed into the stern deadwood. This scarph begins 6.5 feet from the end of the keelson and is cut 0.45 feet into the keelson on either side. From this point aft, the keelson tapers in a manner similar to the keelson's forward end.

It does not appear that the vessel utilized a keel. Instead, the athwartship bottom planks are continuous from turn of bilge to turn of bilge with the exception of where the centerboard penetrated the bottom. The bottom planks are 0.2 feet thick and vary in width from 0.8 feet to 1.2 feet. All are sawn from very knotty fir. The bottom planks were fastened to the underside of the keelson and hull sides with wrought square nails. The ends of the bottom planks were flush with the outboard edge of the hull sides. Lacking a keel, the hull bottom received additional reinforcement from two floor keelsons located on either side of the center keelson (Figure 6). Each longitudinal floor keelson was constructed of two adjacent timbers that each measured 0.4 feet square. The floor keelsons were fastened to the bottom planks and had a space of 2.0 feet between each set of keelsons.

Scow Schooner *Lady Ellen* Algoma, Wisconsin September 2011

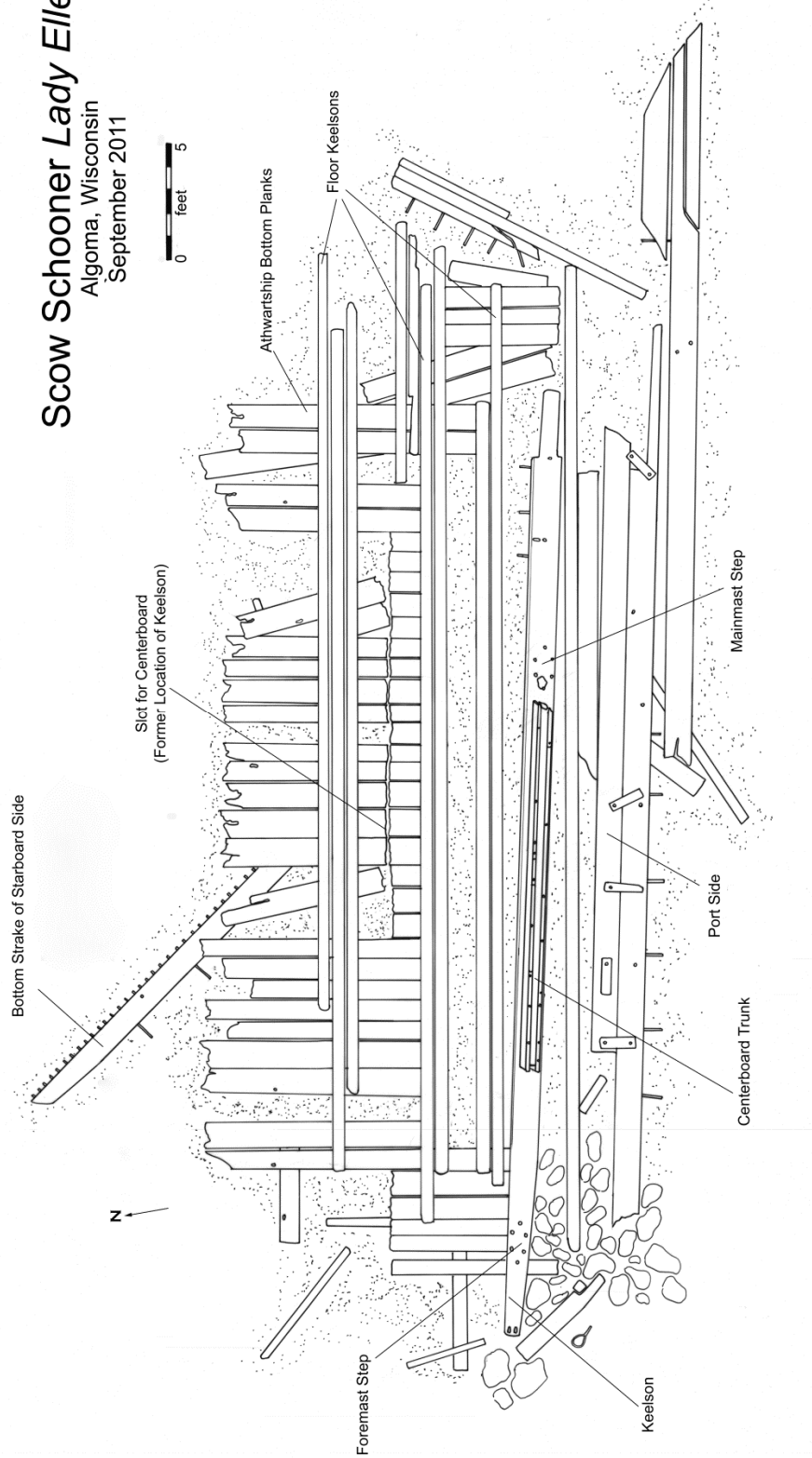


Figure 5. *Lady Ellen* site plan.



Figure 6. Starboard floor keelsons. The outboard set of keelsons are disarticulated from the hull bottom and one of the outboard keelsons lies next to the inboard set of keelsons. Note how exposed bottom planks are considerably shorter than those that are continuously submerged.

A centerboard trunk was fastened to the top of the keelson on the vessel's centerline. The centerboard is not extant and portions of the centerboard trunk that protruded above the water's surface have eroded away. Only the bottommost plank on either side of the centerboard trunk remains extant. The centerboard trunk is 16.0 feet in length, and the horizontal trunk planks were edge-bolted together and to the keelson at varying distances of 1.1 feet, 1.75 feet, and 2.0 feet. The bolts that fastened the trunk to the keelson terminate flush with the keelson's underside and are fastened with clinch rings. The keelson's centerboard slot is 0.45 feet in width, and the centerboard trunk's headledges penetrated the keelson at the fore and aft ends of the centerboard slot. The headledges were held in place with a horizontal iron bolt that runs through the width of the keelson and also served to reinforce the keelson against splitting on either end of the trunk. The keelson is rabbeted on its underside around the perimeter of the centerboard slot. This rabbet produces a shoulder around the centerboard slot that is 0.1 feet wide and extends 0.175 feet beneath the keelson. The ends of the bottom planks abutted this rabbet and were fastened to the underside of the keelson with wrought square nails. Although the keelson and centerboard trunk are disarticulated from the lower hull and is no longer fastened in its original position, the original location is readily identified by the centerboard slot into the bottom planks.

The lack of a keel and the thin, flat keelson indicate the hull sides provided much of the vessel's longitudinal strength. At either turn of the bilge, the bottom planks were fastened to the

bottom of the side hulls with wrought square nails. The hull sides are traditional gunnel-built construction, consisting of longitudinal hull planks that are 0.3 feet thick and edge-bolted with iron bolts. The lower three planks of the port side are extant and measure 0.8 feet, 0.85 feet and 1.2 feet in width from the turn of the bilge upward and are edge-bolted every 3.0 feet. Additional reinforcement was provided by king posts that fastened to the inside of the hull sides, and the lower 1.5 feet of several king posts are extant on the port side hull. The king posts are 0.5 feet thick by 0.3 feet wide, spaced at 3.0 feet on center, and are fastened to the side hull with iron through bolts. The bottom of the king posts terminate flush with the bottom of the hull sides, indicating a chine log was not used to reinforce the turn of the bilge. Additionally, no evidence of fasteners for a chine log were located. At minimum, however, filler chocks between the king posts would have been necessary to support the outboard ends of the athwartships ceiling planks. None of the ceiling planks are extant, but many of their fasteners remain on top of either side of the keelson. The ceiling planks were fastened to the keelson with light machine-cut nails, indicating the ceiling planks were of much smaller dimension than the outer hull planks and provided little structural support.

Two mast steps are extant on the keelson, although little remains of the steps other than the fasteners or evidence of their former location. Each mast step was fastened to the keelson with six iron bolts arranged in an oval pattern around the step. The center of the forward mast step is located 8.4 feet forward of the centerboard trunk. The center of the mainmast step is located 1.7 feet aft of the centerboard trunk. The only extant remains of the rigging are small portions of wire rope that are scattered around the site.

The *Silver Lake*

The scow schooner *Silver Lake* was constructed over the winter of 1888-1889 in the remote shipyard of M. L. Johnson in Little Point Sable, Michigan (Figure 7). She was constructed with one deck, three masts, and a square head and stern. Her measurements were 95 feet in length, 20 feet in beam, and 7.6 feet in depth of hold with a net tonnage of 105.53 and a gross tonnage of 111.08. She was constructed for George A. Wagen of Mears, Michigan, and her initial enrollment was entered on 18 May 1889 at Grand Haven, Michigan. She was assigned the official number 116263 (Bureau of Navigation 1889).

George Wagen only owned the *Silver Lake* for one season and sold her the following winter to John Joys and John Fitzgerald, co-owners of the Milwaukee Shipyard Company. Joys and Fitzgerald purchased equal shares of the *Silver Lake* and moved her across Lake Michigan to their hometown of Milwaukee. There, a new enrollment was entered on 11 January 1890 that listed John Joys as the vessel's new Master (Bureau of Navigation 1890a). Three weeks later, however, on 1 February 1890, Joys and Fitzgerald sold the *Silver Lake* to Nels Johnson and Jacob Schenkenberger. The pair purchased equal shares in the vessel and her home port was changed to their hometown of Racine, Wisconsin. Captain John Schenkenberger, brother of co-owner Jacob, became her new Master (Bureau of Navigation 1890b).



Figure 7. Although the vessel in the foreground is reportedly the *Silver Lake* moored in Milwaukee, vessel details do not match those of registration records or archaeological remains. No other image of the *Silver Lake* is known to exist. Milwaukee Public Library.

Little appears in newsprint of the *Silver Lake*'s early days on Lake Michigan. The few reports of her activity that did make print were incidental mentions of her voyages that told little of her daily operation. She was most frequently found carrying lumber between northern Lake Michigan ports and the larger cities in southern Wisconsin and northern Illinois. Her voyages were punctuated with an occasional layover at ports in between to wait out a storm (*Door County Advocate* 1890; *Manitowoc Pilot* 1890).

One noteworthy mention appeared in the *Milwaukee Sentinel* (1891) while the *Silver Lake* was in Racine and unable to find a crew for a late season trip. Sailors' wages usually increased late in the season due to the greater dangers of sailing during unpredictable fall gales. Accordingly, the *Silver Lake*'s crew demanded her Captain increase their wages to \$2.50 per day prior to getting underway from Racine. Meeting a refusal from the Captain, the entire crew shouldered their sea bags and abandoned the *Silver Lake*. Unfortunately, little more is known of

the incident, and it is uncertain if the *Silver Lake* was able to hire another crew or was compelled to remain in Racine and lay up for the winter.

The *Silver Lake*'s 1893 season was a bit more exciting than her previous ones, but she still managed to elude most contemporary newspapers. She got an early start that spring and was the first vessel to clear Jacksonport after loading wood at LeMere's Pier bound for Racine (*Door County Advocate* 1893a). She continued the season without incident until 20 August 1893, when she was involved in some sort of accident that required the Racine Lifesaving Station to rescue Captain John Schenkenberger and four crew members from the vessel. Little else is known of the incident, which elicited only a brief notation in the Lifesaving Station's log book (United States Life Saving Service 1893). Whatever occurred, the *Silver Lake* received little damage; a little more than a month later she was among a fleet of lumber vessels seeking shelter from a "heavy southeaster" at Sturgeon Bay from 7-9 October (*Door County Advocate* 1893b). The *Silver Lake* laid up for the winter at Racine the last week of December 1893 (*Door County Advocate* 1893c).

On 8 March 1894, Nels Johnson bought out his partner for \$600 and became sole owner of the *Silver Lake* (*Door County Advocate* 1894a). Her home port remained at Racine, and Hans Christiansen became her new Master (Bureau of Navigation 1894; 1899). Schenkenberger reinvested his \$600 from the *Silver Lake* in a new partnership with Harrison Fellows of Racine - the two became new owners of the schooner *Rob Roy* (*Door County Advocate* 1894b).

On Wednesday, 26 September 1894, the *Silver Lake* was involved in her second accident when she went ashore during a storm at Jacksonport. She had been lying at anchor off Jacksonport when her anchors began dragging as the wind and seas increased. She slipped both of her cables and attempted to make the open lake, but unable to make headway, she was driven ashore a short distance north of Hibbard's Pier. A tug was dispatched from Sturgeon Bay on Friday to render assistance, but the *Silver Lake*'s crew was able to kedge her off the beach with the use of the her own anchors and windlass. The *Silver Lake* sustained no damage in the incident and promptly loaded wood at LeMere's Pier and departed for Racine (*Door County Advocate* 1894a, 1894b; *Marine Review* 1895).

The only 1895 newspaper report of the *Silver Lake* documented her arrival at Whitefish Bay for the first time that season on 17 April. There she loaded a cargo of wood and cleared for Racine the same day (*Door County Advocate* 1895). The newspapers documented little more of the *Silver Lake*'s 1896 season. On 18 April 1896 she sought shelter from a storm at Sturgeon Bay (*Door County Advocate* 1896a). She again sought shelter there on 1 October 1896 when she came into Sturgeon Bay under her own canvas and lay at anchor at the head of the bay until 3 October, when she hired a tow to take her back out to the lake. Upon release from the tow she continued northward to Jacksonport to load wood (*Door County Advocate* 1896b).

In mid-April 1897, the *Silver Lake* took on a cargo of wood from Baileys Harbor (*Door County Advocate* 1897a). On 21 August 1897, the *Silver Lake* arrived at Sturgeon Bay, sailing light and riding high in the water. Sailing into the bay under her own canvas, she ran hard aground off the channel near the range light. Unable to free herself, she required assistance from the tug *Golden* to pull her free (*Door County Advocate* 1897b).

The *Silver Lake* cleared Jacksonport with wood during week of 19 June 1898 (*Door County Advocate* 1898a). She took on another wood cargo at Reynolds Pier in Jacksonport on Monday, 22 August 1898 (*Door County Advocate* 1898b). She immediately returned and cleared Jacksonport again the following week with another load of wood (*Door County Advocate* 1898c).

All cargos were the property of the vessel's owner, Captain Nels Johnson, and all were delivered to Racine.

There is no record of the *Silver Lake*'s operation during the 1899 season, and she does not reappear in the newspapers until the following spring, when she passed through the Sturgeon Bay Canal at 5:45AM on Sunday, 6 May 1900 (*Door County Advocate* 1900a). On the morning of Sunday, 27 May 1900, the *Silver Lake* cleared Eagle Harbor (Ephraim) in Door County loaded with 80 cords of maple wood bound for Racine. Aboard the vessel were Captain Samuel Martin, First Mate Harry Eastman, and Seamen Olle Williamson and Sigwald Anderson. She passed through the Sturgeon Bay Canal around noon that day, and by late afternoon the *Silver Lake* was passing Kewaunee. There was a light northeast breeze and moderate seas, but throughout the day visibility was reduced by patches of scattered fog (*Detroit Free Press* 1900; *Door County Advocate* 1900b; Milwaukee Public Library 1959b; *Saginaw Courier-Herald* 1900a).

That same Sunday afternoon, the steel railcar ferry *Pere Marquette* was loading at Ludington, Michigan. The *Pere Marquette* was the first steel car ferry in service on Lake Michigan, and she was considered a behemoth for her time. Built in West Bay City, Michigan, in 1896, she was 338 feet in length, 57.7 feet in beam, and had a 34.9 foot depth of hold for a capacity of 5,580.28 gross tons (Bureau of Navigation 1897b). The *Pere Marquette* was designed for year-round service on Lake Michigan, which included a swept back, reinforced forefoot that allowed the vessel to ride up on, and break, thick ice sheets during the winter months. The *Pere Marquette* departed her Ludington slip about 10:00 PM that Sunday, bound for Manitowoc (Milwaukee Public Library 1959b).

Around 2:30 AM Monday morning, the *Silver Lake* was approximately fifteen miles east of Manitowoc, sailing southward amidst a dense fog with her fog horn regularly blowing. In the distance toward the middle of the lake, First Mate Eastman heard the faint sound of a steamer's fog signal as the other crew members slept below deck. Around 2:50 AM, alarmed that the sound of the steamer's whistle was growing louder and closing, Eastman roused the sleeping crew from below. Just as the drowsy crew members emerged on deck to the sound of the *Pere Marquette*'s rushing bow wake punctuated by her booming steam whistle, the car ferry's immense steel bow loomed out of the fog and smashed into the *Silver Lake*'s port side almost directly amidships (*Detroit Free Press* 1900; *Door County Advocate* 1900b; Milwaukee Public Library 1959b; *Saginaw Courier-Herald* 1900a; *Sheboygan County News* 1900; *Sheboygan Telegram* 1900).

Amidst a crash of splintering wood, the *Silver Lake* violently lurched to starboard from the impact, an impact so forceful that Eastman was thrown overboard from his position at the helm. Broken and stuck to the *Pere Marquette*'s bow, the *Silver Lake* was pushed sideways through the fog as the big steamer slowly lost her headway. Seaman Sigwald Anderson jumped onto one of the *Pere Marquette*'s anchors and climbed up the side of the ship to the safety of her deck. Captain Martin and the other crewmen quickly launched the yawl and clambered aboard² (*Detroit Free Press* 1900; *Door County Advocate* 1900b; *Marine Review* 1900; Milwaukee Public Library 1959b; *Saginaw Courier-Herald* 1900a).

With no one left aboard the *Silver Lake* and her broken remains mangled on the *Pere Marquette*'s bow, her tangled rigging was cut free from the steamer and she quickly sank from sight. The crew members aboard the yawl were taken aboard the *Pere Marquette*, but the 46 year-

² Some reports indicate that all three climbed the schooner's rigging to board the car ferry.

old First Mate Eastman could not be found. The body of the unmarried Norwegian immigrant from Racine was never recovered (*Detroit Free Press* 1900; *Door County Advocate* 1900b; *Marine Review* 1900; Milwaukee Public Library 1959b; *Saginaw Courier-Herald* 1900a).

At the time of her sinking, the *Silver Lake* was eleven years old. Some reports valued the vessel between \$1,200 and \$1,500, while others stated the vessel was only worth \$600 – but added that Nels Johnson had spent \$400 in repairs that spring. The cargo was also owned by Captain Johnson and valued at \$500. Nothing was saved from the vessel and neither the hull or cargo were insured (Bureau of Navigation 1894; *Detroit Free Press* 1900; *Door County Advocate* 1900b; Milwaukee Public Library 1959b; *Sheboygan County News* 1900).

The *Silver Lake*'s loss was yet another chapter in a very interesting maritime career for Captain Samuel Martin (full name Simen Martin Torbjørnson). Born in Kragerø, Norway, on 15 December 1840, he began sailing at the age of twelve. In the early 1860's, while in port at Nassau, Bahamas, he was pressed into service under false pretenses aboard the Confederate privateer and blockade runner *Oreta* (later renamed *Florida*). Following the war, he moved to Racine, Wisconsin, and began his career on the Great Lakes (Gjerset 1928). In 1892, he lost the 96-ton schooner *Persia* on North Point reef off Racine. The following year, in a storm off Milwaukee, he lost the small 55-ton schooner *Laurina* with a load of lumber. In 1894, Samuel Martin was a seaman aboard the schooner *Rainbow* when that vessel was wrecked in a fierce gale off Chicago on 18 May. After the loss of the *Rainbow*, his luck held out until the sinking of the *Silver Lake* six years later (Gjerset 1928; *Marine Review* 1901; Milwaukee Public Library 1959b).

Due to the severity of the collision, it was believed the *Silver Lake* was cut in two and sank immediately after she was cut free from the *Pere Marquette*. On Thursday, 31 May 1900, however, the schooner *Eliza Day* came upon the *Silver Lake* eight miles due east of Sheboygan, twenty-five miles south of where the collision occurred. Surprisingly, the ship was afloat but in bad shape and *Eliza Day*'s crew removed her mainsail (Milwaukee Public Library 1959b). A few days later, Captain C.P. Theyer of the Manitowoc tug *Arctic* notified the hydrographic office that he had spotted a derelict vessel off Sheboygan. He presumed it was the *Silver Lake*, and it lay directly in the track of vessels sailing up the west shore. Additional concern was expressed that other vessels may strike flotsam from the wreck, particularly the cargo of maple slabs (*Saginaw Courier-Herald* 1900b). On 17 September 1900, a storm brought a large piece of wreckage, 40 feet long by 10 feet wide, ashore a half a mile north of the Racine harbor piers. However unlikely, part of a name was discernible on the side of the wreckage and the locals claimed it was from the scow *Silver Lake* (*Detroit Free Press* 1900).

The *Silver Lake*'s loss did nothing to prevent steamers from running at full speed in the fog. The Supervising Inspector of Steamboats allowed the practice to continue, indicating that the steamers could whistle which side they proposed to take when hearing another vessel's fog signal. Review of the *Silver Lake* incident led to a suggestion that the Supervising Inspector of Steamboats might consider the adoption of a steam or electric calliope, so that the exact points of the compass over which a steamer was heading in fog might be indicated by note. This was rejected, however, as it would require "the higher development of a musical ear in lake pilots" (*Marine Review* 1900).

Site Description

The *Silver Lake* lies in 200 feet of water seven miles northeast of Sheboygan, Wisconsin, on a heading of 318 degrees (Figure 8). Overall length of the hull is 98.5 feet with a beam of 20.5 feet. All hull components are present with the exception of the lower portion of the broken mainmast, which could not be located on the site (Figure 9). The forward half of the hull is exceptionally intact and includes a standing foremast that remains rigged with topmast and yard. The forward half of the hull rests on the bottom with a 9.0 degree list to starboard and a 9.0 degree downward angle towards the hull break.

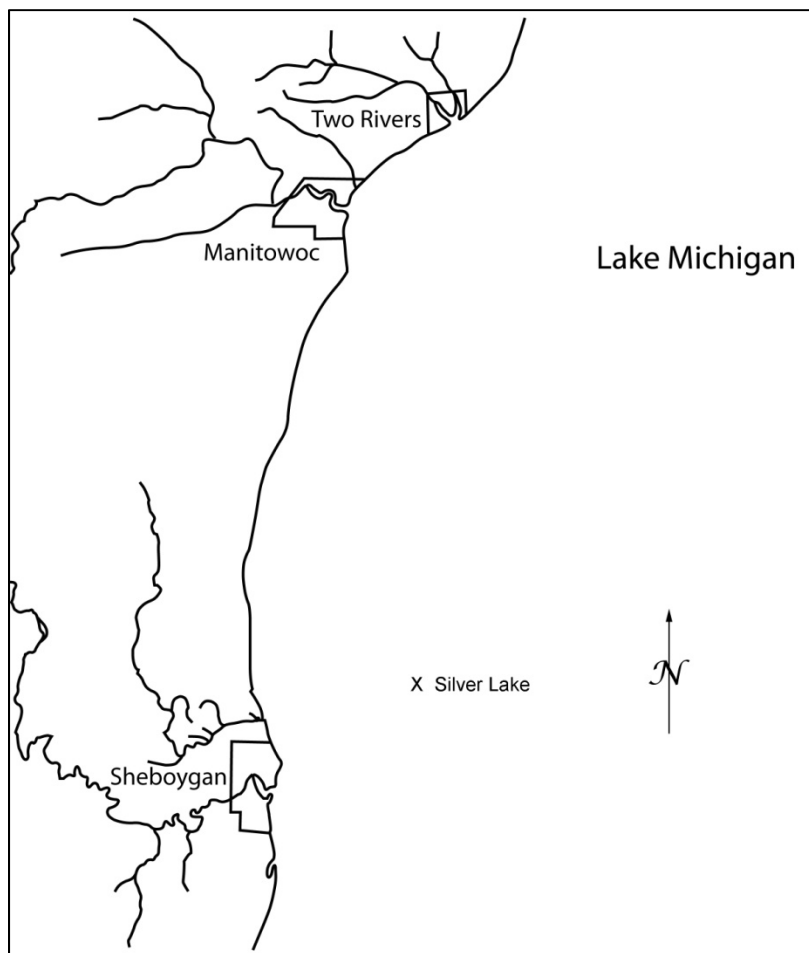


Figure 8. Location of the *Silver Lake* site.

The hull was broken in two amidships from the collision, and the aft half of the vessel is somewhat more broken than the forward. The collision damage and hull break is located 48.0 feet aft of the stem. Immediately aft of the hull break the hull has collapsed to starboard and lies mostly flat, but the hull sides and deck remain intact and attached to one another. The transom is completely intact and upright, however, and rests on the lakebed with a 36 degree starboard list and a slight angle towards the vessel's forward half.

The starboard anchor was removed by divers in the 1970s and donated to the Smithsonian Institution. The Smithsonian later traded the anchor to the Great Lakes Shipwreck Museum in



Scow Schooner *Silver Lake*
Sheboygan, Wisconsin
July 2008



Figure 9. Photo mosaic of the *Silver Lake* site.

Paradise, Michigan, in exchange for the anchor from the steamer *Indiana*. The port anchor remains on site and is an iron stock that remains attached to the anchor chain and hangs from the port hawsepipe, standing upright on the lake bed.

In 2008, the Wisconsin Historical Society partnered with Woods Hole Oceanographic Institution to gather three-dimensional video of the site that was used to create a high-resolution, two-dimensional photo mosaic of the *Silver Lake* site (Figure 9). The Wisconsin Historical Society returned to the site in July 2011 to conduct a Phase II archaeological survey. A temporary baseline was established on the hull to which all hull measurements were referenced. The baseline originated at the forward peak of the monkey rail immediately aft of the jib boom, passed to the starboard side of the samson post and foremast, and continued over the top center of the rudder post to where it terminated at the center of the stern rail.

The bowsprit has a diameter of 0.9 feet and extends 12.9 feet forward of the bow rail at an angle of 19.0 degrees to the hull. The jib boom is 0.85 feet in diameter and is broken flush with the end of the bowsprit; the forward half of the jib boom, along with the martingale, lay on the lakebed beneath the bowsprit. The aft half of the jib boom remains in place atop the bowsprit. The base of the jib boom abuts the forward edge of a 0.5 foot wide monkey rail that is attached to the top of the forward rail.

The bow features a cross-planked bow ramp that curves upward from the bottom (Figure 10). Green paint is visible in many places on the bow ramp. The stem protrudes from the center of the ramp, and Roman numeral draft marks are carved into either side of the stem. Two chain bobstays are fastened to the stem just above the lakebed. The outer bobstay is intact, but the inner bobstay is broken at the stem and hangs from the underside of the bowsprit and drapes over the stock of the port anchor. A chain bowsprit guy is extant on either side of the bowsprit. The guys are anchored to the outside of the covering board on either corner of the bow. The bottom of the double wire forestay is attached to the hull on either side of the bowsprit, but the forestay has parted a few inches above where the two wire forestays are seized together.



Figure 10. The *Silver Lake*'s starboard bow.

The center of the samson post is located at 8.1 feet on the baseline. It rises 4.0 feet above deck level and is 1.05 feet square. The patent windlass crosshead is fastened to the forward side of the samson post. The overall width of the windlass barrel is 9.7 feet. The centers of the carrick bitts are located at 8.75 feet on baseline, and the top of each bitt is 0.3 feet wide, 1.3 feet long, and rise 3.3 feet above deck level.

An iron capstan is fastened to the deck on the vessel's centerline between the windlass and the foremast (Figure 11). The center of the capstan is located at 13.8 feet on the baseline. The drum head is 1.2 feet in diameter, the pawl rim is 2.2 feet in diameter, and the top of the capstan rises 2.9 feet above deck level.



Figure 11. Forward deck including the windlass, capstan, forecastle scuttle, foremast, and bilge pump (aft of the foremast).

The forecastle scuttle is located to port of the capstan. The leading edge of the scuttle's coaming is located at 12.0 feet on the baseline, and starboard edge of the coaming is located 2.1 feet to port from the vessel's centerline. The inside dimensions of the scuttle coaming are 2.1 feet long by 2.4 feet wide. The coaming is 0.05 feet thick and slopes towards the bow so that the forward edge of the coaming rises 0.8 feet above deck level, while the aft edge rises 1.2 feet above deck level.

