

**“A” is for Archaeology
Underwater Archaeological Investigations from
the 2016 and 2017 Field Seasons**



**State Archaeology and Maritime Preservation
Technical Report Series #18-001**



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Note:

At the time of publication the *J.M. Allmendinger*, and *Antelope* sites are pending listing on the State and National Registers of Historic Places. Nomination packets for these shipwreck sites have been prepared and submitted to the Wisconsin State Historic Preservation Office. The *Arctic* site is listed on the State Register of Historic Places pending listing on the National Register of Historic Places. The *Atlanta* site has been listed on the State and National Register of Historic Places.

Cover photo: A diver surveying the boiler of the steambarge *J.M. Allmendinger*, Ozaukee County, Wisconsin.

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CHAPTER ONE

INTRODUCTION

Underwater 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, and the University of Wisconsin Sea Grant Institute. Project funding was provided by grants from the University of Wisconsin Sea Grant Institute and the Wisconsin Coastal Management Program. The surveys were organized and staffed by the Society's Maritime Preservation and Archaeology program archaeologists and volunteers, and were conducted over the 2016 and 2017 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 housed within the Society's State Historic Preservation Office. 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 waterways, 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 strategy 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 from the basis of interpretation and outreach projects.

Shipwreck Moorings. With volunteer assistance, the Society maintains permanent moorings on 30 historic shipwrecks statewide. These moorings facilitate recreational access, provide a means of interpreting the wreck sites for 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 and Wisconsin Coastal Management Program, the Society has produced guides to 40 Wisconsin shipwrecks and underwater 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. As of January 2018, presentations given by the Society's underwater archaeologists and volunteers have reached approximately 53,260. Many more have also been reached through radio and television programs.

Interpretive Signage and Kiosks. As of January 2018, the Society has created shore-side informational markers for 43 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. Six interactive touch-screen kiosks that highlight Wisconsin's historic shipwrecks are installed at the Wisconsin Maritime Museum in Manitowoc, the Wisconsin Historical Museum in Madison, the Wisconsin Historical Society's Madeline Island Museum in La Pointe, the Door County Maritime Museum in Sturgeon Bay, Door County Maritime Museum in Gills Rock and the History Museum at the Castle in Appleton. 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.

Maritime History Geocaches. Taking participants on self-guided tours of local maritime heritage sites, or modern commercial use of the Great Lakes and their tributaries, 39 Maritime History Geocaches have been placed in the communities of Superior, Two Rivers, Manitowoc, Sheboygan, Port Washington, Milwaukee, and throughout Door County. A full listing of available geocaches under the name "WiscMaritime" can be found at <http://www.geocaching.com/seek/nearest.aspx?u=WiscMaritime&submit4=Go>

Website. WisconsinShipwrecks.org is a collaborative effort between the Wisconsin Historical Society and the University of Wisconsin Sea Grant Institute, which began in 1996. This website makes results of underwater archaeological research available to the public and fosters the preservation of submerged archaeological sites. The heart of the site features detailed information on historically and recreationally significant shipwrecks in Wisconsin, including Lakes Michigan and Superior, the Mississippi River, and other inland waters. Each shipwreck profile includes information about the ship's archaeology, history, final voyage, sinking, and current condition. However, to maintain public interest in the site, new research and updates of current shipwreck "profiles" must be added in a timely manner. Data and images gathered during the fieldwork, historical research, and trail creation is added to the popular website. With several searchable databases for Wisconsin's maritime resources, visitors are able to view shipwreck site plans as well as historic and underwater photos of shipwrecks. This website features a database of over 750 Wisconsin shipwrecks and a database of statewide maritime-related cultural attractions to promote heritage tourism and preservation of submerged cultural resources. This website was updated in 2014.

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 how vessels were built and operated during this time. As a result, much of what we know about Great Lakes merchant vessels has come from the archaeological record of vessels that now lay on the Great Lakes bottomlands. The archaeological surveys within this report were designed to provide a better understanding of historic Great Lakes commercial vessel construction and use.

Field data collection methods included traditional baseline surveys aided by digital photo and video documentation. Data from deep wreck sites was collected by a remotely operated vehicle (ROV) equipped with video and multibeam sonar. Archaeological documentation was conducted along guidelines established by the National 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, environmental 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 and methods included:

1. Determine the site location, environment, and parameters through visual survey of extant elements, features, artifacts and documentation and mapping of exposed remains using trilaterated survey points and an onsite (submerged) datum. Additionally, 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.
2. 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 traditional and closed-circuit scuba technology as well as ROV. Documentation included digital photo mosaics, photogrammetry,

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 descriptions, 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

GOODRICH STEAMBOAT LINE

The Goodrich Transit Company is heralded as one of the longest running companies dedicated to the transportation of people and goods on the Great Lakes. Under its various iterations, the Goodrich line provided seventy-seven years of continual and dependable routes on what arguably were as some of the most luxurious steamers on the lakes. The company's prosperity and longevity can be directly attributed to the actions of its founder, Captain Albert Edgar "A.E." Goodrich.



Figure 1. Captain Albert Edgar Goodrich (Elliott 1995:4)

A.E. Goodrich was born in 1826, the sixth of seven children, to one of the founding families of New Buffalo, Michigan (Elliott 1995:13). He acquired a passion for ships and shipping at a young age and by the age of twenty-one became a clerk on the Ward Line steamer *A.D. Patchin*, with the help of his uncle Captain Henry Whittaker (Elliott 1995:16). Through years of hard work and dedication he became a distinguished captain and prominent figure of the Ward Line of Steamers. In the late 1830s, a massive inflow of immigrants traveled westward and Ward line passenger steamers were the vessels of choice. Through the 1840s the Ward Line of Steamers was the only carrier with regular service on southern Lake Michigan. Captain Goodrich observed this growing industry and decided to come together with others of the Ward line to incorporate under the Clement Steamboat Line in 1856. The Clement line chartered vessels

from the Ward Line for transportation out of Chicago (Elliott 195:18). Within a year A.E. Goodrich sold his stock in the Clement Line, partnered with George C. Drew and formed a new company under his name, initially organized as the Goodrich Steamboat Line.

The Goodrich Steamboat Line acquired docks and offices in Chicago and Milwaukee and maintained routes between these ports and others along the western Wisconsin coast. The first vessel of the Goodrich line was the sidewheeler *Huron*, which was chartered by the Ward line (Elliott 1995:18-22). Within three years the Goodrich line purchased the *Huron*, the propeller *Ogontz*, and the sidewheeler *Comet* (Elliott 1995:23, 26). The line also established a cross-lake route from Chicago to Grand Haven and Muskegon, Michigan as well as extended their western route as far north as Green Bay. The cross-lake route was essential for the Goodrich line because it was a direct link for railway service in Michigan before railroads crossed to Wisconsin. The railway was not fully established in Wisconsin until the 1870s, so the line provided fast and reliable transportation for break-bulk railway freight and passengers westward (Hilton 2002:55).

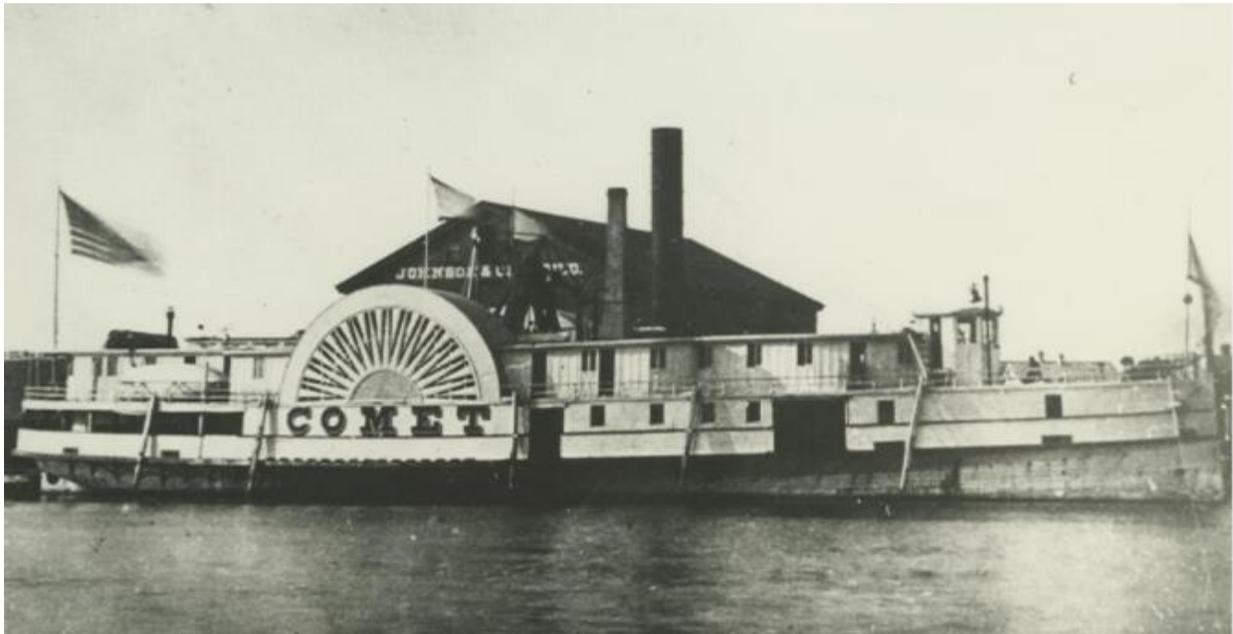


Figure 2. Goodrich sidewheel steamer *Comet* (C. Patrick Labadie Collection)

In 1861 Goodrich contracted the construction of the company's first new vessel, the propeller *Union*, with the Bates Shipyard in Manitowoc (Elliott 1995:37). The *Union* was a very strong, well-built vessel. This began the long relationship between Manitowoc shipyards and the Goodrich line. Bates constructed two other steamers for Goodrich (Elliott 1995:37). After the Civil War, C.S. Rand purchased the Bates yard. This did not hinder the relationship with Goodrich, and by 1867 the shipyard was contracted to build the sidewheeler *Northwest* (Elliott 1995:49). Under Rand, two more vessels were constructed and two were remodeled for the Goodrich line (Elliott 1995:49, 76, 51). In the early 1880s shipwright Henry Burger joined C.S.

Rand to form the Rand & Burger shipyard. Rand & Burger built the tug *Arctic* and the steamer *City of Ludington* for Goodrich (Elliott 1995:81, 83, 294; *Manitowoc Pilot* 1882a). When C.S. Rand passed away in 1885, George Burger joined his cousin and reformed the company as Burger & Burger Shipbuilding Company. Burger & Burger built three more steamers for the Goodrich line until the Manitowoc Shipbuilding and Dry Dock Company purchased the yard in 1903 (Elliot 1995:118, 120, 294). Even after this purchase Goodrich continued vessel construction, maintenance, and repair in Manitowoc.

The early 1860s were tough for the Goodrich Steamboat Line. Two of the vessels owned by the line, *Wabash Valley* and *Sunbeam*, wrecked on the lakes costing the company a total of \$61,000 (Elliott 1995:289). Outside of these losses, the Civil War brought financial burden and emotional distress to the United States diminishing the passenger trade on the lakes. Captain Goodrich no longer thought of expanding, but focused inward on how to use the property he had to maintain business. Between 1857 and 1865 the Goodrich line purchased ten vessels. Out of these, three were dismantled and their engines reused, two were wrecked, one was sold, and four remained in service.



Figure 3. Goodrich vessels in winter quarters in the Manitowoc River ca. 1868 (Wisconsin Maritime Museum)

In 1867 Captain Goodrich purchased docks in Manitowoc and began using the harbor as the company's main port (Elliott 1995:57). Manitowoc provided a central location between Milwaukee, Door County ports, and Grand Haven and Muskegon, Michigan for ready access to repair disabled vessels at the city's shipyards. On 18 April 1868 the Goodrich Steamboat Line incorporated as the Goodrich Transportation Company. A.E. Goodrich became president; Joseph Goodrich, Vice President; W. Wright, Treasurer; and T. Butlin, Superintendent. The corporate offices were located in Chicago while the port of hail for the vessels was Manitowoc. The Goodrich Transportation Company ran the steamers *Alpena*, *Comet*, *Truesdell*, *Manitowoc*, *Northwest*, and *Ottawa*. Under this new name, Captain Goodrich focused on consistency and reliability (Elliott 1995:59). Goodrich vessels were identified by their black hulls, white cabins, red smoke stacks, and white dove-tail pennants embroidered with the initials "G.T.Co". In 1868, A.E. and his wife were blessed with a baby boy named Albert Whaling "A.W." Goodrich.

The 1870s were prosperous for the Goodrich line. Contracts with railway service in Grand Haven and Muskegon, Michigan maintained profitable cross-lake routes and passenger transport north from Chicago was constant. To keep this traction, the wooden sidewheeler *Corona* was purposely built for year-round transportation (Elliott 1995:64). After *Corona*, six new steamers were built for the company at Manitowoc, including the *Muskegon*, *Navarino*, *Oconto*, *Menominee*, *DePere*, and *Chicago*. These new steamers were built to withstand the busy cross-lake and western shore traffic. Unfortunately, the steamer *Navarino* was not in service long. In 1871, the steamer was tied to the Goodrich docks in Chicago during the Great Chicago Fire. Captain Goodrich could not save the vessel or his warehouses from the flames, but he was able to save the majority of the company's records (Elliott 1995:64-68). The fire was a great loss of property to the Goodrich Transportation Company, but the line prevailed, and continued prospering into the 1880s.

In 1881 the Goodrich Transportation Company launched five vessels. The first was the wooden tug *Arctic*. The cross-lake route was essential to the Goodrich line so it was imperative that the navigational channels needed to be kept open through the winter season. *Arctic* was tasked with breaking ice for winter navigation and assisting the Goodrich vessels in any way deemed necessary. Captain A.E. Goodrich was a progressive man, striving to make contemporary improvements to the fleet. To this vein, he contracted the construction of one iron sidewheeler, *City of Milwaukee*, and two iron propellers, *Michigan* and *Wisconsin*, built solely for the growing railroad traffic that the cross-lake route produced. Built in Detroit, these were the first ships built for Goodrich outside of a Manitowoc yard (Elliott 1995:95). Unfortunately, these new iron-hulled steamers did not stay long under Goodrich ownership. In 1882 the Flint & Pere Marquette Railroad Company purchased two steamers for their own use and terminated their contract with Goodrich (Elliott 1995:93, 96). By 1883 the Goodrich line lost their remaining railroad contracts and to avert financial ruin, sold their iron steamers (Elliott 1995:96-97).

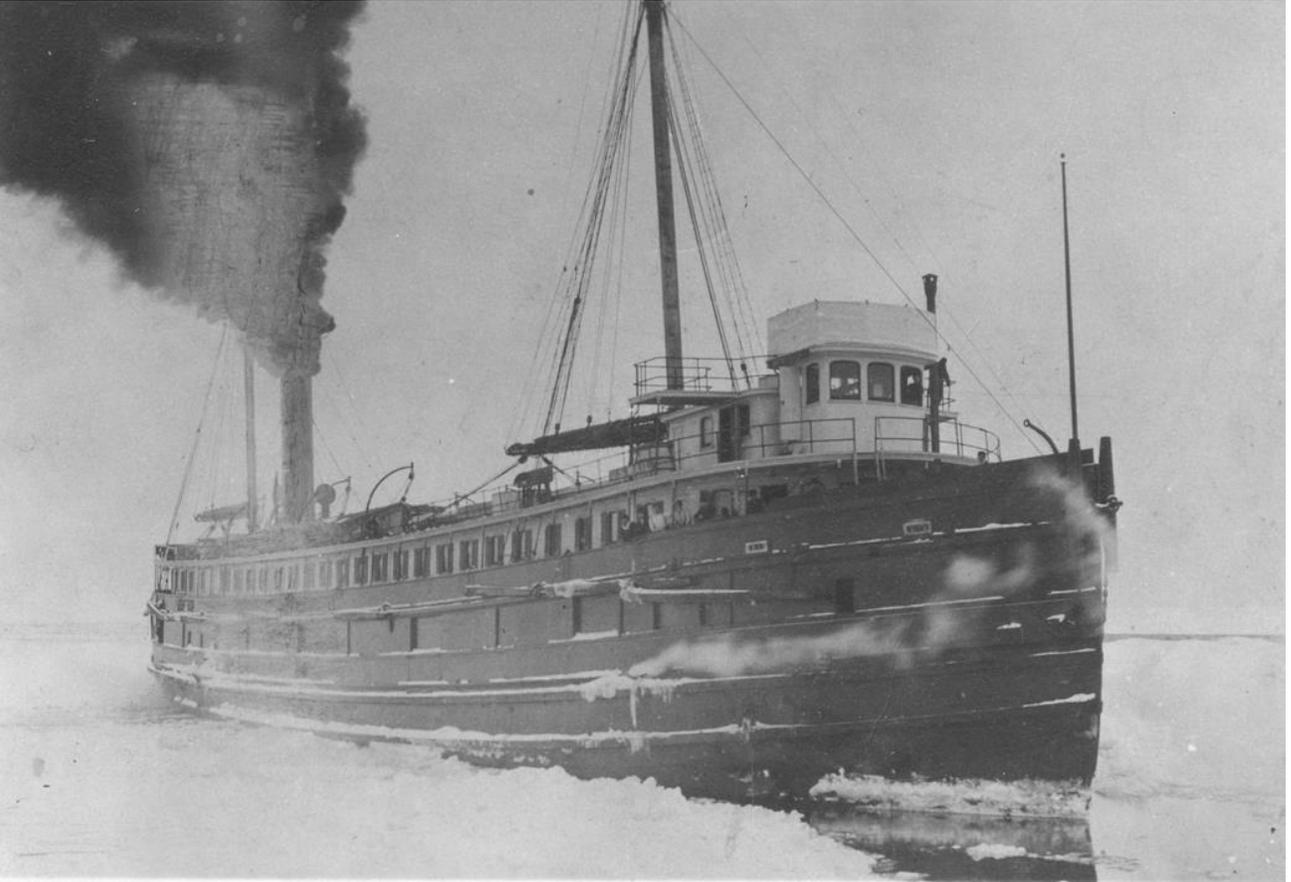


Figure 4. The steamer *Wisconsin* (Wisconsin Maritime Museum)

The stress of losing the railroad business took a toll on A.E. Goodrich's health and on 14 September 1885, the stalwart captain passed away (Elliott 1995:100). Superintendent Captain Butlin was appointed interim president to act as steward of the Goodrich line until the prodigal son, A.W. Goodrich could step into his father's shoes. The Goodrich Transportation Company was vulnerable financially, so for three years Captain Butlin refused to acquire new vessels and focused on the economic restoration of the company (Elliott 1995:112). In December of 1889, A.W. Goodrich was appointed President of the Goodrich Transportation Company. With the company financially stable and a new generation of Goodrich at the helm, it was decided new vessels were needed to replace the old passenger steamers.



Figure 5. Albert Whaling Goodrich (Elliott 1995)

To stay competitive in passenger transportation these new steamers focused on speed and dependability, as well as luxurious accommodations (Elliott 1995:115-117). Before 1890 the Goodrich Company employed sixteen sidewheel steamers and fifteen steam propellers. After 1890, no sidewheel steamers were built for the company. The first three vessels contracted by A.W. Goodrich were the *City of Racine* (1889), *Indiana* (1890), and *Atlanta* (1891). These three vessels were built with overnight passengers in mind. Each had state rooms for over 150 guests and spacious parlors, all with ornate décor and lavish furnishings. The *Virginia*, also built in 1891, was the first all steel-hulled, twin-screw steamer built and owned by the Goodrich line. The steamer was built at the Globe Shipbuilding Company of Cleveland, Ohio for \$301,163.89, the most expensive vessel ever built for the line. The cost was well invested as *Virginia* was considered the most beautiful vessel of the Goodrich line and was often compared to the grandness of the England trans-Atlantic steamers of the time (Elliott 1995:127-129).

Another progressive move was the purchase of the whaleback steamer *Christopher Columbus*. The *Christopher Columbus* was the world's first whaleback passenger steamer originally built as an excursion boat for the 1893 Columbian Exposition (World's Fair) in Chicago. After the Exposition the whaleback was purchased by Hurson Line and was put on a round trip excursion route between Chicago and Milwaukee. This was in direct competition with the Goodrich line. In order to meet that competition, *Virginia* was also put on that same route. To the public's

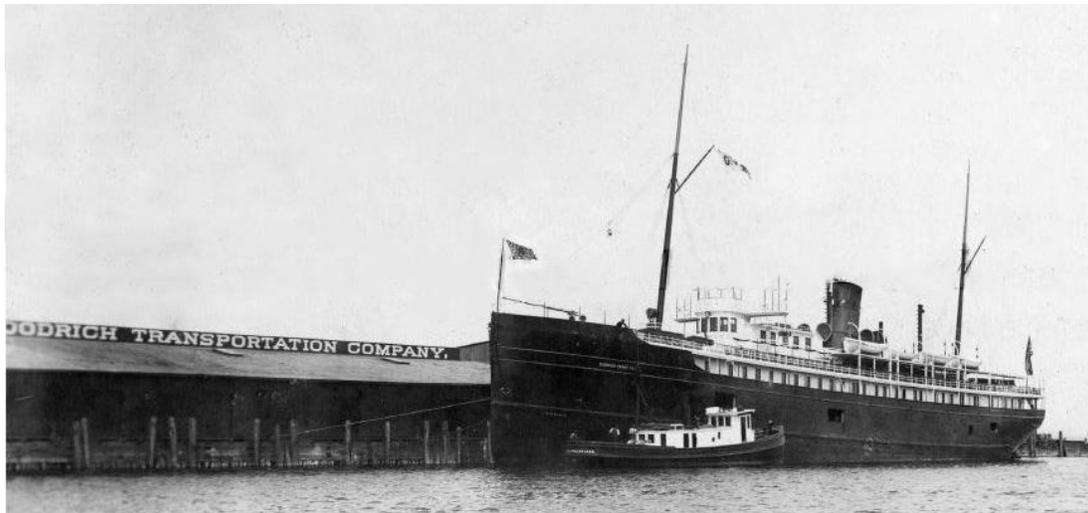


Figure 6. Goodrich passenger steamer *Virginia* and tug *Arctic* at the Goodrich Company dock in Manitowoc ca. 1893 (Wisconsin Maritime Museum).

amusement, and company's benefit, these two vessels would race each other from port to port. Though popular, having the grandest, strongest, and most expensive vessel travel between these relatively close cities was consideration to be a ridiculous waste of resources. In 1908, the Goodrich Transportation Company bought the *Christopher Columbus*, which terminated the competition (Elliott 1995:153-157). The whaleback continued on the Chicago-Milwaukee route for the Goodrich line until the company's end. The vessel was a very popular attraction, each year setting records for most passengers handled by an American vessel (Elliott 1995:165).

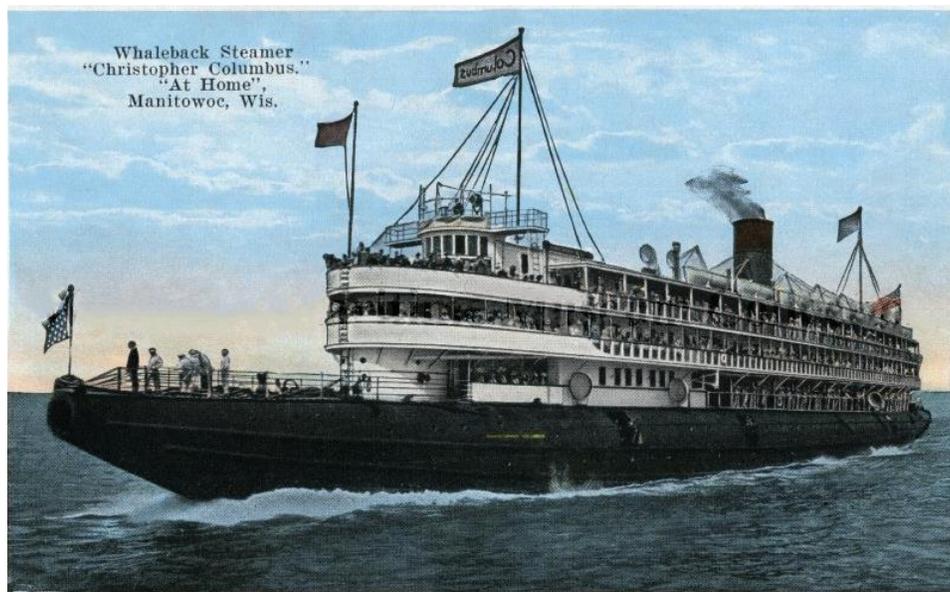


Figure 7. Postcard of the whaleback steamer *Christopher Columbus* (Wisconsin Maritime Museum)

For the year 1900, the Goodrich Transportation Company vessel roster included *Atlanta*, *Chicago*, *Christopher Columbus*, *City of Racine*, *Georgia*, *Indiana*, *Iowa*, *Sheboygan*, *Virginia*, and *Arctic*. *Christopher Columbus* was placed on day trip excursions where the steamers *Virginia* and *Racine* were on night service between Chicago and Milwaukee. *Iowa* and *Indiana* routes were cross-lake between Chicago and Grand Haven/Muskegon. *Atlanta*, *Sheboygan*, and *Chicago* continued steaming from Chicago to various ports along the western shore, including Manitowoc, Sheboygan, Green Bay, and ports of Door County. The steamer *Georgia* was on a seven-day route from Chicago to Mackinac Island with various stops at western ports. The tug *Arctic* continued to work as an icebreaker and support vessel for all of the Goodrich steamers (Elliott 1995:166). In its forty-four years, the Goodrich Transportation Company owned thirty-eight vessels of which ten were still in use. Of these, only three steamers were involved in accidents resulting in loss of life.

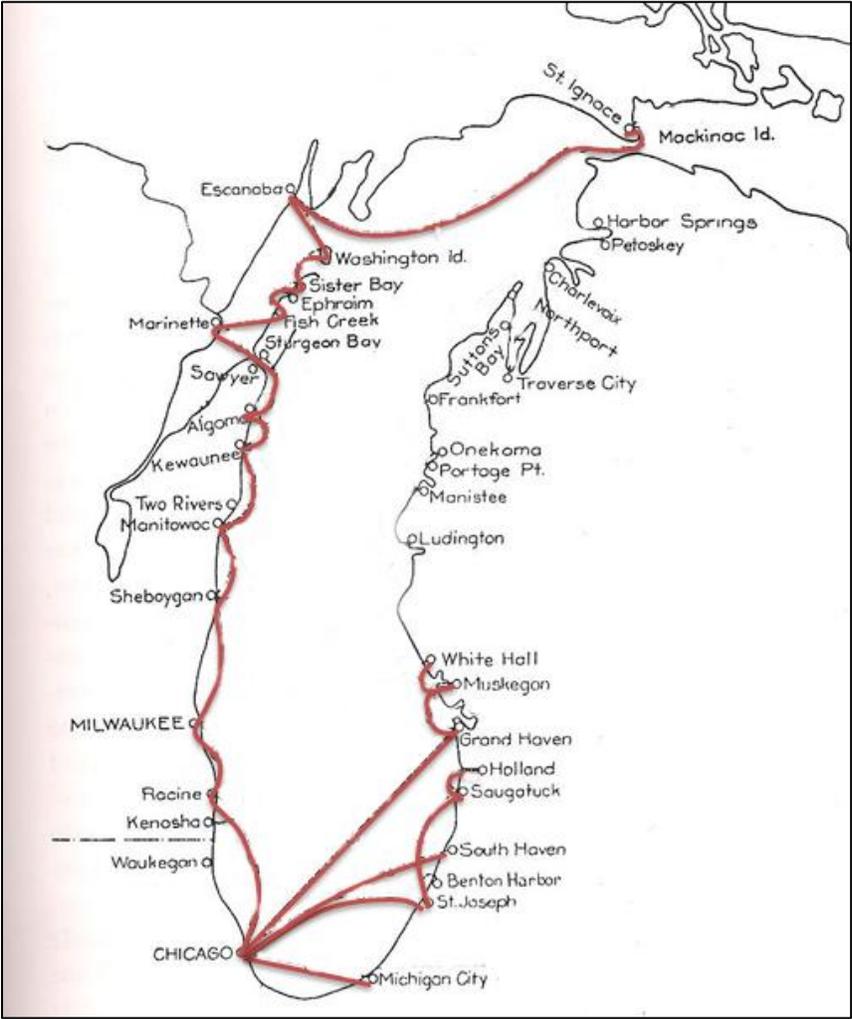


Figure 8. Routes for the Goodrich Transportation Company vessels in 1900 (Hilton 2002)

In 1906 the Goodrich Transportation Company (under the Laws of the State of Wisconsin) was dissolved and a new corporation, the Goodrich Transit Company was established in Maine. The new officers included; A.W. Goodrich, President; E.L. Upton, Vice-President; H.W. Thorp, Secretary; and W.J. Louderback, Treasurer. A.W. Goodrich believed that incorporation in Maine would prove beneficial to the company's bottom line. Goodrich vessels' port-of-hail was transferred from Milwaukee to Duluth, Minnesota. The Goodrich colors stayed the same, the corporate offices remained in Chicago, and the base of shore operations continued at Manitowoc (Elliott 1995:169).

Operation of the Goodrich Transit Company was very different than under its former name. The company built the steel-hulled steamer *Alabama*. This steamer was engineered for year-round navigation of the cross-lake route. It was designed to provide luxurious travel for the summertime excursion passenger, but also provided maximum cargo capacity for freight and a strong hull for ice breaking during the winter months. *Alabama* quickly became the Goodrich Transit Company's flagship and the most photographed vessel of the line (Elliott 1995:179, 181). Six years after the steel steamer's launch, Goodrich finally retired the sidewheeler *Sheboygan* after forty-four years of service. The next vessel built for the line would replace the forty-two year-old sidewheeler *Chicago*. In 1915 the steel-hulled propeller *Nevada* was built, but unlike the other steamers, this one was not built with the passenger in mind.

After the *Titanic* disaster in April 1912, working conditions of seamen and safety at sea began to be questioned. In 1915 Congress enacted the LaFollette Seamen's Act to improve the living and working conditions for seamen. This Act regulated wages, determined lifeboats per passenger capacity, along with other managing requirements. According to the Act, it took four years of service to become an able-bodied seaman. This requirement impacted who the company could hire and what wages these seamen would receive. During the winter months, many of the Goodrich vessels would, essentially, become freighters. Little to no passengers would be aboard, but the vessel would transport a full load of cargo. Unfortunately, the crew management requirements are based on license capacity rather than actual passenger numbers. This meant that even if a vessel were used as a freighter, the ship would need to employ the same number of crew at full passenger capacity. The LaFollette Seamen's Act regulations made it difficult to manage the Goodrich line economically. The steamer *Nevada* was built in response to this act, but inevitably was the last steamer Goodrich built.

At U.S. entry into World War I in 1914, *Nevada* and *Virginia* caught the eye of wanting governments. In April 1917 the United States Navy requisitioned *Virginia*, relocated the ship to Boston, and renamed it *Blue Ridge*. The vessel was later moved to California for service and the steamer never returned to the Great Lakes (Elliott 1995:135). In May 1917, Goodrich sold the *Nevada* to the Russian Imperial Navy to be used as an icebreaker in Russian ports. The steamer was never used in Russia, however, following a collision on the coast of California it was seized by the U.S. government. The *Nevada* was returned to the Great Lakes in the 1920s as a freighter for the Pere Marquette line (Elliott 1995:221).

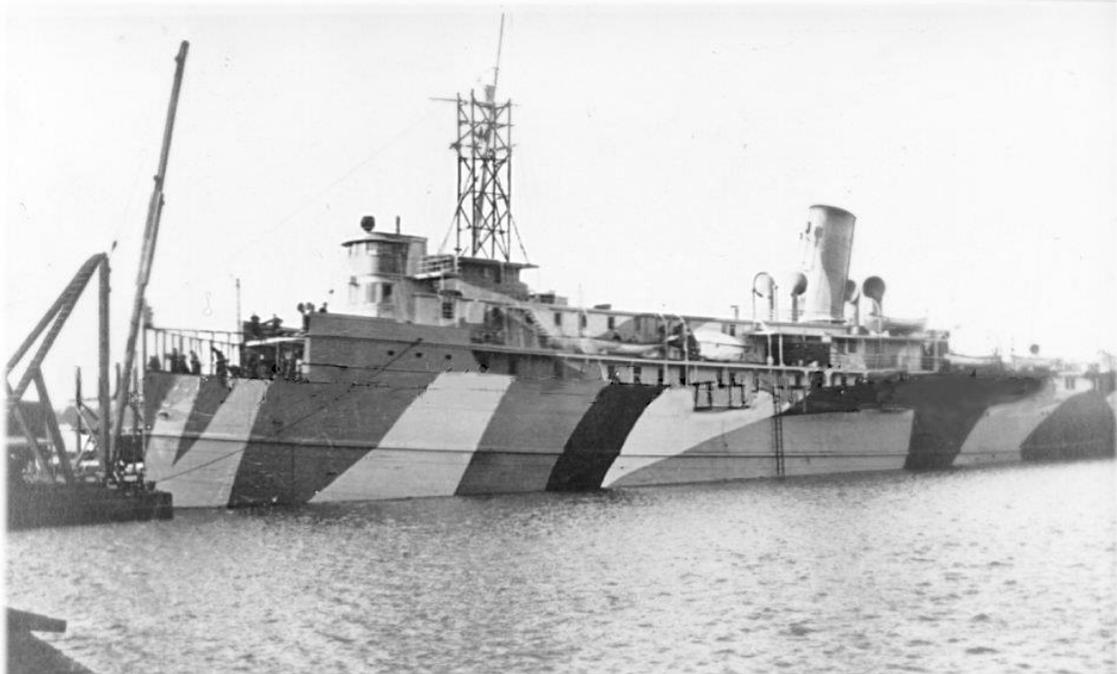


Figure 9. Steamer Virginia reconstructed and renamed *U.S.S. Blue Ridge* by the United States Navy (Wisconsin Maritime Museum)

By 1920 the Goodrich Transit Company vessels included the tug *Arctic*, the wooden-hulled propellers *City of Ludington*, *City of Racine*, and *Indiana*, and the steel-hulled propellers *Christopher Columbus*, *Alabama*, and *Florida*. The economic damage of the war and the natural decline of the industry were observed by A.W. Goodrich and in July 1920 he decided to dissolve the company and retire. Local investors under the name, Maritime Securities Company purchased majority shares of the company. H.W. Thorp became the new president but everything from the vessel colors to the company name remained the same (Elliott 1995:236). Thorp understood that the industry was dying but decided the best way to be profitable was to absorb other lines on the lakes, consolidate terminals, and decrease competition (Hilton 2002:275).

Thorp aimed to absorb, and absorb he did. In 1922 the Goodrich Transit Company purchased all the property of the Chicago, Racine, and Milwaukee Steamship Company. The property included two propellers *Illinois* and *Pilgrim* (Elliott 1995:241). The *Pilgrim*, originally the Goodrich steamer *Wisconsin*, finally returned to its company of origin and original name. Thorp's first attempt at combining companies went well and the next two years remained profitable for the Goodrich line. In 1924 Goodrich Transit Company merged with the second largest transportation company on the lakes, Graham & Morton (Elliott 1995:253). The vessels acquired by the merger included: *City of Benton Harbor*, *City of Grand Rapids*, *City of St. Joseph*, *City of Holland*, and *City of Saugatuck*. With the exception of one, all of these vessels were sidewheelers and quite old. It was said that the merger between the top two steamship

companies, accelerated the death of the line. Goodrich owned a substantial amount of property, yet did not have the means for the management and maintenance of it. 1925 was the last profitable year in the company's history; afterwards it plunged deeper and deeper into debt.



Figure 10. An advertisement for the Goodrich Transit Company fleet (C. Patrick Labadie Collection)

By 1928 H.W. Thorp resigned from his post and Captain E. Taylor became the new president. Taylor began his leadership with the tug *Arctic* and steamers *Alabama*, *Carolina*, *Christopher Columbus*, *City of Benton Harbor*, *City of Grand Rapids*, *City of Holland*, *City of St. Joseph*, *City of Saugatuck*, *Illinois*, *Indiana*, *Theodore Roosevelt*, and *Wisconsin* on the company roles (Elliott 1995:271, 272). Taylor continued to consolidate transportation companies and purchased the Benton Transportation Company in 1929 (Elliott 1955:274). There was a proposed merger in 1929 of the Goodrich line, Pere Marquette line, and the Wisconsin & Michigan Transportation Company, but this never occurred (Elliot 1995:276). Goodrich merged with the West Ports Steamship Company in 1930 (Elliott 1995:277). By this time, the Great

the 1857 wooden propeller *Skylark*'s Machinery went to the *Oconto* (Elliott 1995:48, 69). The *Ogontz* and *Comet* were purchased to be dismantled, but were found seaworthy enough to be used for a couple of years. Later they both were dismantled for their engines, boilers, and cabin fittings (Elliott 1995:26, 31, 37). Steamship machinery is very durable, especially in fresh water, and can last an extremely long time. Reuse of machinery was more cost effective than purchasing brand new for every newly built vessel. An example of great financial prowess was the sale of the three iron steamers *City of Milwaukee*, *Michigan*, and *Wisconsin*. Goodrich spent a great amount of money to construct these vessels solely to support the business from railroad contracts. When these contracts were terminated, Goodrich knew they must be sold to pay off debt, even though they were the best in the line. When the LaFollette Seamen's Act restricted management, Goodrich responded by building the freighter *Nevada*. All of these careful economic decisions positioned Goodrich to become the longest running passenger/freight transportation company on the lakes.

CHAPTER THREE

PASSENGER STEAMER *ATLANTA*

The Goodrich Transportation Company was one of the longest running companies dedicated to the transportation of people and packet freight on the Great Lakes. Captain Albert E. Goodrich built his own company and developed it through seventy-five years of dependable and comfortable routes using sidewheel and propeller vessels. Throughout the 1880s the Goodrich line suffered some hardships and financial instability. In September of 1885, the titan of the transportation line passed away leaving newly appointed president Captain Butlin as steward of the Goodrich line until the prodigal son, Albert W. Goodrich would step into his father's shoes. For three years Butlin refused to acquire new vessels until the financial stability of the company was restored.

In December 1889, Albert W. Goodrich was named the president of the Goodrich Transportation Company. With the company financially stable and a new generation of the Goodrich family at the helm, it was decided new vessels were needed to replace the old passenger vessels. To stay competitive in passenger transportation these new steamers were chosen for their speed and dependability, having propeller propulsion, and more grand and luxurious accommodations (Elliott 1995:115-117). Out of this change came the wooden steam screw *Atlanta*.

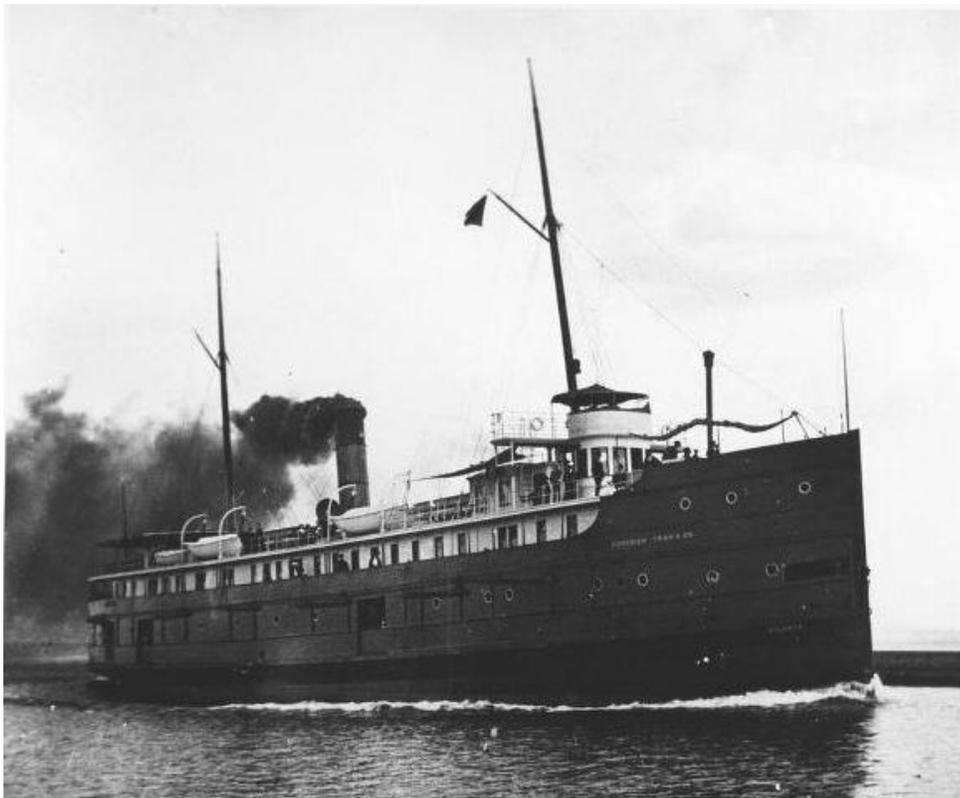


Figure 12. Historic image of passenger steamer *Atlanta* (C. Patrick Labadie Collection).

The *Atlanta* was the third passenger vessel that was built under A.W. Goodrich's leadership. Unlike the majority of Goodrich steamers, this screw steamer was built at the Cleveland Dry Dock Company in Ohio instead of the Burger & Burger Shipyard of Manitowoc, Wisconsin. The *Atlanta* was only the second wooden hulled vessel ever to be built for the Goodrich Company outside of Manitowoc, the first being the 1861 steamer *Union* (Elliott 1995:123). Although *Atlanta*'s origins differed from its sister ships *City of Racine* and *Indiana*, her construction and appearance were extremely similar. On 21 May 1891, *Atlanta* was first enrolled in the port of Cleveland containing original dimensions of 200.1 feet in length, 32.2 feet in beam, and 13.6 feet in depth of hold (Bureau of Navigation 1891a). *Atlanta*'s single stern propeller was moved by a fore-and-aft compound expansion engine measuring 24 x 44 x 36 from Globe Ironworks of Cleveland, Ohio. Fueled by coal, the propeller could reach speeds over 14 knots (*Detroit Free Press* 1891a; Elliott 1995:124; *Inter Ocean* 1891a, 1891b; WMHS 1969). By 14 July, *Atlanta* was inspected and given the Official Number 106823, with a homeport of Kenosha, Wisconsin (Bureau of Navigation 1891a; 1891b; 1891c).

Achieving the Goodrich Company's competitive goals *Atlanta* was built to comfortably sleep 175 people along with the capacity for 958 net tons of cargo. An article in the *Ahnapee Record* described the steamer as the "largest and handsomest of the fleet owned by that company" (1891), while many other newspapers admired its graceful lines, lack of sheer, trim and neat sails (*Door County Advocate* 1891b). *Atlanta*'s interior was praised even more highly by reporters. The vessel's doors and staircases were of mahogany wood. Every wall displayed embossed white leather and cream colored Lincrusta Walton. Lincrusta Walton is a deeply embossed wallcovering first produced in 1883 and was used to decorate the grand interiors of *Titanic* and the White House. Dark blue and gold Axminster carpet led passengers throughout the steamer, while peach colored plush upholstered chairs were available for any weary traveler. Windows were lined with salmon colored silk curtains. The grand saloon even had a mahogany upright piano made by the Chase Bros. Piano Company (*Door County Advocate* 1891b; *Republican* 1891). With these luxurious accommodations and electricity running through the entire vessel it is understandable that the *Door County Advocate* deemed the *Atlanta* as "a craft which adds another triumph to the series of success of this great transportation company, and which assures to this city and people of the east shore as fine a steamboat line as there is upon the lakes" (1891b).

Captain Charles A.W. Rossman led the steamer's first season running opposite the *City of Racine* on the western overnight route from Chicago to Grand Haven and Muskegon (*Ahnapee Record* 1891; *Detroit Free Press* 1891a; *Door County Advocate* 1891a; 1891b; Elliott 1995:124; *Inter Ocean* 1891a, 1891b; *Manitowoc Pilot* 1891). The 1891 season steaming across Lake Michigan was a normal one for the vessel. No news of accidents or hull damage was reported for *Atlanta*, but that cannot be said for the passengers on board. Upon arriving in

harbor, 28 year-old deckhand, John Mills was seriously injured when the gangplank he occupied broke and he was crushed between the ship and the dock (*Detroit Free Press* 1891b).