Two additional samson posts protrude from either side of the deck somewhat aft and outboard of the windlass. The center of both samson posts are located at 11.55 feet on the baseline and are 0.8 feet wide by 0.9 feet in length and rise 3.0 feet above deck. Either post is located 5.55 feet from the vessel's centerline. A double-acting bilge pump is fastened to the deck immediately aft of the foremast.

The hull utilizes traditional "gunnel-built" construction techniques. The hull bottom, including the bow and stern ramps, are cross-planked and fastened to the longitudinally-planked

hull sides with a chine log. The bottom planks vary in width; planks measured on the stern ramp range between 0.5 and 0.82 feet in width and are 0.25 feet thick. The hull sides are constructed of longitudinal planks that are 0.65 feet high by 0.45 feet thick. The planks are edge-bolted together, as well as to the chine long. The joint between side hull planks is caulked, and green paint is visible over much of the outer hull. The chine log is 0.5 feet wide by 0.9 feet tall. The side hull planks are fastened to the top of the chine log flush with the chine log's outside edge so that the chine log forms the turn of the bilge. A sister chine log, 0.6 wide by 0.65 feet tall, is fastened to the inside of the chine log (Figure 12). The sister chine log serves as both a reinforcement to the chine log and as a chock upon which the ends of the athwartship ceiling planks are supported and fastened. The ceiling planks are 0.15 feet thick by 0.75 feet wide and abut the inside edge of the chine log with the tops of the ceiling planks flush with the top of the chine log. The bottom is additionally strengthened by longitudinal bilge keelsons that are visible where the ceiling planks are missing due to collision damage. The outermost bilge keelson has a space of 2.2 feet between itself and the sister chine log. This bilge keelson measures 0.6 feet wide by 0.7 feet tall.



Figure 12. The port side turn of the bilge, aft of the collision damage. The chine log, sister chine log, and athwartship ceiling planks are visible. The bilge keelson is barely visible beneath the broken plank in the center of the photo.

King posts were not utilized in the construction, but the hull sides are protected from damage from cargo by approximately 0.1 foot thick vertical planks that ceil the sides of the hold. The hull sides are reinforced by three iron tie bolts that hold the hull sides together. The tie bolts penetrate the hull just beneath the covering board and are fastened with nuts and washers outside the hull. The tie bolts are equally spaced along the hull, with the first located approximately

halfway between the first and second cargo hatches, the second is immediately aft of the collisions damage, and the aft-most is located immediately forward of the mizzenmast.

Deck planks are 0.2 feet thick and vary in width between 0.45 and 0.5 feet. Deck beams are 0.4 feet high by 0.5 feet wide and are fastened to either side hull atop a large deck shelf that is 0.5 feet thick by 0.85 feet wide. The deck beams are fastened atop this shelf with no chocks or filler pieces between deck beams. Between the deck beams, the bulwark stanchions are butted against the top of the deck shelf and fastened to the inside of the side hull planks. The covering board is then fastened atop the deck beams and is mortised along its inside edge to fit around the bulwark stanchions. The covering board's dimensions are 0.6 feet wide by 0.2 feet tall, and it extends outboard of the side hull planks to form a rubbing strake at deck level. The bulwark stanchions are 0.4 feet square and have a space of 3.9 feet between stanchions. The bulwark stanchions are topped by a rail that is 1.15 feet wide and 0.3 feet thick and rises 2.6 feet above deck level. The outside of the bulwark stanchions are completely planked over with the exception of a small gap between the bottom of the bulwark and the covering board that serves as a freeing port for water that runs the length of the bulwarks. A single bulwark plank is fastened on the inside of the stanchions immediately below the rail that is 0.7 feet high and 0.2 feet thick.

A second rubbing strake is located below the former on either side of the hull. This strake is 0.4 feet in height and protrudes 0.2 feet outboard from the hull side planks. The top of the strake is located 7.26 feet from the top of the rail and 3.15 feet from the bottom of the chine log.

None of the hatch covers are extant, but all three cargo hatches remain intact. The forward most hatch begins at 22.7 feet on the baseline with outside dimensions of 4.55 feet long by 7.6 feet wide. The hatch coaming rises 0.9 feet above deck level and is 0.3 feet thick. A plank is fastened to the inside of the coaming 0.3 feet below the coaming's upper edge. The outermost edge of the coaming is chamfered, and iron flat stock is fastened around the top perimeter of the coaming to serve as chafing gear while loading and unloading cargo.

The second cargo hatch begins at 36.7 feet on the baseline and has outside dimensions of 6.7 feet long by 7.55 feet wide. The coaming rises 1 foot above deck level, but otherwise exhibits the same construction as the first hatch. The third and aft-most hatch is located at 58.3 feet on the baseline and has outside dimensions of 10.5 feet long by 7.5 feet wide. The coaming rises 1.1 feet above deck level, but otherwise exhibits the same construction details as the forward two hatch coamings.

The stern cabin's bulkheads have collapsed, but the cabin roof is extant and lies in the opening where the cabin formerly stood (Figure 13). The stern cabin was 9.5 feet in length and 14.3 feet in width, with the cabin's forward bulkhead located at 82.7 feet on the baseline. The cabin roof was longitudinally planked over athwartship frames. Cabin roof planks are 0.55 feet wide by 0.12 feet thick. Roof frames are 0.21 feet tall by 0.16 feet thick with a spacing of 1.3 feet. A skylight was built into the center of the cabin roof that is no longer extant. The skylight was 3.2 feet wide and ran the entire length of the cabin roof's centerline. The cabin scuttle was located near the port quarter and is 2.2 feet wide and extends 2.9 feet forward of the cabin roof's aft edge. A 0.6 foot diameter hole for the stove pipe is cut into the cabin roof 1.05 feet from the port side edge and 1.25 feet aft from the forward edge (measured to the center of the hole).

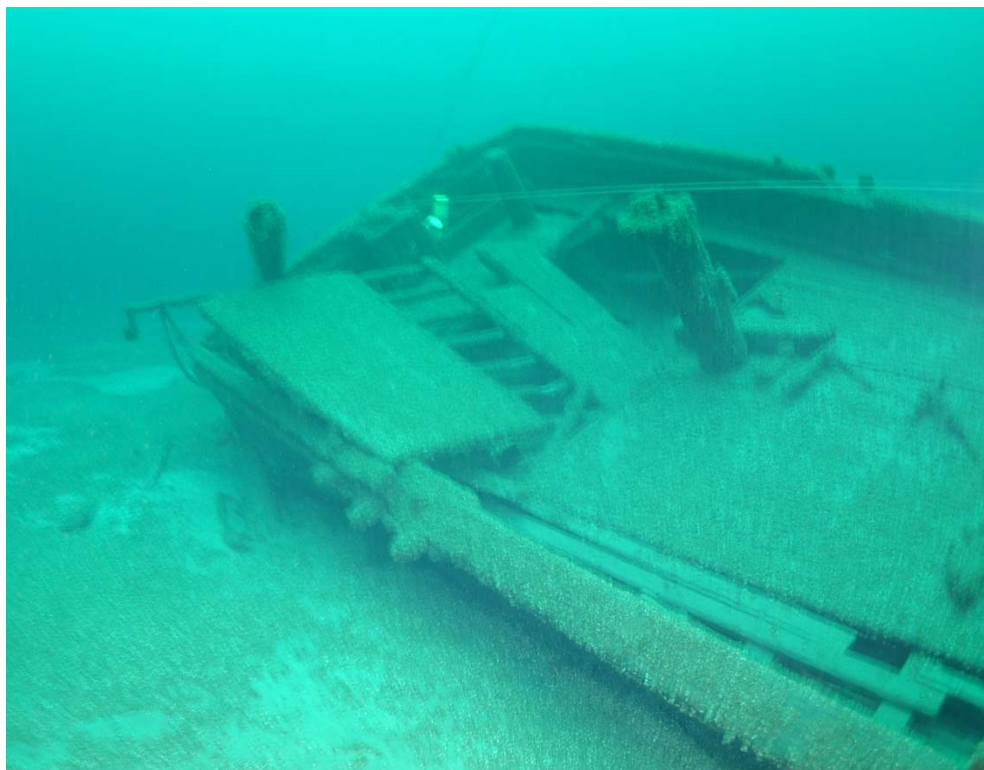


Figure 13. Looking towards the stern from the starboard side, amidships. The broken mizzenmast is visible on the transom.

The *Silver Lake*'s most unusual feature is that she was constructed with two centerboards. The forward centerboard trunk begins forward of the first cargo hatch at 21.0 feet on the baseline, extends through the center of the first hatch, and terminates nearly a foot into the second cargo hatch at 37.4 feet on the baseline. The centerboard was not raised and lowered via a dedicated deck winch as was the norm on single centerboard vessels, but instead was raised and lowered with tackle hung from the rigging. The chain used to raise and lower the centerboard passed through a vertical wooden box fastened to the deck that is 0.75 feet wide by 0.8 feet long and rose 4.5 feet above deck level. This box is no longer fastened to the deck but lies on the deck next to the centerboard trunk with the chain passing through the box (Figure 14). Presumably, the purpose of this box was to allow the centerboard chain to run freely and prevent fouling due to deck cargo.

The aft centerboard trunk begins within the aft cargo hatch at 65.5 feet on the baseline and terminates just before the mizzenmast at 79.3 feet on the baseline. The centerboard chain protrudes from the deck at 76.3 feet on the baseline. Like the forward centerboard, the aft does not have a dedicated winch mounted on deck above the trunk, but instead is raised and lowered via the ship's rigging. Likewise, the chain also passed through a wooden box that is 0.55 feet wide, 0.9 feet long, and rose 4.7 feet above deck level. This box is visible in Figure 12, lying on deck to port of the base of the mizzenmast. The ends of both centerboard trunks are reinforced with large vertical iron tie rods that compress the hull around the trunks. The bolts are fastened on top of the deck with large nuts and an iron plate that crosses overtop the trunk.

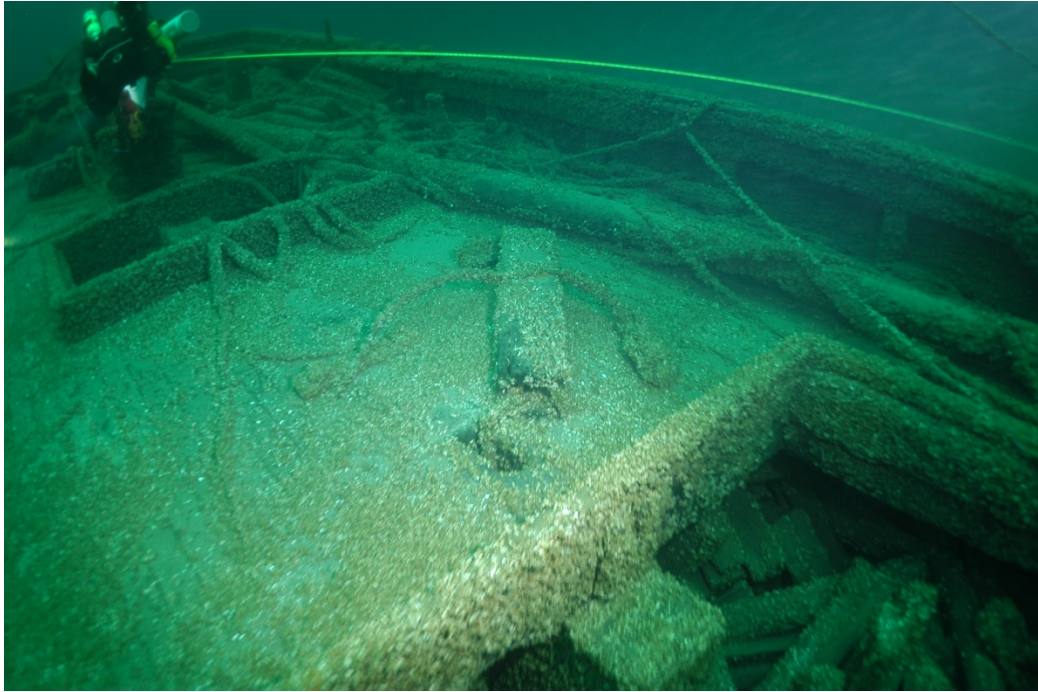


Figure 14. The forward centerboard trunk is visible within both cargo hatches, as well as the wooden box through which the centerboard chain runs.



Figure 15. The *Silver Lake*'s foremast, viewed from off the vessel's port quarter.

The *Silver Lake* is the only known schooner in Wisconsin waters with a standing foremast with extant topmast and square-rigged yard (Figure 15). The foremast is located at 17.5 feet on the baseline and has a diameter of 1.2 feet immediately above deck level. The foremast leans 12 degrees aft, but this is due to degradation in hull integrity rather than an intentionally-raked mast. The top of the fore topmast is at a water depth of 127 feet, or 62 feet above deck level. The head of the foremast is at a water depth of 145 feet, or 44 feet above deck level. The yard truss is fastened to the foremast at a water depth of 149 feet. The fore top is extant on the port side, but has been broken away on starboard. Much of the masthead is a tangle of commercial fishing nets and abandoned mooring lines from dive boats. None of the wire shrouds remain connected between the chainplates and masthead, but instead lie in a tangle on deck around the foremast. Many of the wood sail hoops that fastened the foresail to the mast are extant atop the mast table.

The mainmast is broken below the main masthead. The lower portion of the mainmast is not extant, but the remainder of the mainmast, from the break upwards, lies over the starboard rail (Figure 16). The main topmast is stepped to the mainmast, and even the tops remain intact. The mainmast's exact location on the hull could not be determined, as the hull break occurred at the mainmast step and the mainmast partners could not be located.

The mizzenmast is broken immediately above the mast table, and the lower portion of the mast remains stepped in the hull and protrudes from the deck at 81.1 feet on the baseline (Figure 16). At the break, the mizzenmast has a diameter of 1.1 feet. The upper portion of the mizzen mast is intact and lies across the starboard quarter, extending off the vessel's transom. Like the mainmast, the mizzen topmast remains stepped to the mast and the tops are likewise intact. Much of the running rigging is strewn about the foredeck and in a debris field off the starboard side. All booms and gaffs are extant on site with the exception of one spar. All have intact jaws and most have intact rigging blocks.

The rudder post protrudes from the quarterdeck at 96.7 feet on the baseline and is 0.5 feet in diameter. The rudder blade is rather long and extends 5.6 feet aft of the transom. Angular iron supports extend from the bottom of the stern post on either side and extend outward to fasten to the bottom of the stern ramp near the chine (Figure 17). One of the stern ramp planks is missing above the port side stern post support, and planks in this area are 0.55 feet wide by 0.25 feet thick.



Figure 16. The mainmast lies across the vessel's starboard rail.



Figure 17. The rudder and stern post supports.

CHAPTER THREE TRADING SCHOONER *ISLAND CITY*

It is difficult to discuss Wisconsin's maritime heritage without including the eastern Great Lakes of Huron, Erie, and Ontario. Many Wisconsin commodities were shipped beyond the waters of Lakes Michigan or Superior to eastern ports such as Buffalo, New York, or Kingston, Ontario. These distant ports returned goods, supplies, and immigrants to Wisconsin, creating a diverse and widespread economic universe. Although separating Wisconsin from the eastern Great Lakes results in a fragmented understanding of Wisconsin's maritime heritage as a whole, there existed a robust maritime trade that was populated by small sailing craft that never left Lake Michigan. This intra-lake trade connected communities in Wisconsin, Illinois, Indiana, and Michigan in a discrete local economy, transporting cargo from one Lake Michigan port to another where it could be sold for profit. While this trade amounted to only a fraction of the total Great Lakes tonnage, these smaller vessels were often the life line that connected smaller lakeshore communities to one another and to the larger cities of Milwaukee and Chicago. This trade was worked in a large part by immigrant sailors who had traveled from Europe, and the small Lake Michigan schooner provided a livelihood and career for many as sailors, masters, and vessel owners (Gjerset 1928; Hirthe and Hirthe 1986).

Nineteenth-century authors frequently glossed over the small lake schooner when writing about the contemporary Great Lakes merchant trade. Most of their effort was instead devoted to the new steam technology that was quickly rendering commercial sail obsolete. For this reason, how the smaller commercial sailing vessels operated on the Great Lakes is poorly known today. This is exacerbated by the fact that the sailing vessel's role changed dramatically during the nineteenth century. At the beginning of the century, the Great Lakes were a vast wilderness frontier populated by native peoples and a handful of hardy European fur traders. By the century's close, however, Lake Michigan boasted one of the world's busiest shipping ports (Karamanski 2000). Throughout this period, Lake Michigan schooners were subject to rapidly evolving trade patterns that required them to be highly adaptable to shifting markets and technologies. Despite increasing pressure from larger vessels, both sail and steam, the smaller lake schooners managed to survive this period and continued sailing well into the twentieth century – suggesting they were one of the most hardy and adaptable vessel types on the lake. This adaptability required rapid changes in their routes and cargoes, which makes a simple description of their trade difficult today. As more information is uncovered on this maritime subculture, particularly from archaeological sites such as the *Island City*, it will become easier to define the small schooner's role in Wisconsin's maritime trade.

The *Island City* was a two-masted schooner built in 1859 by Peter Perry at his shipyard on Harsens Island, Michigan. The vessel had one deck, a square stern, and no figurehead. She was owned equally by Peter Perry and John Babbitt, and Peter Perry was her first Master. The *Island City* measured 54 feet 6 inches in length, 16 feet 10 inches in beam, and 5 feet 11 inches in depth of hold with a tonnage of 46 55/95ths. She was enrolled at the Port of Detroit on 15 August 1859 (Bureau of Navigation 1859a).

Her managing owner, Peter Perry, was born in Canada in 1824. He was 35 years old when he built the *Island City* and lived on Harsens Island in the Township of Clay, St. Clair County, Michigan, with his wife Jane and their three children (United States Census Bureau

1860g). His partner, John Babbitt was a 30 year-old New York-born ship carpenter. In 1860, Babbitt reported \$1,200 in real estate and \$300 personal assets (United States Census Bureau 1860h).

During the *Island City*'s tenure on Lake St. Clair, the vessel carried fresh farm products from unimproved ports around Lake St. Clair to markets in Detroit. According to enrollment documents, Perry and Babbitt maintained ownership of the vessel for the duration of the 1859 and 1860 shipping seasons. One source, however, suggests the *Island City* may have been purchased late in the 1860 season by Captain Riley M. Burrington, who then sailed the *Island City* for the remainder of that season (Mansfield 1899b). Captain Burrington was a well-known seaman who was born into a sailing family on 22 December 1838 at Painted Post, New York. Burrington took to the sea at the early age of ten and found employment in different capacities on various ships. He became Master of his first ship, the side-wheel tug *Undine*, at the age of seventeen. He had worked aboard or captained the steamer *Columbia*, the steamer *Sam Ward*, the steamer *Magnet*, the propeller *Buckeye*, and the *James Eagle* prior to purchasing the schooner *Island City* and sailing her in late 1860 (Mansfield 1899b).

On 26 April 1861, the *Island City*'s enrollment was surrendered at the Port of Detroit for change of owners. Her new owners were Roswell Green, Daniel Green, and Henry S. Austin, each 1/3 owners of the vessel. Her homeport was changed to New Baltimore, Michigan, and Roswell Green took command (Bureau of Navigation 1861a). Both Roswell and Daniel Green were farmers who resided in Macomb County, Michigan. Roswell, born about 1833 in New York, lived with his wife and three children in the Town of Chesterfield, Michigan, and was reported to own \$800 in real estate and \$200 in personal assets (United States Census Bureau 1860e). Daniel Green, Roswell's father, was 58 years old, born in New Hampshire, and lived in the Town of Lenox, Michigan, with his wife Almira and four children. He reported \$1,500 in real estate and \$540 in personal assets (United States Census Bureau 1860f). No information on the third owner, Henry S. Austin was located.

On 19 July 1861, Roswell Green bought out his partners and became the *Island City*'s sole owner (Bureau of Navigation 1861b). Four days later, he surrendered the *Island City*'s enrollment on 23 July 1861 at the Port of Cleveland for yet another change in ownership. J. M. Titue, the *Island City*'s new managing owner, registered a new enrollment that listed himself as 2/3 owner and E. A. Cuyler as 1/3 owner of the vessel. The *Island City*'s homeport was changed to Cleveland, Ohio, and J. M. Titue became her new Master (Bureau of Navigation 1861c). At some point during the fall of 1861, Captain O. Sheffield took command of the vessel, but this change in Master was not listed on the enrollment documents (Thomas 1864).

The Titue-Cuyler partnership lasted only one year and *Island City*'s enrollment was surrendered on 22 July 1862 for a change in ownership and district. A new enrollment was entered at the Port of Detroit that listed D. W. Gooding of East Saginaw, Michigan, as 2/3 owner and W. L. Kellogg as 1/3 owner of the schooner. Her homeport was changed to East Saginaw, Michigan, and J. E. Day became her new Master (Bureau of Navigation 1862a). Little is known of the vessel's use during her time under Gooding and Kellogg. Of note, however, the *Island City* was the first vessel through the St. Clair River in the spring of 1863 (Mansfield 1899a).

On 29 July 1863, a temporary enrollment taken out at the Port of Chicago for another change in owners and district. The temporary enrollment was surrendered and replaced with a permanent enrollment on 8 April 1864 when William A. Parker and James M. Plumsted were

entered as equal owners in the *Island City*. Her homeport was changed to Chicago, Illinois, and Herman Thompson became her new Master (Bureau of Navigation 1864a). Little is known about William A. Parker. His partner, James M. Plumsted, was a 46 year-old master planer that worked in Chicago's lumber industry. Originally from New York, he lived in the 5th Ward of Chicago with his wife Mary and their two sons. By 1860, he had accrued \$5,000 in personal assets (United States Census Bureau 1860b).

On 11 April 1865 Parker and Plumsted surrendered the *Island City*'s enrollment to have the vessel readmeasured in conformity with the Congressional Act of 6 May 1864. Her new measurements were 54 13/10 feet in length, 16 feet in beam, and 5 65/100 feet in depth of hold. She had a capacity of 31 52/100 tons that included 30 27/100 tons under the tonnage deck and 1 25/100 tons of enclosures on the upper deck. She was described as having one deck and two-masts, and for the first time a plain head. Richard H. Ames became her new Master (Bureau of Navigation 1865a).

On 21 October 1865 the *Island City* was reregistered at the Port of Chicago following a rebuild that included an enlargement. The rebuild took place in Chicago at the yard of Thos. E. Miller. Her new enrollment described her as having one deck, two masts, a square stern, and a plain head. Her new measurements were 80 9/10 feet in length, 17 9/10 feet in beam, and 6 feet in depth of hold. This increased her capacity to 59 24/100 total tons, including 53 84/100 tons capacity under tonnage deck and 5 40/100 tons of capacity in enclosures on her upper deck (Bureau of Navigation 1865b).

In August 1866, while bound from Green Bay to Chicago, the *Island City* collided with the brig *Fashion* off Chicago. Reports of the damage to the *Island City* varied between \$80 and \$200, and the damage went unreported to the *Island City*'s insurers (*Buffalo Commercial Advertiser* 1867; United States Life Saving Service 1874). In May 1867 she was again involved in an accident, this time running ashore at Calumet, Michigan. This accident was also a minor one, and she was able to get off the beach with little damage (*Detroit Free Press* 1867).

The *Island City*'s enrollment was surrendered on 28 February 1868 at the Port of Milwaukee for a change of owners and district. A new enrollment was entered that listed Henry Roth, Nicholas Stone, and John Pfeiler, all of Sheboygan, as each 1/3 owners of the vessel. Her homeport was changed to Sheboygan, and Nicholas Stone became her new Master (Bureau of Navigation 1868b). Henry Roth was 43 year-old builder from Schwartzberg, Germany, who resided in Sheboygan's 4th Ward with his wife Henriette and their nine children. By 1870, he had \$4,500 in real estate and \$200 in personal assets (United States Census Bureau 1870c). Nicholas Stone was a 41 year-old sailor from Denmark who lived in Sheboygan's 1st Ward with his wife Mary and their two daughters; by 1870 had accrued \$2,000 in real estate and \$2,000 in personal assets (United States Census Bureau 1870a). John Pfeiler was a 44 year-old provision dealer from Bavaria who also lived in Sheboygan's 1st Ward with his wife Dorothea and their four children (United States Census Bureau 1870a).

By June 1868, Henry Roth had sold his share in the vessel to Richard Nommensen, a 27 year-old master planer from Denmark who resided in Sheboygan's 2nd Ward with \$2,000 in personal estate (United States Census Bureau 1870b). A new enrollment was entered at the Port of Milwaukee on 5 June 1868 to reflect her new owners, and on 30 June 1868 the *Island City* was assigned the official number 12084, which was handwritten into the margin of her 5 June enrollment (Bureau of Navigation 1868c). The following spring, Richard Nommensen sold his

share in the *Island City* to John Pheiler. A new enrollment was registered at the Port of Milwaukee on 7 April 1869 that indicated Pheiler now owned 2/3 of the vessel with Stone owning the remaining 1/3 (Bureau of Navigation 1869d).

The *Island City*'s enrollment was surrendered on 16 February 1870 for yet another change in ownership. Her new enrollment indicated that Peter Werner of Centerville, Wisconsin, and Nicholas Stone of Sheboygan, now owned equal shares of the vessel. Her home port remained at Sheboygan, and Nicholas Stone remained as her Master (Bureau of Navigation 1870). Peter Werner was a 31 year-old general retail dealer from Prussia. He lived in Centerville with his wife Christine, their four children, his parents, and two domestic servants. By 1870, he owned \$3,600 in real estate and \$3,600 in personal assets (United States Census Bureau 1870k).

On Tuesday, 12 April 1870, the *Island City* was entering Sheboygan Harbor around 2:00 AM when she ran up on sunken cribs at the end of the harbor piers. The cribs had been continually sinking and washing out from the piers due to the loose sand of the lakebed around the harbor entrance. The *Island City* remained stranded on the cribs until daylight, when a tug pulled her free of the cribs and towed her into the harbor for repairs (*Manitowoc Pilot* 1870).

On the evening of 16 September 1873, the *Island City* was loading at the Centerville pier in Manitowoc County. A storm began building over the lake, and because of the pier's unprotected nature it was decided the schooner should head to Sheboygan for refuge. Two miles out of Sheboygan, however, the wind changed direction and forced the *Island City* to turn and run for Manitowoc. While en route, the ship's foremast was struck by lightning. John Gunderson, a sailor who was standing on deck next to the foremast, was killed instantly. The *Island City* arrived at Manitowoc the following morning on 17 September 1873. A coroner's inquest was held upon her arrival, and Gunderson's body was taken to Sheboygan by a team of horses on 18 September (*Detroit Free Press* 1873; *Manitowoc Pilot* 1873).

At the start of the 1874 season, the *Island City* was valued at \$2,000 and had an insurance rating of B1 (Board of Lake Underwriters 1874). On 27 February 1874, Peter Werner bought out his partner to become the *Island City*'s sole owner. Her homeport remained at Sheboygan, and Captain Anders Gunderson became her new Master (Bureau of Navigation 1874b). It is uncertain if there was any relationship between Anders Gunderson and the sailor, John Gunderson, who was killed during the previous season.

The *Island City*'s enrollment was surrendered on 10 April 1877 for another rebuild and change in tonnage. The ship was rebuilt at Sheboygan that spring, and when she was reenrolled at the Port of Milwaukee she was measured at 81 5/10 feet in length, 17 9/10 feet in beam, and 6 5/10 feet in depth of hold. Her capacity was 54 92/100 total tons, including 52 75/100 tons under the tonnage deck and 2 17/100 tons in enclosures on her upper deck (Bureau of Navigation 1877).

On Tuesday, 3 September 1878, the schooner *J. P. Ward* of Milwaukee was off Little Point Sable, Michigan, when she filled with water and capsized. She was loaded with elm lumber from Manistee, Michigan, and was bound for Chicago when the accident occurred. The entire crew was forced into the vessel's yawl and they rowed eighteen miles to shore. On 4 September, a tug was sent from White Lake, Michigan, to search for the *J. P. Ward*, but it was unable to locate the derelict. On Thursday, 5 September 1878, Captain Gunderson, aboard the *Island City*, came across the *J. P. Ward* floating ten miles off White Lake. She was waterlogged, her spars were broken off, and one lone survivor was clinging to her hull. Captain Gunderson sailed the

Island City up to the wrecked *J. P. Ward* and rescued the ship's dog, which he had mistaken for a man (*Detroit Free Press* 1878).

On 17 March 1879, the *Island City*'s enrollment was surrendered at the Port of Milwaukee for another change in owners. A new enrollment was issued the same day that indicated Peter Werner sold $\frac{1}{4}$ share of the vessel to Captain Anders Gunderson (Bureau of Navigation 1879b). Late that season, after loading wood at the Centerville pier, the *Island City* received considerable damage after colliding with the schooner *Rainbow* while outbound from the pier. The actual extent of the damage to the *Island City* is unknown (*Manitowoc Pilot* 1879).

On 8 March 1880, Peter Werner sold his remaining interest in the vessel. Anders Gunderson and John Miller became equal owners of the *Island City*, and Captain Gunderson remained in command (Bureau of Navigation 1880a). John Miller was a 33 year-old widowed Norwegian sailor who lived with his 7 year-old son, Benton, in Sheboygan's 3rd Ward (United States Census Bureau 1880b).

The Gunderson-Miller partnership lasted two seasons, and Captain Gunderson sold his half of the vessel to A. Kilson of Sheboygan on 9 March 1882. Captain Kilson also became the *Island City*'s new Master (Bureau of Navigation 1882b). On 6 June 1882, the *Island City* became the first vessel to load lumber at a new mill in Whitefish Bay, Wisconsin, bound for Ahnapee (Algoma), Wisconsin (*Door County Advocate* 1882b). In 1884, the *Island City* lost part of a deckload of railroad ties while underway in a storm, and then decided to put into Sheboygan to wait for fairer weather (Hall 1884).

By the spring of 1885, John Miller had relocated to the Town of Church in Benson County, Dakota Territory, and Captain Kilson decided to sell his share of the vessel to Henry C. Kane, a 37 year-old Irish-born sailor who lived in Sheboygan's 5th Ward (United States Census Bureau 1880c). Kane and John Miller became equal partners in the vessel, and Captain Kane took command of the *Island City* on 16 April 1885 (Bureau of Navigation 1885a).

In the spring of 1886, the Miller-Kane partnership dissolved and the *Island City*'s enrollment was surrendered at the Port of Milwaukee on 13 March 1886. A new enrollment was issued that same day that indicated Henry C. Kane now owned $\frac{3}{4}$ share of the vessel and Anton Graff of Sheboygan owned the remaining $\frac{1}{4}$ share. Captain Kane remained as the vessel's Master (Bureau of Navigation 1886).

On 27 August 1887 the *Island City*'s owners changed again. Henry Kane and Dennis Minahan were now equal owners of the *Island City*, and Captain Kane continued as the vessel's Master (Bureau of Navigation 1887). Dennis Minahan was a 27 year-old who lived in Sheboygan and worked at a cane chair factory at the time he purchased a share of the *Island City* - likely his first venture into vessel ownership (United States Census Bureau 1880a). On 15 October 1887, the *Island City* was chartered to carry lumber from Menominee, Michigan, to Sheboygan for Charles B. Freyberg under private terms (*Door County Advocate* 1887).

On 30 March 1888, a new enrollment was entered at the Port of Milwaukee when Charles Froehlich of Sheboygan became the vessels' sole owner, with Captain Henry Kane remaining on as Master (Bureau of Navigation 1888a). Charles Froehlich was the 35 years-old owner of a brick yard in Sheboygan, but his ownership of the vessel did not last long (United States Census Bureau 1880b). On 18 April 1888 Dennis Minahan and A. Hiebing of Sheboygan became the vessels equal owners, and Captain Hiebing became the *Island City*'s new Master (Bureau of Navigation 1888b).

Little is known of the *Island City* for the next several years. On 3 November 1892, A. Hiebing bought out his partner to become sole owner and Master of the vessel (Bureau of Navigation 1892). Captain Hiebing did not hang onto the *Island City* for long, and on 6 December 1892 her enrollment was surrendered at the Port of Grand Haven, Michigan (Bureau of Navigation 1892). Herman Ludwig, a 35 year-old from Ludington, Michigan, and 22 year-old Captain William R. Wood of South Haven, Michigan, had purchased the *Island City* in equal shares. Her home port was moved to Ludington, Michigan, and Captain Wood became her new Master (*Milwaukee Sentinel* 1894a). Herman M. Ludwig was born in May 1857 in Park, Michigan. In the early 1880's he moved to South Haven, Michigan, with his brother Daniel where they became sailors. Soon after, more Ludwig brothers (Lancaster, Franklin, John, and Van Beethoven) arrived at South Haven to take up maritime careers as did their siblings (United States Census Bureau 1880e; 1880f). The *Island City* was not the only vessel owned by Herman Ludwig. He was also the sole owner and Master of the scow schooner *Tennie and Laura*, which he had originally purchased with his brother Van Beethoven Ludwig in 1888 (Meverden and Thomsen 2006).

On the morning of Saturday, 7 April 1894, the *Island City* cleared Ludington, Michigan, under the command of Captain William Wood with a load of hardwood bound for Milwaukee. Aboard was his young crew, William Marsh of St. Joseph, Michigan, and Joseph Rouse of Benoit, Michigan. The seas were calm and winds fair until Sunday afternoon, when an easterly gale arose as they were fourteen miles off Milwaukee harbor. As the seas grew, the *Island City* began laboring and taking on water. The crew worked the pumps continuously, but the water kept rising in the hold. At 9:00 PM, the storm increased in strength and by 10:00 PM water was pouring into the hold so fast it could not be controlled. By 11:00 PM, the *Island City* was in danger of capsizing and the yawl boat was prepared for launching. Captain Wood was overseeing the launch of the yawl, but as soon the yawl was released from the davits it was carried away by the seas and pulled Captain Wood into the water. Captain Wood, hanging from the yawl's painter, managed to drag himself into the little boat and once safely inside he called back to his crew aboard the *Island City*; he received no response. There were no oars inside the yawl when it broke free, and Captain Wood drifted helplessly away from the foundering *Island City*. Fortunately, there was a bucket aboard the yawl and Captain Wood bailed water from the boat until delirium overcame him and he passed out. At sunrise he was within sight of shore and by 1:00 PM on Monday he finally drifting ashore near Mequon, Wisconsin. Captain Wood was so weak that he crawled ashore and made his way to higher ground until he came to a fence. The fence was the last thing he remembered, and on Wednesday, 11 September, he awoke in the house of a farmer named Henry Johnson. By the morning of 12 September, Captain Wood had recovered enough to board a train to Milwaukee to report the loss of the *Island City* and the two men left aboard. That same day, the fish tug *Barney Catos* located the spars of a schooner protruding from the water about 12 miles northeast of Milwaukee, and it was assumed the spars belonged to the *Island City*. The *Island City* was valued at \$700 at the time of her loss (Mansfield 1899a; *Milwaukee Sentinel* 1894a; 1894b; 1894c; *St. Joseph Saturday Herald* 1894; United States Life Saving Service 1894a; 1894b; 1894c).

Site Description

The *Island City* is located 10 miles south southeast of Port Washington, Wisconsin (Figure 18), and lies broken in 130 feet of water on a heading of 090 degrees (Figure 19). The Wisconsin Historical Society conducted a Phase II archaeological survey of the site over August and September 2010. For the survey, a temporary baseline was installed to which all hull measurements were referenced. The baseline originated at the top of the stem and terminated at the top of the rubber post.

The *Island City* site is heavily draped in commercial trawl nets, which likely contributed to the site's broken condition. The hull rests with a 22 degree starboard list, and the port side hull has separated at the bow and fallen outward. Little of the vessel's deck remains, but the starboard side is largely intact for its length, including the rail. The port side hull is broken at approximately the waterline level beginning 30 feet aft of the stem, and the upper half of the hull side has fallen inward and lies inside the hull. The transom has separated from the hull and lies on the lakebed near the stern, but the stern post and rudder post remain intact and upright. Hull dimensions are 82 feet in length and 16.8 feet in beam, and the hull lies at a 2 degree pitch toward the bow.

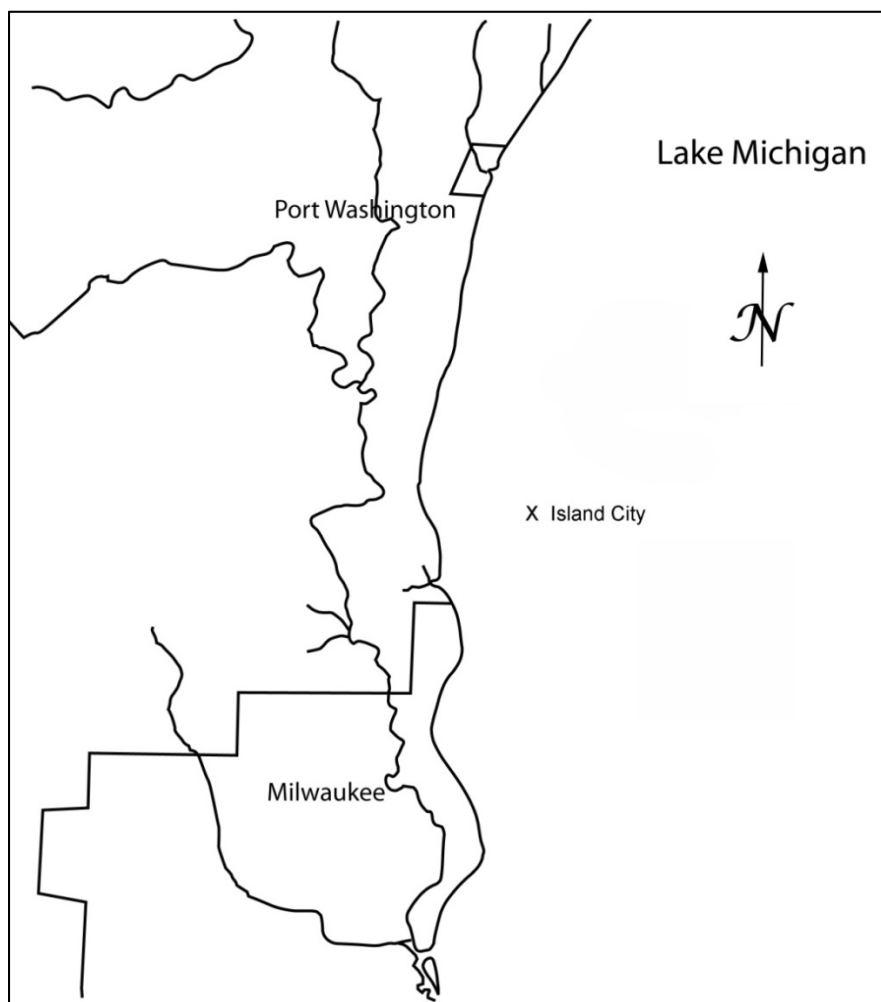


Figure 18. Location of the *Island City* site.

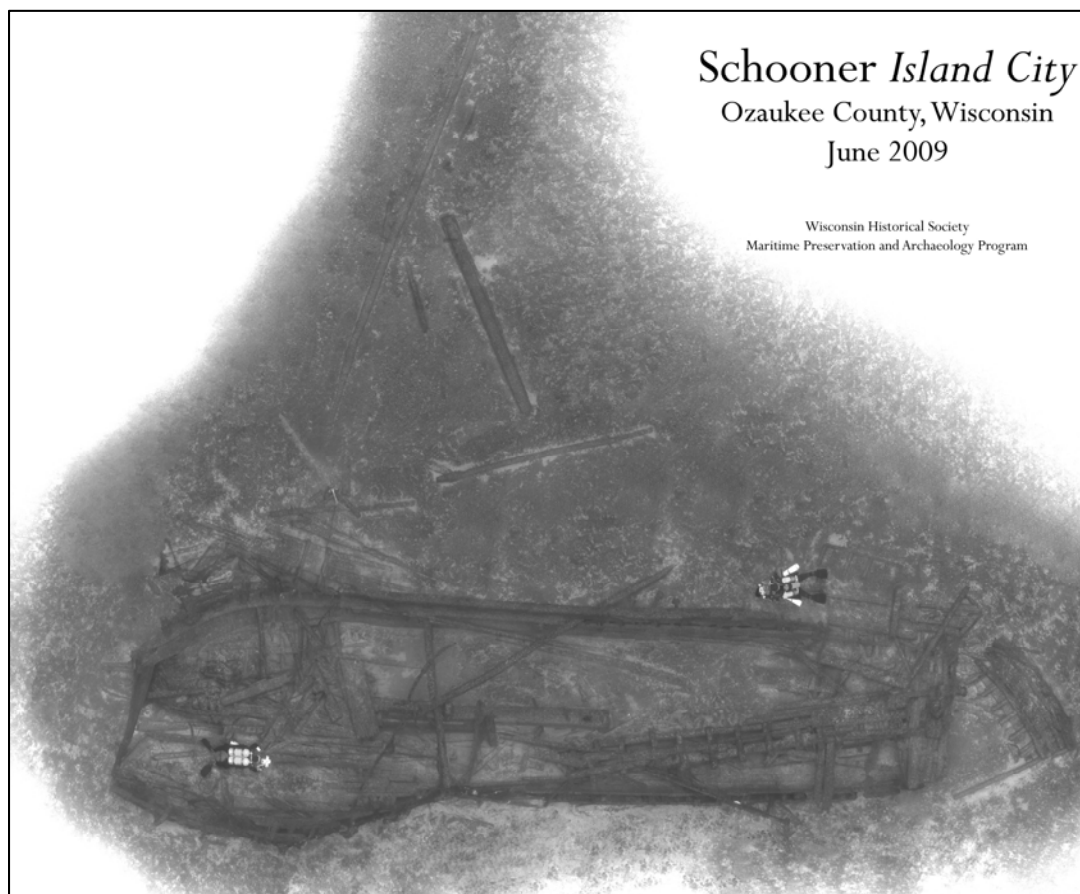


Figure 19. Photo mosaic of the *Island City* wreck site.

The *Island City*'s stem remains intact and is fastened at a 30 degree to the keel (Figure 20). The stem is 0.45 feet sided, 0.47 feet molded, and is protected by a stem iron 0.47 feet wide that rises 1.4 feet above the gripe. Two chain bobstays remain attached to the front of the stem above the stem iron, and the bowsprit now lies on the lakebed just forward of the stem. The bowsprit is 6.6 feet in length and square in cross section at 0.6 feet thick by 0.7 feet wide. The apron remains attached to the aft side of the stem and measures 0.53 feet sided by 0.47 feet molded. The starboard side bow is intact and remains fastened to the stem, but to port only four lower outer hull strakes are intact and remain attached to the stem; above this break, the port side hull has fallen outward, but is largely intact from where it formerly attached to the stem to 30 feet aft of the stem.

None of the anchors or ground tackle are extant, but both catheads remain fastened to either side hull 4.9 feet aft of the stem. Either cathead rises vertically from the deck and curves outboard at the rail. Each cathead is 0.6 feet square in section, rises 2.7 feet above deck level and extends 1.3 feet outboard of the rail. The ends of the catheads are reinforced with an iron strap that is 0.25 feet wide. The samson post has collapsed along with the forward deck, but lies inside the hull near its former location amidst a jumble of deck planks (Figure 20). The samson post is 8.2 feet long, 0.75 feet square at its base and 0.95 feet square at the top. The windlass is not extant.



Figure 20. An archaeologist documents the stem. Looking toward the bow from the approximate location of the foremast. The samson post is visible beneath the baseline.

The starboard bulwarks remain intact for much of its length, and is only broken away near the starboard quarter. The port side bulwarks, however, has collapsed inward along all but the forward 30 feet (Figure 21). Where extant, the rail is 0.75 feet wide, 0.23 feet thick, and rises 1.83 feet above the covering board amidships. The rail is supported by bulwark stanchions that are 1.6 feet in height and measure 0.37 sided by 0.45 feet molded and have a space of 1.88 feet between stanchions. A single inner bulwark plank is fastened to the underside of the rail that is 0.6 feet tall by 0.15 feet thick. A single mooring bitt is fastened to the inside of the bulwark on either side of the hull 9.8 feet aft of the stem. Each bit is 0.55 feet thick, 0.4 feet wide, and rises 2.7 feet above deck level.

The vessel's covering board is 1.2 feet wide and 0.13 feet thick. The sheer strake, fastened immediately beneath covering board, is thicker than the lower hull strakes and also serves as a rubbing strake. The sheer strake is .032 feet in height and is .28 feet wider than the adjacent hull strake. Amidships, the outer hull planks from the sheer strake down measures 0.5 feet, 0.55 feet, 0.5 feet, 0.45 feet, 0.5 feet, 0.5 feet, 0.55 feet and 0.5 feet.

None of the deck remains intact except for a small section of dislodged deck that lies off the starboard side (Figure 22). Deck planks on this dislodged section are 0.2 feet thick and vary in width between 0.35 feet and 0.4 feet. Deck beams vary somewhat in dimension but average 0.5 feet wide by 0.4 feet thick and have a space of 1.15 feet between beams. Hanging knees were not utilized to support the deck beams. Instead, a deck shelf was mortised around the deck beams that is 0.75 feet high by 0.25 inches thick. The top of the deck shelf abuts the underside of the covering board. The ends of the deck beams abut the outer hull planking and are fastened to adjacent frames.



Figure 21. The port side bulwarks now lies inside the hull. The rudder post is visible in the distance.



Figure 22. Outside the starboard bow, looking aft. The bulwarks, rubbing strake, and fore chainplates are visible. An inversed section of deck and gaff lie on the lakebed.

The hull was ceiled with planks that vary in width between 0.60 feet and 0.82 feet. The vessel was double framed, and each frame futtock is 0.25 feet sided by 0.35 feet molded with a space of 1.15 feet between frames. Evidence of the *Island City*'s 1877 lengthening is visible between 54 feet and 81 feet aft of the stem. In this amidships area the above framing pattern is replaced by frames which are 0.3 feet sided and have a space that varies between 0.15 feet to 0.8 feet. No deck stanchions are extant along the keelson.

The *Island City* carried a single centerboard located on the vessel's centerline (Figure 23). The centerboard trunk remains intact and upright, and is located between 20.85 feet and 27.85 feet on the baseline. The trunk is 1.1 feet wide and rises 4.9 feet above the keelson. Each longitudinal centerboard plank is 1.0 foot tall by 0.25 feet thick. The centerboard is retracted within the trunk, as both end of the centerboard are visible within the trunk.

The rudder, rudderpost, and rudderbox remain intact, and the rudder is turned slightly to starboard. The center of the rudder post is located at 81.0 feet on the baseline, is 0.7 feet in diameter, and rises 7.5 feet above the lakebed (Figure 24). The rudder blade is 3.4 feet tall and extends 2.3 feet aft of the rudder post at its widest part. The rudder blade is constructed from five vertical timbers attached to the rudder post's aft surface. No preventers are extant. The sternpost is fastened at a 10 degree to the keel, and is 0.8 feet sided by 0.6 feet molded. The stern post's aft surface is hollowed out to fit the curvature of the rudder post.



Figure 23. The centerboard trunk, view from the starboard side looking aft.

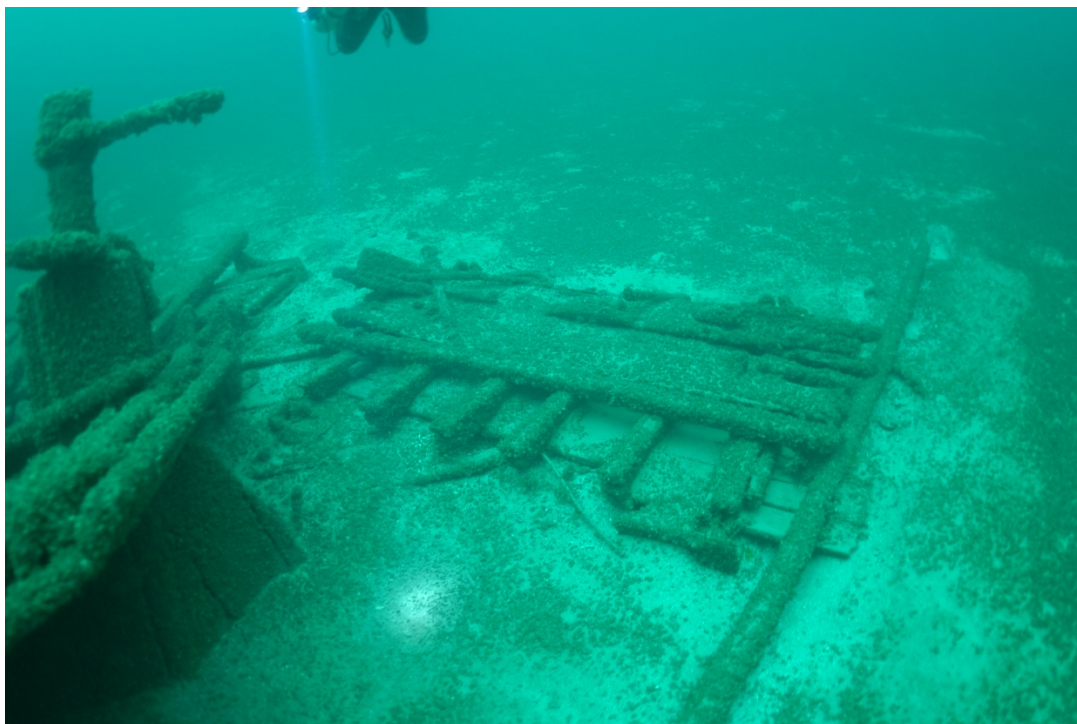


Figure 24. The rudder, rudder post, and transom, viewed from the port quarter.

The transom has separated from the hull and lies on the lakebed 6.0 feet aft of the sternpost. The transom remains intact and is 11.6 feet in width and has a camber of 0.4 feet. The transom's inner planks 0.3 feet to 0.4 feet in width and 0.1 foot thick. Six horn timbers are extant, and all are 0.3 feet sided by 0.5 feet molded. Spacing between horn timbers is 1.5 feet, 1.4 feet, 1.1 feet, 1.4 feet, and 1.5 feet. The outer transom planking 0.7 feet wide by 0.2 feet thick. Two iron fairleads, 1.4 feet in length, are fastened to the top of the transom rail 2.8 feet on center from the either quarter. Two wooden cleats are fastened to the inside of the transom beneath the rail, located 2.8 feet from either side of the transom. Each cleat is 1.4 feet in length and extends 0.2 feet from the inner transom planks.

Both the foremast and mainmast lie on the lakebed off the vessel's starboard side. The masts' former locations within the hull is evidenced by the locations of both the fore and aft chainplates. The foremast chainplates begin 17.0 feet aft of the bow and are comprised of three chains with associated dead eyes on either side of the hull. Individual chainplates are 3.3 feet in height and 0.3 feet in width. There is space of 1.8 feet between the first and second foremast chainplates, and a space of 1.4 feet between the second and third.

Only the starboard chainplates are extant for the mainmast, as the port chainplates were carried away with the collapse of the hull's port quarter. The chainplate's leading edge is located at 51.2 feet on the baseline, and likewise consists of three individual chainplates that are each 3.3 feet tall by 0.3 feet wide. The space between the first chain and the second mainmast chainplates is 1.4 feet, and 2.1 feet between the second and third. Many of the vessels spars lay about the site, including a topmasts that lies 21 feet of the bow, both masts and a boom off the starboard side, and another unidentified spar off the stern.

CHAPTER FOUR

CANALLER WALTER B. ALLEN

Wisconsin's first encounter with a European sailing vessel occurred in 1679 when Le Griffon landed somewhere on the Door County peninsula. Following Le Griffon, it was nearly 100 years before another sailing vessel again entered Lake Michigan. It is probable that King George's Royal Navy ventured onto Lake Michigan in the 1760s, but the next confirmed sailing vessel to enter the lake was John Askin's *Archange* in 1778, which sailed to Green Bay and Chicago in search of corn to supply Canadian fur traders (Quaife 1944). From the *Archange's* voyage until 1815, most voyages onto Lake Michigan were in support of military outposts on the lake's southern shore, such as Fort St. Joseph and Fort Dearborn (present day Chicago). In 1818, the Walk-in-the-Water was the first steamer constructed on the upper lakes, and it reportedly entered Lake Michigan one year later when it sailed to Green Bay (Mansfield 1899:184, 596; Mills 1910).

By 1836, regularly-scheduled steamship lines connected western Lake Michigan with eastern cities, and steam vessels were under construction at Milwaukee (*Milwaukee Advertiser* 1836; Quaife 1944). The proliferation of scheduled steam routes quickly drew passengers and high-dollar cargo from the schooners. On 21 May 1853, the Michigan Central Railway made the first railroad connection to Chicago, and by 1855 passengers and freight could be shipped between Buffalo and Chicago entirely by rail (Mills 1910; Quaife 1944). As the nineteenth century progressed, newly established rail lines acquired an increasing amount of passengers and cargo that was previously shipped over the lakes. Unlike lake vessels, rail lines could provide regularly-scheduled shipments that were unaffected by wind or weather and could continue operating throughout the coldest months of winter that kept lake boats icebound in the harbor.

During the open shipping season, steam vessels provided a convenient alternative to rail transportation. Because they were not reliant on the wind for propulsion, steamers could maintain regular schedules and routes with surprising consistency. Despite the advantages of steam, however, both on land and water, the humble merchant sailing craft maintained a formidable presence on the Great Lakes throughout the nineteenth century, an indeed well into the twentieth. Sail power retained the advantages of lower cost of construction and operation, they were readily adaptable to various trades, and often overlooked is that while steam power was a relatively infant technology, sail technology was already at its zenith, having benefited from centuries of technological development. In some trades, however, sailing vessels were more profitable than steamers - trades that involved bulk cargoes such as lumber or grain.

The Great Lakes developed a unique vessel type within its bulk grain trade, a type of vessel designed to transit the Welland Canal locks while carrying the largest amount of cargo possible – the canaller. Canallers had flat bottoms, square sterns, and bluff bows with short bowsprits and highly-canted jib booms. Some canallers were rigged with a hinged or shortened jib boom that could be folded, removed, or un-stepped while transiting the locks. The mainmast (on two-masters) or mizzenmast (on three-masters) booms were typically shortened so they did not overhang the stern. With their boxy shape and altered rigging, some claimed the canaller was a notoriously poor sailer in heavy weather - a claim supported by the fact that one particularly violent storm in October 1873 sent six Oswego canallers to the bottom with all hands (Karamanski 2000; *Oswego Daily Palladium* 1873b).

The Welland Canal opened on 30 November 1829. The first vessel through the canal was the British schooner *Ann and Jane* on a two-day up-bound transit from Port Dalhousie on Lake Ontario to Port Colburne on Lake Erie. The original Welland Canal (1829-1845) limited vessels to 110 feet in length, 22 feet in beam, and 8 feet in depth. It followed many natural water routes, beginning with Twelve Mile Creek from Port Dalhousie to Merritton, where vessels locked through 40 locks over the Niagara Escarpment. The canal then followed the Welland River from Merritton to Port Robinson to avoid the Niagara Falls.

As the volume of grain traffic and vessel size increased, the original canal locks quickly became obsolete. The Canadian government purchased the Welland Canal Company and expanded the canal in 1846, reducing the number of locks to 27 and cutting a more direct route. The new locks were expanded to allow vessels of 150 feet in length, 26.5 feet in beam, and 9 feet in depth. The canal's original wooden locks became control weirs for the new canal and reduced the physical labor of towing ships from lock to lock (Aitken 1997; Mansfield 1899a; St. Lawrence Seaway Management Corporation 2003).

The large number of immigrants that arrived on Lake Michigan's western shore during the early nineteenth century soon began moving from the lakeshore to populate the rich Midwestern prairie lands. Under these industrious settlers' hands, the fertile Midwestern soil soon began producing a large surplus of grain that made its way back to the Lake Michigan shoreline. There, it was loaded aboard lake vessels and carried to eastern markets via the Great Lakes. The Great Lakes were instrumental in facilitating growth in the grain trade by providing readily available and inexpensive transportation.