In 1892, *Atlanta* continued running a daily route from Chicago to Grand Haven and Muskegon, Michigan under the supervision of Captain Rossman (*Chicago Daily Tribune* 1892b; 1892c; *Door County Advocate* 1892; *Manitowoc Pilot* 1892a). In March the steamer spent a small stint in dry dock for general repairs but all was quite normal until late December when *Atlanta* went into winter quarters in Manitowoc (*Ahnapee Record* 1892; *Manitowoc Pilot* 1892b). One odd phenomenon occurred in June of that year. Passengers and crew reported seeing large floating balls of light on the forward and aft decks of the vessel periodically throughout the night. This phenomenon called St. Elmo's fire, is the cause of electric build up during thunderstorms. Though connected with dangerous weather, St. Elmo's fire is thought of as a good omen to many sailors and on this occasion "kept the ship company all the way to the harbor" (*Chicago Daily Tribune* 1892a).

The 1893 season began with the employment of Captain William M. Nicholson. Nicholson had previously been in command of the tug *Boscobel* (*Door County Advocate* 1893a; *Manitowoc Pilot* 1893b). Nicholson's first season on the steamer was a successful one. Beginning in early April and lasting until the end of November, the steamer made 113 trips across Lake Michigan with only one loss (*Door County Advocate* 1893b; *Manitowoc Pilot* 1893a; 1893c). On 31 May, passenger Jacob Fees jumped overboard 5 miles from Grand Haven and drowned (*Detroit Free Press* 1893). The following year was very much the same as the previous; Captain Nicholson ran *Atlanta* on the route from Chicago to Muskegon and Grand Haven (*Detroit Free Press* 1894; *Door County Advocate* 1894; *Manitowoc Pilot* 1894a). The 1894-season began in April and ended when the steamer went into winter quarters in early December (*Manitowoc Pilot* 1894b; 1894c).

Many changes and issues surrounded *Atlanta* during the year of 1895. In April the steamer began its season at the Burger & Burger dry dock at Manitowoc to have steel arches added to the interior of the hull structure to increase the vessel's longitudinal strength, and further prevent hogging and sagging (*Door County Democrat* 1895a). The day after being taken out of dry dock, *Atlanta* was found resting at the bottom of the harbor with its hull filled with water. Apparently a seacock was overlooked and left open letting water flow in overnight. A steam pump was used to pump out the water. No damage occurred and *Atlanta*, after some drying, was allowed to continue the usual cross-lake route (*Door County Advocate* 1895a; *Door County Democrat* 1895a; *Oshkosh Daily Northwestern* 1895). For five months Captain Nicholson piloted Lake Michigan without any issues (*Manitowoc Pilot* 1895a). On 21 September, *Atlanta* was halfway across the lake bound for Muskegon when a soft plug from one of the boilers blew. This made the engine useless and left the vessel at the mercy of a southwest gale. Fortunately a new plug was fitted and the vessel continued on its journey. Later on the same trip a second soft boiler plug blew. This time the vessel was so close to the Muskegon harbor that repairs were left until docking (*Door County Democrat* 1895a). In late October *Atlanta* broke its propeller shaft

in heavy seas just off Grand Haven. The steamer *Soo City* towed the broken vessel back into Grand Haven. After this, it was decided to place *Atlanta* in winter quarters for repairs. The Goodrich tug *Arctic* towed the steamer back to Manitowoc and the *Ludington* was placed on the Muskegon/Grand Haven route for the rest of the season (*Detroit Free Press* 1895a; *Door County Advocate* 1895b; *Manitowoc Pilot* 1895b). Along with the repairs to the propeller shaft, the steamer's hull was redesigned from amidships aft. Some newspapers printed that the *Atlanta* would receive a bustle or false sides to the original hull to make a wider structure above the waterline (*Detroit Free Press* 1895b). Other articles declared that naval architect W.J. Wood designed and constructed an entirely new after body that replaced the old frames (*Door County Advocate* 1895c; *Door County Democrat* 1895b). It is not clear exactly what alterations or repairs were made to the vessel's stern, but structural reinforcements were likely made without changing the vessel's hull lines. Two new Scotch boilers were also added to the hull. The boilers (salvaged after the ship's sinking) measured 10.5 feet by 10.5 feet and were capable of producing 140 pounds of pressure. These were placed further forward in the hull than the previous boilers (*Door County Advocate* 1896a). By February 1896 *Atlanta* floated out of dry dock with new hull design and machinery. The wider after body made the vessel more stable and placement of the boilers caused it to draw 20 inches less water than the previous year (*Detroit Free Press* 1896a).

In 1896 vessel enrollment documents show that *Atlanta's* port of hail was changed from Kenosha to Milwaukee (Bureau of Navigation 1895; 1896). Although much of the steamer's appearance had changed, *Atlanta* began the season like so many. The vessel began operation in April under Captain William Nicholson for tri-weekly trips from Chicago to Grand Haven and Muskegon (*Door County Advocate* 1896c; 1896d; *Manitowoc Pilot* 1896a; 1896b). A few incidences occurred during the 1896 season. In April the steamer struck a pier in the Muskegon harbor breaking frames and planking (*Detroit Free Press* 1896c; *Door County Democrat* 1896). In October heavy seas threw *Atlanta* into a piling in Chicago crushing its port side planking (*Logansport Reporter* 1896). W.H. Jerome, *Atlanta's* chief engineer since 1895 was given an award for the best engineer of the Goodrich line for 1896 (*Detroit Free Press* 1896b; *Door County Advocate* 1896b). By January of 1897 *Atlanta* was still making regular stops on the Muskegon /Grand Haven route, and collected 113 round trips and over 27,000 miles for the season (*Door County Advocate* 1896e; 1897). Although *Atlanta* was dedicated to the speedy and efficient transfer of passengers across the lake, occasionally the vessel just cruised. On 21 July, *Atlanta* provided members of the State Bar Association a luxurious luncheon and afternoon excursion around Chicago (*Inter Ocean* 1896).

Unlike previous years, the *Atlanta* did not go into winter quarters at the end of 1896. The dangerous weather, cold temperatures, and ice development made it difficult for the vessel to continue its cross-lake route, so the steamer began making trips to ports along the Wisconsin and Illinois coast. These stops included Chicago, Milwaukee, Algoma, and Sturgeon Bay (*Advocate* 1897c; *Door County Advocate* 1897; *Door County Democrat* 1897a, 1897b). This

continued use of the steamship into winter season may have been permitted by the remodel the year before. This route continued from December until April when the *Atlanta* was taken to Manitowoc to be repainted (*Advocate* 1897a; *Algoma Record* 1897; *Manitowoc Pilot* 1897). Once the steamer was repainted it is likely that it began the usual summer route from Chicago to Muskegon and Grand Haven under Captain Nicholson (*Advocate* 1897b). In July 1897, *Atlanta* was once again used as an excursion vessel. This time the Officers of the Press Club used the steamship for the establishment of the General Logan Monument that was constructed in Chicago's Grant Park (*Inter Ocean* 1897). There were no issues on the cross-lake route until October. Halfway across Lake Michigan *Atlanta's* crankshaft broke leaving the vessel stranded. Luckily engineer W.H. Jerome caught the issue in time to prevent permanent damage to the engine. The steamer *Iowa* towed the vessel into port where it stayed until it could be repaired (*Advocate* 1897b; *Detroit Free Press* 1897). The *Advocate* listed the *Atlanta* as one of Manitowoc's winter fleet (1898), during the winter months the steamer brought some passengers, but mainly freight from Chicago to as far north as Sturgeon Bay (*Advocate* 1897c; *Algoma Record* 1897).



Figure 13. Vessels *Simon J. Murphy*, *Atlanta*, *Arctic* and *Virginia* in Manitowoc Harbor ca. 1895 (Wisconsin Maritime Museum)

In January 1898, the *Atlanta* spent over two weeks at the Burger & Burger Shipyard for a complete overhaul receiving new bulwarks, new stanchions, rails, covering-board, and gangways (*Advocate* 1898a; *Manitowoc Pilot* 1898). Ice was broken up by March to begin the summer route to Muskegon and Grand Haven (*Detroit Free Press* 1898a). The steamer was back in dry dock in April to repair its stern bearing and fasten its wheel (*Advocate* 1898c, 1898e). For the third year in a row the *Atlanta* was temporarily used as an excursion boat in July; this time for the Michigan Press Association (*Detroit Free Press* 1898b, 1896c). In February *Atlanta's* watchman, J.B. Watrous fell overboard and drowned. Watrous was securing a lifeboat cover when he lost his balance and fell. Once overboard he sank immediately and after all efforts to save him were exhausted, the search was ended (*Advocate* 1898d). In December Captain David M. Cochran from Chicago came in as Master (*Advocate* 1898f). December ended the Muskegon and Grand Haven routes for *Atlanta*. The steamer transferred to the Wisconsin coastal route from Chicago north to Sturgeon Bay (*Advocate* 1898g; *Algoma Record* 1898; *Chicago Daily Tribune* 1898; *Detroit Free Press* 1898d).

In 1899, while bound for Sheboygan in early January, *Atlanta*, along with steamers *Georgia* and *Chicago* of the winter fleet, found themselves trapped in a massive ice floe that reached from the bottom of the lake to nearly 8 feet above the waterline. Although every effort was attempted to free the steamers, the vessels had to wait until the wind shifted to be free (*Inter Ocean* 1899a). The ice continued to cause problems for the steamer during the winter season and into spring. In March the *Atlanta* left Chicago and was traveling north along Wisconsin's coast when it became stranded in ice once again. The ice, driven by a southeast gale, pushed the steamer into shallow water 2 miles south of Racine. Because the lake bottom was soft and sandy and the ice on top was thick, strong, and unlikely to shift, *Atlanta* was not in immediate danger. The vessel was listing to port but the real concern was for the fifty-three passengers on board. The vessel could be pulled easily from the shallow waters, but the ice was so thick it prevented any tug from reaching it. One successful attempt was made by six male passengers and four crewmen to make it to shore. A line was run from shore to the stranded steamer. One of the yawl boats was attached to the line and with a combination of walking and pulling the ten men arrived safely on shore. This trek was deemed too dangerous to attempt again and the *Atlanta's* stranded passengers had to wait another two days until the wind shifted and rescue could be achieved. A channel was cut in the ice by steamer *Georgia* and passengers were transported to shore, while the steamer was pulled from the sandy bottom into deeper water. Fortunately the vessel was undamaged and the passengers were unscathed (*Advocate* 1899a; *Chicago Daily Tribune* 1899a, 1899b; *Detroit Free Press* 1899a, 1899b; *Fort Wayne Journal-Gazette* 1899; *Inter Ocean* 1899b, 1899c; *Manitowoc Pilot* 1899a; *Oshkosh Daily Northwestern* 1899).

Captain Cochran began *Atlanta's* 1899 eastern route in early April. This may have been premature due to the fact that ice still covered Muskegon harbor which had to be cleared with dynamite (*Detroit Free Press* 1899c; *Manitowoc Pilot* 1899b). While still making continual

routes to Muskegon and Grand Haven, *Atlanta* also made appearances along Lake Michigan's west coast (*Algoma Record* 1899c; Elliott 1995:120). The steamer could be seen regularly at Algoma and Sturgeon Bay, and traveled as far north as Menominee, Michigan (*Advocate* 1899b; 1899c; 1899d; 1899e; 1899f; *Algoma Record* 1899a; 1899b; 1899d). The second week of December, *Atlanta* joined steamers *Iowa*, *Indiana*, *Racine* and *Georgia* in the winter route along the western shore. The vessel frequented the ports at Milwaukee, Kewaunee, Algoma, and Sturgeon Bay, and traveled through Green Bay to Menominee until the ice became too thick (*Advocate* 1899g; 1899h; *Algoma Record* 1899e; *Manitowoc Pilot* 1899c; 1900a). Surprisingly the vessel was reported in Menominee as late as Christmas day, although the ice made the journey "a struggle" (*Algoma Record* 1899f).

Shipping in 1900 was less eventful than the previous year. *Atlanta* began its cross-lake season in early April making tri-weekly trips to Muskegon and Grand Haven until June when it made daily trips (*Advocate* 1900a; *Detroit Free Press* 1900a, 1900b). The vessel continued this route until it transferred back to the western route at the end of July. Again, *Atlanta* ran north along the Wisconsin coast to Menominee until ice prevented it (*Advocate* 1900b; *Algoma Record* 1900a, 1900b, 1901a; *Detroit Free Press* 1900c; *Inter Ocean* 1900a, 1900b). This route continued until March and April when the ice was too thick for the steamer to travel any further north than Kewaunee (*Algoma Record* 1901b, 1901c, 1901d). The only change for the year was the appointment of a new Master, Captain Joseph Munger (Bureau of Navigation 1900; *Manitowoc Pilot* 1900b). Unfortunately Captain Munger's leadership was not long. On December 15, eight months after his appointment, 50 year-old Captain Munger died suddenly of heart failure. Munger had been an exceptional captain for twenty-two years, six of which were under the Goodrich flag (*Advocate* 1900c; *Door County Democrat* 1900; *Inter Ocean* 1900c). After Munger's death, Captain Edward Carus was transferred to the *Atlanta* for the 1901 season (*Algoma Record* 1901d). This was a temporary installment, as he took employment on the Barry Line in October of that year. Captain John Pardee was appointed to the steamship in his place (*Advocate* 1901h, 1901g; *Inter Ocean* 1901b).

In 1901 newspaper accounts indicate that for this year the *Atlanta* began to frequent ports along the western coast as well as the eastern route. The steamer came to the aid of the disabled steamer *Indiana* during a gale in March. *Atlanta* towed the stranded vessel into Racine with help of tug *Myers* (*Detroit Free Press* 1901a; *News-Palladium* 1901). In April the steamer went into dry dock again for repairs. Once out, it continued on the western route instead of heading to Muskegon and Grand Haven (*Advocate* 1901a; *Algoma Record* 1901e; *Chicago Daily Tribune* 1901; *Detroit Free Press* 1901b). The vessel continued this route until September visiting Algoma, Fish Creek, Sturgeon Bay, Green Bay, and Menominee (*Advocate* 1901b; 1901c; 1901d; *Algoma Record* 1901f). For two months in the fall *Atlanta* made trips along the cross-lake route until the beginning of December, but was also still visiting western ports like Sturgeon Bay (*Inter Ocean* 1901c). At the end of September, during one of these Sturgeon Bay visits, *Atlanta* ran ashore on Dunlap's Reef. The scow *Libby Carter* was anchored in the middle

of the channel at Sturgeon Bay and while attempting to maneuver around it, *Atlanta* ran ashore. Many attempts at removing the grounded steamer were made by tugs including *A. J. Wright*, *Geo. Nelson*, *O.M. Field*, *Cecelia Hill*, *Leathem*, and *Arctic*. The vessel was stranded for four days of dredging, lightering and pulling. On the fourth day, the wrecking tugs *Arctic* and *Monarch* used their wheels to dredge on either side of *Atlanta* while everything was removed from the vessel, including cargo, lifeboats, chains, anchors, and crew. After a few good pulls from the powerful tugs, *Atlanta* was floating again. The steamer was towed to dry dock for inspection, but no damage was found. The overall salvage cost the Goodrich Company over \$2,500 (*Advocate* 1901e, 1901f; *Algoma Record* 1901g; *Door County Democrat* 1901a, 1901b; *Inter Ocean* 1901a; *Manitowoc Pilot* 1901). In December while exiting Milwaukee harbor in a blizzard, *Atlanta* collided with the steambarge *Louis Pahlow*. This incident was documented as a head on collision, but no analysis of damage or post collision effects were recorded (*Advocate* 1901j).

In 1902, the *Atlanta* transferred from its winter to spring schedule in late June and ran this route as usual until December. Although the routes were the same, the vessel's luck continued to wane (*Advocate* 1902b; 1902f). The year did not begin well for the steamer. On 18 January *Atlanta* grounded while backing out of the Sturgeon Bay docks and had to be pulled free by the Goodrich tug *Arctic* (*Advocate* 1902a; *Door County Democrat* 1902a). A few weeks later, the steamer was blown into an ice floe during a snowstorm. The *Atlanta*, along with the steamer *Iowa*, was stuck in ice for 31 hours, 8 miles from Chicago. During the imprisonment, the vessel's thirty-one passengers stayed in good spirits and by the end of the second day, the steamers were able to free themselves from the ice with no damage (*Chicago Daily Tribune* 1902a, 1902b; *Detroit Free Press* 1902a; *Inter Ocean* 1902a). In August *Atlanta* suffered from a broken propeller blade just off Fish Creek, Wisconsin. This incident delayed the steamer significantly, but when given the choice to transfer to the steamer *Georgia*, only fifty of the one hundred and fifty passengers left the vessel. *Atlanta* slowly steamed back to Sturgeon Bay where it offloaded its passengers and went into dry dock for repairs (*Advocate* 1902d; *Algoma Record* 1902). Again, the steamer got into trouble while trying to avoid another vessel. The tug *O.H. Green*, with the steamer *Topeka* in tow, was hidden from view by the Dearborn Street Bridge as the *Atlanta* approached. The steamer was closing in too quickly, so to avoid a collision with the vessels, aimed for the bridge instead. Major damage was done to the *Atlanta*'s stem (*Advocate* 1902e; *Chicago Daily Tribune* 1902c; *Detroit Free Press* 1902b; *Inter Ocean* 1902b).



Figure 14. Passengers of the steamship *Atlanta* 1902 (Wisconsin Maritime Museum)

According to the *Door County Advocate*, Captain Taylor took command of the *Atlanta* for the 1903-season; however, this change in command is not reflected in the vessel's enrollment documents and is not substantiated in other reports (*Advocate* 1903b). Lake Michigan cross-lake navigation opened in March 1903 as the *Atlanta* made its first trip to Muskegon and Grand Haven. Ice made the journey dangerous and created delays. Ice floes were reported 25 miles by 70 miles in dimension southwest of Grand Haven (*Advocate* 1903a; *Daily Review* 1903; *Detroit Free Press* 1903a, 1903b; *Inter Ocean* 1903). By fall, with the tourist season ending and winter coming, the *Atlanta* was busy returning tourists to their homes and bringing merchants their fall and winter goods (*Advocate* 1903c; *Algoma Record* 1903; *Door County Democrat* 1903a; 1903b).

In January 1904 *Atlanta* was headed north from Chicago along the Wisconsin coast when its engine pin broke disabling the vessel. The passengers were transported to another vessel and

taken to Milwaukee while the *Atlanta* was towed back to Chicago for repairs. The engine pin was replaced in Chicago after which the steamer was taken to Manitowoc for a general overhaul. After fourteen days of repair and overhaul the steamer was placed back in commission (*Advocate* 1904; *Door County Democrat* 1904a; *Manitowoc Pilot* 1904). In April 1904 navigation was opened up and the *Atlanta* was sent on its route to Muskegon and Grand Haven. The schedule would take the steamer to these ports three times a week. Unfortunately, the first run was too early to make both ports. Grand Haven was reached, but Muskegon Lake was still too covered in ice to allow lake traffic. The steamer attempted to break ice into port but was unsuccessful (*Detroit Free Press* 1904; *Inter Ocean* 1904a, 1904b). June 1904 was difficult for the steamer. Early that month the vessel ran into the scow schooner *German* while entering port at Sturgeon Bay. A couple weeks later, it collided with the steamer *Saturn* (*Advocate* 1904c; 1904d; *Door County Democrat* 1904b). No supporting documentation was found regarding the condition of the vessel after each collision. When the *Atlanta* was not steaming across the lake it could be seen at one of the western ports as far north as Marinette, Wisconsin, and Menominee, Michigan (*Advocate* 1904b). It is unknown when the summer season ended for the steamer. Newspapers report the *Atlanta* passing from one route to another on a monthly basis. The vessel was taken off the eastern route in September (*Advocate* 1904e; *Door County Democrat* 1904c; *Inter Ocean* 1904c) then placed back on it in October (*Door County Democrat* 1904d, 1904e). The *Atlanta* stayed on the eastern route through December and January. This was the first winter route between Chicago, Muskegon, and Grand Haven (*Advocate* 1904f, 1905a; *Door County Democrat* 1904e).

Although winter navigation was considered open, ice still was a big influence in daily operations. In January 1905 the steamer found itself locked in an ice floe near Grand Haven. Ice floes such as this hindered business with uncertain schedules and dangerous voyages. By this time, cross-lake navigation was finally closed for the winter (*Detroit Free Press* 1905a; *Oshkosh Daily Northwestern* 1905). After winter navigation closed, *Atlanta* was placed in dry dock for all of February and the beginning of March. By March 16 the Goodrich tug *Arctic* had opened a path from Chicago to Grand Haven and Muskegon so the steamer was once again placed on the cross-lake route (*Advocate* 1905b; 1905c; *Chicago Daily Tribune* 1905; *Detroit Free Press* 1905d; *Inter Ocean* 1905). While *Atlanta* was in dry dock the vessel received a change in command. Captain Parde, captain since 1901, found new employment as Hull Inspector in Grand Haven, Michigan. Captain Charles T. Bronson was appointed Master of the steamer until Captain Cornelius McCauley could be officially appointed in April 1905 (*Advocate* 1905b, 1905d; *Detroit Free Press* 1905b, 1905c; *Manitowoc Pilot* 1905). Documents show that the *Atlanta* worked the east shore route all through the summer season and into November (*Advocate* 1905e, 1905f, 1905g; *Door County Democrat* 1905a, 1905b). The steamer was also making cross-lake trips during this time. The *Detroit Free Press* claimed that *Atlanta* was continuing the Grand Haven and Muskegon route until January. Muskegon harbor had been newly dredged and the channel was kept open to provide the steamer with the longest running

winter route to Muskegon (*Detroit Free Press* 1906a, 1906b). Ice blocked the Muskegon passage for several weeks but the steamer was able to navigate the icy waters back to Muskegon Lake in late February (*Detroit Free Press* 1906c).