The brig *John Kenzie* carried the first grain shipment on Lake Michigan when she sailed from Grand River, Michigan, to Buffalo, New York, in 1836. Chicago followed suit two years later, sending 39 bags of wheat to Buffalo aboard the *Great Western* in 1838. In 1839, the brig *Osceola* loaded Chicago's first bulk shipment of wheat - 1,678 bushels bound for Black Rock (Buffalo), New York (Mansfield 1899a).

It wasn't until 1840, however, that the Great Lake grain trade truly blossomed. Between 1834 and 1840, Chicago's grain exports totaled 13,765 bushels (Mills 1910). In 1841 alone, 40,000 bushels were exported from Chicago, and by 1847 Chicago was shipping more than two million bushels yearly. Milwaukee had achieved an equal volume by 1853, and surpassed Chicago in grain exports by 1862 (Karamanski 2000). Due to a lack of adequate harbor facilities and grain elevators elsewhere on Lake Michigan, Milwaukee and Chicago became the dominant grain ports.

Freight rates for grain were subject to supply and demand. Rates typically dropped during the summer months and peaked during the fall harvest. Freight rates for the 1837-1838 seasons were eight cents a bushel, with an additional two cents per bushel surcharge for elevator service. During the 1850s, rates from Chicago to Buffalo remained steady between 10 and 15 cents per bushel, and steamers earned a fraction of cent more than schooners. During the 1860s, rates dropped to between 4 and 7 cents per bushel, and from 1874 onward rates began a constant decline, reaching 1.53 cents per bushel by 1898 (Cooper 1988; Mansfield 1899a; Mills 1910).

The Lake Michigan grain trade was dominated by wheat until 1848, when corn began shipping in increasing quantities. Oats, barley, and rye also shipped in smaller quantities (Cooper 1988). Buffalo and Oswego were early rivals for Lake Michigan grain, and Buffalo captured a larger share of the trade during the early years because vessel could reach Buffalo without

transiting the Welland Canal. Vessels that transited the canal were charged a toll of six dollars per thousand bushels, making a trip to Oswego less profitable. By the 1870s, however, canal tolls from Buffalo to Syracuse equaled or exceeded those of the Welland Canal, and because the route from Oswego to Atlantic sea ports was shorter than that from Buffalo, Oswego's grain traffic swelled (*Oswego Daily Palladium* 1897).

After unloading at either port, vessels often returned to Lake Michigan with coal loaded at ports on Lake Erie or Lake Ontario. Coal shipments were valuable for heating Midwestern cities and powering factories, and coal tonnage grew as transportation between the coal mines and lake ports was improved (Mansfield 1899a). Schooners could make the round trip between Chicago and Oswego in thirty to thirty-five days, and six to seven trips were completed seasonally (*Oswego Daily Palladium* 1897). Although profitable while it lasted, the heyday of canallers and the grain trade was short lived. By the late 1870s, railroads were gaining ever-increasing shares of Midwestern grain, and in 1880 rail tonnage finally exceeded lake tonnage (Mansfield 1899a).

The canaller *Walter B. Allen* was built during the height of the grain trade in 1866 at the H. C. Pierson shipyard in Ogdensburg, New York. She was officially enrolled at that port on 14 May 1866 with measurements of 136 8/10 feet in length, 26 2/10 feet in beam, and 11 1/10 feet depth of hold. Her capacity was 296 15/100 tons. She was built as a canaller, designed to pass through the Welland Canal Locks, and was constructed to the largest of that class of vessels. She was schooner-rigged with two masts, one deck, and no figurehead. The vessel was built for 41 year-old Walter B. Allen and his father, 71 year-old Elijah B. Allen, who were both commercial merchants of the firm E. B. Allen & Son of Ogdensburg. Her first Master was Timothy Larkin (Bureau of Navigation 1866).

In April 1849, Elijah B. Allen partnered with his eldest son David (26 years old at the time and 3 years older than Walter) and his second child Walter to form the E. B. Allen & Sons chandlery at 34 Water Street in Ogdensburg. It was natural for the business to branch into vessel ownership, and it proved to be successful for the Allen family, who resided in the town of Oswegatchie, New York - by 1870, Walter B. Allen was worth \$90,000 in real estate and \$54,000 in personal estate (*St. Lawrence Republican and General Advertiser* 1849; United States Census Bureau 1840; 1850b; 1870g).

The *Walter B. Allen's* maiden voyage was a trip from Ganonoque, Canada West (Ontario), to Chicago in May 1866. The vessel passed through the Welland Canal on 23 May 1866, and passed Buffalo, New York, on 27 May as the *Buffalo Daily Courier* (1866a) announced the newly launched vessel's first trip past that port (*Buffalo Evening Courier & Republic* 1866a). The departure for this voyage occurred before the issue of *Walter B. Allen's* official number, 26561, which was not assigned until 23 July 1868 (Bureau of Navigation 1866).

Only fragments of the *Walter B. Allen's* sailings are available for the 1866 season. She arrived at Chicago sometime during the first week in June, although her arrival went unreported. She cleared Chicago on 8 June 1866 with 20,000 bushels of corn that was consigned to W.O. Brown and bound for Buffalo, and she arrived at that port on 14 June 1866 (*Buffalo Evening Courier & Republic* 1866b; 1866c). It is uncertain what her return cargo was or where it was loaded, but on 20 June 1866 the *Walter B. Allen* passed upbound at Detroit (*Buffalo Daily Courier* 1866b; *Buffalo Evening Courier & Republic* 1866d). She is next reported downbound at Detroit on 4 July 1866, and two days later she was downbound through the Welland Canal with

an unspecified cargo of grain from Chicago to Oswego (*Buffalo Daily Courier* 1866c; *Buffalo Evening Courier & Republic* 1866e). The Canadian tariffs on wheat, corn, and flour cargoes that passed downbound through the Welland Canal were 20 cents per ton. This rate was collected from 1863 through 1883 and encompassed the *Walter B. Allen*'s entire career (Bureau of Statistics 1885; Kingsford 1865).

The *Walter B. Allen* is largely absent from the newspapers during the summer of 1866, but on 3 September 1866 she was reported heading upbound at Detroit (*Buffalo Evening Courier & Republic* 1866f). She reappeared in the *Buffalo Evening Courier & Republic* (1866g) as passing downbound at Detroit on 20 October, and again upbound at Detroit on 27 October (*Buffalo Evening Courier & Republic* 1866h). No other records of her voyages have been uncovered for the 1866 season.

The *Walter B. Allen*'s sailings are equally spotty for 1867. A notice in the *Buffalo Daily Courier* (1867a) on 24 August 1867 reported that the *Walter B. Allen* carried lumber from Au Sauble to Chicago at a rate of \$2.75 "per board foot" (most likely per thousand board feet). The vessel's next report is at Buffalo on 7 November 1867, where she arrived from Milwaukee under the command of Captain Larken with 19,000 bushels of wheat consigned to Bentley & Company (*Buffalo Daily Courier* 1867b). During a gale on the night of 1 December 1867, while downbound from Chicago to Ogdensburg with wheat, the *Walter B. Allen* went ashore at Pilot Island in the St. Lawrence River. A tug and steam-pump were sent to assist her removal, and repairs to her hull were performed over the winter lay-up (*Buffalo Daily Courier* 1867c; *New York Tribune* 1867).

The *Walter B. Allen* gained a new Master for the 1868 season. Captain George Cochrane replaced Timothy Larkin at the helm on 15 April 1868 at Ogdensburg (Bureau of Navigation 1866). The 30 year-old Cochrane, a career sailor, was born and resided in Oswegatchie, New York (United States Census Bureau 1870g). On 19 June 1868, the *Walter B. Allen* arrived at Buffalo with 20,000 bushels of corn consigned to M. L. Crittenden, and cleared the next day for Sauble River, Ontario (*Buffalo Daily Courier* 1868a). The amount of grain delivered to Buffalo was disputed, however, and Mr. Smith, a weighmaster from the Board of Trade, was brought in to confirm that the amount of corn delivered was actually 19,954 bushels rather than the 20,000 bushels listed on the bill of lading (*Buffalo Daily Courier* 1868b). The report of the vessel was on 8 September 1868 when she passed upbound at Detroit (*Buffalo Daily Courier* 1868c). On 21 September 1868, the *Walter B. Allen* cleared Chicago for Buffalo with wheat carried at 8 cents per bushel. With an average cargo of 20,000 bushels, the *Walter B. Allen* would earn \$1,600 per shipment. She passed Detroit on 30 September, but her arrival at Buffalo went unreported (*Buffalo Daily Courier* 1868d; 1868e).

The *Walter B. Allen* was again downbound at Detroit on 20 October 1868, but there is no record of her upbound passage, cargo, or destination (*Buffalo Daily Courier* 1868f). On the evening of 11 November 1867, the *Walter B. Allen* was laden with wheat for Oswego when she went ashore on the Toronto Islands and was reported to be leaking badly (*Buffalo Daily Courier* 1868g; *Daily Eagle* 1868; *Daily Union & Advertiser* 1868). On the morning of 14 November 1868, the tug *Hiram Calvin*, under command of Captain John Donnelly, pulled the damaged *Walter B. Allen* from the beach and took her and the brig *Henry Roney* in tow. The consort first proceeded to Ogdensburg to allow the *Walter B. Allen* to discharge her cargo, and then to Garden

Island to allow the *Henry Roney* to discharge her cargo before the trio steamed to Kingston, Ontario, for repairs (*Daily News* 1868).

Captain Charles N. Cramer took command of the *Walter B. Allen* on 21 April 1869 (Bureau of Navigation 1866). Captain Cramer, a 44 year-old Ohio-born sailor, resided in Oswegatchie, New York (United States Census Bureau 1870g). The season's first trip brought her into Milwaukee the second week of May, and she cleared that city on 20 May 1869 for St. Catharines, Ontario, with 15,161 bushels of wheat (*Buffalo Daily Courier* 1869a). Although there is no other record of her next trip, the *Walter B. Allen* passed Detroit downbound on 1 July 1869 (*Buffalo Evening Courier & Republic* 1869a). The schooner cleared Chicago on 28 July 1869 with wheat for Port Colborne, Ontario, carried at one cent per bushel (*Buffalo Evening Courier & Republic* 1869b). On 19 August 1869, the *Walter B. Allen* passed Detroit upbound, but there is no record of her cargo or destination (*Buffalo Evening Courier & Republic* 1869c). The next record of the *Walter B. Allen* reports her arrival at Buffalo on 13 September from Chicago with 19,600 bushels wheat for G. S. Buzard & Company (*Buffalo Evening Courier & Republic* 1869d). She turned around quickly and passed Detroit upbound on 20 September 1869 (*Buffalo Evening Courier & Republic* 1869e).

On the evening of 27 October 1869, the *Walter B. Allen* was off Grand River on Lake Erie when a gale arose and washed Second Mate Antoine Cutway overboard while he was passing the reef-platt to the mainsail on deck. The crew was unable to save Cutway, and the *Walter B. Allen* later turned and ran with the storm to Buffalo (*Buffalo Commercial Advertiser* 1869; *Buffalo Daily Courier* 1869b; *Buffalo Morning Express* 1869). At Buffalo, minor repairs were made and on 31 October 1869 she passed Detroit upbound on her way to Chicago (*Buffalo Evening Courier & Republic* 1869f). At Chicago, the *Walter B. Allen* loaded wheat and corn and cleared for Ogdensburg on 12 November 1869. The grain rates for the trip were 17 cents per bushel for wheat and 16 cents per bushel for corn (*Buffalo Evening Courier and Republic* 1869g). The vessel passed Detroit downbound on 23 November 1869 for her final trip of the season (*Buffalo Evening Courier & Republic* 1869h).

Captain Cramer remained at the helm for the 1870 shipping season, with an occasional relief by Captains P. Hackett or J.N. Chany (Bureau of Navigation 1866). On 27 April 1870, the *Walter B. Allen* was upbound through the Welland Canal loaded with railroad iron from Oswego to Toledo. After unloading at Toledo, she passed Detroit upbound on 5 May bound for Milwaukee (*Daily Standard* 1870a). The schooner cleared Milwaukee on 17 May 1870 for Buffalo, where she arrived on 24 May 1870 with 15,000 bushels of wheat for J.M. Richmond & Company and 4,100 bushels for S.K. Worthington (*Buffalo Evening Courier & Republic* 1870a; 1870b). She then cleared Buffalo on 28 May 1870 for Chicago with 547 tons of coal and passed Detroit upbound on 30 May 1870 (*Buffalo Evening Courier & Republic* 1870c; *Daily Standard* 1870b). On 15 June 1870, she cleared Chicago for Kingston, Ontario, with wheat at 9 cents per bushel and passed downbound at Port Colborne on the Welland Canal on 25 June 1870 (*Buffalo Evening Courier & Republic* 1870d; 1870e; *Oswego Daily Press* 1870b). The schooner returned to Chicago on 25 July 1870 for an unknown cargo and then disappears from the historic record until 19 September 1870 when she arrived at Milwaukee to load barley at 4 ½ cents per bushel (*Buffalo Evening Courier & Republic* 1870f; *Oswego Daily Press* 1870c). She loaded 21,271 bushels and cleared Milwaukee on 21 September, passing Detroit on 25 September 1870 on her way to Buffalo (*Buffalo Daily Courier* 1870). The *Walter B. Allen* returned to Milwaukee from

Cleveland on 13 October 1870 with 550 tons of coal (*Buffalo Evening Courier & Republic* 1870g). It is uncertain what cargo she carried back east, but she cleared Buffalo on 29 October 1870 for Milwaukee with 300 tons of coal (*Buffalo Evening Courier & Republic* 1870h). She arrived at Milwaukee on 7 November 1870, and her cargo officially weighed in with 282 tons delivered (*Buffalo Evening Courier & Republic* 1870i). It is unknown when the *Walter B. Allen* cleared Milwaukee, but she was downbound in the Welland Canal with wheat for Ogdensburg on 16 November 1870 (*Buffalo Evening Courier & Republic* 1870j).

On 15 May 1871, a new enrollment was issued that indicated Walter B. Allen had become the *Walter B. Allen*'s sole owner following Elijah B. Allen's death on 16 February 1869 (Bureau of Navigation 1866; 1871c). Seven days later, on 22 March 1871, Walter sold the *Walter B. Allen* for \$16,350 and a new enrollment was entered at Chicago (Bureau of Navigation 1871c, *Oswego Daily Press* 1871). The new enrollment indicated John M. Long now owned 3/8 of the vessel, the firm of Long & Schaffel owned one half, and William Long owned the remaining 1/8 share. Her home port was changed to Chicago and William Long became the vessel's new Master (Bureau of Navigation 1866; 1871d).

The Longs spared no time in putting their new vessel to work and immediately dispatched her to the lower lakes. On 19 April 1871, the *Walter B. Allen* passed upbound through the Welland Canal on her way to Erie, Pennsylvania, with iron ore (*Buffalo Evening Courier & Republic* 1871a). She offloaded at Erie and returned to Chicago on 2 May 1871 (*Buffalo Evening Courier & Republic* 1871b). At Chicago, there were reports that she was loading wheat bound for Erie, but when she cleared Chicago on 6 May she was bound for Kingston with 19,851 bushels of corn (*Buffalo Daily Courier* 1871a; *Buffalo Evening Courier & Republic* 1871c). She passed downbound through the Welland Canal on her way to Kingston on 18 May 1871 and returned back through the Canal upbound on 31 May for Cleveland (*Buffalo Evening Courier & Republic* 1871d; 1871e). On 6 June 1871, the *Walter B. Allen* passed Detroit upbound for Chicago (*Buffalo Evening Courier & Republic* 1871f). At Chicago, she loaded 20,076 bushels of corn and cleared on 19 June for Buffalo (*Buffalo Evening Courier & Republic* 1871g). She passed downbound at Detroit on 24 June, and cleared Buffalo on 29 June 1871 for Chicago with 215 tons of coal (*Buffalo Courier & Republic* 1871h; 1871i). At Chicago, she loaded 20,380 bushels of corn and departed on 17 July for Buffalo, arriving at that port on 27 June 1871 (*Buffalo Evening Courier & Republic* 1871j; 1871k). At Buffalo, she loaded 550 tons of railroad iron and cleared for Chicago on 29 July 1871 (*Buffalo Daily Courier* 1871b; *Buffalo Evening Courier & Republic* 1871l). There is no record of the ship's arrival at Chicago or her subsequent departure for the lower lakes, but she passed Detroit downbound on 21 August (*Buffalo Evening Courier & Republic* 1871m).

While in Ogdensburg on the evening of 23 August 1871, John Mulvany, Captain of the *Walter B. Allen*, attended a lecture given by Baron DeCamin. During the lecture, DeCamin made derogatory comments regarding the Catholic Church that resulted in a riot in the street. In the ensuing melee, Captain Mulvany stuck and seriously injured DeCamin, after which Captain Mulvany fled to Canada to avoid arrest (*Auburn Daily Bulletin* 1871).

The record of the *Walter B. Allen* is when she passed Detroit upbound on 6 September for Chicago, where she arrived on 11 September 1871 (*Buffalo Daily Courier* 1871c; 1871d). She loaded wheat at 9 ½ cents per bushel and cleared on 13 September 1871 for Port Colborne, Ontario (*Buffalo Daily Courier* 1871e). She passed Detroit downbound on 20 September 1871 and arrived at the Port Colborne grain elevator on 23 September 1871 (*Buffalo Daily Courier*

1871f; *Buffalo Evening Courier & Republic* 1871n). The *Walter B. Allen* passed Detroit upbound on 8 October 1871 for Chicago and again downbound on 30 October for Kingston, Ontario (*Buffalo Daily Courier* 1871g; 1871h; 1871i; 1871j). At Kingston, she loaded railroad iron and cleared on 14 November 1871 for Chicago (*Buffalo Daily Courier* 1871k). She passed Detroit upbound on 18 November on her final trip of the 1871 shipping season (*Buffalo Daily Courier* 1871l).

The following spring, John Long bought out Long & Schaffel's share of the *Walter B. Allen*. John Long now owned 7/8ths of the vessel and William Long retained his 1/8th share along with his role as Master. A new enrollment was entered at Chicago on 16 April 1872 (Bureau of Navigation 1872). For the first trip of the 1872 season, the *Walter B. Allen* arrived at Buffalo on 16 May from Chicago (*Buffalo Evening Courier & Republic* 1872a). A quick turnaround at Buffalo saw the ship upbound at Detroit on 19 May on her way to Chicago (*Buffalo Evening Courier & Republic* 1872b). There, the *Walter B. Allen* loaded corn at 5 cents per bushel and cleared Chicago for Buffalo on 29 May 1872 (*Buffalo Evening Courier & Republic* 1872c). At Buffalo, she loaded 500 tons of coal on 7 June and later passed Detroit upbound on 12 June and arrived at Chicago on 21 June 1871 (*Buffalo Daily Courier* 1872a; 1872b, *Buffalo Evening Courier & Republic* 1872d). The *Walter B. Allen* took on 21,050 bushels of corn at Chicago and cleared for Buffalo on 26 June (*Buffalo Evening Courier & Republic* 1872e). She arrived at Buffalo on 5 July to unloaded her cargo and then load 500 tons of coal for Chicago at \$1.00 per ton (*Buffalo Evening Courier & Republic* 1872f; 1872g). She cleared Buffalo on 17 July, passed Detroit on 1 August, and arrived at Chicago on 12 August 1872 (*Buffalo Evening Courier & Republic* 2 1872h; 1872i). The *Walter B. Allen* then returned to Buffalo on 8 September 1872, where she was again chartered for coal to Chicago and took aboard 550 tons at \$1.05 (*Buffalo Evening Courier & Republic* 1872j; 1872k).

At Chicago, the *Walter B. Allen* loaded grain and cleared for Buffalo, but while sailing across Lake Huron her hull and sails were damaged in a gale. Before entering Lake Erie, she stopped at Detroit for repairs, which were quickly made and the schooner departed Detroit on 3 October and finally arrived at Buffalo on 9 October 1872 (*Buffalo Evening Courier & Republic* 1872l; 1872m; *Detroit Free Press* 1872). The rest of her sailing schedule for 1872 is incomplete, but for her final trip of the year she passed Port Huron, Michigan, downbound with grain on 4 December (*Buffalo Evening Courier & Republic* 1872n).

The earliest record of the *Walter B. Allen*'s 1873 season begins on 10 May when she loaded 20,100 bushels of corn at 7 cents per bushel at Chicago and cleared that city for Buffalo on 12 May 1873, passing Detroit downbound on 22 May (*Buffalo Daily Courier* 1873a; 1873b; 1873c). The schooner arrived back at Chicago on 5 June 1873, where she loaded 20,000 bushels of corn and cleared on 9 June (*Buffalo Daily Courier* 1873d; 1873e). She passed Detroit on 12 June and arrived at Buffalo on 15 June 1873 (*Buffalo Daily Courier* 1873f; *Buffalo Evening Courier & Republic* 1873a). On 16 June 1873, the *Walter B. Allen* was chartered to carry coal to Duluth at \$1.50 per ton, and she cleared Buffalo with 510 tons of coal on 19 June, passing Detroit on 21 June 1873 (*Buffalo Daily Courier* 1873g; *Buffalo Evening Courier & Republic* 1873b; 1873c). At the Soo Locks, she was required to pay a toll of 4 cents per ton of cargo for her passage (Lorimer 1909).

The *Walter B. Allen* next passed Detroit on her way to Buffalo on 11 July, making that port on 14 July and again clearing on 15 July 1873 with 550 tons of coal chartered at \$1.25 per

ton for Chicago (*Buffalo Daily Courier* 1873h; 1873i; 1873j). She arrived at Chicago on 27 July, where she loaded 20,000 bushels of corn and cleared for Buffalo on 2 August (*Buffalo Daily Courier* 1873k; 1873l). On 22 August 1873, the *Walter B. Allen* arrived back at Chicago to again load grain for Buffalo. She cleared and passed downbound at Detroit on 31 August 1873, arriving at Buffalo on 02 September (*Buffalo Daily Courier* 1873m; 1873n; *Oswego Daily Palladium* 1873a). At Buffalo, she loaded 500 tons of coal chartered for Chicago at \$1.12 ½ per ton and cleared that port on 03 September 1873, passing Detroit upbound on 06 September 1873 (*Buffalo Daily Courier* 1873o; 1873p). Her next record does not appear until 17 October 1873, when she arrived at Buffalo from Chicago under the command of Captain Lamy loaded with 19,000 bushels of wheat (*Buffalo Daily Courier* 1873q). No other records of her operation have been found for the 1873 season.

At the start of the 1874 shipping season the *Walter B. Allen* was downgraded to an A2 insurance rating and valued at \$15,000 by the Board of Lake Underwriters (Board of Lake Underwriters 1874). Her first recorded passage was at Detroit downbound for an unknown destination on 5 May, with a return passage upbound on 12 May en route to Chicago (*Buffalo Daily Courier* 1874a; *Buffalo Evening Courier & Republic* 1874a). At Chicago, loaded 20,000 bushels of corn for Buffalo at 4 cents per bushel (*Buffalo Daily Courier* 1874b). On her way, she passed Detroit on 26 May and arrived at Buffalo on 28 May under the command of Captain William Long (*Buffalo Daily Courier* 1874c; 1874d). She returned through Detroit upbound on 1 June and arrived at Chicago on 9 June 1874 (*Buffalo Daily Courier* 1874e; 1874f). At Chicago she loaded 20,625 bushels of corn and cleared for Buffalo on 12 June 1874. With favorable winds, she passed Detroit the following day on 13 June (*Buffalo Daily Courier* 1874g; 1874h).

On 22 June 1874, the *Walter B. Allen* loaded 530 tons on coal at only 40 cents per ton at Buffalo, and cleared for Chicago 22 June 1874 (*Buffalo Daily Courier* 1874i; *Buffalo Evening Courier & Republic* 1874b). She passed Detroit on 27 June and arrived at Chicago on 3 July 1874 (*Buffalo Daily Courier* 1874j; 1874k). At Chicago, she loaded 20,000 bushels of corn and cleared 8 July for Buffalo, passing Detroit on 11 July and arriving at Buffalo on 19 July 1874 (*Buffalo Daily Courier* 1874k; 1874l; 1874m; 1874n). At Buffalo, she loaded coal for Racine at \$1.25 per ton and cleared Buffalo on 23 July (*Buffalo Daily Courier* 1874o). It is uncertain when she arrived at Racine to unload her coal, but her next reported arrival is at Chicago on 28 July 1874 (*Buffalo Daily Courier* 1874p). On 31 August she passed Detroit en route to Buffalo, where she arrived on 2 September and cleared the following day with 550 tons of coal for Chicago (*Buffalo Daily Courier* 1874q; 1874r). Passing Detroit on 5 September, she arrived at Chicago on 28 September (*Buffalo Daily Courier* 1874s; 1874t). Her sailing scheduled for the remainder of the 1874 season is incomplete, and there is only one notice of a late season charter to carry wheat from Chicago to Buffalo at 8 cents per bushel, clearing Chicago on 3 November 1874 (*Buffalo Evening Courier & Republic* 1874c).

The *Walter B. Allen*'s winter lay-up was rather short, as she was already loading grain at Chicago on 30 March 1875 (*Buffalo Evening Courier & Republic* 1875a). Her next record doesn't appear until 12 June 1875, when she cleared Chicago with 19,800 bushels of corn for Buffalo (*Buffalo Daily Courier* 1875a). It is uncertain when she made Buffalo, but she passed Detroit upbound on her way back to Chicago on 29 June 1875 (*Buffalo Daily Courier* 1875b). On 14 July 1875, the *Walter B. Allen* cleared Chicago with 20,000 bushels of corn for Buffalo (*Buffalo Daily Courier* 1875c). With favorable winds, she passed downbound at Detroit on 15 July and arrived

at Buffalo under the command of Captain William Long on 17 July 1875. She unloaded her cargo and cleared the next day (*Buffalo Evening Courier & Republic* 1875b; 1875c).

Freight rates for coal were very low during the summer of 1875. Shippers were only willing to pay vessels 50 cents per ton of coal, while the vessel Masters were asking 75 cents per ton. The *Walter B. Allen*'s Master compromised a little, and her next cargo of coal was loaded at Ashtabula, Ohio, on 19 July 1875 for 70 cents per ton, bound for Chicago (*Buffalo Daily Courier* 1875d; *Buffalo Evening Courier & Republic* 1875d; 1875e).

The *Walter B. Allen* next loaded 18,427 bushels of wheat at Chicago and cleared that port on 24 August bound for Buffalo, where she arrived on 1 September under the command of Captain Long (*Buffalo Daily Courier* 1875e). At Buffalo, she loaded 570 tons of coal for Chicago, clearing on 3 September and passing Detroit on 9 September 1875 (*Buffalo Evening Courier & Republic* 1875f; 1875g; 1875h). On 8 October, the *Walter B. Allen* was loading wheat at Chicago, and cleared for Kingston with 19,000 bushels on 10 October. She passed Detroit downbound on 14 October 1875 (*Buffalo Daily Courier* 1875f; 1875g; *Buffalo Evening Courier & Republic* 1875i;). One week later, however, she arrived Buffalo on 17 October 1875 under the command of Captain Lamy (*Buffalo Daily Courier* 1875h). On 4 November 1875, she cleared Chicago with 18,000 bushels of wheat for Buffalo (*Buffalo Daily Courier* 1875i). At Buffalo, she loaded coal at 75 cents per ton for her final trip to Chicago before the 1875-1876 winter lay-up (*Buffalo Evening Courier & Republic* 1875j).