In February of 1906, while the *Atlanta* dodged ice across Lake Michigan, there were talks of a schedule change that would give better service between Chicago and Sturgeon Bay. Representatives from Ephraim and Fish Creek were complaining about irregular service and poor accommodations on the vessels that visited their ports. They complained that the irregularity of vessels to Sturgeon Bay was hurting tourism. Unfortunately, the Goodrich Transportation Company did not have enough boats to sufficiently cover both the cross-lake routes and the Wisconsin routes. The low freight business and short passenger season made very little money, while there was more competition on the eastern shore (*Advocate* 1906a; *Door County Democrat* 1906a). If a schedule change were to be made, this change would have moved *Atlanta* to a more permanent route along the Wisconsin coast. The *Atlanta's* future was never altered by these talks because she was lost a month later.

On 18 March 1906, the *Atlanta* was heading south from Sheboygan to Milwaukee carrying sixty-five passengers and cargo including porcelain, enamelware, metalware, leather, and wooden furniture (*Door County Advocate* 1920a, 1920b, 1920c; Elliott 1995:125). Around noon, fourteen miles south of Sheboygan, crewmen discovered a fire in the hold of the vessel. Once the fire was discovered, Captain McCauley turned the vessel straight for shore. The fire was fought with precision by the well-practiced crew but to no avail. The new automatic sprinklers and fire apparatus, tested six days prior, could not stop the blaze. As the fire grew, the vessel was halted and focus turned to the lifeboats. The Smith Brothers' fishing tug *Tessler* witnessed *Atlanta's* distress and came about to help the passengers and crew. All personnel were safely transferred to the tug except one. Deckhand Michael Hickey attempted to jump from the steamer onto the tug, but misjudged the distance and fell to his death between the vessels. The cook was valiantly saved by fisherman Charles Klein. Screams by the steamer's cook, who was trapped in the pantry, could be heard. Klein climbed onto the burning vessel, widened a porthole near the pantry, and pulled the cook to safety. All the passengers and crew were transferred from the packed fishing tug to the passing steamer *Georgia* who steamed the passengers back to Sheboygan. Once free of *Atlanta's* passengers and crew, *Tessler* towed the burning ship ashore and left it to burn to the waterline. On 21 March 1906, the vessel's enrollment documents described the steamer as a total loss. The loss of the vessel and cargo totaled \$200,000.00 (*Advocate* 1906b; *Algoma Record* 1906; Bureau of Navigation 1906; *Chicago Daily Tribune* 1906a; *Detroit Free Press* 1906d; Elliott 1995:125-127; *Indianapolis Star* 1906).



Figure 15. Fishing tug *Tessler* (C. Patrick Labadie Collection)

A hull inspection was ordered to discover why the fire was unable to be extinguished, especially with the new and newly tested equipment. Upon inspection the location of the flames and the flammability of furnishings and cargo attributed to the unstoppable blaze. It was decided that the captain and crew did everything they could have to protect the passengers and save the vessel. Captain McCauley was presented with a gold watch from the Goodrich Transportation Company for his admirable leadership (*Advocate* 1906c; *Chicago Daily Tribune* 1906b; *Detroit Free Press* 1906e, 1906f; *Inter Ocean* 1906a, 1906b, 1906c). There was also movement to reward the valiant efforts of the *Tessler's* crew. Captain Smith of the *Tessler* received a Carnegie Hero Medal for his and his crew's actions during the rescue (*Chicago Daily Tribune* 1906c; *Detroit Free Press* 1906e). The hull inspection also indicated that the vessel could not be rebuilt therefore the Goodrich Transportation Company would need to pay compensation for the vessel's loss (*Advocate* 1906b; *Detroit Free Press* 1906e).

A year later the Smith Brothers took the Goodrich Transportation Company to court for the salvage actions done for the *Atlanta*. The Goodrich Company had willfully abandoned the vessel so ownership went to United States Marshal Reid. He sold the *Atlanta* and its contents to Captain Smith for \$50. Smith planned to raise the hull believing that the machinery and cargo would be valuable (*Advocate* 1906c, 1906d; *Detroit Free Press* 1906f, 1906g; *Door County Democrat* 1906b; Elliott 1995:127). No further documentation was found on Captain Smith's plans but it is known that salvage of the *Atlanta*'s machinery and cargo did not occur until 1920. Title was purchased by Leathem & Smith Towing and Wrecking Co. of Sturgeon Bay and salvage of the vessel began on 11 August 1920. Diver Perl Purdy and his crew of divers had the task of retrieving *Atlanta*'s boilers, engines and any valuable cargo. Reports claim that most of the cargo and metal was destroyed in the fire and that the machinery was only worth money for scrap value (*Door County Advocate* 1920a, 1920b, 1920c; *Door County News* 1920; *Manitowoc Herald-Times* 1920a, 1920b). The steamer's scotch boiler was not scrapped however, but placed in the newly built steamer *M.H. Stuart* in 1921. *M.H. Stuart* was a 110-foot steamer built at the Wolter & O'Boyle Company of Sturgeon Bay (*Door County Advocate* 1921; *Door County News* 1921).

Site Description

The wreck of the passenger steamer *Atlanta* (SB-0300) lies in 17 feet of water in Lake Michigan on a heading of 40-degrees, 800 feet from the shore, 1.02 miles north northeast of Amsterdam Park's boat launch in the Town of Cedar Grove, Wisconsin (43° 34.253' N, 87° 46.962' W). The site's location has been known since the vessel's sinking, and is familiar to residents along the Lake Michigan coast near the site and to divers. Some residents and divers have acknowledged that artifacts from the vessel and those that washed up on shore have been taken by individuals. The vessel lies in a sandy bottom with sand and organic material covering much of the interior of the vessel and the debris that lies around the intact hull structure. Though fire, salvage, and looting over the years has destroyed the upper decks, machinery, and remaining cargo, the stem, stern, and most of the structure below the vessel's waterline retains structural integrity while various artifacts and machine elements remain inside the structure.



Figure 16. Location of *Atlanta* site

Between 23 May and 10 June 2016, a Phase II archaeological survey was conducted on the *Atlanta* as a field school in underwater archaeology by graduate students from East Carolina University. The project was led by maritime archaeologists from the Wisconsin Historical Society, and funded by a grant from the University of Wisconsin Sea Grant Institute. Divers installed a temporary measured baseline along the centerline of the vessel that began at the inside of the stem post and extended 194 feet to the deadwood inside the stern aft of the propeller shaft. This allowed for the completion of a site map of the *Atlanta*. The height of the stem and stern compared to the rest of the remaining hull prohibited the baseline from being installed along the full length of the vessel from stem post to stern post. The overall length of the *Atlanta* is 196.6 feet while the overall width is 32.0 feet. Debris surrounds the vessel along both starboard and port sides and near the stern. Although largely intact, evidence of wave and ice action is evident on the site, along with other site formation processes. The keelson's 12-degree list to port suggests that the vessel was listing to this degree during its abandonment. While the stern lists only 14 degrees to port, the bow lists 54 degrees to port due to breaks and missing portions of the hull structure.



Figure 17. East Carolina University students document the *Atlanta* site

Atlanta's bow, consisting of cutwater, stempost, and apron, extend 10.8 feet from the sand. The cutwater measures 0.3 feet molded and 0.8 feet sided. The stempost measures 0.8 feet molded and 0.8 feet sided. The apron measures 0.2 feet molded and 0.8 feet sided. Iron sheathing covers the lower 7.9 feet of the bow and extends aft along the outer hull. The iron sheathing is fastened in sheets 1.5 feet by 3 feet with a thickness of 0.05 feet. Two feet of iron sheathing remain extending from the top of the stem post where the wood is missing.

The majority of *Atlanta's* lower hull structure is extant, structured with double frames and outer planking, as well as some ceiling planking on the inside of the hull. Each frame set contains one futtock measuring 0.4 feet molded and the other 0.5 feet molded while both measure 0.4 feet sided. Each frame set was separated by a distance of 1.0 to 1.1 feet running the length of the ship, with a measurement of 1.9 to 2.0 feet from the center of each frame set to the next. A section of the port side hull structure from 4.0 to 30.6 feet along the baseline remains buried in the sand, but the structure remains upright from this point to 149 feet along the baseline. There are two breaks in the hull structure at 61.0 feet and 97.0 feet along the baseline, but the hull remains upright at either end of these breaks. A section of outer hull planking from 158.0 feet to 191.2 feet along the baseline on the port side is lying flat in the sand indicating it has detached from the frames and fallen outward from the structure. The outer hull planking measures 0.6 feet wide and 0.3 feet thick. Most of the starboard hull structure is intact and extant. Between 30.0 feet and 62.4 feet along the baseline, the starboard side appears to have been dredged or salvaged with many of the frames broken before the turn of the bilge and lower structure uncovered from the sand. A large hull section extends 8.7 feet athwartship from the outer hull suggesting it has fallen outward. The top of this section displays ceiling planking measuring 0.6 feet wide and 0.3 feet thick and iron sheathing extends from underneath the timbers. Of this forward section, 16.6 feet of the keelson is extant. The sided dimension of the keelson measures 0.8 feet while the molded dimension could not be measured due to sand cover. Just forward of the keelson, a deck stanchion extends up from the sand with dimensions of 0.6 feet sided and 0.4 feet molded.

Atlanta's stern raises 8 feet from the sand fully intact. The sternpost measures 1.4 feet by 1.4 feet with rabbets 0.6 feet molded for the outer planking. Forward of the sternpost is a deadwood timber 1 foot sided, 1 foot molded, and 4.6 feet long, lying over the stern cant frames. Remnants of the propeller shaft and machinery are extant in the stern. The 5.2 foot long propeller shaft with a 1 foot diameter begins 180 feet along the baseline. Just forward of the propeller shaft lays the pillow block measuring 2.2 feet wide and 3.4 feet long. A pillow block, also known as a plummer block, is a secure structure that supports a vessel's propeller shaft. A bearing contained within the block allowed the shaft to turn freely. Located at 187.0 feet along the baseline, extending from the deadwood to the propeller shaft, is the stuffing box and shaft log measuring 2.2 feet by 3.4 feet in dimension. The propeller is not extant and was likely salvaged, but the stern bushing can be seen 1 foot from the sandy bottom along the outside of the sternpost. No iron sheathing is evident along the outer hull near the stern. A wooden timber 8.5 feet long and 1 foot in diameter lies along the sandy bottom aft of the stern of the vessel. A metal ring 0.2 feet wide is fastened with 0.1 foot bolts to the timber 0.5 feet from the end. Another wooden timber measuring 2.0 feet sided, 0.5 feet molded, and 5.0 feet long is partially buried in the sand close by. This timber contains a 0.4 foot wide metal strap along the wood and an iron wire that goes into a hole near the end. It is uncertain how these timbers were utilized on the vessel, but the metal and wire components, as well as their placement along the site, may indicate fragments of a communication mast.



Figure 18. *Atlanta*'s stern looking forward



Figure 19. *Atlanta*'s propeller shaft in stern

Iron and steel hogging trusses and diagonal iron bracing remnants are extant along both the port and starboard sides of the vessel. Products of the fire, the warped and melted metal are either draped over the hull or fallen outward into the sand. Iron hogging trusses are extant at the stern of the vessel connected to frames. These iron hogging trusses measure 1.0 foot wide and 0.1 feet thick and are fastened with 0.1 foot diameter bolts. The hogging trusses are extant attached 3 feet from the stern on both the port and starboard sides. Double connecting steel braces measuring 1.5 feet wide and 0.1 foot thick are extant and connect together with fasteners 0.1 feet in dimension and 0.1 foot thick square nuts. These braces can be found on both port and starboard sides near 60 feet along the baseline and on the starboard side at 168 feet along the baseline. Iron diagonal bracing is extant along both sides of the *Atlanta* measuring 0.75 feet wide and 0.05 feet thick. Evidence of the diagonal bracing can be seen fastened between frames and ceiling planking, yet the spacing between each brace could not be determined because of the damage by fire. A 20-foot section of diagonal cross-bracing along the starboard side between 59 and 80 feet along the baseline is fastened between two steel braces at 4 foot spacing. The connection of steel bracing and iron diagonal bracing may indicate that this was the process of securely attaching the diagonal bracing to the top of the hull while also providing more longitudinal strength through the steel braces. Unfortunately, all of the metal support structures are warped from the heat of the 1906 fire.



Figure 20. Remnants of cross-bracing on the starboard side

Remnants of *Atlanta*'s machinery are extant throughout the interior of the vessel. A 16-foot long metal cylinder is located on the port side, possibly a small boiler or ventilation shaft. The cylinder extends from the sand at 28 feet to 44 feet along the baseline with a diameter of 3.7 feet. At 93 feet along the baseline near the center of the vessel a hatch door, 3 feet in diameter, is partly exposed in the sand. This hatch contains the letters "Globe Ironworks Cleveland" around the center. This was possibly a hatch door for the engines that were made by the Globe Ironworks Company of Cleveland, Ohio. A 1 foot by 1 foot metal box containing the words "Chase Manufacturing" is located on the port side 158 feet along the baseline. This may have been a product of the Fisher-Chase Manufacturing Company, Inc. of Columbus, Ohio. This company manufactured various electronics including fuse boxes (ERP 1917:644; GPC 1917; 41). The *Atlanta* contained electricity, heat, and running water throughout the vessel and piping for these luxuries remains scattered around the site. Although these pipes are found along the length of the vessel, the highest concentration of pipes are located on both the port and starboard sides of the vessel, beginning at 70 feet along the baseline and extending to the stern. This piping measures 0.1 feet to 0.8 feet in diameter with various ends and connectors. The primary shape and direction of these pipes have been distorted by the fire and salvage. The piping from 170 feet along the baseline aft appears mostly longitudinal along the vessel. This placement seems original to the vessel. Remnants of metal sheathing are located throughout the hull, possibly portions of the sheathing covering the outer hull. Radiator fragments are extant near the bow, 40 feet along the baseline. These may be remaining evidence of interior heating. Iron catwalk fragments are located along the baseline between 140 feet and 150 feet indicating the location of the engine room. Various other pieces of unidentified machinery remain extant between 140 feet along the baseline and the vessel's stern. These disarticulated pieces are likely the remains of the salvaged boiler and engine rooms.

Fragments of artifacts relating to the passenger living compartments, and cargo storage are extant on the site, although partially covered with sand. On the starboard side 12 feet along the baseline a white wrought iron chair is partially covered by the sand. On the port side, 42 feet along the baseline, the lower portions of multiple barrels are extant measuring 2 feet in diameter. The leather sole of a shoe is located on the starboard side at 90 feet along the baseline. Multiple clear and brown glass bottles and fragments of textiles are also partially extant within the hull.



Figure 21. Machine debris found in the interior of the site



Figure 22. Engine hatch cast with 'Globe Ironworks'

Atlanta Shipwreck (Steam Screw)

Town of Cedar Grove, Sheboygan County, Wisconsin

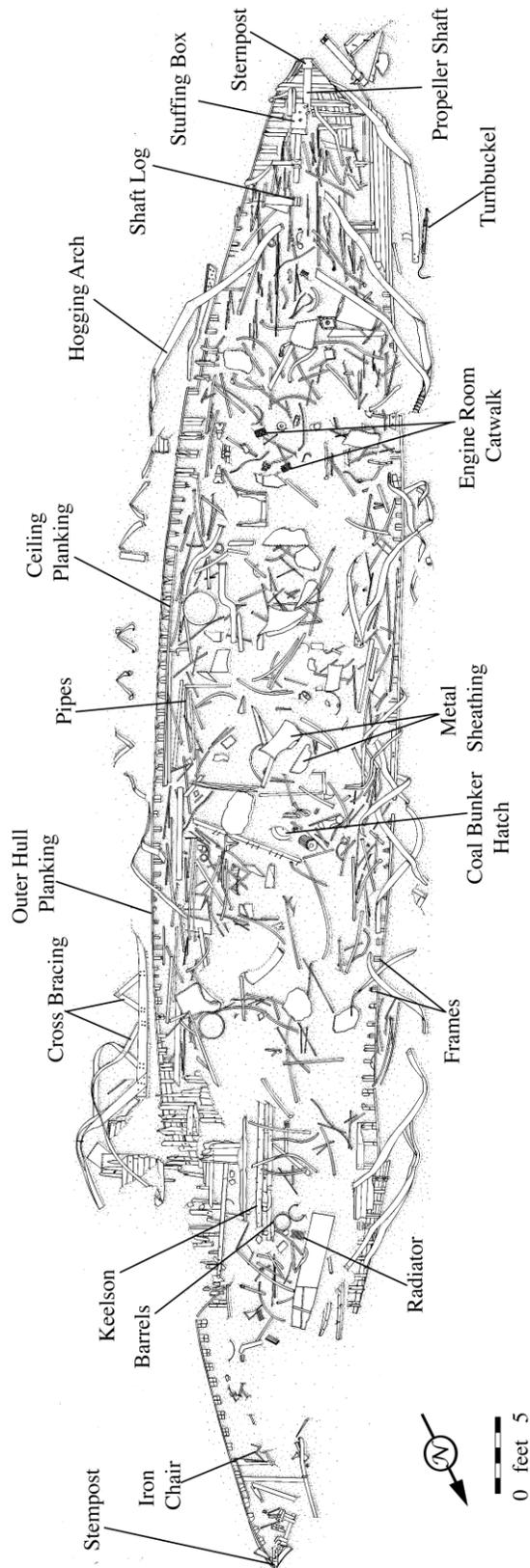


Figure 23. Site plan of the *Atlanta* wreck site



CHAPTER FOUR

TUG ARCTIC

The tug *Arctic*, Official Number 106040, was built at the Rand & Burger Shipyard in Manitowoc, Wisconsin. The Goodrich Transportation Company commissioned the ice-breaking tug *Arctic* to aid stranded and distressed vessels, and keep navigation channels open enabling cross-lake trade throughout the winter. Rand & Burger accomplished this request by building the tug with heavy frames set close together and sheathing the hull in iron from stem to stern. The *Arctic* also contained a high pressure, non-condensing engine with 225 horsepower and one steel boiler, 14 feet in length and 6 feet in diameter, from the A.C. Mason Company of Chicago. When launched, the *Arctic* was a sturdily built tug 65 feet in length, 18 feet in beam, 9 feet in draft, and 52 gross tons, costing Goodrich \$17,000 (Bureau of Navigation 1881a, 1881b, 1882; *Door County Advocate* 1882a; Elliott 1995:81; *Manitowoc Pilot* 1881, 1882a).

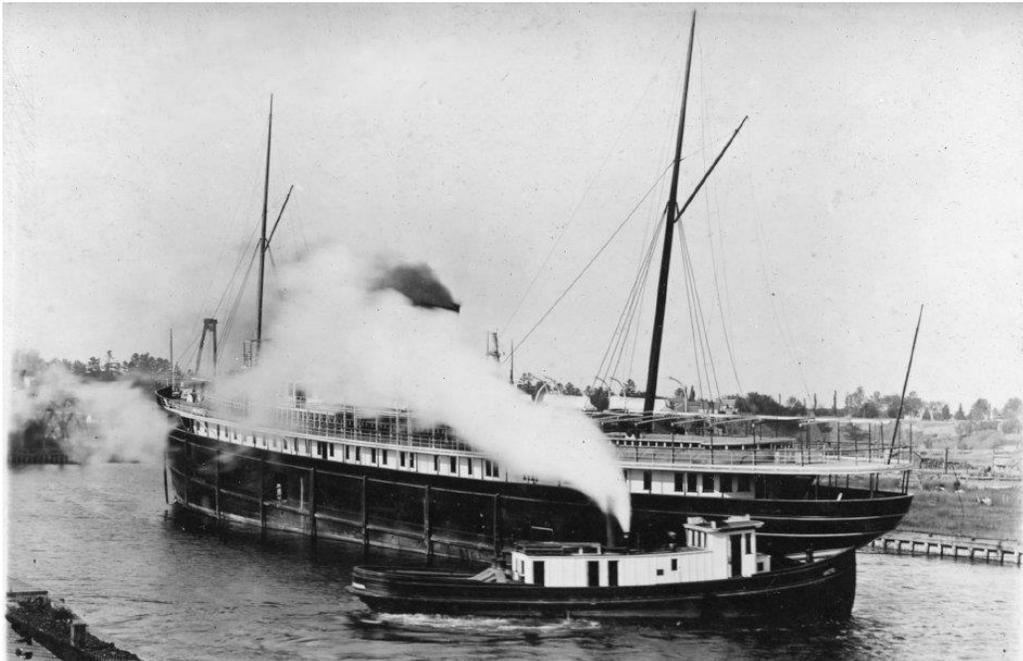


Figure 24. The Goodrich tug *Arctic* maneuvering the Goodrich steamer *Virginia* ca. 1898 (Wisconsin Maritime Museum)

The first working season for the tug *Arctic* was 1882 under command of Captain Perry H. Edwards (Bureau of Navigation 1882). During the summer months, the vessel was positioned as a harbor tug in Manitowoc. Here the tug had access to a top-of-the-line 12-inch steam pump and other necessary equipment to aid stranded and distressed vessels in the area (*Chicago Daily Tribune* 1882b, 1882c; *Detroit Free Press* 1882a, 1882b; Elliott 1995:82; *Manitowoc Pilot* 1882b, 1882c). During this season, *Arctic* assisted in the rescue of the Goodrich vessels *DePere* and *City of Milwaukee*, as well as the schooners, *Minnie Mueller*, *Mexico*, *Goodfellow*,

Barbarian, C.C. *Barnes*, and the scows *Hercules* and *Contest* (*Chicago Daily Tribune* 1882a, 1882d, 1882e, 1882f; *Door County Advocate* 1882b; Elliott 1995: 75; *Manitowoc Pilot* 1882e, 1882g, 1882i). Although the tug's purpose was to aid vessels, some accidents did occur during its first season. The schooner *H.B. Burger* was damaged when it hit the Main Street Bridge in Manitowoc while *Arctic* provided a tow down river. Damage was estimated at \$50, which included the loss of the vessel's jibboom (*Manitowoc Pilot* 1882d). The scow *Maria* collided with a bridge abutment under *Arctic's* tow. Damage was sustained to the vessel's port side, headgear, and anchor (*Detroit Free Press* 1882c; *Inter Ocean* 1882). *Arctic* collided with the schooner *A.M. Peterson's* head rigging as the tug was placing the schooner along the Manitowoc wharf, which destroyed the tug's pilothouse (*Door County Advocate* 1882c; *Manitowoc Pilot* 1882f).

In December of this year Captain Edwards took command of the tug. While towing up the river in Manitowoc, a log broke the vessel's rudder causing the ship's wheel to revolve rapidly and forcefully, catching the captain's hand in one of the spokes, which broke his hand (*Door County Advocate* 1882d; *Manitowoc Pilot* 1882h).