No record of the *Walter B. Allen*'s 1876 operations have been uncovered, and she does not reappear in historical documents until 24 May 1877 when she passed light through the Welland Canal from Ogdensburg, New York, to Cleveland, Ohio (*Oswego Daily Times* 1877a). In July 1877, the *Walter B. Allen* was at the Bates Shipyard in Manitowoc, Wisconsin, to receive a general overhaul and have her spars cut down (*Oswego Daily Times* 1877b). While at the shipyard, Captain Long entertained the idea of entering the *Walter B. Allen* in transatlantic trade with Europe (*Chicago Tribune* 1887; *Oswego Daily Times* 1877c). At the time, English merchants were soliciting Great Lakes vessel owners for trade to replace what was lost in the escalating Russo-Turkish War. With freight rates low and many vessels Great Lakes vessels laid up, it was an attractive offer. Two canallers, owned by a Mr. Irish and Mr. Bullen, were chartered to carry supplies from Oconto and Suamico, Wisconsin, to England at a rate of \$20 per 1,000 pounds of cargo. Although Captain Long had entertained the idea, he ultimately rejected it, as on 4 August 1877 the *Walter B. Allen* was again carrying a load of corn from Chicago to Buffalo, passing Detroit downbound on 15 August 1877 (*Buffalo Daily Courier* 1877a; *Oswego Daily Times* 1877d).

On 11 September 1877, the *Walter B. Allen* was chartered to carry 19,104 bushels of wheat from Chicago to Oswego, New York, at 7 ¼ cents per bushel, consigned to M. Merick of Oswego (*Oswego Daily Times* 1877e). She cleared Chicago on 12 September, passed Detroit on 18 September, and arrived in Port Colborne, Ontario, for a downbound passage through the Welland Canal on 19 September 1877 (*Buffalo Daily Courier* 1877b; *Oswego Daily Times* 1877f; 1877g). She arrived at Oswego on 26 September 1877 under the command of Captain Higgins, although Captain Higgins is not recorded on the enrollment documents (*Oswego Daily Times* 1877h).

The *Walter B. Allen* loaded coal at Oswego and cleared that port on 29 September for Chicago (*Oswego Daily Times* 1877i). At Chicago, the vessel was chartered for corn bound for

Buffalo. She cleared Chicago on 13 October and passed downbound at Detroit on 17 October (*Buffalo Daily Courier* 1877c; 1877d). On 27 October 1877, the *Walter B. Allen* was hired to carry railroad ties from Tawas, Michigan, to Chicago at \$1.62 ½. This was her final charter of the season before her winter lay-up (*Buffalo Daily Courier* 1877e).

The *Walter B. Allen*'s shipping history for the 1878 season is incomplete. On 29 April 1878 the *Walter B. Allen* was chartered to carry corn at 3 cents per bushel from Chicago to Buffalo (*Oswego Daily Palladium* 1878a). Then, on 17 June 1878, the *Walter B. Allen* arrived at Buffalo from Chicago with 19,836 bushels of corn consigned to M. W. Blapro, and with 17,000 bushels of wheat, 4,400 barrels of flour, and 310 hides for L.S.T. Company (*Buffalo Daily Courier* 1878). On 10 July, the schooner passed downbound at Port Huron, Michigan, and on 19 July 1878 she passed upbound at Detroit (*Oswego Daily Palladium* 1878b; *Oswego Daily Times* 1878). Outside of these listings, no other arrivals, passages, or clearings were found in contemporary news reports.

At the opening of the 1879 shipping season, the *Oswego Morning Herald* (1879a) announced that Captain George McMorran was taking command of the *Walter B. Allen*, replacing Captain Higgins. The *Walter B. Allen* passed Port Huron, Michigan, downbound on 11 June, but there was no indication of her destination or cargo (*Buffalo Morning Express* 1879a). On 5 July 1879, the *Walter B. Allen* was reported to be leaking badly and seeking refuge at Beaver Harbor on Lake Michigan. She was heavily loaded with railroad iron, and the tug *Leviathan* was sent to assist her. The tug took the schooner in tow to Detroit, and passed Port Huron on 8 July 1879 (*Buffalo Daily Courier* 1879a; *Oswego Morning Herald* 1879b).

The *Walter B. Allen* has just been repaired and placed back into service when she suffered a second accident in 1879. During a gale on the evening of 8 August 1879, she went ashore on Point au Pelee Island on Lake Erie. She was carrying grain loaded at Toledo bound for Buffalo when the accident occurred. The following morning a propeller out of Detroit spotted the *Walter B. Allen* on the beach, but the seas were too rough to assist her (*Buffalo Evening Courier & Republic* 1879b). A tug was finally sent to assist her on the morning of 12 August, but the schooner was afloat before the tug reached her. Although she was leaking badly, she continued on to Buffalo, and reached Sloan's dock for repairs (*Buffalo Morning Express* 1879b; *Oswego Daily Palladium* 1879; *Oswego Daily Times* 1879; *Oswego Morning Herald* 1879c). At the time of the grounding, the *Walter B. Allen* had an A2 insurance rating and a value of \$9,000. She was underinsured at \$5,000 by St. Paul Insurance of St Paul, Minnesota, and Northwestern Insurance of Milwaukee (*Buffalo Evening Courier & Republic* 1879a).

Repairs were again made, and on 14 August 1879 the *Walter B. Allen* cleared Buffalo with 350 tons of coal for Detroit (*Buffalo Evening Courier & Republic* 1879b). On 1 September, she returned to Buffalo from Detroit with 20,000 bushels of wheat consigned to Preston & Wright. At her helm was a new Master, Captain William Jones (*Buffalo Daily Courier* 1879b). Her next arrival at Buffalo was on 9 September 1879, when she arrived with 19,039 bushels of wheat consigned to R. Hall & Company. She loaded 400 tons of coal for Detroit and cleared Buffalo the same day with Captain G.W. Holt as Master (*Buffalo Daily Courier* 1879c).

On 25 September 1879, the *Walter B. Allen* was chartered to carry wheat from Detroit Buffalo at 7 ½ cents per bushel, but wheat rates declined for subsequent charters (*Buffalo Daily Courier* 1879d). On 31 October 1879, the rate for wheat was negotiated at 5 cents per bushel (*Buffalo Evening Courier & Republic* 1879c), and she arrived at Buffalo on 1 November with

18,000 bushels of wheat (*Buffalo Daily Courier* 1879e). From Buffalo, the *Walter B. Allen* returned to the upper Lakes, but not other information of her voyage is reported other than her downbound passage at Port Huron on 18 November 1879 for her final trip of the 1879 shipping season (*Buffalo Daily Courier* 1879f; *Buffalo Evening Courier & Republic* 1879d).

On the night of 10 April 1880, with large amounts of ice still floating on northern Lake Michigan, a storm swept over the lake while Captain George McMorran was sailing the *Walter B. Allen* on an early season trip. The storm blew the *Walter B. Allen* ashore at South Manitou Island, and the vessel lost her large anchor and main sail in the struggle to stay off the beach. At the time of her grounding, she was carrying 19,000 bushels of corn that had been loaded at Chicago and insured for \$9,000. The insurance was split \$5,000 in the Lloyds and \$4,000 in the Mercantile. The hull was insured for \$8,000, with \$3,000 in the Lloyds, \$2,500 in the Manhattan, and \$2,500 in the Phoenix (*Buffalo Daily Courier* 1880; *Buffalo Evening Courier & Republic* 1880; *Chicago Tribune* 1880a; *Milwaukee Sentinel* 1880a).

On 13 April 1880, the tug *Caroline Williams* of Manistee, Michigan, arrived to assist the *Walter B. Allen* and installed a large steam pump and hawser on the *Walter B. Allen*'s deck. The *Caroline Williams* was to tow the *Walter B. Allen* to Manitowoc for repairs, but after it was learned that Manitowoc had no facility to handle waterlogged grain it was determined that the *Walter B. Allen* would instead be towed to Milwaukee (*Milwaukee Sentinel* 1880a). Under tow of the *Caroline Williams*, the pair had just passed Manitowoc on the morning of 16 April 1880 when the wind increased and the seas began building. The waves were soon breaking over the *Walter B. Allen* and filled her to the rail, extinguishing the fire in the steam pump's boiler. Waves continued to board the vessel, making it impossible for the crew to relight the fire. Soon the waves were so high they buried the schooner from view of the tug and it was decided to remove the crew left aboard the *Walter B. Allen*. The *Caroline Williams* came alongside the *Walter B. Allen* five times before the last man was removed. By 10:00 AM, less than twenty minutes after the last man was rescued, the *Walter B. Allen* disappeared. By this time, it was snowing so heavily that it was not known exactly where the *Walter B. Allen* went down (*Chicago Tribune* 1880b; *Door County Advocate* 1880c; *Manitowoc Tribune* 1880; *Milwaukee Sentinel* 1880b).

Prior to her sinking, the *Walter B. Allen*'s insurance rating had been downgraded to B1 and her hull valued at \$13,000 (*Milwaukee Sentinel* 1880b). Although her insurance only covered a portion of the hull's value, the hull was not the only financial loss. The underwriters were soon notified that they were also liable for the value of the lost steam pump and rescue equipment that had gone down with the *Walter B. Allen* when she foundered. When the tug *Caroline Williams* was sent to the *Walter B. Allen*'s assistance, John M. Long, the *Walter B. Allen*'s majority owner, entered into an agreement whereby the risk to equipment was assumed by the vessel, her owners, and her underwriters. The lost equipment was valued at \$4,000 (*Door County Advocate* 1880c; *Milwaukee Sentinel* 1880c).

John M. Long also owned another vessel, the schooner *Groton*, which left Chicago loaded with corn for Buffalo just hours prior to the *Walter B. Allen*'s departure. The *Groton* was also damaged in the storm, losing her bowsprit, damaging her foremast head, and splitting her foresail and jib before she put in to Mackinaw City to wait out the storm. When asked of his misfortune, Mr. Long replied, "The returns are not yet all in. I have yet to hear from three other vessels, downward-bound with grain cargoes. I have been in the vessel business twenty-two years, owning from five to six sail craft most of the time. And in these twenty-two years the

damage altogether has not amounted to as much as I have been called upon to stand within the past nine months. It seems as if such misfortunes run together when they do come” (*Chicago Tribune* 1880a). The *Walter B. Allen*’s enrollment was surrendered on 20 April 1880, indicating the vessel was lost 10 miles northeast of Sheboygan, Wisconsin, in Lake Michigan (Bureau of Navigation 1872).

Site Description

The *Walter B. Allen* site lies in 170 feet of water 7 miles northeast of Sheboygan, Wisconsin (Figure 25). The vessel is extremely intact, and both of her masts were standing until the mainmast toppled during the winter of 2008-2009, and the foremast toppled during the winter of 2010-2011 (Figure 26). The site was surveyed by the Wisconsin Historical Society during July and August 2010, during which a temporary baseline was installed that originated at the peak of the bow and extended down the vessel’s centerline to terminated at her stern rail. Nearly all of the vessel’s hull components are intact with the exception of the stern cabin, which was carried away during the sinking and now lies on the lakebed off the starboard side. The *Walter B. Allen*’s hull is 142.0 feet in length and 25.0 feet in beam. The hull lists 11 degrees to starboard and has a 3 degree pitch towards the stern. The hull lies on the lakebed on a heading of 235 degrees.

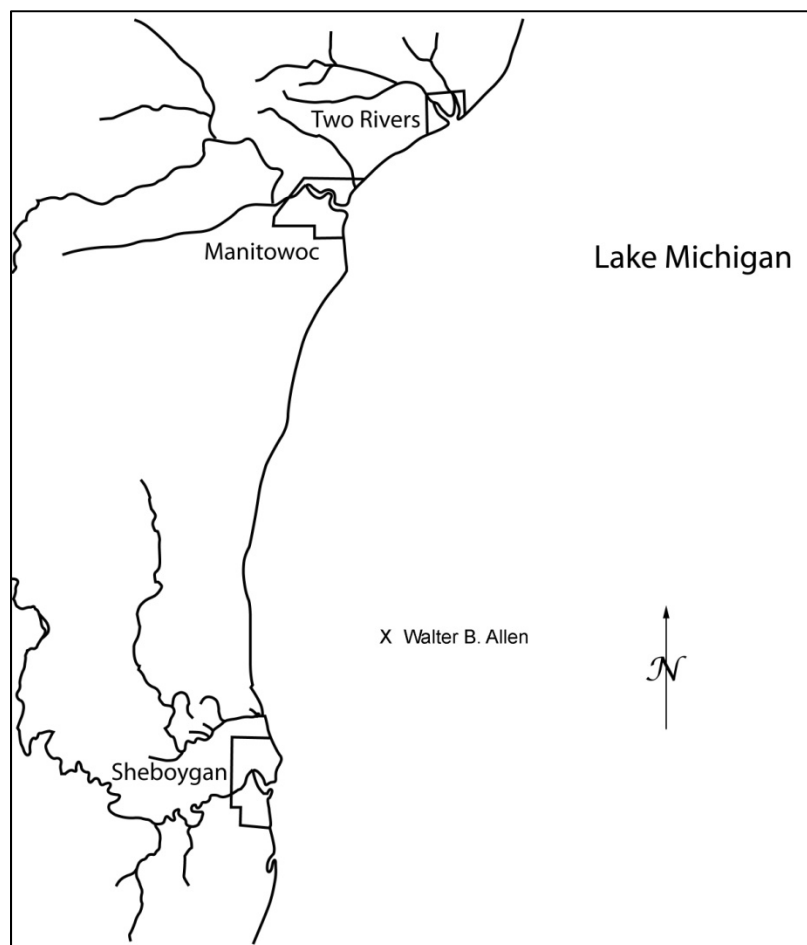
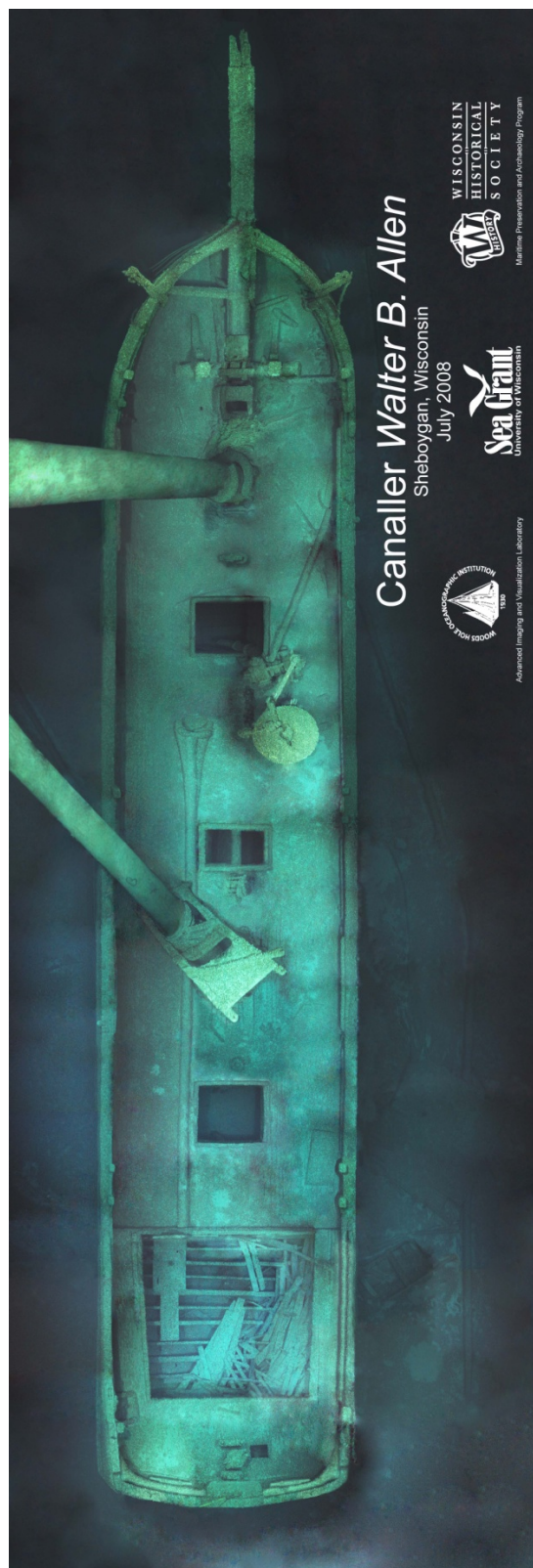


Figure 25. Location of the *Walter B. Allen* site.



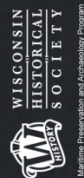
Canaller Walter B. Allen

Sheboygan, Wisconsin

July 2008



Advanced Imaging and Visualization Laboratory



Maritime Preservation and Archaeology Program



University of Wisconsin

Figure 26. Photo mosaic of the *Walter B. Allen*.

The bluff bow typical of canaller's is readily apparent, and the stem is fastened at a 90 degree angle to the keel (Figure 27). The stem is 0.8 feet sided, 1.1 feet molded and is rabbeted on either side to accept the outer hull planking. The stem extends 17.3 feet vertically from the lake bed to the underside of the bowsprit. The vessel's bowsprit is intact, but the jib boom now lies on the lakebed beneath the bow. The bowsprit is fastened at a 14 degrees angle to the hull, and the hounding extends 16.4 feet forward of the rail. The bowsprit's housing is 8.2 feet in length and is stepped into the front of the samson post. Two iron fairleads are fastened atop the rail on either side of the stem. The first set of fairleads is located 7.5 feet aft of the stem, and the second set is located 13.9 feet aft of the stem.



Figure 27. The *Walter B. Allen*'s bow.

According to historical records, the *Walter B. Allen* lost one of her large anchors during her grounding, leaving her with only one anchor at the time of sinking. No anchors are extant, indicating the other anchor was removed by divers sometime after her discovery. The port and starboard hawse pipes are extant both and measure 1.1 feet in diameter, are constructed of iron, and are centered 1.9 feet aft of the stem post. Both catheads are extant, are constructed from a timber 0.6 feet high by 0.7 feet wide, and extend 2.6 feet outboard of the rail.

The samson post's forward edge is located at 11.2 feet on the baseline and is 1.2 feet molded by 1.3 feet sided and rises 5.8 feet above the deck (Figure 28). A copper cap is fastened to the top of the samson post. The crosshead is extant on the forward side of the samson post, and the two purchase rods remain connected between the crosshead and the purchase arms. The windlass strongback is 3.9 feet in length, 0.45 feet in width, and 0.3 feet tall. The strongback does not extend all the way to the carrick bits, but is simply attached to the samson post. The barrel for the patent windlass is located at 13.2 feet on the baseline and is 13 feet long and 2.7 feet in diameter.

The iron purchase rims are 0.4 feet wide by 0.3 feet thick, and the pawl teeth are 1.4 feet wide. The windlass pawl is 1.8 feet long, 0.7 feet wide, and 0.2 feet thick. The anchor chain takes two turns around the windlass on the port side and is secured with a norman bolt. Individual chain links are 0.5 feet long, 0.4 feet wide, and have a diameter of 0.1 feet. Deck pipes 0.55 feet in diameter lead to the chain locker, and are located 1.8 feet to port or starboard of the forecandle scuttle. The gypsy heads on either side of the windlass barrel is 1.7 feet in length and 1.2 feet in diameter. The carrick bitts are 1.1 feet molded by 1.0 foot sided and rise 3.8 feet above the deck.



Figure 28. The fore deck, looking forward toward the port cathead.

The forecandle scuttle is located immediately aft of the windlass and is 2.9 feet square and rises 2.9 feet above the deck creating a companionway whose opening faces aft. The scuttle sits atop a combing that rises 1.1 feet above the deck. Just aft of the scuttle, a large pile of anchor chain lies atop a covered hatch, leaving only the forward port corner of the hatch visible.

The main rail is intact around the entire perimeter of the deck and is 1.2 feet wide by 0.4 feet thick. The rail rises 4.4 feet above the covering board at the stem, 3.6 feet amidships, and 4.7 feet at either quarter. Bulwark stanchions are 0.5 feet sided by 0.6 feet molded, with a space of 3.7 feet between stanchions. Outer bulwark planks are missing in a number of locations, but most are extant. A single plank is fastened to the inside of the bulwarks directly beneath the rail that is 1.5 feet high and 0.1 foot thick. A lower timber is fastened to the inside of the stanchions 1.1 feet above the covering board that measures 0.45 feet tall by 0.3 feet thick. The covering board is 0.4 feet thick by 1.2 feet wide and is chamfered in the inboard edge adjacent to the deck planks.

Each side of the hull has four sets of mooring bitts. A double set is located forward of the fore chainplates, a double set is located amidship forward of the centerboard trunk (only one bit is

present on the port side), a double set located just forward of the stern cabin, and a single set is located at either quarter. All bitts are fastened to the inside of the bulwark stanchions and are constructed from timbers that are 0.8 feet sided, 0.65 feet molded, and rise 5.6 feet above the deck. A single bitt is also located on the vessel's centerline forward of the mainmast at 79.9 feet on the baseline. This bit is 0.9 feet square and rises 4.4 feet above the deck. An iron norman pin extends 0.9 feet from either side of the bitt.

The outer hull planks are intact throughout the vessel. At amidships, the outer hull planks from the sheer strake downward are 0.4 feet, 0.6 feet, 0.5 feet, 0.54 feet, 0.5 feet, 0.35 feet, 0.6 feet, 0.73 feet, 0.7 feet, 0.65 feet, 0.65 feet, and 0.65 feet in width. A rubbing strake protrudes from the hull 3.5 feet below the covering board. The rubbing strake is 0.73 feet wide, projects 0.1 feet from the surrounding hull planks, and runs from just aft of the stem to the transom. A second rubbing strake is present on the hull approximately the same distance below the above strake, but is only located at the bow and stern of the vessel.

The deck is entirely intact except for the area immediately around the mainmast where the deck heaved as the mast toppled (Figure 29). The deck planks vary in width between 0.4 feet and .55 feet. The deck planks remain very tightly caulked and distinguishing individual planks from one another is difficult. Three bilge pumps are fastened to deck in addition to the large portable salvage pump that was aboard when the vessel sank. The forward-most pump is located at 32.2 feet on the baseline, and 2.7 feet aft of the foremast. This double-acting bilge pump is 3.4 feet high with an intact cross head that is 1.8 feet in length and 0.3 feet square. The pump shafts remain attached to the crosshead, but no hand levers are present. The cast iron pump body is 2.1 feet tall, 1.7 feet wide, and 0.7 feet thick. A single-acting bilge pump is located 22.5 feet aft of the foremast. This pump is 3.0 feet in height to the top of the pump lever, which is intact and 3.3 feet in length. The aft-most pump is located 4.0 feet aft of the mainmast and is also a single-acting pump. Only the pump shaft is extant, which protrudes above the deck. The salvage pump and donkey boiler is located aft of the first hatch and to starboard of the vessel's centerline (Figure 30). A large diameter pump shaft extends through the hatch into the hold, and a discharge pipe runs forward from the pump to discharge over the starboard side. The pump is affixed to the top of a four-wheeled cart.

At the time of the survey the foremast remained standing, and rose 59 feet above the deck. The mast was stepped vertically and had no rake. The foremast's leading edge was located at 23.2 feet on the baseline is 2.0 feet in diameter immediately above the mast table. Two small winches are fastened to the aft side of the foremast. The lower winch is fastened 1.0 foot above the deck and is 4.2 feet wide with a gypsy head on each end. The upper winch is located 1.7 feet above deck, is 4.2 feet wide, and has two smaller gypsy heads on either end. The fife rail is extant above the winches, and a U-shape around the mast with the opening facing aft. The fife rail is 0.6 feet wide and 0.3 feet thick, and the top of the rail is 2.7 feet above the deck. The rail is supported by five chocks that are each 0.5 feet square. The mast table is also extant; the top of the table is 3.7 feet above the deck and is 0.4 feet wide by 0.35 feet thick. The table is supported by five chocks that are 0.3 feet square and 1.1 feet long and are equally spaced around the mast. The top is extant at the masthead and is located 50 feet above the deck, but no planks are extant to form working platform. The cross trees are .7 feet square and are 7.5 feet long and are fastened atop the trestle trees with iron bolts. The trestle trees are .7 feet square and 4.8 feet long.



Figure 29. The weather deck, looking forward from near the starboard quarter. The centerboard winch is visible forward of the toppled mast, as well as the donkey boiler forward of the second cargo hatch.



Figure 30. Salvage pump and donkey boiler.

The foremast chainplates begin at 22.5 feet on the baseline and are covered by a chainwale that is 0.5 feet tall and 0.2 feet thick. The chainwale continues forward to nearly the stem to create an additional rubbing strake. Each chainplate is 0.3 feet wide, 0.1 foot thick, and 5.7 feet in length. There are five fore chainplates, spaced from fore to aft at 2.6 feet, 2.5 feet, 1.8 feet, and 0.6 feet, respectively. Belaying pin racks, 11.7 feet long, 0.4 feet wide, and 0.2 feet thick, are affixed to the inside of the rail on either side of the foremast and centered on the chain plates. Each rack has ten holes that are each 0.15 feet in diameter. Only one belaying pin is extant and measures 1.4 feet in length.

The mainmast is located at 82.3 feet on the baseline. The mainmast was standing until the winter of 2008-2009, and now lies across the port side rail at an angle of 23 degrees with the masthead at a water depth of 125 feet. The mainmast rose 61 feet above the deck and has a diameter of 2.15 feet immediately above the mast table. Like the foremast, to small winches are fastened to the aft side of the mast. The lower winch is fastened 1.0 foot above the deck and is 4.2 feet wide with a gypsy head located on either end. The upper winch is fastened 1.7 feet above the deck and is also 4.2 feet wide with a gypsy head on either end.

Prior to the mast toppling, the main top and trestle trees slid down the mast and came to rest on the deck facing the stern. The trestle trees are .7 feet square and 4.5 feet in length. The cross trees are 0.7 feet wide, 0.4 feet thick, and 5.5 feet in length. Several planks of the working top are extant, including four planks on the port side and six planks on the starboard. Eyes for the futtock shrouds are extant on each bottom corner of the top that measure 0.3 x 0.3 feet. Five sail hoops are extant above the mast table beneath the top. A boom lies on deck to port of the mainmast. The boom is 47 feet in length with jaws that are 2.9 feet wide and 0.3 feet thick. The main chainplates begin at 83.2 feet on the baseline, and five individual chainplates are located on either side of the hull. Fore to aft, the chainplates are spaced at 0.65 feet, 2.45 feet, 2.3 feet, and 2.6 feet. Belaying pin racks are fastened to the inside of the rail on either side that is 11.7 feet long, 0.4 feet wide, 0.2 feet thick, and are centered on the chain plates. Each rack has holes for ten belaying pins.

Three cargo hatches allow access to the hold; the first and third hatches are the largest in dimension, with the center hatch being smaller and partially blocked by the centerboard trunk (Figure 26). Both the first and third cargo hatches are 7.0 feet wide by 6.6 feet long, while the second hatch is 5.3 feet wide by 6.5 feet long. All three hatches are identical in construction with the head ledges butt-scarphed to the coaming and an iron chaffing band, 0.2 feet wide, fastened to the top of the coamings. The coamings rise 0.8 feet above deck, while the head ledges are curved in shape and rise 1.0 feet above deck at the center. The carling below the hatch is 0.7 feet high, giving an interior height of 1.5 feet along the coamings, and 1.7 feet at the highest point of the head ledges. Part of one hatch cover lies on deck to starboard of the third hatch that measures 6.8 feet long by 2.6 feet wide.

Deck beams vary in dimension depending on their location on the hull. Beams closest to the hatches are 0.8 feet molded by 0.6 feet sided, while those further from the hatches are 0.3 feet molded by 0.67 sided. The space between deck beams is consistent throughout the vessel at 2.0 feet. Deck beams are supported by hanging knees that are 0.65 feet wide and have an arm length of 2.9 feet and a body length of 2.7 feet. Additionally, dagger knees are fastened throughout the hull that are 0.55 feet wide with arm length of 2.65 feet and body a body length of 3.45 feet.

Deck beams are supported by stanchions that are 0.35 feet molded by 0.65 feet sided and have a space 1.8 to 2.35 feet between stanchions. Ends of the deck beams are supported by a deck shelf

that is 2.0 feet high. Ceiling planks are 1.0 foot in height. A hogging arch was not utilized in the vessel's construction, and due to the hull's impressive integrity it was not possible to measure dimensions or spacing of the vessel's frames.