By the end of December, *Arctic* transferred to Milwaukee to keep transportation channels open for Goodrich steamers during the winter months (*Door County Advocate* 1882e; Elliott 1995:82). In February 1883 ice collected on Lake Michigan and *Arctic* was busy clearing the ice from Milwaukee and Grand Haven harbors. For the next couple of months, the tug was busy monitoring and aiding the Goodrich steamers *Michigan* and *Wisconsin* during their cross-lake routes (*Chicago Daily Tribune* 1883a; *Door County Advocate* 1883a; *Inter Ocean* 1883a; *Manitowoc Pilot* 1883a). The heavy build of the *Arctic* proved its worth and allowed for success for the Goodrich line's winter season. Many publications commended the tug's "valiant service in keeping the Grand Haven & Milwaukee route across Lake Michigan open this winter" (*Chicago Daily Tribune* 1883a; *Detroit Free Press* 1883a).

In March 1883 *Arctic* participated in a major rescue of the Goodrich steamer *DePere* that went ashore near Two Rivers. The steamer ran aground in December and was prevented from removal by the weather. Within 24 hours the *Arctic* dredged a 14-foot-deep channel to *DePere* and pulled it free with the assistance of the tug *Goldsmith* (*Door County Advocate* 1883b; *Detroit Free Press* 1883b; *Inter Ocean* 1883b; *Manitowoc Pilot* 1883b). News reports declared this to be "One of the most speedy and successful jobs of the kind in marine annals" (*Manitowoc Pilot* 1883b). Throughout 1883 the *Arctic* came to the aid of the barge *Allen* and the schooners *Imperial* and *Norman* (*Chicago Daily Tribune* 1883b, 1883c, 1883d; *Detroit Free Press* 1883c, 1883d; *Manitowoc Pilot* 1883c).

As winter fell the tug was returned to clearing the ice in Milwaukee and Grand Haven. March 1884 proved rough for the tug and other vessels as reports of ice as much as twenty-five feet thick extending across all of Lake Michigan and obstructing harbors. The propellers *Michigan* and *Wisconsin*, both serving the railroads, found themselves stranded in the ice. *Arctic* was

tasked with breaking a channel across the lake and freeing the propellers. This was not an easy task for the tug, and no channel was completely open for fifteen days (*Chicago Daily Tribune* 1884a; *Detroit Free Press* 1884a, 1884b, 1884c, 1884d). This was the first time in three years that the *Arctic* could not break through the ice.

On 9 April 1884 the *Arctic* came into Manitowoc for repairs to its engines. The tug had been inspected the month before and was cleared (*Detroit Free Press* 1884e; *Inter Ocean* 1884a). In July a major squall occurred on the lakes as the *Arctic* towed the iron laden barge *Transfer* and schooner *C.O.D.* to Escanaba. While off Muskegon, Michigan the tug broke its piston rod and the schooner lost its mast and rigging. Little of note occurred for the remainder of the 1884-season and *Arctic* was positioned to assist disabled and stranded vessels near Grand Haven, Michigan (*Chicago Daily Tribune* 1884b; 1884c; 1884d; 1884e; *Inter Ocean* 1884b).

The 1885 winter proved harsh for the *Arctic*. Before the end of January, both the steamers *Oneida* and *Michigan* were stranded in large ice floes drifting in the lake. The *Arctic* made every attempt to break through the ice outside Grand Haven to aid the stranded vessels, but to no avail (*Detroit Free Press* 1885a; *Inter Ocean* 1885a). On 4 February the propeller *Wisconsin* also became stuck in the ice leaving three Goodrich vessels stranded on the lake (*Detroit Free Press* 1885b). Finally, by 10 February the steamers *Michigan* and *Wisconsin* freed themselves. Without hesitation, they began searching for the drifting *Oneida* without knowing that the *Arctic* had already found the stranded steamer and was towing it into port (*Detroit Free Press* 1885c). While looking for *Oneida* both the *Wisconsin* and *Michigan* once again found themselves caught in the ice fields (*Chicago Daily Tribune* 1885a; *Detroit Free Press* 1885d). For forty-two days from 9 February to 23 March, *Michigan* was stranded in ice near Grand Haven, Michigan. The *Arctic* managed to break ice to within six miles of the steamer before the tug also became stuck in the ice. Some provisions were unloaded and dragged over to the stranded *Michigan*. Days later, ice punctured *Michigan*'s hull. *Michigan*'s crew made the dangerous trek over the ice and boarded the *Arctic* before the steamer was lost to the lake. After a brief rest, the crew of the *Michigan* walked fourteen miles to the safety of shore. The tug was still stranded near where *Michigan* went down and *Wisconsin* remained trapped in ice in an unknown location (*Chicago Daily Tribune* 1885b, 1885c; *Detroit Free Press* 1885e; Elliott 1995:97-98; *Freeport Journal-Standard* 1885). On 29 March, fifty-six days from the vessel's departure, *Wisconsin* was discovered fifteen miles from the Grand Haven harbor (*Chicago Daily Tribune* 1885d; *Detroit Free Press* 1885f). The tug and steamer eventually freed themselves from the ice and made their way to Grand Haven (*Weekly Expositor Independent* 1885). Shortly thereafter, the *Arctic* left Grand Haven for Manitowoc (*Chicago Daily Tribune* 1885e; *Inter Ocean* 1885b).

On 1 April 1886 the *Arctic* was placed in dry dock at Manitowoc for recalking (*Manitowoc Pilot* 1886a). The tug reportedly towed a dredge in June and July 1886, but no other details are known (*Manitowoc Pilot* 1886b; 1886c). No other reports of the vessel's actions were discovered for the 1886-season.

During the 1886-87 winter, the *Arctic* again was tasked with breaking ice across the lake and in harbors keeping navigation channels open (*Manitowoc Pilot* 1886d; 1887a). During the summer months of 1887 the tug was moved to Manitowoc. There, the vessel towed the schooners *Nellie Redington*, *Paige*, *H.C. Richards*, *John Raber*, and the barge *D.P. Dobbin* (*Inter Ocean* 1887a, 1887b; *Manitowoc Pilot* 1887b, 1887d; 1887e). In October, the *Arctic* came to the aid of the tug *Charley* after the vessel lost its wheel while towing a stone laden scow (*Door County Advocate* 1887a). The same month, the *Arctic* towed a dredge owned by O.B. Green to Marinette, Michigan for a large project (*Door County Advocate* 1887b; *Inter Ocean* 1887c; *Manitowoc Pilot* 1887c). The tug was so often seen in the harbor that the *Manitowoc Pilot* (1888a) commented,

“The tug *Arctic*, which belongs to the [Goodrich] company gets all its business at this point and the bridges have been swung for it a greater number of times than for all other craft combined.”

As late as April 1888 *Arctic* was breaking ice on the lake and in ports. An ice damn formed on the Manitowoc River that was broken up by the tug (*Manitowoc Pilot* 1888b). On 27 September, the tug towed Kewaunee’s *Dredge No. 1* to Ahnapee for harbor work and returned the dredge to Kewaunee in December for a rebuild (*Ahnapee Record* 1888; *Door County Advocate* 1888b). On 19 October the Goodrich steamer *Corona* was disabled off Cedar River, Michigan. One of the pins connecting the walking beam to the engine broke leaving the steamer adrift. The tug *Pilot* towed the steamer into Cedar River then telegraphed Manitowoc for the *Arctic*. The *Arctic* towed the *Corona* back to Manitowoc for repairs (*Door County Advocate* 1888a; *Independent* 1888; *Manitowoc Pilot* 1889a).

In early June 1889 the propeller *DePere* broke its wheel while entering Green Bay’s harbor. The vessel’s rudder struck a log, which disabled its wheel and jarred a hole in its hull. Passengers were transferred to the propeller *Moore* and the *Arctic* towed the steamer to Manitowoc for repairs (*Door County Advocate* 1889; *Independent* 1889). Kewaunee’s *Dredge No. 1* was towed back to Ahnapee in June by the *Arctic*, for continuation of harbor work. The dredge deepened the channels between piers and dredged stone from the river to sink cribs (*Ahnapee Record* 1889). On 7 November, the schooner *Golden Fleece* split its sail and jib and was towed into port by the *Arctic* (*Manitowoc Pilot* 1889b).

Very little is written about events involving the *Arctic* during the year of 1890. The tug assisted in towing the disabled Goodrich steamer *Ludington* into port. In November 1889 the steamer became stranded near Eagle Bluff, Door County in bad weather and it remained grounded until May 1890. The wrecking tug *Monarch* lifted the vessel with hydraulic jacks to plug holes in the hull and refloat the vessel. After the *Ludington* was freed from the rocks *Arctic* and *Monarch* towed it into Manitowoc for repairs (*Door County Advocate* 1890; Elliott 1995:86; *Independent* 1890).

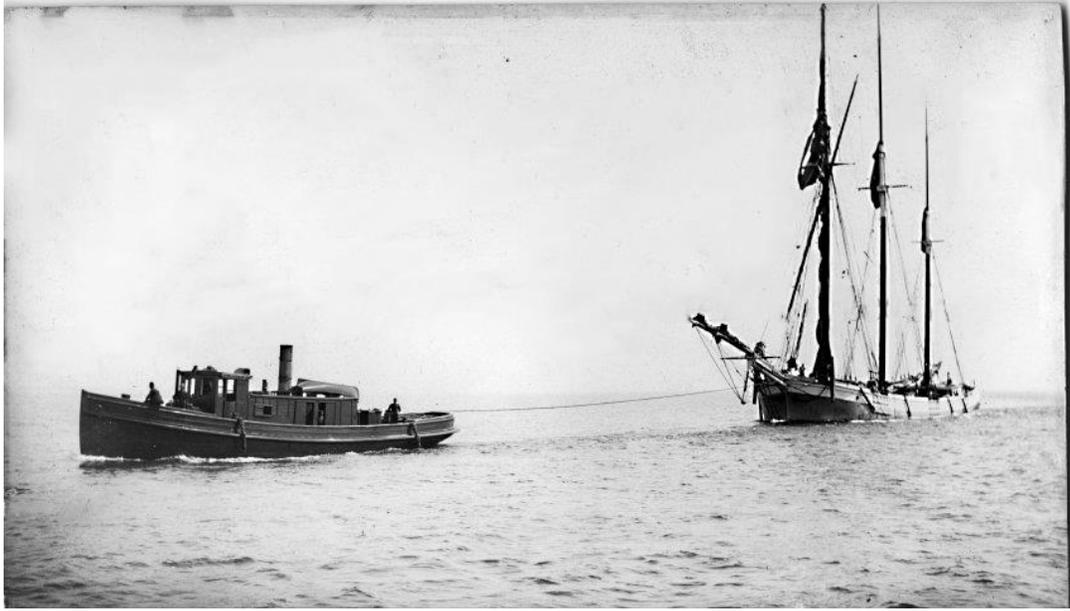


Figure 25. Tug *Arctic* towing a three-masted schooner ca. 1890 (Wisconsin Maritime Museum)

Little was reported about the *Arctic*'s service in 1891, but the *Door County Advocate* (1891b) mentioned that "shipping is terrible dull this season, arrivals, except coastwise, being few and far between." The tug *Temple Emory* was the only reported vessel that was aided by the *Arctic* during that year (*Door County Advocate* 1891a). The spring of 1891 brought repairs and modifications to the ice-breaking tug. In January, the *Arctic*'s deck was raised and in May some machinery was repaired (*Manitowoc Pilot* 1891a; 1891b). By December the *Arctic* began to break ice to clear navigation channels in Manitowoc (*Manitowoc Pilot* 1891c).

During the early months of 1892 the *Arctic* continued to break lake ice. Cross-lake winds packed ice onto the western shore. The steamer *Osceola* required the assistance of the tug (*Door County Advocate* 1892a). In June and July *Arctic* assisted with the bridge work in the Manitowoc River as well as with vessels in the harbor (*Door County Advocate* 1892b; *Manitowoc Pilot* 1892a). While in Manitowoc, the tug received repairs to its boiler (*Manitowoc Pilot* 1892b).

News reports indicated that the *Arctic*'s 1893-season began under new command. In April, Captain John Gilbraith replaced Captain Edwards as Master of the tug (*Manitowoc Pilot* 1893a, 1893b). Unfortunately, no enrollment documents for this year are available to support this claim. The Captain's first task was the removal of an ice dam under the Main Street Bridge in the Manitowoc River (*Manitowoc Pilot* 1893a). In both June and July the *Arctic* assisted the tug *Temple Emory*. *Temple Emory* first broke its engine while towing a log raft off of Two Rivers, then broke it again a month later in between the Sturgeon Bay Canal and Two Rivers (*Door County Advocate* 1893a, 1893b). In September, the *Arctic* removed the steamer *W.H. Barnum* from the beach after it came ashore south of Manitowoc (*Chicago Daily Tribune* 1893; *Detroit Free Press* 1893).

In April of 1894 the tug ran into a bridge on the Manitowoc River losing its pilothouse and smokestack. No one was injured, but the vessel was once again laid up for repairs (*Manitowoc Pilot* 1894a). A large squall during the second week of November 1894 stranded many vessels. The steamer *W.L. Wetmore* went ashore with its consort, the schooner *Brunette*. The Sheboygan Lifesaving crew managed to rescue the crew of the *W.L. Wetmore* while *Arctic* located and towed the *Brunette* into Manitowoc. During this storm the tug also located and rescued the barge *Manitowoc* and schooner *Charles Wall* (*Door County Advocate* 1894; *Inter Ocean* 1894; *Manitowoc Pilot* 1894b).

In July of 1895 Captain Munger became Master of *Arctic*; in November Captain Louis Sinclair succeeded him (*Door County Advocate* 1895a, 1895b; *Manitowoc Pilot* 1895b). In 1896 Captain Chauncey R. Thayer took command of the tug and remained at the helm until the early 1900s (*Advocate* 1898a; Bureau of Navigation 1896; 1898; *Inter Ocean* 1899b; *Manitowoc Pilot* 1898a 1899c).

The *Manitowoc Pilot* reported that the tug *Arctic* “is kept quite busy these times” for the 1895-1897 seasons (*Manitowoc Pilot* 1895a, 1896, 1897a). Within these two years the *Arctic* assisted five schooners, five steamers, and a dredge (*Advocate* 1897a, 1897b; *Ahnapee Pilot* 1895; *Detroit Free Press* 1896; *Door County Advocate* 1896a; 1896b; *Inter Ocean* 1896; *Manitowoc Pilot* 1895c; 1895d; 1895e).

In December of 1897 the *Manitowoc Pilot* (1897b) mentioned that the Goodrich Transportation Company intended to build a new tug. This proposed tug was to be larger than the *Arctic* and would be ready by next season. No other evidence of a second tug or even its proposal could be found in the research.

Late in the summer of 1898 *Arctic* was taken to the Burger & Burger shipyard for a hull extension and complete overhaul. The hull was extended twelve feet increasing its overall length to 76.5 feet with the gross tonnage increasing from 52 tons to 71 tons (*Advocate* 1898b, 1898c; Bureau of Navigation 1898; *Detroit Free Press* 1898; Elliott 1995:83). After the hull extension, the *Manitowoc Pilot* (1899a) described the tug as having “a roll like the hip and shoulder movement of a thumper when he is about to wade into an opponent. It is communicated by means of the helm and greatly aid in ice crushing”. This “roll” was thought to be more helpful in ice breaking, and it was proven during the extreme weather the following winter. The *Arctic*’s new hull was put to use in December 1899. The steamer *Rand* went ashore on the reefs at Jacksonport. The crew tried to float and kedge the vessel off, without success. Other tugs attempted to aid the steamer but they could not free it from the ice. *Arctic* managed to release the *Rand* within ten minutes with no damage (*Advocate* 1898d, 1898e; *Manitowoc Pilot* 1898b).

In February 1899, two weeks of winter storms caused serious ice buildup on the lake. *Arctic* had the chore of opening channels for the Goodrich steamers *Iowa*, *Atlanta*, and *Georgia*

(*Advocate* 1899a, 1899b). The Goodrich steamer *Iowa* became trapped in an ice floe, but *Arctic*, along with the steamer *Georgia*, freed the *Iowa* from the ice within seventy-two hours (*Chicago Daily Tribune* 1899; *Inter Ocean* 1899a). In March the steamer *Atlanta* went ashore near Racine while en route from Chicago to Manitowoc. The captain attempted to navigate around an ice floe and ended up in shallow water. The *Arctic* released the vessel after experiencing difficulty in ice itself near Sheboygan (*Manitowoc Pilot* 1899b).

The *Ann Arbor Ferry No. 1* became stuck in ice in Green Bay in February 1900. The tugs *Arctic* and *Algolah* attempted to release the ferry, but failed when *Algolah* was disabled during the effort. Although *Arctic* held its own, representatives of the Goodrich Company pulled the tug from the rescue and moved it to Manitowoc to maintain open navigation channels (*Algoma Record* 1900; *Manitowoc Pilot* 1900). In the following months *Arctic* continued to break ice, tow vessels, and come to the aid of those in distress (*Advocate* 1900a; *Detroit Free Press* 1900; *Inter Ocean* 1900). Few reports discuss *Arctic's* ice breaking for the following years. It is known that the tug wintered in the Grand Haven and Muskegon areas and opened cross-lake channels to ports along the western shore (*Detroit Free Press* 1907a; *Manitowoc Herald-Times* 1929a; 1932).



Figure 26. The port side of the *Arctic* (Wisconsin Maritime Museum)

In September 1900 Captain Thayer resigned command and was succeeded by Captain Thomas McGinn. Captain Berlin Sniffin took command a few months later (*Advocate* 1900b, 1900c, 1900d; Bureau of Navigation 1898). Captain Sniffin remained Master of the tug until he was

afflicted by a stroke in 1914 (*Advocate* 1903, 1905, 1907a, 1908a, 1909b, 1910; Bureau of Navigation 1903, 1913; *Door County News* 1916a).

The early 1900s were challenging for Goodrich Transportation Company steamers. In September 1901 the Goodrich steamer *Atlanta* ran ashore outside of Sturgeon Bay. The *Arctic*, along with tugs *Albert J. Wright*, *Geo. Nelson*, *O.M. Field*, and *Leathem* spent four days attempting to pull the vessel from the sand. After unsuccessful attempts, *Arctic* tried a new tactic and used its propeller wash to dredge under the steamer. Finally, with *Arctic*'s dredging and the strength of wrecking tug *Monarch*, *Atlanta* was freed (*Advocate* 1901a, 1901b; *Door County Democrat* 1901). *Arctic* came to the steamer's rescue again four months later when *Atlanta* went ashore again while maneuvering out from the Sturgeon Bay Canal in January 1902. The tug released *Atlanta* easily with some dredging and pulling (*Advocate* 1902a; *Door County Democrat* 1902). In September 1902 *Arctic* came to the rescue of the Goodrich steamer *Sheboygan*. The steamer went ashore in a heavy fog just north of Algoma. *Arctic* and the wrecking tug *Favorite*, both dispatched from Chicago, assisted in its removal. *Arctic* towed a schooner to the stranded vessel to transfer all the cargo. Once lightered, the tugs pulled the steamer into deep water (*Advocate* 1902b; *Algoma Record* 1902; *Inter Ocean* 1902b). Historic research shows that the *Arctic* was moved to the Chicago harbor sometime after 1900, so the tug could accompany the popular Goodrich steamers *Christopher Columbus* and *Virginia* for towing in the Chicago River (*Detroit Free Press* 1902; *Inter Ocean* 1902a).

The *Arctic* saved the yacht *Toxeth* in the summer of 1903 after the vessel ran into a pier in the Manitowoc harbor. The yacht veered into the pier to escape a collision with the steamer *Chicago*. The tug also came to the aid of the *Temple Emery* with its consort of scows and the schooner *Glen Cuyler* (*Detroit Free Press* 1903a, 1903b; *Inter Ocean* 1903a; *Manitowoc Pilot* 1903). In 1903 while docked in the Manitowoc harbor, a fire began on the steamer *Pewaukee* when a lantern exploded in the aft cabin. During this time a northeast gale was blowing pushing the flames toward the warehouse of the Chicago & Northwestern Railway. The *Arctic* used its pumps to douse the flames in water saving the warehouse and vessel (*Door County Democrat* 1903; *Inter Ocean* 1903b).

In 1904 the *Arctic* maintained its station in and around the Manitowoc harbor. In January, the tug towed the steamer *Atlanta* to the shipyard for a general overhaul (*Manitowoc Pilot* 1904a). In July, the *Arctic* towed the barge *Warmington* to Two Rivers (*Manitowoc Pilot* 1904b). In October 1904 the steamer *Phoenix* became disabled on the lake and was towed back to port by the tug (*Manitowoc Pilot* 1904c). A month later the steamer *City of Racine* struck a pile at the Sheboygan pier and broke three blades from its propeller. The disabled steamer offloaded all cargo at that port and *Arctic* towed it to Manitowoc for repair (*Advocate* 1904; *Door County Democrat* 1904).

In November of 1906 *Arctic* came to the aid of the Goodrich steamer *Iowa*. On the way to Escanaba the steamer ran aground in a fog at Hill's Point near Sturgeon Bay. The *Eugene Hart*

and steamer *Saugatuck* took turns trying to free the *Iowa*, without success. The tug *Thos. Thompson* brought a lightering scow to the vessel, so the *Arctic* could pull the steamer free. No damage was reported to the *Iowa* and it continued on its route to Escanaba (*Advocate* 1906; *Detroit Free Press* 1906; *Door County Democrat* 1906).

In March 1907 the *Arctic* was in Grand Haven and Muskegon, Michigan breaking ice and keeping navigation channels open (*Detroit Free Press* 1907a). A month later the tug was in Manitowoc where it came to the aid of the disabled steamer *R.J. Gordon*. Outside of Manitowoc the steamer's piston rod broke disabling the vessel. The second engineer shut off the vessel's steam to prevent any further damage, and suffered serious burns in the process. The *Arctic* towed the steamer into harbor quickly so the engineer could be hospitalized (*Advocate* 1907b; *Detroit Free Press* 1907b). In July the steamer *James P. Walsh* went ashore carrying 9,000 tons of coal. The *Arctic* brought a lighter and transferred some of the cargo. The tug returned and successfully pulled the *Walsh* off the shoal (*Advocate* 1907c; *Detroit Free Press* 1907c; *Inter Ocean* 1907).

In January 1908 the *Arctic* came to the rescue of the Manitowoc Assistant Lightkeeper Edward Warren. Warren was on duty at the fog station on the breakwater during one of the worst storms of the year. The large seas washed Warren's boat away, broke up the station steps, and beat in the walls of the station, threatening the structure itself. Captains of the car ferries *Ann Arbor* and *Pere Marquette* could not position their ships close enough to rescue the man. After a day and a half, the *Arctic* rescued Warren (*Edwardsville Intelligencer* 1908). During the summer months of 1908 the *Arctic* was used to improve Algoma's harbor. The tug towed stone from the Green Stone Company and Termansen & Jenson's quarry of Sturgeon Bay loaded on the Great Lakes Company's *Scow 37* to Algoma. The construction equipment towed included pile drivers, derricks, and cement caissons, all from Kewaunee (*Advocate* 1908b, 1908c; *Door County Democrat* 1907, 1908a, 1908b, 1908c, 1908d). In August, the schooner *Cora White* lost its foremast, main topmast, and jibboom in a squall twelve miles south of Manitowoc. The *Arctic* towed the schooner into the harbor for repairs (*Eau Claire Leader* 1908).

In January 1909 *Arctic* was placed in dry dock at Manitowoc to receive new frames and ceiling planking around its boiler and the boiler itself was overhauled (*Advocate* 1909a). Around this time rumors were spread that the Manitowoc City Council was going to install pumps on the *Arctic* to make the vessel into a fire tug (*Door County Democrat* 1909). There was no evidence to support this claim found in the historical research. In October the steamer *Wyoming* became stranded on South Point Reef, three miles south of Manitowoc while en route from Buffalo, New York to Chicago with a load of steel. The *Arctic* and the Two Rivers Lifesaving crew went to the aid of the badly leaking steamer. A lighter was brought in and cargo transferred. The *Pere Marquette* and tug *Ottawa* both attempted to pull the vessel off the reef to no avail. The dual effort of *Ottawa* and *Arctic* released the steamer and the tugs towed *Wyoming* to Manitowoc where it was put in dry dock for repairs (*Advocate* 1909c; *Algoma Record* 1909).

Little is known of the *Arctic*'s 1910-season. The tug came to the aid of the schooner *Oscar Newhouse*. The schooner was overloaded with wood and became waterlogged. The vessel was equipped with a gas engine, but ran out of fuel and was unable to make port without assistance (*Algoma Record* 1910; *Door County Democrat* 1910).

In June 1911 the car ferry *Ann Arbor No. 5* went ashore north of Manitowoc harbor. *Arctic* rapidly came to its assistance, and was able to release the car ferry after two hours of work with little damage (*Algoma Record* 1911). In October the tug *Lorens*, hauling dump scows, was disabled outside of Manitowoc. The *Arctic* towed the vessel into port for repairs (*Advocate* 1911).



Figure 27. Tugs *Arctic* and *Sheboygan* tow the freighter *Globe* up the Manitowoc River (Wisconsin Maritime Museum)

From January to March 1914 the tug went into dry dock for a general overhaul and rebuild (*Sturgeon Bay Advocate* 1914a, 1914b; *Manitowoc Herald-Times* 1929b). After *Arctic* received repairs, it also received a new captain. Captain Sniffin's stroke paralyzed his arm and ultimately resulted in his death. Captain Edward Stoke took command of the *Arctic* (Bureau of Navigation 1913; *Door County News* 1916a). In September 1914 the *Arctic* towed the Goodrich steamer *Sheboygan* out of the Manitowoc harbor for the last time. *Sheboygan*, now forty-five years old,

was retired from service. The sidewheel steamer was gutted, beached, and set on fire one mile north of the Manitowoc harbor pier (*Detroit Free Press* 1914; *Escanaba Morning Press* 1914).

Little is known about the tug's movements in 1915. In July, the steamer *Arizona* went ashore near Little Traverse Bay, Michigan in a dense fog. The *Arctic* had little trouble releasing the vessel and towed *Arizona* back to Manitowoc for a thorough inspection (*Door County Democrat* 1915; *Sturgeon Bay Advocate* 1915a). On 14 October 1915 the steamer *Tempest* lost its consort, the barge *Filer*, in a storm. The steamer could not reconnect with the barge so it came into Manitowoc and sent the *Arctic* out to recover the drifting barge (*Sturgeon Bay Advocate* 1915b).

On 3 December 1916 the Goodrich steamer *Carolina* ran aground on the rocky shore near Stoney Creek in Door County. It took a team of vessels eighteen days to free the steamer. The tug *Arctic* used its pumps to empty the hull of water while the crew of the *Advance* spent most of the days repairing damage to the bottom of its hull. On 21 December, the wrecking tug *Favorite* arrived on site and successfully pulled the steamer off the rocks. The steambarge *J.S. Crouse* and tug *Arctic* furnished steam to *Carolina's* machinery, while the *Favorite* towed it to Manitowoc for repairs (*Door County Democrat* 1916; *Door County News* 1916b; *Sturgeon Bay Advocate* 1916a, 1916b, 1916c).

In June 1917 the schooner *J.V. Taylor* was rescued in a heavy gale. The schooner was bound for Chicago with a load of wood when it was caught in the storm. The vessel was taking on water in immense waves when the *Arctic* and the Two Rivers Lifesaving crew came to its rescue. The tug towed the schooner safely into port (*Algoma Record* 1917; *Sturgeon Bay Advocate* 1917a).

Three years after Stokes took command of the vessel in June 1917, he passed away. His leg had been injured and reinjured while working on the *Arctic* and a month prior to his death the captain underwent an operation to amputate the leg. Complications arose after the amputation resulting in his death (*Door County Democrat* 1917; *Grand Rapids Tribune* 1917; *Sturgeon Bay Advocate* 1917a). Captain William Vaughn took command (*Sturgeon Bay Advocate* 1918). A few months later engineer Otto Sperlich resigned his post on the tug to take up farming and Jack Myers, former engineer of the tug *Industry*, took his place (*Door County News* 1917; *Sturgeon Bay Advocate* 1917b, 1918). Captain Vaughn was Master only three years and succeeded by Captain William Clark (Bureau of Navigation 1913; *Escanaba Daily Press* 1928; *Manitowoc Herald-Times* 1927b). Clark remained captain of the *Arctic* until its abandonment (*Manitowoc Herald Times* 1930a).

On 14 November 1919 the railroad car ferry *Pere Marquette No. 18* ran ashore near Manitowoc in heavy seas. The *Arctic* along with the tug *Smith* pulled the car ferry from the beach (*Door County Advocate* 1919). On 18 November the *Arctic* towed the McMullen & Pitz dredge *Algoma* and two dump scows to Sheboygan when a heavy sea washed over the dredge and capsized it. The five men aboard the *Algoma* were all able to board the tug safely before the

dredge sank beneath the waves. The *Algoma* was declared a total loss with an estimated value of \$40,000 (*Door County News* 1919).

In November of 1920 a massive lake-wide volunteer search was conducted for a missing Great Lakes Naval Station seaplane. The search party included the tugs *Arctic* and *Reiss*, the Two Rivers Coast Guard crew, airplanes from the Great Lakes Naval Station, and the head of aviation from Culver Military Academy. The search covered the entirety of central Lake Michigan from coast to coast. Some debris thought to be part of the plane was located, but the hull and passengers were never recovered (*Eau Claire Leader* 1920; *Manitowoc Herald-Times* 1920a; 1920b).



Figure 28. The tug *Arctic* assisting the Goodrich steamer *Georgia* ca. 1920 (Wisconsin Maritime Museum)

From 1923-1926 newspaper entries portray *Arctic*'s service as a railroad car ferry keeper. In April 1923 *Arctic* came to the aid of the *Ann Arbor Ferry No. 3* when it became disabled outside of Manitowoc (*Door County News* 1923; *Manitowoc Herald Times* 1923a). In May 1923 *Arctic* towed the car ferry *Ann Arbor No. 4* across the lake from Frankfort, Michigan to Manitowoc for repair after the vessel was disabled in a storm (*Manitowoc Herald-Times* 1923b). In March 1924 *Arctic* was the first to tow the *Pere Marquette No. 21*, the first of the two new steel-hulled railroad car ferries constructed in Manitowoc (*Manitowoc Herald-Times* 1924a). In January 1926 during a heavy snowstorm the car ferry *Pere Marquette No. 18* ran aground south of Manitowoc. The car ferry *Pere Marquette No. 17* and tug *Arctic* were charged with releasing the vessel. Their efforts seemed to have little effect and it was thought that the twenty-six railroad cars aboard the ferry would need to be removed. The *No. 22* of the *Pere Marquette Line* and the wrecking tug *Favorite* came to assist the *Arctic* and *Pere Marquette No.*

17. The *Pere Marquette No. 18* was released within a few days of incident (*Ironwood Daily Globe* 1926; *Manitowoc Herald-Times* 1926a, 1926b).

In March 1924 the Goodrich Transportation Company was charged for negligence by McMullen & Pitz Company, for the actions of the *Arctic* and its crew in the loss of the dredge *Algoma*. McMullen & Pitz claimed \$20,000 in damages. The federal court decided in favor of the tug *Arctic* and the Goodrich Company determining that stormy weather and sea conditions were to blame (*Door County Advocate* 1924; *Manitowoc Herald-Times* 1924b).

During the summer months in this period *Arctic* frequented the port of Chicago, but could mostly be found in Manitowoc aiding distressed vessels (*Door County Advocate* 1928; Elliott 1995:83; *Manitowoc Herald-Times* 1924c; 1924d; 1925; 1928). During the months of February and March 1927 the bridge in Manitowoc was lifted sixty-nine times for the tug (*Manitowoc Herald-Times* 1927a, 1927c).

As the *Arctic* aged, it required repair and overhaul more frequently. The Goodrich Transportation Company ultimately determined that it had reached a threshold where it would cost more to rebuild the tug than to acquire a new vessel. The *Arctic* was dismantled and beached north of Manitowoc harbor. On 17 January 1930 the tug's enrollment documents were surrendered declaring *Arctic* beached and abandoned (Bureau of Navigation 1930).

Arctic, built in 1881, spent forty-nine years servicing vessels in Manitowoc, Chicago, and Muskegon (*Door County Advocate* 1930; Elliott 1995:83; *Manitowoc Herald-Times* 1930a). *Manitowoc Herald-Times* (1930b) paid homage to the tug in an article saying,

“to recount the items of service this craft has rendered throughout its life, would fill volumes-- its responses to the four blasts of vessels on the lake in need of help; its assistance to grounded boats; its welcome stream of water on dock property being destroyed by flames; its charges into ice jams that threatened destruction of boats and bridges; and breaking of ice that enabled navigation to continue—all are legion in number, and no man can recount them all”.

Site Description

A search of Wisconsin Historical Society's shipwreck database, generated from historic newspaper accounts of vessels casualties, revealed that four vessels have been lost or abandoned approximately one mile north of the Manitowoc Harbor. The steamer *Francis Hinton*, surveyed by Wisconsin Historical Society in 1991 is buoyed and frequently visited by divers. Three vessels of the Goodrich Line were also abandoned in this area. Two of these abandonments were sidewheel steamers, the *Sheboygan* and the *Muskegon* (both approximately 200 feet in length), while the third was the 76-foot-long tug *Arctic*. Dimensional data and artifacts that remain on the site indicate that the vessel described in this document belong to the

tug *Arctic*. At the time of her registration, *Arctic* was described as a wooden screw-propelled tug with one deck, measuring 64.55 feet in length, 18.01 feet in beam, with a 9-foot depth of hold, and a gross tonnage of 52.97 tons (Bureau of Navigation 1881). The *Arctic*'s wreck site lies in Lake Michigan 1.5 miles northeast of the Manitowoc Breakwater Light, Manitowoc, Wisconsin. The vessel lies in two distinct disarticulated sections, 805 feet apart in 10-15 feet of water. The bow section contains the stempost and upper hull structure, while the bilge section contains the rudder, lower hull/bilge, boiler, and machine remnants. Wisconsin Historical Society archaeologists initially investigated the site's bilge section in 1994 but a full site survey was never completed. During the summer of 2017, the bow was surveyed, as well as a resurvey of the bilge section, by Society archaeologists and field school participants from Wisconsin Underwater Archaeology Association (WUAA) and the Great Lakes Shipwreck Preservation Society (GLSPS).

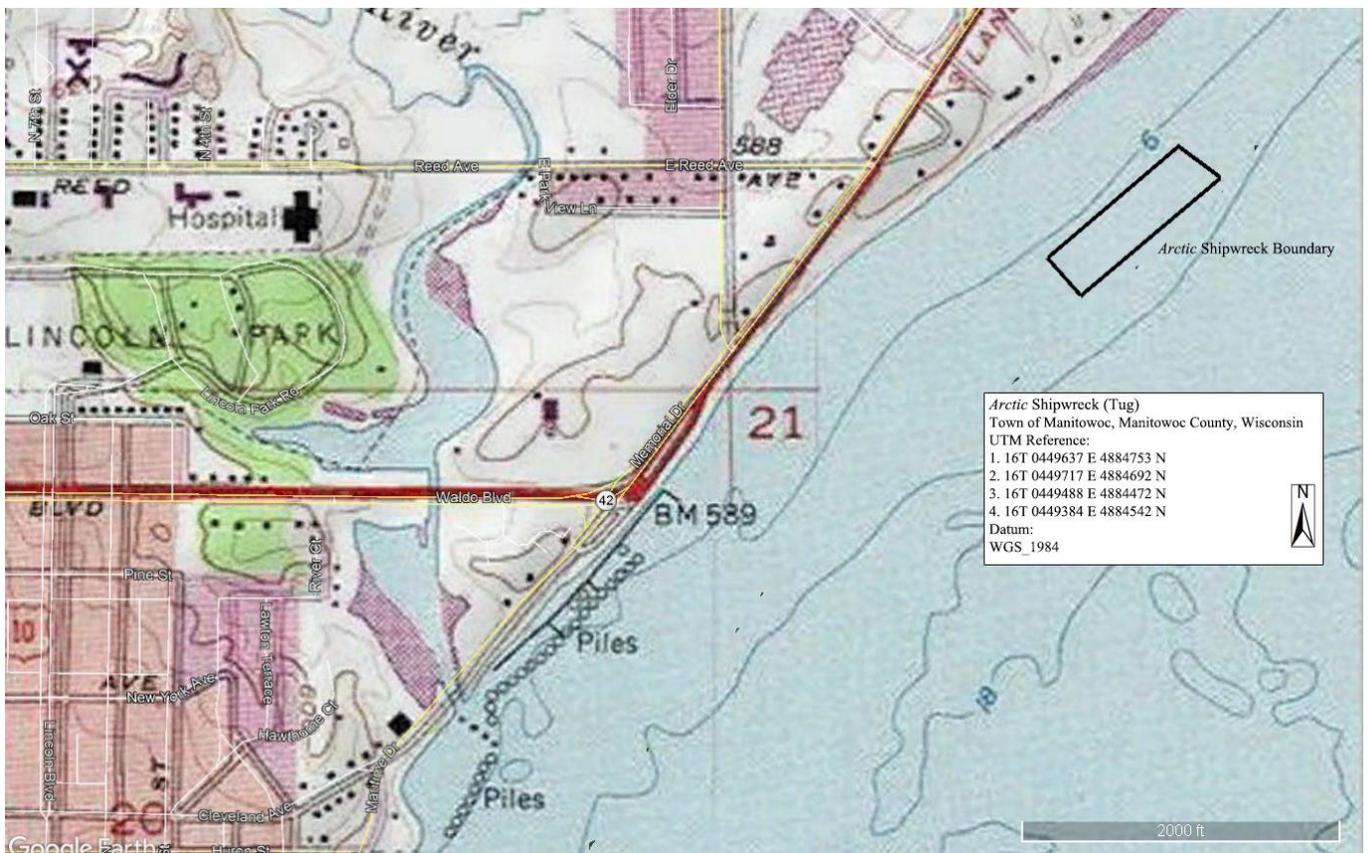


Figure 29. Location of the *Arctic* site

During the 2017 archaeological survey of the bow section, a temporary baseline was attached to the stempost and extended toward the stern of the vessel ending in the sand aft of the broken hull. All measurements were taken in reference to the baseline. The bow of the vessel sits upright between 8 and 14 feet below the surface on a heading of 69 degrees. The extant hull structure measures 73 feet long, therefore it is estimated that the section contains most of the

upper hull structure of the vessel. The stern and transom are non-extant, or remain buried beneath the sand. The hull sides are splayed out aft of the stem to a width of 37 feet.

The stempost of *Arctic* rises 7 feet out of the sand with a 48-degree list to starboard and 30-degree pitch forward. Both the port and starboard sides of the upper hull of *Arctic*'s bow are exposed. The stempost remains attached to the starboard side of the hull while the port side has fallen away. The interior of the bow section is covered in sand, which likely covers other interior hull features. The stempost is comprised of two timbers that together measure 0.8 feet sided by 2.3 feet molded. An iron cutwater is attached to the front of the stempost measuring 0.8 feet sided and 0.1 feet molded. The stem angles back twelve feet to the deadwood. Just aft of the stempost and deadwood are the remnants of cable that was left on the vessel at the time of its abandonment. Two wooden knees are located just aft of the stempost partially buried in sand. The first measures 3.0 feet long with a maximum width of 2.1 feet. The second, located just aft of the first, measures 3.8 feet long with a maximum width of 1.5 feet. Both knees measure 0.4 feet in thickness and appear to be attached to each other. On the outside of the vessel near the stempost, one foot above the sand, remains scant evidence of the tug's iron sheathing.

The port side hull leans 30-degree outward from the bow to a point 38 feet along the baseline. At this point there is a break and the remainder of the port hull lays flat, visible above the sand until it disappears 73 feet aft of the stem. The first 38 feet of the port side contains frames, outer hull planking, and ceiling planking. On the outside of this portion of the hull, iron sheathing was observed falling away from the hull into the sand. Cant frames are located in the first 15 feet along the baseline. These cant frames measure 1.0 foot sided and 0.6 feet molded, and are placed almost side-by-side. They gain spacing as the hull extends aft and frames measure 0.8 feet sided and 0.6 feet molded with 1.0 foot spacing between. Measured on the port side, the outer hull planking measures 0.5 feet sided and 0.3 feet molded. The ceiling planking measures 0.6 feet sided and 0.2 feet molded.

The starboard side of the bow wreckage extends into sand 73.5 feet aft of the stempost. Near the stempost on the starboard side, two hawsepipes are located at the top of the hull structure. The first hawsepipe is 1.1 feet long, 0.6 feet high, and 1.3 feet thick. The second hawse pipe, located 1.8 feet aft of the first, measures of 1.3 feet long, 0.4 feet high, and 1.3 feet thick. There is no evidence of a hawsepipe on the port side of the hull. The starboard hull, containing frames, ceiling planking, and outer planking and stands at a 48-degree angle that gradually increases aft to 40 feet along the baseline where the piece ends in sand. Between 42 feet and 64 feet along the baseline is a section of collapsed decking. A deck beam 1.0 feet sided and molded can be seen under multiple deck planks.



Figure 30. Interior of hull in bow section, starboard side looking forward



Figure 31. Wooden hogging trusses on the port side hull bow section

Multiple wooden and iron hogging trusses are extant on the bow portion of wreckage, an indicator of the ice breaking capacity of this ship. On the port side three wooden trusses are extant. The first is located at 12 feet along the baseline and extends 16 feet aft, measuring 1.3 feet sided and 0.4 feet molded. The second wooden truss on the port side is located at 24 feet along the baseline and extends 13 feet aft, measuring 1.6 feet sided and 0.9 feet molded. The third wooden truss on the port side is located at 34 feet along the baseline and extends 4 feet aft, measuring 1.3 feet sided and 0.4 feet molded. An iron hogging truss along the port side begins at 39 feet along the baseline and ends at 72 feet, measuring 1.1 feet sided and 0.1 feet molded. Along the starboard side, the first wooden hogging truss is located also 12 feet along the baseline, and extends 12 feet ending in sand. It measures 1.3 feet sided and 0.4 feet molded. The second wooden-hogging truss was located at 20 feet along the baseline and extends 14.5 feet before ending in sand. It measures 1.6 feet sided and 0.9 feet molded. On the starboard side the iron hogging truss begins at 32 feet along the baseline and extends into the sand at 73.5 feet, measuring 1.1 feet sided and 0.1 feet molded.

Between 55 feet and 61.5 feet on the baseline, near the center of the structure, there is evidence of a step. The *Arctic* was a towing and wrecking vessel so this may be a remnant of a tow bitt that was stepped into the vessel. The hull is fastened with rove fasteners 0.1 feet in diameter. Evidence of burning can be found throughout the site; the wood is charred and the iron trusses are warped.

Eight hundred and five feet southwest (229 degrees) of *Arctic*'s bow structure is the tug's bilge. The bilge section lays on a heading of 43-degrees and contains lower hull structure, boiler, steering quadrant, rudder, propeller, and other machinery.

A temporary cable baseline was strung between fence posts driven into the sand forward of the wreckage and extended 130 feet toward the stern of the vessel, ending aft of the rudder. All measurements for the bilge section were taken in reference to the baseline. Between 6 and 27 feet along the baseline, a 15-foot section of hull lays 30 feet to starboard. This section contains single frames measuring 0.5 feet sided and 0.4 feet molded. One piece of planking was extant on this piece, measuring 1.0 foot wide and fastened to the frames with roves, 0.2 feet in diameter, and bolts, 0.1 feet in diameter. The forward end of this piece contains two metal plates measuring 0.25 feet wide and 2.65 feet apart. The metal plates disappeared into the sand and were covered by planking so no overall length measurement could be taken. The plates are attached to the planking by square bolts measuring 0.1 feet by 0.1 feet. Both plates end in a circular bend, one with a shackle attached. The shackle is a U-shaped piece of iron that is attached to the metal plate at the open end by a screw pin. The shackle measures 0.4 feet in length with maximum width of 0.25 feet and thickness of 0.05 feet. The pin that holds the shackle to the plate measures 0.55 feet in length and 0.075 feet in diameter. Near this section disarticulated wooden fragments extend from the sand. Mussel growth is heavy on the upper

frames, and light to nonexistent on the planking and lower frames, indicating recent sand movement around the site. All the wood is charred, indicating burning.