A wooden bulkhead separates the forecabin from the cargo hold, but a break in the bulkhead allows access to the forecabin and chain locker. Remains of crew bunks are visible on either side of the forecabin, as well as a small stove on the starboard side of the forecabin and several of the crew's effects, including a hat and a shoe. The breasthook is visible, and is 0.8 feet thick with each arm 3.4 feet long. The anchor chain drop from the weather deck through a deck pipe and into the chain locker, which consists of a large wooden box. Two blocks are also present near the chain locker.

The *Walter B Allen* carried a single centerboard on the vessel's centerline. The centerboard trunk is 27.4 feet long, 1.5 feet wide, and begins 20.3 feet aft of the foremast and terminates 5.7 feet aft of the second cargo hatch. Silt within the hold rises to 3.1 feet beneath the deck beams, and visible trunk planks are 0.55 feet, 0.55 feet, 1.0 feet and 1.0 feet wide and all are 0.45 feet thick. A reinforcing beam, 1.1 feet by 0.65 feet, is fastened on either side of the centerboard trunk that extends horizontally from the trunk to the hull side. The centerboard itself is not visible within the trunk. The centerboard winch is extant on deck just aft of the second hatch, and two turns of chain are wrapped around the winch drum.

The stern cabin was carried away in the sinking, but its former location is readily discernible (Figure 31). The cabin was 16 feet in length with a forward bulkhead that was 16.5 feet wide and an aft bulkhead 15.2 feet wide. A small section of the forward bulkhead is extant near the port side, consisting of fragments of vertical planks. The cabin's sole was supported by nine athwartships beams between 0.6 and 0.3 feet wide and spaced at 1.3 feet. The cabin roof was dislodged during the sinking and now lies on the lakebed off the starboard side.



Figure 31. The former location of the stern cabin. The remains of the yawl boat can be seen on the lakebed beneath the hull.

The center of the rudder post is located 138.2 feet on the baseline. The rudder post is 1.1 feet in diameter and rises 2.5 feet above the deck. The vessel had a patent steering mechanism that mounted to the aft deck above the rudder post and steered via a worm gear. The wheel was removed by recreational divers in the 1970's and is now on display at the American Club in Kohler, Wisconsin. The forward edge of the wheel stand is located at 136.5 feet on the baseline, and the aft edge is located at 139.3 feet. The rudder is intact and turned to starboard. The rudder blade is 10.6 feet tall, 0.8 feet thick, and extends 3.8 feet aft of the rudder post at its widest part. The blade is constructed from five vertical timbers attached to the rudder post. No preventers are extant. The sternpost is 1.0 foot square and is fastened at a 90 degree angle to the keel.

The transom is angled at 25 degrees and is 18.3 feet wide at the rail, 5.8 feet tall in the center, and curves with a radius of 2.6 feet. The outside of the transom was decorated with three iron stars that were 0.7 feet wide by 0.7 feet tall. The top of the stars are located 0.4 feet below the transom rail and spaced at 4.6 feet. The star on the starboard side is not extant, but its former location is readily apparent from the iron oxide from the star that has impregnated the wood. The yawl boat hung from folding davits that could be pulled inboard to provide additional clearance while transiting the locks. The port side davit is extant, and folded forward in its stowed position. The davit is 7.4 feet long and tapers from 0.9 feet to 0.5 feet in thickness.

The ships yawl boat is extant, and lies on the lakebed near the starboard quarter, aft of the cabin roof. The stern half of the boat is extremely intact for 16.3 feet forward from the transom; forward of this point the boat is broken and scattered. The boat is carvel planked and had a beam of 6.1 feet and a depth of 1.9 feet at the transom. The outer hull planking is 0.5 feet wide by 0.07 feet thick. A rubbing strake is located 0.15 feet below the sheer strake. The boat was built with single frames 0.1 foot wide by 0.13 foot thick, with a space of 0.13 feet between frames. A plank seat is extant 5.2 feet forward of the transom that is 6.1 feet long, 0.63 feet wide, and 0.12 feet thick.

A second boom lies off the stern that is 65.5 feet in length, 0.4 feet in diameter at the jaws, and 0.05 feet at its tip. The tip of the boom is reinforced by a metal band 0.1 feet wide. The booms jaws are 3.0 feet wide with an opening of 2.4 feet. Two unidentified spars, 48.3 feet in length and 58.5 feet in length, lie off the vessel's starboard side amidship.

CHAPTER FIVE JACKSONPORT WHARF COMPLEX

Jacksonport's first European settler was Scotchman Neil Blair. Blair settled at Jacksonport in 1850 to work as a subsistence fisherman and farmer, and later became Jacksonport's first commercial fisherman. Eight years after Blair's arrival, in 1858, Perry G. Hibbard landed at Jacksonport after leaving his family's New York fishing business. Hibbard continued fishing at Jacksonport, but also diversified into working as a farmer, sawmill operator, cooper, blacksmith, and merchant (Butler 1960; Holland 1917; Reynolds 1960).

Jacksonport remained a small, quiet settlement until lumber interests began moving into the area in the late 1860s, which began in earnest through the collaboration of three men: Andrew Jackson, Colonel Charles L. Harris, and John Reynolds. Charles Harris, originally from New Jersey, moved to Madison, Wisconsin, during the 1850s to practice law. During the Civil War, Harris achieved the rank of Colonel while leading the 11th Wisconsin Regiment for four years before he returned to Green Bay, Wisconsin, as a businessman (Andreas 1881; Martin 1881). John Reynolds had emigrated from Granard, Ireland, in 1858 to become a real estate broker in Madison (Krueger 2002). Andrew Jackson managed the Federal Land Office in Menasha. In 1867, the three men met in Madison to form the Jackson-Harris-Reynolds Land and Timber Company. Harris and Reynolds invested \$14,000 and purchased 2,000 acres of forested land surrounding Jacksonport. John Reynolds' brother, Thomas, was hired to manage the business operations and Frank Rowell, a lumberjack from Maine, was hired to run the logging crew. Thirty-seven men were hired at Green Bay and sent northward with equipment for the logging operation. Because there were no roads north of Sturgeon Bay, a road had to be cut to move the supply sleigh northward (Butler 1960; Holland 1917; Krueger 2002; Reynolds 1960).

Charles Harris arrived at Jacksonport to set up the operation's headquarters, obtain land options, and begin work as a timber merchant (Reynolds 1960). Harris purchased land from Perry Hibbard along the lakeshore (where Lakeside Town Park is located today) with the intent of constructing a pier to ship his wood products. Hibbard, realizing the financial potential of a pier at Jacksonport, immediately began construction of his own pier that was completed in 1868 - a full season before the Jackson-Harris-Reynolds Pier was finished (Andreas 1881).

By late 1868, steps were underway to incorporate Jacksonport as a township. Charles Harris, who was a member of the state legislature, circumvented the county board supervisory committee and entered a bill that allowed Jacksonport to become the fourteenth and last township incorporated in Door County on 9 March 1869 by taking contiguous sections from the towns of Egg Harbor, Baileys Harbor, and Sevastopol (Butler 1960; Reynolds 1960; Van Harpen 1991). The town was named Jacksonport in honor of Andrew Jackson - the person who originally promoted the idea of a logging business near Hibbard Creek (Martin 1881). At the first town meeting in April 1869, Charles Harris was elected Town Chairman with Perry Hibbard and Thomas Reynolds elected to the Board of Supervisors (Reynolds 1960).

The Jackson-Harris-Reynolds Pier was finally completed in 1869, and Jacksonport soon saw prosperity and growth. The Jackson-Harris-Reynolds Company constructed a sawmill and hired Norwegian and Swedish immigrants out of Chicago, bringing them north to Jacksonport aboard sailing vessels (Bayley 1961). These men cut timber, worked the mill, and loaded vessels at the newly built pier - vessels largely bound for the Milwaukee and Chicago markets. Lumber

products shipped from the Jackson-Harris-Reynolds Pier included telegraph poles, cedar posts, railroad ties, cordwood, dimensioned lumber, and hemlock bark used in the tanning industry (Reynolds 1960). Land along the shoreline was cleared to make room for the growing stockpiles of lumber that awaited shipment, and the influx of new labor vitalized the town (Butler 1960).

In November 1869, the editor of the *Door County Advocate* (1869) wrote enthusiastically of a visit to Jacksonport, stating that 80 vessels had loaded at the town's two piers and 50 men were employed to cut and haul timber. During the 1869 season, Jacksonport produced 350,000 cedar posts, 25,000 railroad ties, 2,000 cords of wood, and 2,000,000 board feet of lumber in addition to 100 barrels of fish. The editor noted that these numbers were an increase over the previous year's totals, and only three years ago there was nothing at Jacksonport other than a small fishing station (*Door County Advocate* 1869).

Jacksonport was first included in the 1870 U.S. Census, which indicated a total of 139 residents - significantly fewer than the neighboring Baileys Harbor with a population of 300 (Reynolds 1960). As was typical of early "company town" settlements initiated by promoters, Jacksonport saw fleeting expansion. The recession of the early 1870s caused Jacksonport's economy to falter, and combined with dropping freight rates, Jacksonport's business quickly slumped. Additionally, as a result of the 1871 Chicago Fire, Chicago adopted a city ordinance in 1875 that required non-combustible building materials. This ordinance further reduced lumber demand and freight rates at a time when the number of commercial vessels sailing the Great Lakes was nearly at an all-time high (Cooper 1987; Reynolds 1960).

Despite a drop in income, the Jackson-Harris-Reynolds Company's expenditures persisted and debt began to grow. Sensing that business matters were going badly, Andrew Jackson withdrew from the company. Within a matter of years the company went into bankruptcy, its original capital gone and thousands of dollars owed to Green Bay merchants. Charles Harris severed his connection with his remaining partner and returned to New Jersey to manage his grandfather's estate (Reynolds 1960). In December 1873, John Reynolds died at the age of thirty-nine. The United States District Court liquidated the Jackson-Harris-Reynolds company's holdings later that year (Krueger 2002).

Following the dissolution of the Jackson-Harris-Reynolds Company, Thomas Reynolds, with brothers Michael Jr. and Henry, purchased the former company's lumber rights to form Reynolds Brothers Lumber. The new endeavor was equally unsuccessful, however, and the newly-formed company was dissolved less than one year after its inception. Charles Reynolds, another brother of John Reynolds, bought the defaulted Reynolds Brothers property, including the pier, town site, banking grounds, barn, mill store, and 2,000 acres of virgin timber in 1873 (Van Harpen 1991).

Charles Reynolds had emigrated from Ireland to Madison, Wisconsin, in 1860, where he worked as a clerk for his brother John Reynolds. After one year in Madison, Charles moved to Green Bay to become a partner in a firm that was a heavy creditor for the Jackson-Harris-Reynolds Company. During the Civil War, Charles Reynolds had achieved the rank of Sargent Major in the Twelfth Wisconsin Regiment and engaged in battles in Missouri, Kansas, Tennessee, and most notably in Sherman's March to the Sea. By the end of the war, Charles had been promoted to Assistant Adjutant General on General Ewing's staff (Krueger 2002).

Two years after purchasing the rights to his brother's defunct business, Charles and his wife, Mary Ann, moved to Jacksonport in 1875 and opened a general store, took over operations

at the pier, and served as postmaster for the next twenty years. Charles Reynolds no longer employed seasonal lumberjacks; instead, he promoted the permanent settlement of families in the area by underwriting home construction with lumber from his mill and provisions from his general store in exchange for labor as mill workers, carpenters, teamsters, farm hands, wood cutters, coopers, blacksmiths, and dock laborers. There was no bank in Jacksonport, so Charles Reynolds (as did Perry Hibbard) offered credit to farmers and foodstuffs in exchange for lumber, replacing many banking functions with bartering as the preferred method of trade. Customers were encouraged to buy large amounts on credit. While this placed the customer in debt, it reaped more profit and respect for the merchants as uncompromising businessmen (Butler 1960; Krueger 2002).

During the winter months, Jacksonport was busy cutting, processing, and stockpiling lumber products on the Lake Michigan shoreline in preparation for the opening of the shipping season in the spring. By springtime, it was not uncommon to have upwards of 800,000 board feet of pine banked at Reynolds' Pier awaiting shipment, in addition to cedar cordwood. The largest logs were stacked nearest the water, followed by eight-foot-high tiers of cordwood, and then stacks of ties and posts. Shingle bolts were stacked near the saw mills (Reynolds 1960).

The arrival of spring brought a flurry of activity on the Reynolds' banking grounds. The saw mill buzzed with the cutting of lumber, planks, and shingles. Drawknives busily peeled bark from stacks of cedar logs for fence posts and rails. Skilled adze wielders shaped hemlock logs into railroad ties. Fishermen who were not tending their nets prepared long tamarack poles as pound net stakes or telegraph poles. Pile drivers repaired the piers and planking for heavy summer trading. Canthook jacks, wearing spiked boots, rolled logs into the water and fastened long log booms into immense log rafts to be picked up by steam-powered tugs and towed to mills at southern lake ports. Teams of draft horses hauled wagons of cordwood onto the piers where it was stacked in high piles for the lumber schooners. It was also the wood slingers' job to load the wood stacked on the pier into the holds of ships moored alongside. For the exhausting task of loading a ship, workmen were paid one dollar for a ten-hour day (Butler 1960).

On 12 July 1875, the Reynolds' saw and shingle mill was destroyed by a fire that started from an unattended furnace. The flames were impossible to extinguish and the fire destroyed the mill, 800,000 shingles, all of the logs that were harvested the previous winter, and a considerable quantity of lumber. The mill had been leased to Mr. David McCann, who had recently installed a new boiler, engine, and other machinery. With no insurance on the property, the mill remained closed for the rest of the 1875 season (*Door County Advocate* 1875).

It is uncertain exactly when the mill was rebuilt and resumed operation, but on 19 July 1877 the *Door County Advocate* (1877a) reported that approximately 25 cords of tan bark was banked on the piers daily and the schooner *Julia Smith* was there loading. The newspaper also reported that Charles Reynolds was shipping basswood bolts to parties at Cleveland, Ohio.

By 1879, Jacksonport was well into the transition from a lumber camp to a thriving community. Jacksonport's first grain shipment occurred in October of that year and consisted of 90 bushels of wheat and 120 bushels of barley (Reynolds 1960). A third pier was constructed by Joseph LeMere around 1880. Joseph LaMere, a successful Two Rivers fisherman, had moved to Jacksonport in 1875 and married Almira LeClaire. After constructing Jacksonport's third pier, he built a general store, home, fish shanty, and barn (Butler 1960). Three piers now lined

Jacksonport's shoreline - the northernmost pier was Perry Hibbard's, Joseph LaMere's Pier was in the center, and Charles Reynolds's pier was the southernmost (Butler 1960; Van Harpen 1991).

Each of the piers had its own general store as well as two or three fish shanties on either side. Each shanty also had its own small dock that extended a short distance into the lake. Surrounding this waterfront business center were a number of homes and outbuildings, a school, several churches, two wagon shops, a sawmill, two hotels with taverns, and several boarding houses (Reynolds 1960). The Eureka House, built between 1871-1873 by Charles Reynolds, was a combination boarding house, dance hall, and saloon (Butler 1960). Purchased by Royal Erskine in 1875, the Eureka House was originally two separate structures - a boarding house near Reynolds' Pier and a second house farther off the lake. Perry Hibbard operated the Hibbard Boarding House to the north of the Eureka House (Erskine 1984; Hein 1997).

On 27 March 1880, immediately prior to the opening of the shipping season, an ice shove damaged Reynolds' Pier and carried away the bridgeway, forty cords of maple wood, and 200 cedar posts that belonged to Joseph Smith, the well-known Great Lakes "Cedar King". The total damage exceeded \$1,000, and Charles Reynolds was forced to ship his lumber from Perry Hibbard's Pier until he could make repairs (*Door County Advocate* 1880a; Smith 2002).

Charles Reynolds retired from the lumber business in 1890 and moved to Sturgeon Bay to become Vice President of the Mercantile Bank, and he was elected to the state legislature in 1892. There still remained a bit of animosity between the brothers from the Reynolds Brothers bankruptcy, and in 1906 Charles Reynolds was defeated in the State Assembly race by his brother Thomas Reynolds (Krueger 2002). By 1920, the Jacksonport lumber trade was logged out and the three piers were largely abandoned, with only occasional use by local commercial fisherman until 1938 when an ice shove damaged the piers beyond use (Van Harpen 1991).

Schooner *Perry Hannah*

The schooner *Perry Hannah*, official number 11178, was built by Thomas J. Arnold at Newport, Michigan, and first enrolled on 30 May 1859 at Chicago. Constructed in a remote shipyard several miles up Swan Creek from Lake Erie, the *Perry Hannah* measured 92 feet, 8 inches in length, 25 feet, 2 inches in beam, and 8 feet, 7 inches in depth of hold. Her capacity was 183 and 22/95 tons. She had a one deck, two masts, a square stern and plain head. Charles F. Gray, a 52 year-old businessman from Chicago's Second Ward, was one-half owner of the vessel in partnership with another unidentified individual from Chicago. Thomas M. Canfield was listed as the *Perry Hannah's* first Master (Bureau of Navigation 1859b; United States Census Bureau 1860a; 1870d). The vessel was named for Mr. Perry Hannah, the founding father of Traverse City, Michigan. Hannah was the city's first mayor, established the Traverse City State Bank, the Mercantile Company, and was a partner in the lumber firm Hannah, Lay & Company, with offices in both Traverse City and Chicago (*The Evening Record* 1904).

The *Perry Hannah* arrived at Traverse City on 8 May 1859 to begin her career transporting lumber to Chicago for Hannah, Lay & Company (Sprague 1903). Perry Hannah, with associates A. Tracy Lay and James Morgan, employed nearly every man in the region in the local lumber trade (Sprague 1903). During her first season, the *Perry Hannah* visited several ports around Lake Michigan, including her first stop at Sturgeon Bay, Wisconsin, in September 1859 to load lumber at the Island Mill for Bradner, Charnley & Company (*Door County Advocate* 1909).

On 20 March 1861, Charles F. Gray bought out his partner to become sole owner of the *Perry Hannah*, and Captain Canfield remained as master (Bureau of Navigation 1861d). Prior to the start of the 1862 season, the *Perry Hannah* was rebuilt to larger dimensions at Edward Flood's shipyard in Chicago. Flood had emigrated from England to Chicago in the 1840s and worked as a carpenter and wagon maker before becoming a shipwright. The *Perry Hannah* was lengthened by 33 feet, which increased her capacity by 131 tons. The *Perry Hannah* was re-enrolled on 9 June 1862 with the new measurements of 125 feet in length, 26 feet in beam, 10.5 feet in depth of hold, and 314 and 38/95 tons capacity. Captain Canfield remained as Master (Bureau of Navigation 1862b; United States Census Bureau 1850a; 1860c).

On 29 March 1864, Charles Gray sold the *Perry Hannah* in equal shares to Thomas O'Connor and Michael Roach, both of Chicago. Thomas O'Connor, an Irish-born sailor, became managing owner and master (Bureau of Navigation 1864b; United States Census Bureau 1860d; 1870e). One year later, on 18 April 1865, O'Connor sold his share to Timothy Buckley of Chicago. Michael Roach retained his half share, and Captain Michael Cullotin took command. The *Perry Hannah* was re-admeasured and a new enrollment was issued with the measurements of 124 feet in length, 26 feet in beam, 10.5 feet in depth of hold, and 219 and 60/100 tons capacity (Bureau of Navigation 1865c).

Lumber prices strengthened during the 1868 season, and when the *Perry Hannah* arrived at Chicago in June of that year with 180,000 board feet of 3/8 inch strip mill-run lumber from Oconto, the cargo fetched \$17.00 per thousand board feet (*Door County Advocate* 1868b). The *Perry Hannah's* ownership changed again following the 1868 season. Michael Roach purchased Timothy Buckley's share on 15 January 1869 to become sole owner, and then sold a quarter share to John Keelin of Chicago, who became the *Perry Hannah's* part owner and new master on 20 February 1869 (Bureau of Navigation 1869e; 1869f). Lumber prices remained strong into the early 1870s, and the *Perry Hannah* again arrived at Chicago in May 1871 with 80,000 board feet of mill-run Oconto lumber that fetched \$16.50 per thousand board feet, in addition to 50,000 pieces of lath that brought \$2.12 ½ per thousand board feet (*Door County Advocate* 1871).

Ownership continued unchanged until 11 April 1874, when Captain John Long purchased the *Perry Hannah* (Bureau of Navigation 1874c). The 40 year-old Long and his family had emigrated from Ireland to Chicago in the 1850s. The son of a sailor, Long quickly found work in the Chicago lumber yards where he worked as a wood inspector from Chicago's Ninth Ward (United States Census Bureau 1860b; 1870d). Under Long's ownership, Captain James Donigan took command, and the *Perry Hannah* continued regular service moving lumber between the Door County Peninsula and Chicago (Bureau of Navigation 1874c; *Door County Advocate* 1874). Under Donigan's command, the *Perry Hannah's* career was largely uneventful until early July 1875, when Michael Rouse, a 28 year-old sailor, was lost overboard while en route from Jacksonport to Chicago (*Door County Advocate* 1875).

Two years later, J.V. Taylor of Evanston, Illinois, bought out Long. James Donigan continued as Master, and a new enrollment was entered on 6 April 1876 (Bureau of Navigation 1876b). The next three years continued to be uneventful for Captain Donigan and the *Perry Hannah* until a northeast squall washed 800 telegraph poles along with the Mate from her deck while anchored off Hyde Park, Illinois, on 15 May 1879. Luckily, the crew was able to quickly pull the Mate from the water, and nearly all of the telegraph poles, loaded at Jacksonport and

consigned to Ripley & Son of Chicago, were recovered after they washed ashore (*Door County Advocate* 1879b).

Taylor owned the *Perry Hannah* for four seasons before he sold her back to Captain Long on 19 March 1880. John Long again enrolled the *Perry Hannah* at Chicago, but this time 35 year-old wife, Jane Long, was entered as the vessel's sole owner and Captain J. Begg as Master (Bureau of Navigation 1880b; United States Census Bureau 1870c). Shortly after changing hands, the *Perry Hannah* again lost a portion of her deck load on 16 April 1880, when a storm washed away 1,200 to 1,500 cedar ties that were loaded at Jacksonport (*Door County Advocate* 1880b).

The *Perry Hannah* enjoyed an uneventful season for most of 1880, but encountered exciting times as fall approached. On 15 October 1880, the *Perry Hannah* was loading hemlock ties at Reynolds' Pier in a light northerly breeze and 70 degree temperatures. Early the next morning, however, the wind increased and the temperature dropped to near freezing. The storm caught the *Perry Hannah* moored alongside Reynolds' Pier with her hold nearly full and the remaining ties stacked on the pier. The building surf pushed the *Perry Hannah* into the pier, sinking her and causing \$2,500 damage to the pier. The *Perry Hannah* sank in eight feet of water and the ties stacked on the pier waiting to be loaded were washed into the lake (*Door County Advocate* 1880e).

The storm continued blowing throughout the 16th and into the 17th before subsiding. The Goodrich steamer *Alpena*, with nearly 100 passengers and crew, was lost with all hands during the storm north of Chicago. Due to this tragic loss, the storm came to be known as "The Great Alpena Blow". In total, the storm claimed 188 lives across the Great Lakes and 90 vessels were sunk or severely damaged. Twenty-one vessels were wrecked in Door County alone: the *Perry Hannah* at Jacksonport; the schooners *Van Valkenburg*, *City of Woodstock*, and the scow *Dunham* at Whitefish Bay; *Nabob* at Cana Island; the schooners *Pauline*, *Pretoria*, *Louisa McDonald*, *Joseph Platt*, and *Lettie May* at Baileys Harbor; the *Cuyahoga* and *Colonel Cook* at Plum Island; the *Contest* at Mud Bay; the *Foscoro* at Foscoro; and *Guido Pfister*, *Jennie Belle*, *Lem Ellsworth*, *George B. Sloan*, *Shandon*, *Two Friends*, and *Brunette* at North Bay (*Door County Advocate* 1923).

The *Perry Hannah* remained lodged between the bridge piers with a hold full of hemlock ties for nearly a week before John Long made his way up from Chicago to survey the damage (*Door County Advocate* 1880f; *Milwaukee Sentinel* 1880d). The pier itself had sustained such severe damage that Charles Reynolds did not reopen the pier to shipping until the following season (*Door County Advocate* 1880g). Along with the loss of ties that were stacked on the pier, 30,000 board feet of plank, intended to replank the pier over the winter, was also washed away in the storm (*Door County Advocate* 1880e).

The *Perry Hannah* was declared a total loss. The schooner *Felicitous* was sent from Sturgeon Bay on 11 November 1880 to recover any items of value from the *Perry Hannah*. The *Perry Hannah* was pulled from her position beneath the pier and hauled alongside the south side of pier to unload her cargo of ties (*Door County Advocate* 1880g; 1881a). Her enrollment certificate was surrendered on 23 April 1881 (Bureau of Navigation 1880b). Reynolds' Pier did not reopen for business until the third week of April 1881, after much of the pier was rebuilt and protected by fenders (*Door County Advocate* 1881a).

Nearly a year after the accident, the newspaper reported that the *Perry Hannah's* condition was the same as the day she was hauled from the pier (*Door County Advocate* 1881c).

Her 3,000 pound anchor had been recovered by Charles Reynolds and placed a few hundred feet from shore and buoyed to aid vessels in pulling away from the pier in case a sudden storm blew up (*Door County Advocate* 1881a; 1886a). The anchor's buoy was carried away in 1886 and several unsuccessful attempts were made to recover the anchor. Later that season, the tug Arctic fouled its own anchor in the missing anchor and hauled it to the surface after considerable effort. The *Perry Hannah's* anchor was then returned to Captain John Long, who used it on one of his other vessels (*Door County Advocate* 1886a).

Schooner *Cecelia*

In 1868, James MacGiven built the barque *Cecelia*, official number 5548, at White Lake, Michigan. She was registered at 118 25/100 feet in length, 25 75/100 feet in beam, and 8 42/100 feet in depth of hold with a rated capacity of 175 tons and 82/100 (Bureau of Navigation 1868a). She had one deck, three masts, a square stern and plain head. *Cecelia's* first owner and master, Jens Larsen of Chicago, Illinois, enrolled her at Chicago on 16 September 1868 although she had been carrying lumber from Sturgeon Bay as early as 11 June 1868 (Bureau of Navigation 1868a; *Door County Advocate* 1868a).

On 23 March 1869, Larsen sold half of the *Cecelia* to Halvor Michelson of Chicago, and Jno. Wilson took over as Master (Bureau of Navigation 1869a). The two remained equal owners for four months, until Michelson bought out Larsen on 12 July 1869 to enter into a partnership with the Chicago lumber merchants Martin H. Ryerson and William Johnson the following day (Bureau of Navigation 1869b; 1869c; United States Census Bureau 1870f; 1880e). Michelson and Johnson each purchased a 5/12 share in the *Cecelia*, with Ryerson owning the remaining 2/12. Jno. Wilson remained as Master (Bureau of Navigation 1869b; 1869c).

The *Cecelia* partnership remained intact until 25 March 1871, when Johnson bought out Michelson's shares so that William Johnson now owned 5/6 and Martin Ryerson owned 1/6 of the vessel (Bureau of Navigation 1871a). Four days later, on 29 March 1871, Halvor Michelson bought out Ryerson's share and a share from Johnson to create a partnership with Johnson owning 2/3 and Michelson owning 1/3 (Bureau of Navigation 1871b). With ownership finally settled, T. W. Hobby took over as Master (Bureau of Navigation 1871b). Captain James Field eventually took command from Captain Hobby sometime before March 1874 (Bureau of Navigation 1874a). During the 1878-1879 winter layup, the *Cecelia* was re-rigged and she began the 1879 season a schooner (Bureau of Navigation 1879a).

On 29 March 1882, Captain Samuel Marshall and Mrs. Jane Long, both of Chicago, purchased the *Cecelia*; Captain Marshall was assigned her Master (Bureau of Navigation 1882a). Marshall was a lifelong sailor and lake captain who had emigrated from England and arrived in Chicago during the mid-1860s (United States Census Bureau 1870c; 1880). Jane Long, the wife of lumber merchant Captain John Long, was born to Irish immigrants in Illinois in 1845 (United States Census Bureau 1870d; 1880d). Jane Long had been widowed in her early 20s before the older, self-made lumberman John Long married her and took in her son, Samuel Douglas, in the late 1860s (United States Census Bureau 1870d; 1880d).