A few disarticulated fragments of wood extend from the sand on the starboard side of the baseline at 42 feet. These fragments measure between 0.4 and 0.6 feet in width and also contain evidence of burning. Little to no mussel growth is found on the wood indicating that these pieces have been recently washed out of the sand.

Arctic (Tug)

Boiler and Steam Drum - Profile View

Manitowoc, Wisconsin

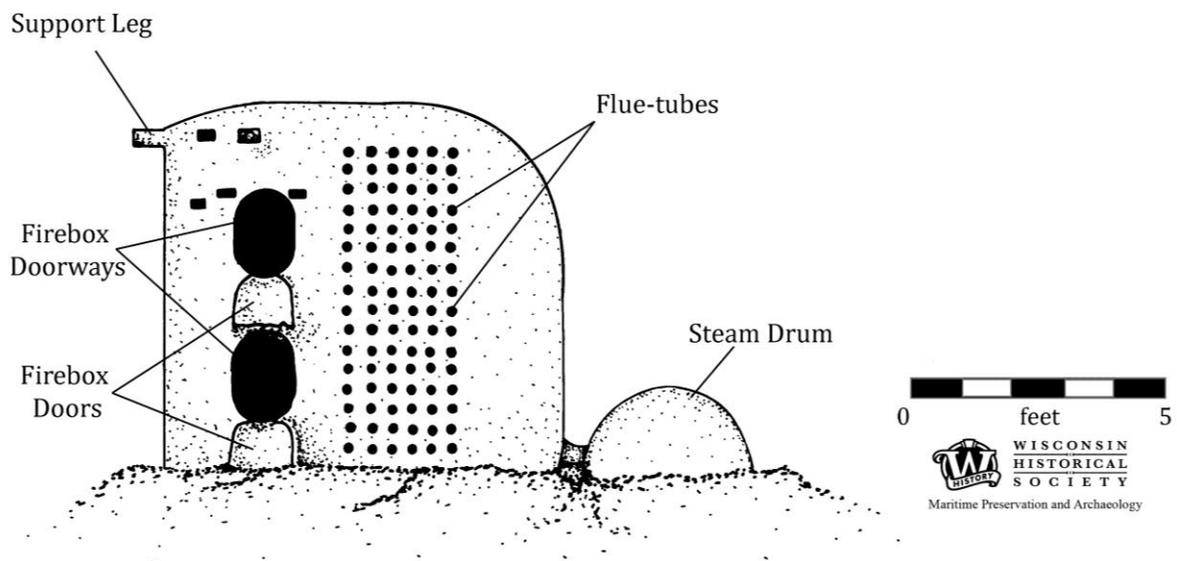


Figure 32. Profile view of the *Arctic*'s boiler

At 65 feet along the baseline the firebox boiler and its attached steam drum are lying on their side. The firebox doors face forward indicating that the boiler fell towards the port side from its supports. The firebox measures 12.0 feet long and 8.0 feet wide, and stands 7.4 feet above the sand. The steam drum measures 5.7 feet long with a 3.3 feet diameter. The forward end of the firebox contains two doorways measuring 1.6 feet long and 1.3 feet wide. Since the boiler is laying on its side the doorways are located vertically on the left side of the boiler face. Both firebox doors are attached and lie open underneath each doorway. The top door measures 1.3 feet wide and 1.0 foot long. The bottom door measures 1.3 feet wide, but extends into the sand preventing a length measurement. To the right of the firebox doorways are sixteen rows of six flue-tubes. The flue-tubes measure 0.9 feet in diameter and are located 0.1 feet apart, totaling 96

flue-tubes visible on the firebox. To the starboard side of the firebox (near the bottom of the boiler) a piece of metal and a 5.0 feet by 2.6 feet piece of grating is located. This may be the remains of the firebox's fire grate and boiler bed. The fire grate was located just above the ash pan and collected pieces of coal (still burning) and allowed the ash to settle in the ash pan. The metal may have been a support for the heavy machinery to be secured to and/or a barrier between the heat of the firebox and the wooden hull.

Disarticulated wood and metal is located between 80 and 100 feet along the baseline. Floor timbers extend from the sand on the starboard side of the baseline. These floors measure 0.2 feet sided and 0.9 feet molded, with 1.4 feet spacing. Some ceiling planking, 0.5 feet wide, is partially uncovered over four floors. On top of the floors and ceiling planking, four timbers lie parallel with the floors. These timbers measure 0.5 feet wide. Just to the port side of this floor section is a mass of disarticulated metal and wood. From what remains in this area and its placement near the boiler, this may have been the location of the engine. The additional timbers atop the floors and ceiling planking were possibly added support for the heavy machinery. At 90 to 100 feet along the baseline and 7 feet to starboard, is the engine mount. Timbers for the engine mount measure 0.8 feet wide and are fastened with roved bolts. The scattered metal and wooden debris in this area are likely a result of the removal of the engine and its machinery.

At 100 feet on the baseline, a metal tank lies on its side, partially covered in sand 10.5 feet to starboard. The tank measures 1.5 feet wide and 3.5 feet long and has a 0.2 feet diameter pipe protruding from its side. Just aft of the metal tank, 2.0 feet to the port side is the propeller shaft bearing. The top of the shaft bearing is partially covered in sand. The shaft measures 1.5 feet in length with a width between 1.0 and 2.0 feet. Only 0.5 feet of propeller shaft extends aft from the shaft bearing into sand. Between the shaft bearing and the rudder, metal fasteners protrude slightly out of the sand indicating that more of the site is still buried.

At 130 feet on the baseline, the intact rudder assembly, consisting of rudder blade, rudderstock, and tiller, extends 5.75 feet above the sand. The rudder lists 28-degrees to port, with a 6-degree pitch aft. The tiller is a 4.4 feet long metal piece that joins the rudderstock at the rudder head. The shaft of the tiller is 0.5 feet in diameter and ends at the round connection 1.2 feet in diameter. The rudderstock measures 4.0 feet from the top of the tiller to the top of the rudder with a diameter of 0.6 feet. A round metal plate 1.8 feet in diameter connects the rudderstock and blade. The rudder blade runs parallel to the baseline, extending 2 feet forward from the rudderstock and 4.5 feet aft of the rudderstock, giving the rudder blade and rudderstock an overall length of 6.5 feet. Only 2.7 feet of rudder blade is visible above the sand; its full height was unable to be measured. Just forward of the rudder blade on the starboard side, the top edge of a propeller blade is visible above the sand.



Figure 33. Diver near *Arctic*'s rudder

During the research and reporting on the *Arctic*, documentation of an unknown shipwreck called “Maritime Bay Unidentified Wreck” was discovered. This site drawing and description was determined to be an early survey of the bilge portion of the *Arctic* site, documented by the Wisconsin Historical Society archaeologists and volunteers in July 1994. The survey produced multiple underwater measured drawings, a brief site description, and a partial site map. This fortunate accident allowed the opportunity to compare the site as it lies today with how it was twenty-three years prior. Comparison of the 1994 and 2017 surveys indicate massive sand movement especially on the forward portion of the bilge and near the boiler. An entire 16-foot section of hull structure, visible in 1994, is now nearly covered with only 1.0 foot visible in 2017. The 1994 survey showed a boiler ventilation hood just forward and to the starboard side of the boiler. The hood was searched for at length, but was not located in 2017. The hood may have been moved elsewhere by ice or waves, buried by sand, or looted. Additionally, the metal tank located near the propeller shaft has fallen over and is now mostly buried in sand.

Both sections of the *Arctic* site display clear evidence of fire damage, from burned wood to warped metal. This indicates that the vessel was set on fire as part of its abandonment. The most intense burning can be found in the bilge section, while evidence of burning is located on the inner hull of the bow section, but not the outer hull. Evidence supports that the fire was probably started inside the hull of the vessel. This hypothesis supports the way the vessel is broken up. As fire damaged the lower hull, the bilge portion, loaded with heavy machinery, broke apart from the upper hull section. The bilge portion is facing southwest while the bow portion, 800 feet to the Northeast, is facing East. Wave action, and winter ice may be the cause of the bow section's location and heading.

Arctic (Tug)

Bow and Upper Hull

Manitowoc, Wisconsin

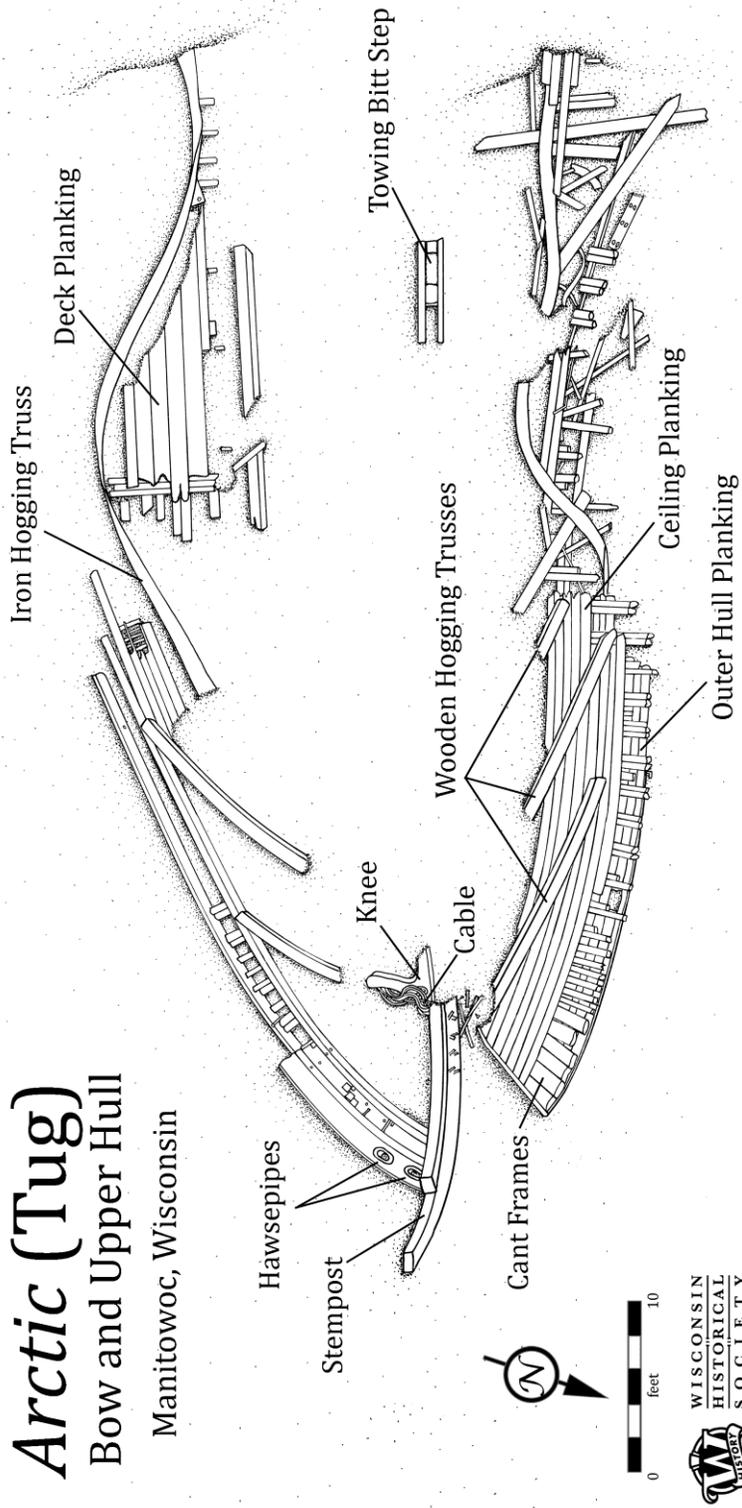


Figure 34. Site plan of the bow section of the *Arctic* wreck site

Arctic (Tug)

Bilge and Machinery

Manitowoc, Wisconsin

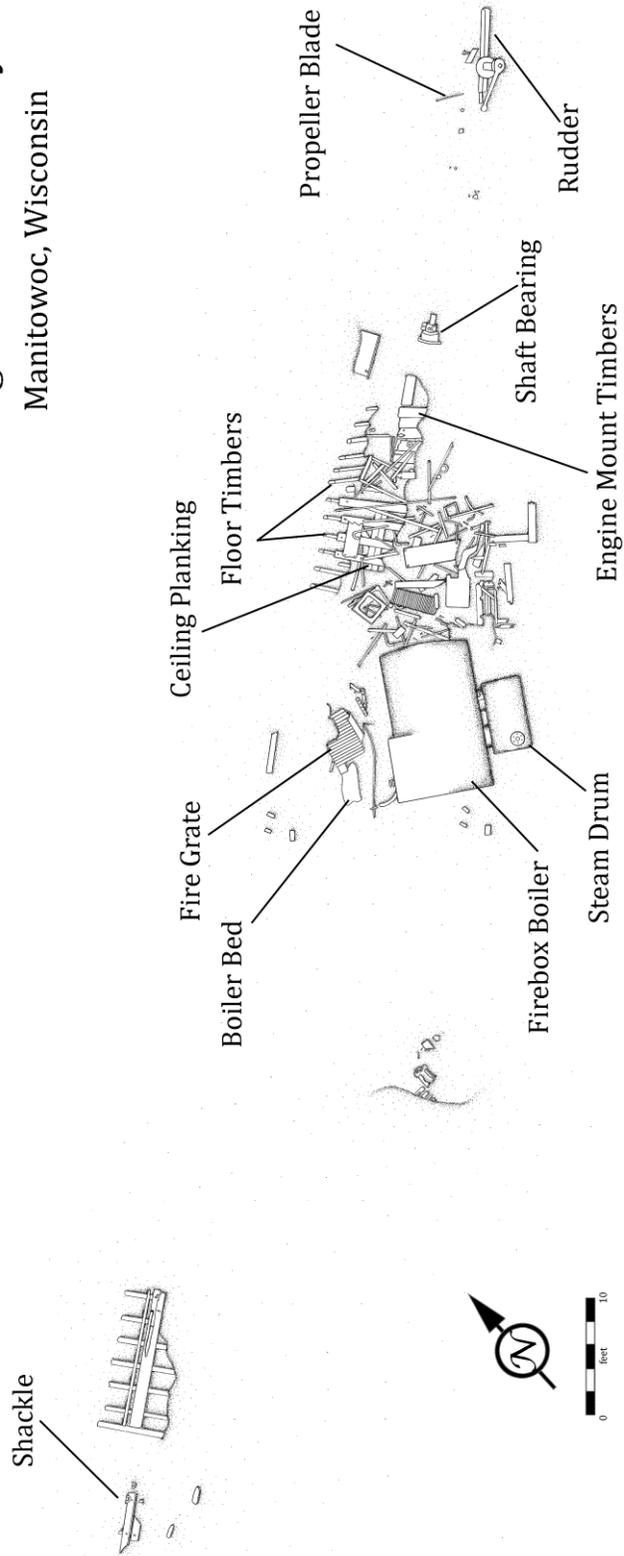


Figure 35. Site plan of the bilge section of the *Arctic* wreck site

CHAPTER FIVE

STEAMBARGE *J.M. AMENDINGER*

The steambarge *J.M. Allmendinger* was constructed in early 1883 under the supervision of Master Builder, Albert Burgoine at the shipyard of her namesake, John Allmendinger, in Benton Harbor, Michigan. The vessel was built for the equal partnership of Allmendinger and Samuel Hull, a wholesale and retail fruit dealer and packer in Benton Harbor. In addition to his shipyard, John Allmendinger operated a sawmill and a dredging business. *J.M. Allmendinger* was not the first ship built by Burgoine for Hull; the 70-foot two-masted schooner *Cora* (named for Hull's oldest daughter) was launched in 1879 primarily for use in his fresh produce business (*Benton Harbor Weekly Palladium* 1890, 1892a; Bureau of Navigation 1883; Coolidge 1906; Pender 1915; Polk 1888).

The *J.M. Allmendinger* was enrolled at the Port of Grand Haven, Michigan on 6 June 1883, where she was assigned the Official Number 76411. The ship was described as measuring 104 feet long, 24.4 feet in beam with 10 feet depth of hold and a capacity of 230.64 tons, of which 166.63 tons was under the tonnage deck, 11.06 tons for the forecastle and 52.95 tons for the freight room. Space making up the boiler and engine rooms above deck, windlass space and the Texas deck was omitted from calculations, so with deductions of 23.60 tons provided under the Act of August 5, 1882, the ship's total net tonnage was calculated at 207.04 tons. The steambarge was described as a propeller with a round stern and plain head, one deck and one mast. Her engine 18 x 20, and boiler 6 feet 6 inches by 14 feet 2 inches, was supplied by Anderson & Holman of St. Joseph, Michigan. Captain Charles Morrison became her first Master and Benton Harbor her homeport (Bureau of Navigation 1883; *Marine Record* 1883).

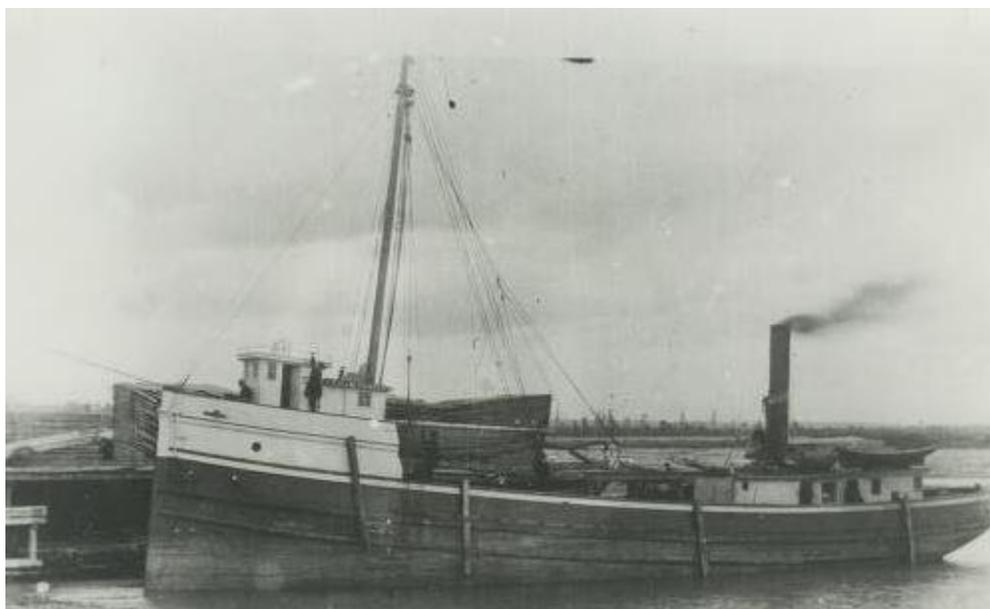


Figure 36. Steambarge *J.M. Allmendinger* at dock (Bowling Green State University)

J.M. Allmendinger's first trip brought lumber from Ludington, Michigan to Chicago. As many as four arrivals were recorded in July at Chicago with lumber from the ports of Pierport and Muskegon, Michigan where the vessel arrived, unloaded and cleared light (without cargo) on the same day (*Marine Record* 1883; *Inter Ocean* 1883a, 1883b, 1883c). No records of the ship's movement were found for August or September and it is unclear if the ship remained at Chicago awaiting a cargo during this time period. On 6 October the vessel was reported clearing the port light (*Inter Ocean* 1883d).

By the end of the season, several changes at *J.M. Allmendinger*'s helm took place. At the port of Michigan City, Indiana on 23 October 1883, Captain William Evans took command from Charles Morrison, and on 2 November Captain Morrison returned to the helm. By the end of November, Captain William Boswell became the ship's new Master at Benton Harbor. The ship likely spent her first winter in Benton Harbor. At the opening of navigation on 1 April 1884, Captain Evans returned to command in lieu of William Boswell (Bureau of Navigation 1883).

J.M. Allmendinger continued to transport cargos of lumber from Muskegon to Chicago during the 1884-season with arrivals recorded on 2 May, 10 May, 6 June, 13 June, 27 June, and 23 August. With the exception of 2 May when the ship departed Chicago with sundries, on all other occasions, the ship arrived, unloaded and cleared light for a return to Muskegon. The steamer reportedly sought shelter from a storm at St. Joseph on 17 September and by 1 October was making late season calls at Michigan City, Indiana (*Chicago Tribune* 1884; *Inter Ocean* 1884a, 1884b, 1884c, 1884d, 1884e; *Milwaukee Sentinel* 1884; *St. Joseph Herald Press* 1884).

J.M. Allmendinger overwintered at Benton Harbor and fitted out during the first week of May 1885. Her first trips of the season continued in the lumber trade with one early season trip carrying sundries to Old Mission, Michigan (near Grand Traverse). In June the ship was moved into the iron ore trade between Escanaba, Michigan and St. Joseph. This change corresponded to Samuel Hull's new role as manager and principal stockholder in the Benton Harbor Chilled Plow Factory. *J.M. Allmendinger* carried a capacity of 300 tons of iron ore and arrivals (with loading and same day departures) were recorded at Escanaba on 8 June, 22 June, 30 June, 6 July, and 16 July 1885. The ship returned to the lumber trade between Muskegon and Chicago in September, delivering shipments on 21 September, 25 September, 28 October and 29 November, arriving, unloading, and departing light on each occasion (*Benton Harbor Weekly Palladium* 1890, 1892a; *Inter Ocean* 1885a, 1885b, 1885c, 1885d, 1885e, 1885f; *Plain Dealer* 1885a, 1885b, 1885c; *St. Joseph Herald Press* 1885a, 1885b, 1885c).

The ship wintered over at St. Joseph and Captain W.E. Stufflebeam took command of the steamer at the onset of the 1886-season. Trips with lumber from Charlevoix, Michigan to Chicago were recorded on 19 June, 25 June, 10 July, and 2 October, each departure from

Chicago was light. On 14 October the ship cleared Chicago with sundries for Garden Bay, Michigan (Bureau of Navigation 1883; *Inter Ocean* 1886a, 1886b, 1886c, 1886d, 1886e).