Marshall and Long also had owned and worked the schooner *Yankee Blade* during the 1881 shipping season. Marshall sold his share of that vessel on 14 January 1882 and John Long took command of the *Yankee Blade*, which allowed Marshall to purchase and sail the *Cecelia* during the 1882 shipping season (Bureau of Navigation 1881c; 1882a; 1882d). Not long into

Marshall and Long's first season with the *Cecelia*, Captain Marshall made a navigational error while approaching Reynolds' Pier on 25 May 1882, running the *Cecelia* onto the pier and holing in her bow (*Door County Advocate* 1882a). The tug *Gregory* was called from Sturgeon Bay to free the *Cecelia* from the pier. The *Cecelia* pulled free from the pier with little effort, but promptly sank and settled on the bottom in six feet of water (*Door County Advocate* 1882a). A salvage pump was brought in the following day, and the *Cecelia* was refloated and towed to Milwaukee for repairs, arriving at that port on 28 May 1882. Repairs were quickly made, and the *Cecelia* departed Milwaukee for Jacksonport the evening of 29 May (*Door County Advocate* 1882a).

The Marshall-Long partnership only lasted one season. On 5 January 1883, Mrs. Jane Long bought out Marshall, and Captain Bernhard R. Smith took over as Master (Bureau of Navigation 1883b). The *Cecelia* continued her regular route, hauling wood and cedar from Jacksonport to Chicago. The *Cecelia* was the first ship to begin the 1884 shipping season in Jacksonport, arriving there to load wood for Charles Reynolds on 10 April 1884 (*Door County Advocate* 1883; 1884a; 1884b).

On 12 July 1884, while departing Reynolds' Pier, the *Cecelia* collided with the Goodrich steamer *Corona*, resulting in damage to both vessels. The *Cecelia* suffered a number of broken stanchions and one or two broken deck beams. The *Corona* received damage on her port quarter. It was reported that the Longs would bring a lawsuit against the Goodrich Company for the damage, but no documentation of a lawsuit has been uncovered (*Door County Advocate* 1884c; 1884d).

On 22 September 1884, again while attempting to depart Jacksonport, the *Cecelia* was driven onto the beach south of Reynolds' Pier (*Door County Advocate* 1884e). The tug *Jesse Spalding* arrived from Sturgeon Bay the following morning, removed the deck load of cedar, and pulled the *Cecelia* into deeper water where she anchored to survey the damage. Surmising the *Cecelia* had sustained little damage, Captain Smith weighed anchor and sailed for Chicago without assistance (*Door County Advocate* 1884e). Not long after, declining freight rates made additional trips unprofitable, and on 9 October 1884, the *Door County Advocate* (1884f) reported that the *Cecelia* was being stripped down early for the winter layup.

The *Cecelia* was back in service for the 1885 season, making her regular run between Jacksonport and Chicago. On 9 September 1885, however, the *Cecelia* was once again aground at Jacksonport. She had been anchored offshore to ride out a storm, but her anchors dragged and she was blown onto the beach south of Reynolds' Pier (*Door County Advocate* 1885c). Captain Smith left for Chicago on Friday, 9 September to speak with the Longs. While there, Smith contacted wrecking firms in Chicago and Milwaukee for estimates to pull the *Cecelia* free, but all estimates were far more than the vessel was worth. Smith returned to Jacksonport on Wednesday, 14 September, and began removing everything of value from the *Cecelia*. With a broken keel, the *Cecelia* was declared a total loss (Bureau of Navigation 1883b; *Door County Advocate* 1885d).

Concern was raised that a strong southerly wind would blow the derelict hull into Reynolds' Pier and cause significant damage, but the abandoned *Cecelia* was left in about ten feet of water south of the pier. On 24 September 1885, the schooner's masts were cut down and removed, and the *Cecelia*'s final enrollment was surrendered 13 November 1885 (Bureau of Navigation 1883b; *Door County Advocate* 1885e).

Schooner Tentatively Identified as the *Annie Dall*

To date, the remains of a three-masted schooner that lies north of Hibbard's Pier has not been positively identified, but evidence suggests it is the *Annie Dall*. A comprehensive literature search for schooners lost off Jacksonport that were not recovered produced only one vessel, the *Annie Dall*. Although historic newspapers place the *Annie Dall* south of the Jacksonport piers, no other wreck sites have been located to the south of the *Perry Hannah* and *Cecelia*. Additionally, archaeological data collected on the north wreck site coincide with the *Annie Dall*'s size, construction features, and wrecking event.

The *Annie Dall*, official number 106182, was a Grand Haven-rigged schooner that was 110 feet long, 24.6 feet in beam, and 7.7 feet in depth of hold (Figure 32). The *Annie Dall* was originally launched in 1848 as the three-masted schooner *Mary* (official number 16409) from the Salmon Ruggles shipyard in Milan, Ohio. The *Mary* was first enrolled at Sandusky, Ohio, and underwent extensive repairs in 1863 and again in 1872 before being rebuilt at Chicago and renamed the *Annie Dall* in 1883 (Inland Lloyds Marine Register 1884; Bureau of Navigation 1883a).



Figure 32. Grand Haven-rigged schooner *Annie Dall*. C. Patrick Labadie Collection, Alpena County Public Library.

Shortly after midnight on the morning of 18 October 1898, the *Annie Dall* was riding out a storm at anchor between Reynolds' and LeMere's piers. She had loaded cordwood the previous day at Reynolds' Pier, consigned for Milwaukee. That night a gale began blowing from the east-southeast and the schooner began to pound on the bottom as the waves grew in height. The crew cast overboard a portion of her deck load in order to lighten her stern, but the effort had little effect with only 12 feet of water under her keel. The crew then attempted to kedge the vessel into deeper water, but the anchor cable parted and the *Annie Dall* was blown onto the beach (*Door County Advocate* 1898d).

On Thursday, 20 October 1898, the Leathem & Smith Towing & Wrecking Company tug *Wright* arrived at Jacksonport along with a barge from Sturgeon Bay. The *Wright* found the *Annie Dall* with several holes in her hull and filled with water. Her rudder was missing and her stern was "badly wrecked and twisted". On Friday morning, the *Wright* was joined by the tug *Smith* and an additional barge for lightering. The *Annie Dall* was initially pulled free, but quickly stranded again on the reef. Finally, on 22 October 1898, the *Annie Dall* was freed by the tug *Nelson*, but despite being afloat the *Annie Dall* had received significant damage. A steam-powered salvage pump was placed aboard her, but due to the lengthy salvage attempt there was little coal remaining to run the pump. With the southeast wind and seas again building, the *Annie Dall* was taken in tow of the *Wright* and the pair proceeded to navigate the Jacksonport reef on their way to Sturgeon Bay. Only one mile southeast of Jacksonport, the *Annie Dall* filled with water and capsized. The two crew aboard her were rescued by the *Wright*, and the *Annie Dall* was abandoned (*Door County Advocate* 1898e; 1898f).

Captain Thomas Christenson and Torjus Christensen of Milwaukee owned The *Annie Dall* at the time of her loss. She had been purchased in July 1896 for \$1,200 from Captain Michael Anderson, also of Milwaukee. The Christenson's carried no insurance on the *Annie Dall* or her cargo, and the *Annie Dall*'s final enrollment was surrendered at Milwaukee on 28 October 1898 (Bureau of Navigation 1897a; *Door County Advocate* 1898f).

Historic newspaper accounts state the *Annie Dall* was abandoned in six fathoms of water one mile southeast of Jacksonport. With a southeast wind, it is very possible that the *Annie Dall* could have drifted northward of the Jacksonport piers to come ashore where the north wreck is located. The north wreck's dimensions are consistent with that of the *Annie Dall*. Additionally, the vessel that lies north of Jacksonport has two breaks in her keelson, with the aft 10-15 feet of keelson and the vessel's stern missing from the site. This is also consistent with reports that the *Annie Dall*'s stern was "badly twisted". With no other known wreck sites in the Jacksonport vicinity, and no historic records of other schooners lost and not recovered, it is likely that the north wreck is indeed the *Annie Dall*.

Site Description

The Jacksonport Wharf Complex is located in Lake Michigan off the village of Jacksonport on the Door County peninsula (Figure 33). The archaeological survey of the Jacksonport Wharf Complex began in 2004 when Wisconsin Historical Society staff and volunteers conducted a Phase II archaeological survey of the southernmost components, which included Reynolds' Pier and the schooners *Perry Hannah* and *Cecelia*. Fieldwork on these components was conducted in September 2004. The Wisconsin Historical Society returned to

Jacksonport in June 2010 to complete the archaeological survey of the northernmost components, including Hibbard's Pier, LaMere's Pier, and an unidentified three-masted schooner.

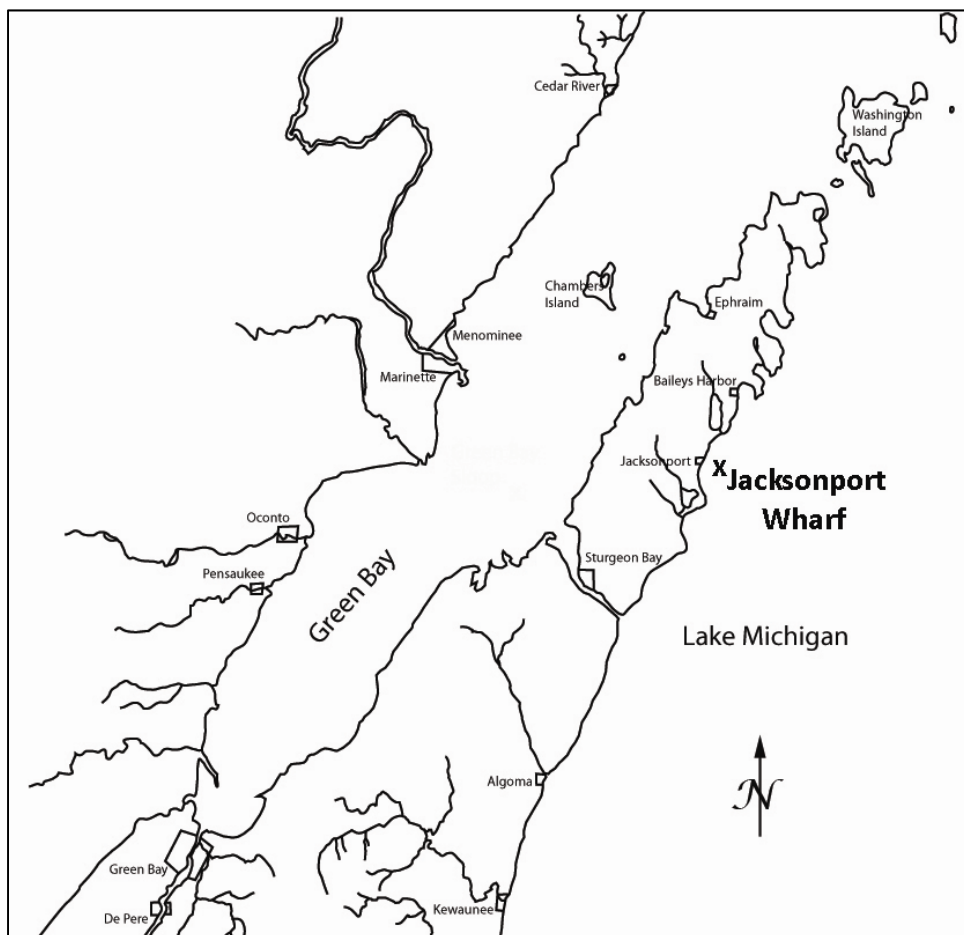


Figure 33. Location of the Jacksonport Wharf Complex.

During the 2004 survey, a datum was established on the roadway at the terminus of County Highway V to coordinate all archaeological surveys and orient the sites with the shoreline and adjacent landmarks. This datum was relocated during the 2010 survey and used to tie in all 2010 survey points with those from 2004. A Sokkisha Set 5 Total Station was set up at the datum and allowed project staff to create an accurate map of the shoreline, piers, and wrecks, and to clearly define their locations and orientations within the surrounding landscape (Figure 34).

The Phase II archaeological surveys allowed archaeologists to identify and record in plan view the overall underwater site, while recording wreckage detail for archaeological interpretation. The Jacksonport Wharf Complex lies in a dynamic surf-zone environment and is subjected to a large amount of sand transport that covers the site to varying degrees from year to year. The remains of two vessels lie immediately south of Reynold's pier, but much of the wreckage is embedded in the lake bed and it was not possible to distinguish which vessel was the *Perry Hannah* and which was the *Cecelia*; therefore these vessels are referred to as Vessel 1 and

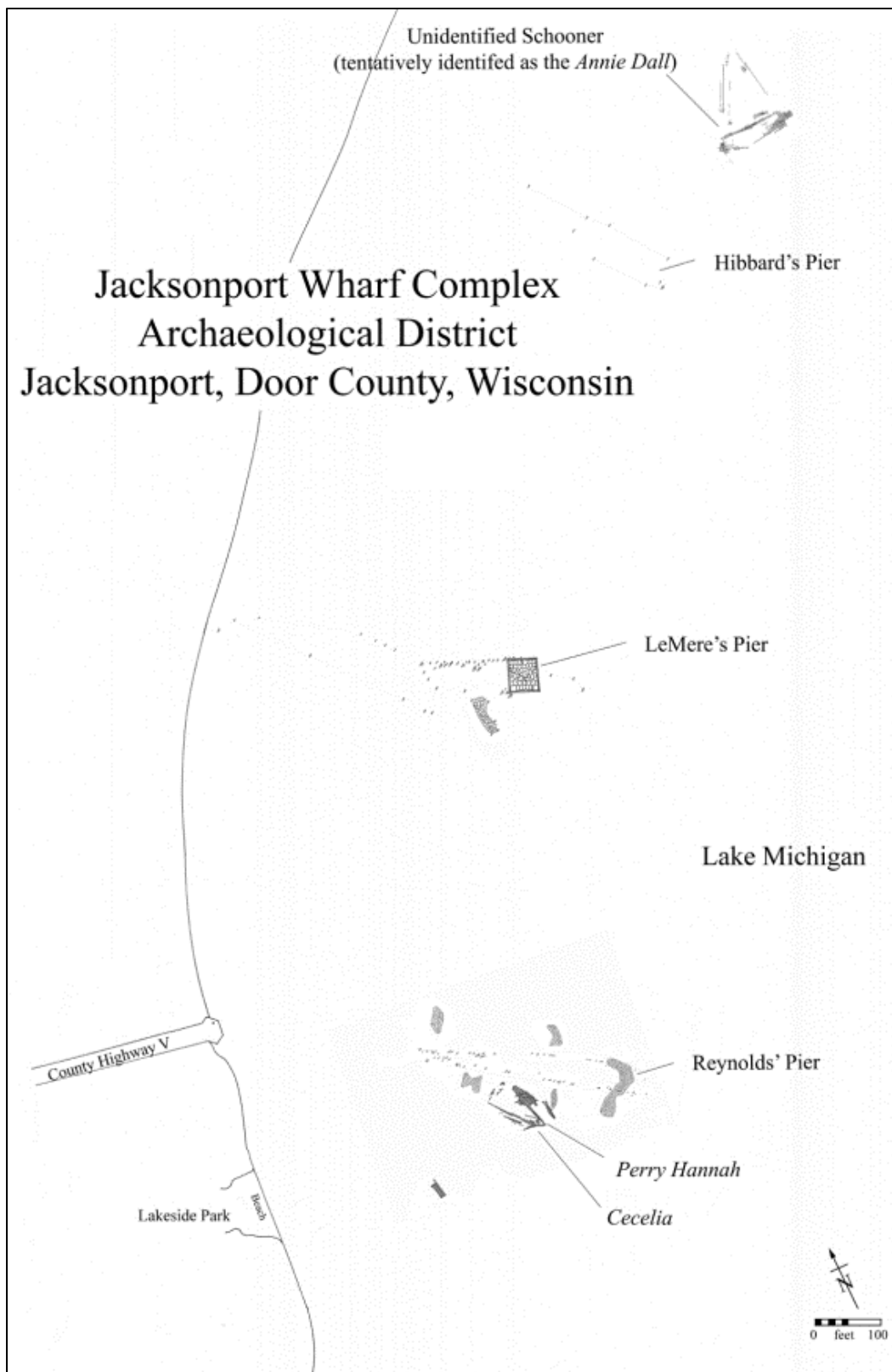


Figure 34. The Jacksonport Wharf Complex.

Vessel 2 (Figure 35). Vessel 1 is oriented in a north-south direction with its bow facing south. Vessel 2 lies south of Vessel 1 and is oriented perpendicular to, and touching, the hull of Vessel 1. At the time of the 2004 survey a large portion of Vessel 1 was exposed, but most of Vessel 2 was buried beneath a foot or more of sand, preventing any survey of that vessel.

The visible remains of Vessel 1 are comprised mostly of the lower hull below the turn of the bilge. Frame members protrude from the turn of the bilge aft of the centerboard trunk. The keelson is broken and missing forward of the centerboard trunk as well as the stern, but the extant keelson section 76.0 feet in length and 1.16 feet molded by 1.0 foot sided. Two-inch thick limber boards are 1.2 feet in width on the starboard side and 1.4 feet in width on the port side.

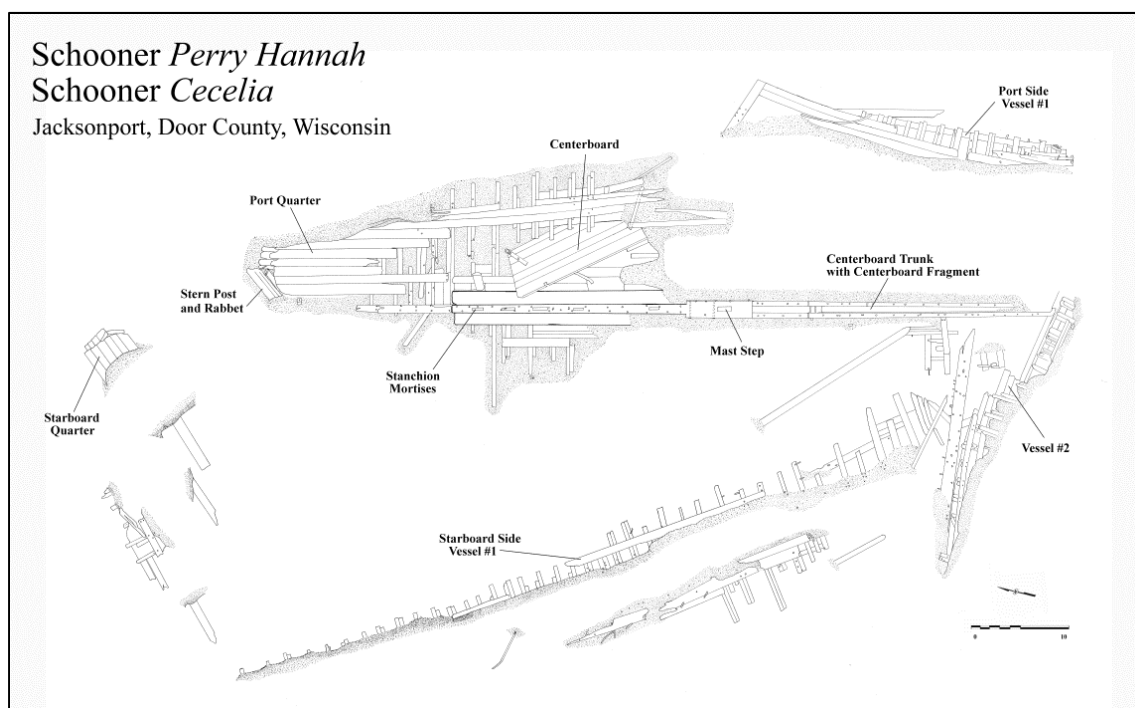


Figure 35. Site plan of the *Perry Hannah* and *Cecelia* as they appeared in 2004.

The vessel is double framed on approximately 2.0 foot centers. The frames immediately aft of the centerboard trunk are 0.66 feet molded and 0.5 feet sided, with 0.92 feet of room and 1.17 feet of space. Ceiling planks are fastened to the frames with both 0.75 and 1.0 inch iron through bolts. Nearer the stern, the ceiling planks are fastened to the frames with ½ inch square spikes with roves.

The bottom of the centerboard trunk is extant atop the keelson. The centerboard trunk is 32.0 feet long by 1.7 feet wide, but is somewhat broken up near the forward end. The trunk was planked with longitudinal timbers 0.8 feet wide and 0.5 feet thick. The centerboard pivot pin is located 6.0 feet aft of the forward edge and is 0.21 feet in diameter. The centerboard itself is broken, but a fragment of the centerboard remains within the trunk. The rest of the centerboard lies off the port side of the keelson at amidships, resting atop the ceiling planks of the lower hull and wedged beneath the disarticulated port side hull. This centerboard fragment is 14.0 feet in length and 5.0 feet in width, and is constructed of six timbers that vary between 0.7 to 1.1 feet in

width. An iron hanger, 2.3 feet long by 0.4 feet wide with a clevis attached to the end, is affixed to the corner of the centerboard fragment.

The mainmast step is located 3.0 feet aft of the centerboard trunk. The mast step is constructed from two longitudinal timbers fastened atop the keelson that each measure 8.2 feet long by 0.9 feet wide. A mortise is cut between the timbers for the mainmast tenon that is 1.4 feet long by 0.5 feet wide. No other mast steps were located on the remaining section of the keelson assembly.

Five mortises for deck stanchion are cut into the keelson aft of the mast step. The first mortise, 1.0 foot long by 0.25 feet wide by 0.17 feet deep, begins 9.0 feet aft of the mainmast step. The second mortise is of the same dimension and begins 7.0 feet aft of the first. The third mortise, 3.0 feet aft of the second, is 1.6 feet long, 0.25 feet wide, and 0.17 feet deep. The fourth and fifth mortises are both 2.0 feet aft of the preceding mortises, and each are 1.3 feet long, 0.25 feet wide, and 0.17 feet deep.

The sternpost lies on the lakebed off the vessel's port quarter, and a disarticulated section of the starboard quarter lies partially buried north of the sternpost. Disarticulated planks and a section of the hulls side also lie in this area. The hull section is double framed with individual futtocks that are 0.42 feet sided and 0.58 feet molded, with a 1.16 feet of space between frame sets. Attached ceiling planks are 0.67 feet wide and 0.33 feet thick.

The vessel's port side hull has collapsed outward and lies 15.0 feet off the centerboard trunk. Frame futtocks on this section are 0.42 feet sided, 0.5 feet molded, with 1.0 feet of space between frames. Ceiling planks are 1.08 feet wide and 0.17 feet thick and are fastened to the frames with $\frac{3}{4}$ -inch iron bolts. Outer hull planks are 1.08 feet wide and 0.25 feet thick, and are also fastened to the frames with $\frac{3}{4}$ -inch iron bolts.

The starboard side is also broken at the turn of the bilge, but is somewhat more intact than the port side, although the stern of the starboard side has moved away from the lower hull so that the starboard side now rests at a 25 degree angle from the keel. Much of the starboard side hull is buried in the lakebed with only the frames at the turn of the bilge protruding from the sand. Frame futtocks on the starboard side hull are 0.42 feet sided, 0.58 feet molded, and have 0.9 feet of space between frames. Ceiling planks are 0.67 feet wide by 0.33 feet thick.

Like Vessel 1, Vessel 2's hull sides have broken at the turn of the bilge, and the centerboard trunk is no longer attached to the keelson. At the time of the survey in 2004, little of Vessel 2 was visible above the lakebed. The only visible wreckage was 12 double-frame sets from one of the vessel's sides that lies at a 70 degree angle to Vessel 1's keel. Visible frame futtocks were 0.42 feet sided and 0.58 feet molded, with 1.17 feet of space between frames. Outer hull planks were 0.83 feet wide and 0.17 feet thick. Ceiling planks were 0.5 feet wide and 0.25 feet thick.

The centerboard trunk from Vessel 2 was located 160 feet southwest of the site. Disarticulated from the keelson, wave action is slowly moving the centerboard trunk towards Lakeside Park. The extant section of the centerboard trunk is comprised of 8 longitudinal planks that vary between 0.7 to 1.0 foot in width and are fasted with $\frac{3}{4}$ -inch iron bolts with roves. The trunk's overall length is 26.4 feet long and is 7.0 feet tall. The centerboard pivot pin is located 4.9 feet from the forward edge of the trunk and is 0.4 feet in diameter.

North of Reynold's pier, many pilings are extant for both the Hibbard and LaMere piers, although not to the extent of Reynolds' Pier. The location of Hibbard's Pier, the northernmost

pier, is marked by 11 extant pilings and the remains of one stone crib. Between Hibbard's and Reynolds' Pier, the location of LaMere's Pier is marked by 45 piling and two large stone cribs.

The hull of an unidentified three-masted schooner lies north of Hibbard's Pier in 11 feet of water. The vessel lies on a sand bottom on a heading of 320 degrees. The hull sides have broken at the turn of the bilge and fallen outward, but the centerboard trunk remains upright and attached to the keelson. Nearly the entire lower hull is extant, including the port and starboard hull sides, but much of the lower hull is embedded in the bottom and covered by several inches of sand that only exposes the bow and stern sections of the port side hull, the keelson and centerboard trunk, and the deck shelf of the starboard side (Figure 36).

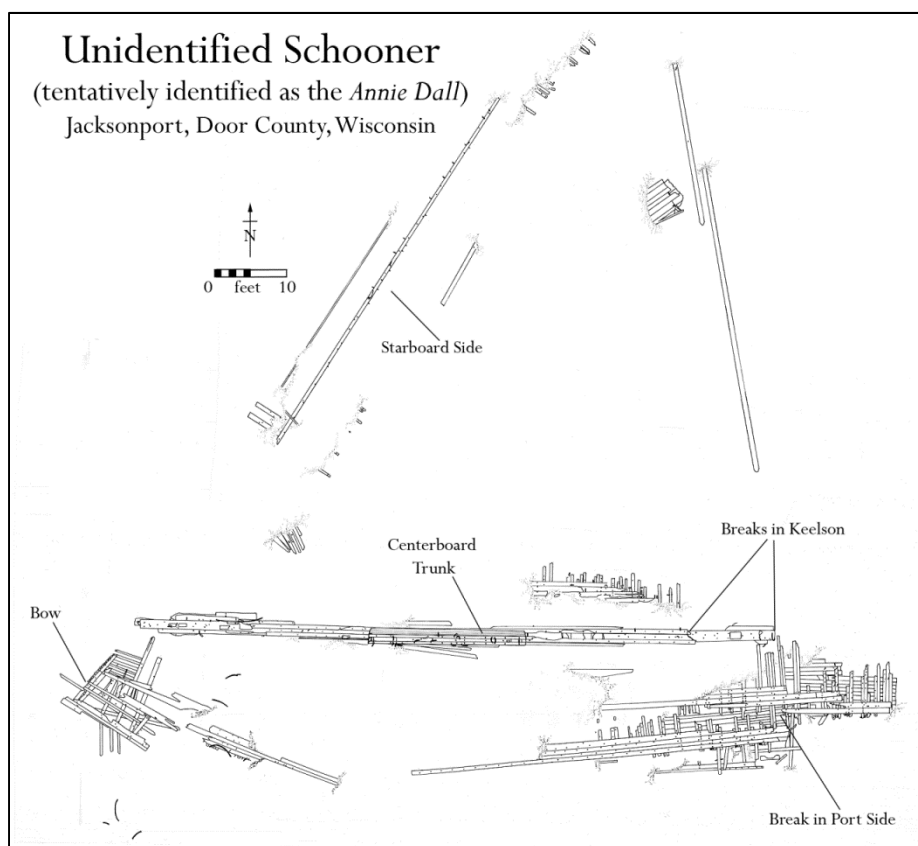


Figure 36. Jacksonport North Wreck, tentatively identified at the *Annie Dall*.

The keelson protrudes above the lakebed for its entire length, but the aft 10 to 15 feet of the keelson is broken off and was not located on the site (Figure 37). The keelson is extant for 91.5 feet of its length, and exhibits construction features that suggest an older vessel that had undergone several repairs to strengthen its aging keel assembly. Both the forward and aft ends of the keelson are constructed of a single timber with a dimension of 1.3 feet sided and 1.00 foot molded, but sister keelsons have been scarphed onto either side of the keelson for additional strengthening. The sister keelsons begins 3.0 feet aft of the stem and terminate 6.0 feet forward of the mizzenmast step. Where the sister keelsons have been scarphed in, the keelson's dimension is reduced to 0.6 feet sided and 1.0 foot molded, and each of the sister keelsons are of equal

dimensions. Additionally, cousin keelsons have been added to reinforce the mainmast step and aft end of the centerboard trunk. The cousin keelsons begin 50.3 feet aft of the stem and terminate 69.3 feet aft of the stem, overlapping the aft 5.0 feet of the centerboard trunk. The cousin keelsons' dimensions are 0.3 feet molded by 0.95 feet sided. Where the sister keelsons terminate aft, there is a visible fracture in the keelson, 12.3 feet forward of where the aft section of keelson was broken and carried away.



Figure 37. Aft end of the keelson, showing break and mizzen mast step.

The port side hull is extant from stem to stern, but it is largely buried in the lake bed. The port side lies nearly parallel to the keel, but there appears to be a break in the port side near the centerboard trunk's leading edge. Additionally, there is a second break in the port side near the stern that corresponds with the keelson's missing end.

The starboard side hull is also extant, but lies at a nearly perpendicular angle to the hull from the bow outward. Much of the starboard side is embedded in the lake bed, with only the forward mooring bitts, the deck shelf, and some of the frames at either end visible above the lake bed. Like the port side, there is a break in the starboard side near the stern, and a section of the starboard quarter lies separated from the rest of the hull side and lies nearer the lower hull.

Neither the stem, sternpost, or transom was located on the site, but the port side knighthead is extant and remains attached to the port side hull section. Two unidentified spars lie partially buried off the lower hull's starboard quarter. The spars' dimensions are too small to be masts, but no identifying features were discovered for a positive identification.

The vessel carried a single centerboard located on the vessel's centerline that begins 32.8 feet aft of the stem (Figure 38). The centerboard trunk is 22.0 feet in length, 1.1 feet in width, and rises 4.6 feet above the keelson. Several of the centerboard trunk's uppermost planks are not extant, exposing the top of the centerboard. The centerboard trunk is edge-bolted with iron bolts. Where the upper centerboard planks have been carried away, the iron bolts protrude from the top

of the trunk and are bent over the sides of the trunk. Five horizontal planks remain on the trunk that are 1.1, 1.0, 1.0, 0.7, and 0.7 feet in width from the top of the trunk downward, and each plank is 0.3 feet thick. The centerboard trunk lists 10 degrees to port at its forward end and 7.0 degrees to port at the aft end. The centerboard itself is 17.6 feet in length and 0.3 feet thick. The centerboard pivoted on a single pin that is 0.4 feet in diameter and located 4.9 feet from the trunk's forward edge and 0.4 feet above the keelson. The pin is not extant in the trunk.

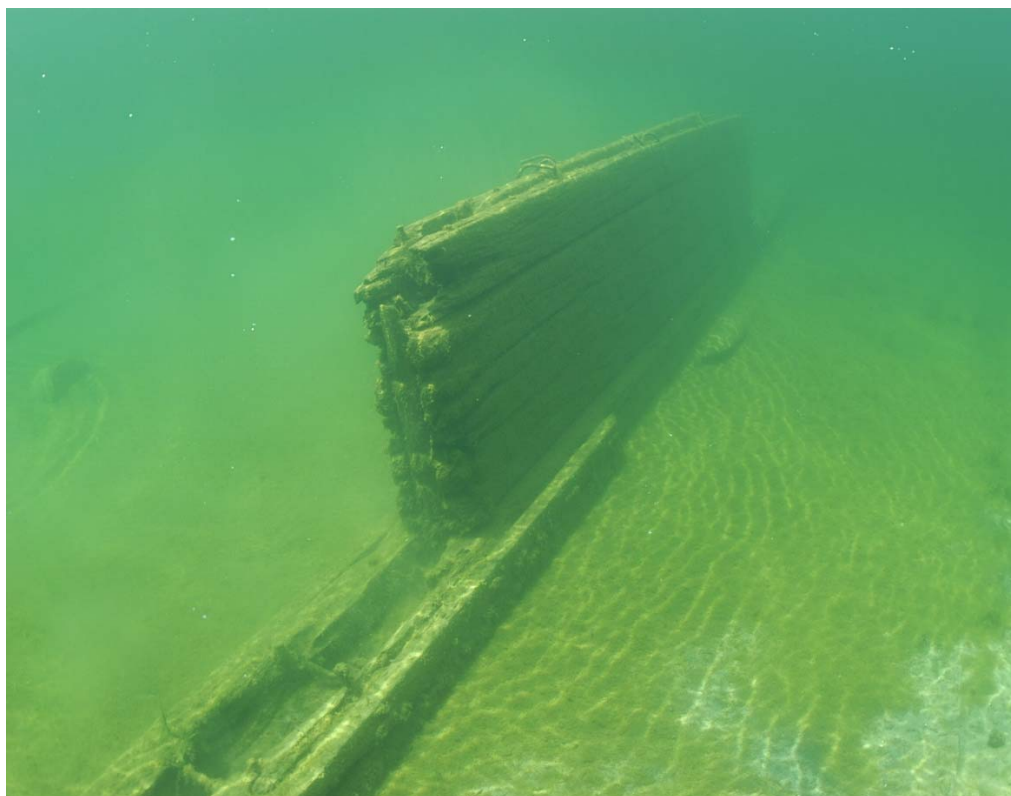


Figure 38. Centerboard trunk, looking forward. Mainmast step is visible on keelson.

The vessel is double framed, and the bulwarks were supported by bulwark stanchions that fastened to the tops of the frames. Outer hull plank dimensions are 0.42 feet wide by 0.15 feet thick. Ceiling plank dimensions are 0.63 feet wide by 0.07 feet thick. No deck beams or deck planks are extant, and no evidence of cargo was discovered.

The vessel carried three masts, and all three mast steps are visible on the keelson. The foremast step is located between 14.1 and 15.8 feet aft of the stem. The mainmast step was somewhat difficult to distinguish, but is located aft of the centerboard trunk between 63.45 feet and 66.3 feet aft of the stem. The mizzenmast step is located between 85.0 feet and 86.6 feet aft of the stem.

A search of historic literature produced a handful of three-masted schooners that were lost off Jacksonport, but most were reported to have been salvaged at a later date. The schooner *Annie Dall* is reported to have come ashore south of the Jacksonport piers and was abandoned there, but to date no vessels have been discovered south of the piers. Information gathered during the 2010 archaeological survey suggests that the remains of the unidentified north schooner may

be that of the *Annie Dall*. The north vessel's size is consistent with that of the *Annie Dall*, and it was reported that the *Annie Dall*'s stern was badly twisted when she came ashore, suggesting her keel may have been broken. The north schooner's keel is broken in two places, and the aftermost section of keel, as well as the vessel's transom, is completely missing from the site. Additionally, both the port and starboard sides are broken in location's that correspond to the break in the keelson. The vessel's orientation is also consistent with a vessel that was driven ashore during a southerly gale, as adrift vessels invariably turn a beam to the seas and come ashore perpendicular to the prevailing wind. Lastly, a seated Liberty dime with 13 stars around the perimeter of the obverse was located in the mainmast step. Although the coin's production year was illegible, other features of the coin place its date of manufacture between 1838 and 1853. When a new vessel was constructed, it was traditional to place a coin beneath the mainmast that was minted the same year as the vessel's construction. The age of this coin potentially places its construction year between 1838 and 1854, consistent with the *Annie Dall*'s launch in 1848.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

This field report is part of an ongoing effort to document several types of historical sailing craft that were once common to Wisconsin and the Great Lakes. Combined with earlier field work conducted on scows, canallers, and small trading schooners, this document adds to a growing body of knowledge on commercial sailing craft that worked Wisconsin waters during the eighteenth and nineteenth centuries. As the Upper Midwest was transformed from a wilderness frontier into an industrial powerhouse during the nineteenth century, the role of commercial sail on the Great Lakes was rapidly transformed. As a result, several different classes of commercial sail developed on the Great Lakes. Many of these more specialized vessels continued to sail long after the trade for which they were designed had waned, and were often adapted to other trades and routes. As the settlements surrounding Lake Michigan grew into cities, an increasing number of vessels stopped sailing to the lower Great Lakes and spent their entire lives on Lake Michigan alone. This field report documents a cross section of these vessel types that were archaeologically surveyed by the Wisconsin Historical Society during the 2010 and 2011 field seasons.

Archaeological surveys of shipwreck sites conducted by the Wisconsin Historical Society are designed to document the sites according to the standards and guidelines established by the National Park Service for submerged cultural resources. A primary goal of the surveys is to evaluate a site to determine its eligibility for listing on the National Register of Historic Places. As a result, several sites included in this report have been listed on the National Register or have been nominated and are awaiting listing.

The *Walter B. Allen* was listed on the National Register in November 2011. The extremely intact nature of the *Walter B. Allen* makes this site particularly significant. One of several canallers that wrecked in Wisconsin waters, the *Walter B. Allen* is one of only two canaller sites that retains a high degree of hull integrity. Most canallers that wrecked in Wisconsin, like the *Daniel Lyons*, lie broken and scattered on the lake bed and do not exhibit the superb level preservation and integrity as that of the *Walter B. Allen*.

The Jacksonport Wharf Complex was listed on the National Register in February 2012, and is the second submerged archaeological district in Wisconsin to be listed. The Jacksonport Wharf Complex is particularly significant as it is an extremely rare example of a nineteenth-century commercial interface between land and water. Few of these interfaces have survived on the Great Lakes as most have experienced significant levels of coastal development during the twentieth century.

The scow *Silver Lake* and the schooner *Island City* have been listed on the State Register of Historic Places and are pending listing on the National Register. The *Silver Lake* is an extremely rare example of an intact scow schooner that still retains a rigged foremast to include the yard. Despite their rather ubiquitous nature during the nineteenth century, relatively few archaeological examples of the scow exist today on the Great Lakes bottom lands. The few examples of the scow schooner that have been discovered are most often broken and scattered, making the *Silver Lake* particularly significant.

The *Island City* is also part of a poorly documented vessel class on the Great Lakes, the trading schooner. Trading schooners were smaller vessels that served the Lake Michigan intralake trade and rarely, if ever, sailed to the lower lakes. They most often served the smaller lakeshore

communities in which their owners and masters lived, and are not well-documented in historical literature. The Wisconsin Historical Society has been focusing on smaller trading schooners over the last several field seasons, and the *Island City* survey has continued that focus.

The *Lady Ellen* site has not been nominated to the State or National Register at this time. The site lies exposed in very shallow water in the Ahnapee River and has deteriorated significantly over the eleven years that elapsed between the two archaeological surveys. Without doubt, the *Lady Ellen* site has provided a wealth of archaeological data on scow schooner construction, including features that have not been recorded on other sites. Little of the former hull structure remains, however, and it is likely that the site will experience significant additional deterioration in upcoming years - even if the site is left undisturbed. Additionally, the site lies on privately-owned commercial property and requires the landowner's permission in order to nominate the site to the National Register. For these reasons, a nomination has not been pursued. The site should be monitored yearly, however, to gather additional construction details that may be uncovered as the site continues to break up and move about the river bottom.

The 2011 field season completed a line of archaeological research that was started by the Wisconsin Historical Society in 2004 – the survey of all known scow schooners on Wisconsin bottomlands. With the conclusion of the 2011 field season, the scow schooners that have been documented include: *Iris*, *Ocean Wave*, *Tennie and Laura*, *Silver Lake*, *Lady Ellen* and the *Daniel Hayes* (surveyed by East Carolina University in 2001). According to historical records, however, many more scows were lost in Wisconsin waters, so it is likely that additional scows will be discovered in the future.

Although all the known scow schooners have been archaeologically documented, much work still remains to fully understand this vessel type and how it developed and evolved on the Great Lakes. Archaeological documentation confirmed a number of the scow's known construction features, but also uncovered a few unknown features, such as the lack of a keel on the *Lady Ellen*. Further research should focus on a comparative study of the different construction techniques utilized by different shipyards, and how those differences may have varied by region or even by lake. A variety of hull design and construction techniques has been documented across the known scow sites, and the scow schooners that sailed Lake Michigan should be compared with those of the other Great Lakes. Preliminary research into one of Lake Superior's scow sites, the *May Flower*, suggests there may be significant differences between each of the Great Lakes (Meverden and Thomsen 2011). There is also much room for research into the connection between Great Lakes and New Zealand scows and what role American expatriate George Spencer may have played in that connection.

What we can learn archaeologically from the scows in Wisconsin is by no means exhausted, especially in regards to the *Tennie and Laura* that lies in just over 300 feet of water off Port Washington. The Remotely Operated Vehicle (ROV) survey conducted by the Wisconsin Historical Society acquired limited data, and a wealth of additional information awaits discovery in the Lake Michigan depths. Additionally, as the sands move around the shallower sites and hull sections that were previously buried become exposed, new construction details will be revealed. This is particularly important on the *Iris* and *Ocean Wave* sites, where significant questions remain regarding their construction and classification.

Although the *Silver Lake* lies in 200 feet of water, it is receiving an increasing number of visitors each year. The site is especially appealing to divers, who often describe the site as the

type of shipwreck “Walt Disney would have created”. The site’s appeal to divers is no doubt due to the standing foremast and yard, as well as the clear, blue water that is usually found at the site that often provides underwater visibility in excess of 100 feet. In the past, divers have tied mooring lines to the foremast, and many abandoned lines now entangle the foremast and some of the surrounding deck. Using the foremast as a mooring point may have contributed to the loosening of the mast partners and the resulting list of the foremast. In recent years, however, divers have come to realize the fragile nature of sites like the *Silver Lake*, and mooring lines have not been attached to the mast for several years. In the future, divers should refrain from attaching any mooring line to the foremast itself, or to any hull structure surrounding the foremast than may cause an entanglement with the mast. If the foremast does topple, one of the most appealing features of this site will be lost forever.

The *Island City* site is a small, broken schooner that lies right at the limit of recreational scuba diving – 130 feet. Combined with its rather long distance from the nearest port – 10 miles from Port Washington and 15 miles from Milwaukee – the site receives few visitors each year. The site is extremely entangled in trawl nets, which are the likely cause of the hull’s broken state. Nonetheless, the *Island City* site is an excellent location to study construction features of the smaller trading schooner as the vessel is opened up enough to examine internal features that are hidden in more intact wrecks, and nearly all of the hull’s components can be found around the site.

The *Walter B. Allen* is a prime example of how well the Great Lakes’ cold, fresh waters can preserve wooden shipwrecks, but is also an unfortunate example of how fragile submerged shipwrecks may be. Until recently, the *Walter B. Allen* was the only wreck site in Wisconsin that had all of her masts standing upright. The upright masts made the site appealing to many divers, and unfortunately also provided a shallow, convenient point on which to place moorings for dive boats. Undoubtedly, many years of mast-head moorings took their toll on the masts’ integrity, and within two years of each other both had toppled. Hopefully, divers will take note of this tragic loss and actively work to preserve those few wrecks with standing masts that remain in Wisconsin by not place mooring lines on or around a standing mast. Additionally, the information gathered during the 2010 survey should be used as a baseline to closely monitor the *Walter B. Allen* site for any further changes in upcoming years.

The Jacksonport Wharf Complex is the most robust of the sites included in this report, having survived more than a century of surf and ice moving over the site. The site’s biggest threat is looting, as many artifacts remain on the bottom, especially around Reynold’s Pier. Longshore currents and surf continually move sand through the area and alternately buries and exposes the site’s artifacts. Each visit by divers may either reveal new artifacts and hull structure that was not previously exposed, or may hide from view those that were previously visible. Divers visiting the site should refrain from removing any artifacts. Equally as important, artifacts should not be moved about the site or piled at one location for photographic or other purposes. Moving artifacts destroys any information that can be gathered from the artifact’s location or relationship to other artifacts.

In upcoming years, it is likely that the disarticulated centerboard trunk will wash ashore on the nearby beach. If this should occur, it is recommended that the centerboard trunk be returned to deeper water, neared the site of the *Cecelia* and *Perry Hannah* if possible. Because the centerboard trunk is waterlogged, removing it from the water would require an expensive and

lengthy conservation treatment. If the centerboard trunk is removed from the water and allowed to dry out without undergoing conservation, it will quickly deteriorate and be lost. The time and expense of conservation can be avoided by simply returning the trunk to deeper water.

Any boats or watercraft transiting the area should use extreme caution. Many of the pier pilings rise to within inches of the surface or break the surface, creating a navigational hazard. Recently, the village of Jacksonport has placed warning buoys around the Reynold's pier pilings, but caution should still be used as the pilings cover vast areas of lake bed.

The shoreline along the Jacksonport Wharf Complex has been rapidly eroding in recent years. In the time between surveys, from 2004 to 2011, as much as twenty feet of the beach has been lost. During this time period, the remains of a small vessel began protruding from the receding shoreline. No historical records were uncovered of an abandoned or wrecked vessel in this area, but an exposed steering quadrant suggested a small, powered vessel that may have been associated with the local commercial fishing industry. The exposed hull structures were removed by the landowners as they presented a hazard to beachgoers, but the vessel's hull remains buried in the beach. As the Jacksonport shoreline continues to move, the area should be monitored for additional artifacts or structures that may be revealed.

The archaeological surveys and historic research included in this report have significantly added to the growing body of documentation on the operation and use of sailing vessels on the Great Lakes and within Wisconsin. The vessels surveyed over the 2010 and 2011 field seasons include a cross section of the types of sailing vessels that were common to Wisconsin waters during last half of the nineteenth century. These vessel types include both small and large vessels, vessels that engaged in both inter- and intralake trade, and vessels that carried various cargoes including grain, coal, lumber, stone, and merchandise. Further research is needed, however, to fully understand the construction and use of commercial sail on the Great Lakes, especially that of smaller sailing vessels like the *Lady Ellen*, *Island City*, and *Silver Lake*. These smaller vessels are not well documented in the historic record, and only through continued archaeological documentation and reconstruction of their operational histories will a fuller understanding of their construction and use be garnered.

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1885q *Ahnapee Record* 22 October. Ahnapee [Algoma], WI.
1885r *Ahnapee Record* 29 October. Ahnapee [Algoma], WI.
1885s *Ahnapee Record* 12 November. Ahnapee [Algoma], WI.
1885t *Ahnapee Record* 19 November. Ahnapee [Algoma], WI.
1885u *Ahnapee Record* 3 December. Ahnapee [Algoma], WI.
1885v *Ahnapee Record* 17 December. Ahnapee [Algoma], WI.
1886a *Ahnapee Record* 1 April. Ahnapee [Algoma], WI.
1886b *Ahnapee Record* 8 April. Ahnapee [Algoma], WI.
1886c *Ahnapee Record* 22 April. Ahnapee [Algoma], WI.
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1886e *Ahnapee Record* 6 May. Ahnapee [Algoma], WI.
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1886j *Ahnapee Record* 10 June. Ahnapee [Algoma], WI.
1886k *Ahnapee Record* 8 July. Ahnapee [Algoma], WI.
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1887a *Ahnapee Record* 8 January. Ahnapee [Algoma], WI.
1887b *Ahnapee Record* 21 April. Ahnapee [Algoma], WI.
1887c *Ahnapee Record* 5 May. Ahnapee [Algoma], WI.
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1887q *Ahnapee Record* 17 November. Ahnapee [Algoma], WI.
1887r *Ahnapee Record* 22 December. Ahnapee [Algoma], WI.

- 1888a *Ahnapee Record* 12 April. Ahnapee [Algoma], WI.
1888b *Ahnapee Record* 19 April. Ahnapee [Algoma], WI.
1888c *Ahnapee Record* 3 May. Ahnapee [Algoma], WI.
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1889a *Ahnapee Record* 14 March. Ahnapee [Algoma], WI.
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1890a *Ahnapee Record* 10 April. Ahnapee [Algoma], WI.
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- 1891n *Ahnapee Record* 3 September. Ahnapee [Algoma], WI.
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1893r *Ahnapee Record* 12 October. Ahnapee [Algoma], WI.
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- 1894a *Ahnapee Record* 8 March. Ahnapee [Algoma], WI.
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1896i *Ahnapee Record* 15 October. Ahnapee [Algoma], WI.
1897a *Ahnapee Record* 29 April. Ahnapee [Algoma], WI.
1897b *Ahnapee Record* 1 July. Ahnapee [Algoma], WI.

- 1897c *Ahnapee Record* 8 July. Ahnapee [Algoma], WI.
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 1897e *Ahnapee Record* 5 August. Ahnapee [Algoma], WI.
 1897f *Ahnapee Record* 9 September. Ahnapee [Algoma], WI.
 1899a *Ahnapee Record* 10 November. Ahnapee [Algoma], WI.
 1899b *Ahnapee Record* 24 November. Ahnapee [Algoma], WI.
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1866c *Buffalo Daily Courier* 7 July. Buffalo, NY.

1867a *Buffalo Daily Courier* 24 August. Buffalo, NY.

1867b *Buffalo Daily Courier* 8 November. Buffalo, NY.

1867c *Buffalo Daily Courier* 3 December. Buffalo, NY.

1868a *Buffalo Daily Courier* 20 June. Buffalo, NY.

1868b *Buffalo Daily Courier* 27 June. Buffalo, NY.

1868c *Buffalo Daily Courier* 9 September. Buffalo, NY.

1868d *Buffalo Daily Courier* 29 September. Buffalo, NY.

1868e *Buffalo Daily Courier* 1 October. Buffalo, NY.

1868f *Buffalo Daily Courier* 31 October. Buffalo, NY.

1868g *Buffalo Daily Courier* 13 November. Buffalo, NY.

1869a *Buffalo Daily Courier* 25 May. Buffalo, NY.

1869b *Buffalo Daily Courier* 29 October. Buffalo, NY.

1870 *Buffalo Daily Courier* 26 September. Buffalo, NY.

1871a *Buffalo Daily Courier* 8 May. Buffalo, NY.

1871b *Buffalo Daily Courier* 29 July. Buffalo, NY.

1871c *Buffalo Daily Courier* 7 September. Buffalo, NY.

1871d *Buffalo Daily Courier* 14 September. Buffalo, NY.

1871e *Buffalo Daily Courier* 16 September. Buffalo, NY.

1871f *Buffalo Daily Courier* 25 September. Buffalo, NY.

1871g *Buffalo Daily Courier* 4 October. Buffalo, NY.

1871h *Buffalo Daily Courier* 30 October. Buffalo, NY.

1871i *Buffalo Daily Courier* 31 October. Buffalo, NY.

1871j *Buffalo Daily Courier* 1 November. Buffalo, NY.

1871k *Buffalo Daily Courier* 15 November. Buffalo, NY.

1871l *Buffalo Daily Courier* 20 November. Buffalo, NY.

1872a *Buffalo Daily Courier* 13 June. Buffalo, NY.

1872b *Buffalo Daily Courier* 24 June. Buffalo, NY.

1873a *Buffalo Daily Courier* 14 May. Buffalo, NY.

1873b *Buffalo Daily Courier* 15 May. Buffalo, NY.

1873c *Buffalo Daily Courier* 23 May. Buffalo, NY.

1873d *Buffalo Daily Courier* 9 June. Buffalo, NY.

1873e *Buffalo Daily Courier* 12 June. Buffalo, NY.

- 1873f *Buffalo Daily Courier* 13 June. Buffalo, NY.
1873g *Buffalo Daily Courier* 17 June. Buffalo, NY.
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1873j *Buffalo Daily Courier* 18 July. Buffalo, NY.
1873k *Buffalo Daily Courier* 30 July. Buffalo, NY.
1873l *Buffalo Daily Courier* 6 August. Buffalo, NY.
1873m *Buffalo Daily Courier* 23 August. Buffalo, NY.
1873n *Buffalo Daily Courier* 1 September. Buffalo, NY.
1873o *Buffalo Daily Courier* 4 September. Buffalo, NY.
1873p *Buffalo Daily Courier* 8 September. Buffalo, NY.
1873q *Buffalo Daily Courier* 19 October. Buffalo, NY.
1874a *Buffalo Daily Courier* 6 May. Buffalo, NY.
1874b *Buffalo Daily Courier* 25 May. Buffalo, NY.
1874c *Buffalo Daily Courier* 27 May. Buffalo, NY.
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1874r *Buffalo Daily Courier* 4 September. Buffalo, NY.
1874s *Buffalo Daily Courier* 9 September. Buffalo, NY.
1874t *Buffalo Daily Courier* 30 September. Buffalo, NY.
1875a *Buffalo Daily Courier* 16 June. Buffalo, NY.
1875b *Buffalo Daily Courier* 30 June. Buffalo, NY.
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- 1875i *Buffalo Daily Courier* 5 November. Buffalo, NY.
 1877a *Buffalo Daily Courier* 4 August. Buffalo, NY.
 1877a *Buffalo Daily Courier* 17 August. Buffalo, NY.
 1877b *Buffalo Daily Courier* 19 September. Buffalo, NY.
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 1877e *Buffalo Daily Courier* 27 October. Buffalo, NY.
 1878 *Buffalo Daily Courier* 18 June. Buffalo, NY.
 1879a *Buffalo Daily Courier* 9 July. Buffalo, NY.
 1879b *Buffalo Daily Courier* 2 September. Buffalo, NY.
 1879c *Buffalo Daily Courier* 10 September. Buffalo, NY.
 1879d *Buffalo Daily Courier* 29 September. Buffalo, NY.
 1879e *Buffalo Daily Courier* 2 November. Buffalo, NY.
 1879f *Buffalo Daily Courier* 18 November. Buffalo, NY.
 1880a *Buffalo Daily Courier* 13 April. Buffalo, NY.

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 1866c *Buffalo Evening Courier & Republic* 14 June. Buffalo, NY.
 1866d *Buffalo Evening Courier & Republic* 22 June. Buffalo, NY.
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 1869a *Buffalo Evening Courier & Republic* 2 July. Buffalo, NY.
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 1870a *Buffalo Evening Courier & Republic* 20 May. Buffalo, NY.
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- 1870h *Buffalo Evening Courier & Republic* 31 October. Buffalo, NY.
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- 1872m *Buffalo Evening Courier & Republic* 11 October. Buffalo, NY.
- 1872n *Buffalo Evening Courier & Republic* 4 December Buffalo, NY.
- 1873a *Buffalo Evening Courier & Republic* 16 June. Buffalo, NY.
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- 1873c *Buffalo Evening Courier & Republic* 23 June. Buffalo, NY.
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- 1870c 4th Ward of the City of Sheboygan, Sheboygan County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
- 1870d Chicago Ward #9, Cook County, Illinois. U.S. Department of the Interior, Government Printing Office, Washington DC.
- 1870e Chicago Ward #12, Cook County, Illinois. U.S. Department of the Interior, Government Printing Office, Washington DC.
- 1870f Chicago Ward #18, Cook County, Illinois. U.S. Department of the Interior, Government Printing Office, Washington DC.
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- 1870h Village of Ahnapee, Kewaunee County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
- 1870i Village of DePere, Brown County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
- 1870j Village of Marine City, St. Clair, County, Michigan. U.S. Department of the Interior, Government Printing Office, Washington DC.
- 1870k Town of Centerville, Manitowoc County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
- 1880a 2nd Ward, City of Sheboygan, Sheboygan County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
- 1880b 3rd Ward of the City of Sheboygan, Sheboygan County, Wisconsin. U.S. Department of the Interior, Government Printing Office, Washington D.C.
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- 1880f Town of Bethany, Gratiot County, Michigan. U.S. Department of the Interior, Government Printing Office, Washington D.C.
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1991 Jacksonport Historical and Archeological Findings of the Door County Maritime Heritage Society for the 1990 Field Work. Manuscript on file, Wisconsin Historical Society Division of Historic Preservation – Public History, Madison, WI.