On 1 March 1887 *J.M. Allmendinger* left St. Joseph for Milwaukee marking the first departure from that port of the season. Upon arrival at Milwaukee, the ship's enrollment was surrendered for change in owners. E.B. and M.L. Simpson, lumber merchants in the firm E.B. Simpson & Co. of Milwaukee purchased the steamer, and along with the ship's new Captain, Thomas Richardson, became equal 1/3-shareholders in the vessel. Milwaukee became *J.M.*

Allmendinger's new homeport (Bureau of Navigation 1883, 1887; *St Joseph Herald Press* 1887). She added a trade route for lumber products between Sturgeon Bay and Milwaukee. On 24 May 1887 she loaded piles and was bound for Milwaukee, when she ran aground in Sturgeon Bay. The ship was released by a passing tug with no damage or much delay (*Door County Advocate* 1887; *Inter Ocean* 1887a). On 22 August, the steambarge came through a bad storm en route from Muskegon to Milwaukee. The main boom worked loose and struck the whistle cord, which caused it to sound in distress. 40,000 board feet of lumber was lost from her deck during the storm and the two passengers aboard Dave Sage and the ship's co-owner, Mark Simpson both thought their time had come.

“Simpson who was deathly sick, raised upon his elbow and said, “let us pray, Sage; it is our last night upon earth.” Sage in a sad tone replied, “Well Simpson, tell all the folks, I died happy.””

The ship made it through the storm but was blown to Racine. She departed that city for Milwaukee on the morning of 24 August (*Inter Ocean* 1887b; *Milwaukee Sentinel* 1887a). The incident must have increased the Captain's level of caution to remain out on the water in a gale. On 25 October *J.M. Allmendinger* was reported windbound at Manitowoc, and again on 30 October at Milwaukee (*Duluth Daily News* 1887; *Inter Ocean* 1887c, 1887d). Trips to fetch lumber from Sturgeon Bay for the Milwaukee market continued through November (*Inter Ocean* 1887e; *Milwaukee Sentinel* 1887a, 1887b).

At the opening of the 1888-season the steamer was readmeasured. The special surveyor at Milwaukee described the ship as measuring 104 feet long, 24.6 feet in beam with 9.4 feet depth of hold and a capacity of 183.17 tons, of which 159.00 tons was under tonnage deck and 24.17 tons capacity of enclosures on upper deck. With deductions made under the Act of August 5, 1882 of 58.13 tons, her new net tonnage was determined to be 125.04 tons. Captain Frank Richardson took command (Bureau of Navigation 1888). Throughout the season, the *J.M. Allmendinger* kept a regular movement of lumber from Manistee to Milwaukee. By 5 December, the ship was laid up in Milwaukee in winter quarters (*Inter Ocean* 1888a, 1888b, 1888c, 1888d; *Milwaukee Daily Journal* 1888a, 1888b; *Milwaukee Sentinel* 1888).

J.M. Allmendinger was active early in 1889, fetching her first cargo of lumber during the second week in April. Lumber was brought into Milwaukee from Manistee, Frankfort and Ludington

throughout the season, always arriving, unloading and clearing light on the same day. During one arrival in port in late July while working her way up the Menomonee River, the tender of the St. Paul Bridge swung the structure against the *J.M. Allmendinger*, breaking fourteen of her stanchions. Repairs were made with little time lost (*Duluth Weekly Tribune* 1889; *Inter Ocean* 1889a, 1889b, 1889c, 1889d, 1889e, 1889f, 1889g; *Milwaukee Daily Journal* 1889a, 1889b, 1889c, 1889d, 1889e, 1889f, 1889g, 1889h).

It is likely the steambarge wintered over at ports on the Michigan side of the lake. On 31 March 1890, *J.M. Allmendinger* was the first vessel of the season to arrive at Milwaukee with a lumber cargo. The ship arrived with lumber from Manistee three additional times in April. On 4 May *J.M. Allmendinger* was bound from Ludington to Milwaukee when Captain Frank Richardson put in at Whitehall, Michigan to wait out a storm and became stranded in White Lake. Captain Thomas Richardson brought the steamer *Hilton* from Milwaukee with a steam pump and was able to lighten and release the *J.M. Allmendinger* without difficulty (*Green Bay Weekly Gazette* 1890; *Inter Ocean* 1890a; *Milwaukee Daily Journal* 1890a, 1890b, 1890c; *Milwaukee Sentinel* 1890a).

When the vessel arrived back at Milwaukee on 18 May, her enrollment was immediately surrendered. Captain Frank Richardson was removed and replaced with Captain Ephraim Small, and Thomas Richardson's share was split between the Simpsons (Bureau of Navigation 1888, 1890). The ship was put back in service on 26 May and departed Milwaukee for Manistee. She maintained a regular schedule through the first week in December arriving at Milwaukee three or four times each month with lumber, and clearing the same day, light for Manistee, Ludington or Cheboygan (*Inter Ocean* 1890b, 1890c, 1890d, 1890e, 1890f, 1890g, 1890h, 1890i, 1890j, 1890k, 1890l, 1890m; *Milwaukee Daily Journal* 1890d, 1890e, 1890f, 1890g, 1890h; *Milwaukee Sentinel* 1890b, 1890c).

Information on shipping schedules for the 1891-season is incomplete. It is not known where the vessel wintered-over, however, on 18 April 1891 she arrived at Milwaukee with a cargo of lumber. Her clearing from the port either went unreported or was delayed. The next known clearing was reported on 10 September 1891 when the ship departed light for Manistee. The vessel arrived back at Milwaukee on 17 September and departed light for Manistee on the same day. The next arrival at Milwaukee was recorded on 24 October delivering lumber from Manistee. The ship unloaded and departed the same day for Manistee (*Milwaukee Sentinel* 1891a, 1891b, 1891c, 1891d).

The *J.M. Allmendinger* departed Manistee at 2 p.m. on 16 November 1891 with a cargo of shingles bound for Milwaukee for her owner, E.B. Simpson. A gale engulfed the vessel while in mid-lake and she became encased from stem to stern in ice. The ship lost her deckload of 300,000 shingles and was driven south to Chicago. Captain Small stated to the *Milwaukee Sentinel*:

“It was the toughest trip I ever made, and I consider myself lucky to reach this port in safety. The steambarge *Ida E.*, which left Manistee at the same time I did I fear has had some trouble. I followed her for some time. The last I saw of her last night she was acting badly. She was out of sight this morning.” (*Milwaukee Sentinel* 1891e; *Plain Dealer* 1891).

The *J.M. Allmendinger* was brought to the Sheriffs Manufacturing Company in Milwaukee on 26 November to receive a new propeller following the storm (*Marine Review* 1891).

Before ice was off the lakes and the harbors opened for navigation, on 4 February 1892, new appointments for Captains of lake steamers were announced. The *Marine Record* reported that Captain Small would take command of the steamer *Arcadia*. Aboard the *J.M. Allmendinger*, Captain James O'Brien, formerly of the steamer *R.A. Seymour*, would replace Small. This change in command was not recorded in the vessel's official documents. *J.M. Allmendinger* landed two loads of lumber and shingles at Milwaukee from Manistee in April (*Inter Ocean* 1892a, 1892b; *Marine Review* 1892; *Milwaukee Daily Journal* 1892a).

On 15 May 1892 a heavy fog hung over the lake as *J.M. Allmendinger* approached North Point (near Milwaukee). The steamer's speed was slackened and soundings were taken. The weights indicated deep enough water as they made their way toward Milwaukee. Before the lead could be cast again, the ship struck the rock on North Point reef. Initially *J.M. Allmendinger* was not held fast and the captain began backing her off. As he did this, the boat began to fill with water so he allowed her to remain on the reef and sink in shallow water. Fortunately the wind was favorable and the boat experienced very little pounding. The tugs *Welcome* and *Carl*, a barge with a large pump owned by the Milwaukee Tug Company, and the Lifesaving Station crew was sent to render assistance. By 3 a.m. on 16 May, the steambarge was released and taken to Milwaukee Dry Dock for repair. Cost of raising the ship and the damage caused by the accident was reported at \$1,500. Interestingly, at the time of the accident the Inland Lloyds insurance register placed the vessel's value at \$14,000, however, there was no insurance taken out on the boat (*Milwaukee Daily Journal* 1892b; *Milwaukee Sentinel* 1892a; United State Life-Saving Service 1893).

By early June, the steambarge was back in service. For the remainder of the season *J.M. Allmendinger* arrived at Milwaukee with lumber products three or four times each month and cleared the same day, light for either Manistee or Ludington. The vessel was kept in service through the end of November 1892 after which she went into winter quarters at Milwaukee (*Chicago Tribune* 1892; *Inter Ocean* 1892c, 1892d, 1892e, 1892f, 1892g, 1892h, 1892i, 1892j, 1892k, 1892l, 1892m, 1892n, 1892o, 1892p; *Milwaukee Sentinel* 1892b; *Plain Dealer* 1892).

After a quick fit-out, the *J.M. Allmendinger* departed Milwaukee on 7 April 1893 for Manistee for her first lumber run of the year. Arrivals at Milwaukee were recorded on 24 June, 1 July, and 21 August with capacity loads of 180,000 board feet of lumber. On 13 September, the

steamer arrived with a full cargo of general merchandise; the port of origination was not reported (*Milwaukee Daily Journal* 1893a *Milwaukee Sentinel* 1893a, 1893b, 1893c, 1893d). *J.M. Allmendinger* was forced to shelter from a gale at Ludington on 26 October. She arrived at Milwaukee on 28 October with 165,000 board feet of lumber from Manistee, unloaded and cleared on the same day. Another arrival with 165,000 board feet of lumber from Manistee was reported on 2 November (*Inter Ocean* 1893a; *Milwaukee Daily Journal* 1893b, 1893c).

While bound for Milwaukee with lumber from Manistee, on 11 November 1893 the steamer grounded at Fox Point, twelve miles north of Milwaukee. The steamer *Hilton* came to her assistance but also stranded; the *Hilton* eventually released herself. The tug *Welcome* and a lighter were sent from Milwaukee to free the *J.M. Allmendinger* and the vessel was freed without damage by 11 p.m. (*Inter Ocean* 1893b; *Plain Dealer* 1893).

J.M. Allmendinger arrived into Milwaukee with a load of lumber products on 19 May 1894. Onboard were 100,000 board feet lumber and 36 cords of wood from Ludington. The ship unloaded and cleared the same day for Manistee. Arrivals with 180,000 board feet lumber from Manistee were recorded on 24 May and 1 June; each time the vessel cleared light on the same day for Manistee (*Milwaukee Daily Journal* 1894a, 1894b, 1894c).

On 9 June 1894 *J.M. Allmendinger* departed Manistee and when about thirteen miles out in the lake, shortly after midnight, her machinery became disabled. A lookout at the lifesaving station heard her distress signals, and awoke the crew. They engaged the tug *J.L. Wheeler* to render assistance. Upon arriving at the steambarge, they found her crew preparing the small boat to leave for Manistee and procure a tug. The steamer had drifted to within 1 ½ miles of the beach. *J.M. Allmendinger* was towed to Manistee for repairs (United States Lifesaving Service 1895).

The steamer was repaired in short order and next arrived at Milwaukee on 20 June with 180,000 board feet lumber from Manistee. Another arrival from Manistee was recorded on 25 June. On 4 August the steamer brought in 180,000 board feet of lumber from Sturgeon Bay and cleared light for Ludington. For the remainder of the season, multiple trips for lumber cargos were made between Manistee and Milwaukee through the end of November 1894 (*Janesville Daily Gazette* 1894; *Milwaukee Daily Journal* 1894d, 1894e, 1894f, 1894g, 1894h, 1894i, 1894j, 1894k, 1894l, 1894m, 1894n).

J.M. Allmendinger expanded her ports of call for the 1895-season and brought lumber and cordwood to Milwaukee from Sturgeon Bay, Frankfort, Empire, Ludington and Manistee (*Inter Ocean* 1895; *Milwaukee Daily Journal* 1895a, 1895b, 1895c, 1895d, 1895e, 1895f; *Milwaukee Sentinel* 1895a).

On the morning of 25 November 1895 *J.M. Allmendinger* loaded lumber at the Pankratz Mill and departed Sturgeon Bay that afternoon bound for Milwaukee. As the vessel approached Milwaukee they experienced a snowstorm accompanied by a strong northerly gale. The winds

were so strong that Captain Peterson (who is not recorded in the vessel's enrollment documents) found it difficult to keep the vessel on course and ran up on the rocky shoal on Fox Point around 3 a.m. The Captain immediately sounded the ship's distress signal. The lifesaving crew left the harbor at 8:30 a.m. in their self-bailing lifeboat and arrived at the wreck around 11 a.m. in tow of the tug *Welcome*. The weather was bitterly cold in the open surfboat for crew. They became coated in ice, which required them to be hosed down with hot water from the tug upon arrival at the scene just so they could move. Within a quarter mile of the scene, the lifeboat was released from the tug and the men rowed toward the wreck. Captain Peterson and eight members of his crew were taken aboard the lifeboat and transferred safely to the tug. The men were then taken back to the Lifesaving Station in Milwaukee. Farmers near Mequon reported that as they awoke that morning, they discovered the *J.M. Allmendinger* high on the rocks, only 500 feet from shore (*Chicago Tribune* 1895; *Door County Advocate* 1895; *Milwaukee Sentinel* 1895b; United State Lifesaving Service 1896).

On 2 December 1895 after days of working to free the ship, the wrecking company ultimately abandoned the vessel. Her lumber cargo was removed, but otherwise her hull was declared a total loss. No insurance was carried on the *J.M. Allmendinger*, but she was valued at \$8,000. The ship's enrollment was surrendered at the Port of Milwaukee on 7 December 1895 (Bureau of Navigation 1890; *Door County Advocate* 1896a; *Milwaukee Daily Journal* 1895g).

The next summer Captain H.W. Baker, a wrecker from Detroit, arrived in Milwaukee on 17 June 1896 to examine the stranded *J.M. Allmendinger*, to determine if she was in fair enough condition to make another attempt for her release. Over the winter, the vessel's hull seams had unfortunately begun to open up by the movement of ice, sand and pebbles. From the time of her abandonment until February 1897, the hull and upper works of the vessel remained intact and conveyed the idea to some that the vessel might be rescued at some point. By April 1897 her hull had at last succumb to the beating of the waves and gone to pieces, her timbers lie scattered along the lakebed with some scattered up on the beach. According to local residents, the ship disintegrated and collapsed almost overnight (*Door County Advocate* 1896b; *Advocate* 1897).

The location of the *J.M. Allmendinger* wreckage was all but forgotten until July of 1934 when three young Milwaukee men, Max Nohl, Jack Browne, and Verne Netzow began working with a raft, homemade diving helmets and oxygen tanks to recover portions of the wreckage (*Milwaukee Daily Journal* 1934). The twenty-four year old Max Eugene Nohl, was enrolled at MIT where he studied mechanical engineering and in 1933 developed the "Hell Below" diving sphere. Nohl went on to set the world's deep diving record to 420 feet of water in Lake Michigan on 1 December 1937. Also in 1937 Nohl and Browne, along with John Craig, formed Diving Equipment and Supply Co. (DESCO) of Milwaukee, which remains an innovator in commercial diving technology (Tillman and Parry 2001).

Site Description

The wreck of the steambarge *J.M. Allmendinger* lies in 12 feet of water in Lake Michigan on a heading of 221 degrees, 1,035 feet from shore. During the Phase II archaeological survey of the site, archaeologists installed a temporary baseline along the centerline of the vessel from the start of the keel at the bow extending 96 feet aft to the rudder. The *J.M. Allmendinger* site consists of the lower hull including the keelsons, floors, and planking. The site also includes the vessel's boiler and rudder.

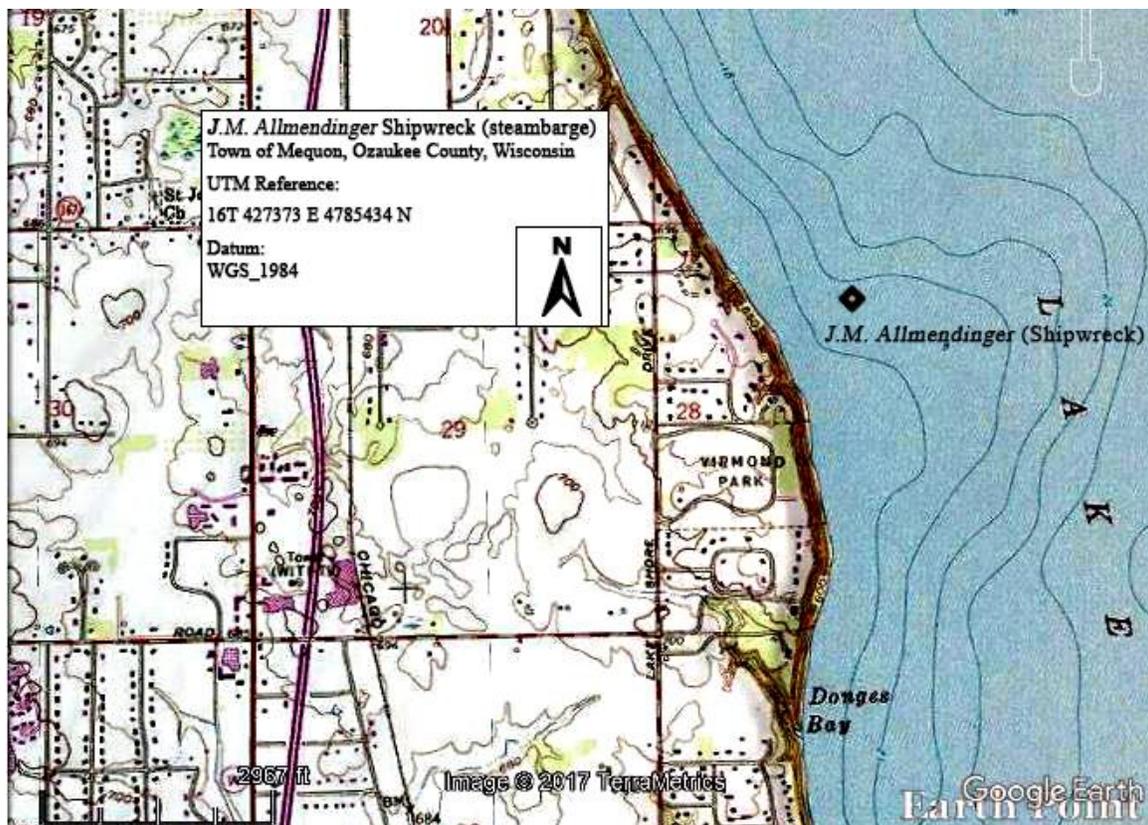


Figure 37. Location of the *J.M. Allmendinger* shipwreck site

The baseline began at a large triangular wooden structural member at the bow of the wreck. This structural member begins at a point and extends aft 5.5 feet, 1.4 feet of which is tucked underneath the keelson, and widens to 3.3 feet. The structural member extends another 3.0 feet along the starboard side of the keelson and attaches to a cant frame. Evidence of hand woodcarving is extant along this piece. The center has been gouged into a bowl shape and there are notches in the starboard side. The thickness of the structural member could not be fully measured because of its placement in the lakebed. Preliminary measurements indicate that this piece is over 0.7 feet thick. Analysis of the structural member's location, measurements, and worked appearance suggest that this may be the bow's deadwood. The stempost is no longer attached which makes the identification of this member difficult.



Figure 38. Deadwood in the bow of the *J.M. Allmendinger* wreck site

The keelson measures 0.8 feet sided and 1.0 feet molded located between 3.4 feet and 82.2 feet on the baseline. The keelson's 4-degree list to port and 2.2-degree pitch forward suggests that the wreckage was located on fairly level ground when abandoned. Sister keelsons lie on either side of the keelson, both measuring 0.7 feet sided and 1.0 feet molded. The starboard sister keelson begins at 18.0 feet on the baseline and extends to 81.0 feet. The port side sister keelson begins at 19.8 feet on the baseline and extends beyond 81.0 feet into bottom sediment. At 57.6 feet on the baseline a rider keelson is fastened on top of the keelson. The rider keelson measures 0.8 feet sided and 1.0 feet molded and extends 24.6 feet.

Rising wood, a form of deadwood that is fastened to the top of the keel, extends from the deadwood in the bow to the deadwood in the stern, and is notched to fit the floors for extra support. A piece of rising wood can be seen dislodged from under the keelson between 36.4 to 40.0 feet along the baseline on the port side. This rising wood measures 1.0 feet sided and has the vessel's floors set into it. The only reference to rising timbers is found in English construction methods. Little is known about the shipwright Albert Burgoine. The evidence of a rising wood suggests European influence on Burgoine's shipbuilding methods.

Frames are located on the wreck on both the starboard and port sides 30.0 feet on the baseline. These are double frame sets containing room of 0.65 feet and spacing of 1.18 feet. Each frame measures 0.32 sided while the molded measurements are 0.65 feet at the sister keelson to 0.45 feet at the turn of the bilge. The lengths of the starboard frames vary from 8.2 to 1.5 feet, while the lengths of the port frames vary from 1.0 feet to 11.0 feet. The frames on the port side are visible until 60.2 feet on the baseline. Aft of this, ceiling planking is present. Ceiling planking measures 0.33 feet sided and 0.58 feet molded. The ceiling planking was fastened with bolts 0.05 foot in dimension, with evidence of roves.

Between 82.0 feet and 88.0 feet on the baseline, both the starboard and port sides contain large metal pieces. The starboard piece is broken in two while the port piece lies intact in the shape of an 'H' with a maximum length of 3.0 feet and maximum width of 1.5 feet. Both of these pieces contain 0.12 threaded bolts with hex nuts. These pieces may be the remnants of the engine mount. The engine was salvaged after wrecking, but interestingly, the hex nuts were returned to the threaded bolts after salvage.



Figure 39. Remnants of the *J.M. Allmendinger's* engine mounts

At 94.0 feet on the baseline, the rudder lies on the starboard side of the wreck. The rudder head lies closest to the baseline while the rudder blade extends perpendicular 8.0 feet. The rudder blade was partially covered with rocks and sand so the thickness and width could not be measured.

Iron sheathing and angle iron are scattered throughout the site, particularly on the port side. The largest metal sheets are located at 32.0 feet and 15.0 feet to the port side of the baseline, and at 40.0 feet and 20.0 feet to the port side of the baseline. At 43 feet on the baseline, a portion of angle iron is notch but not fastened into the frame set. The angle iron measures 0.02 feet thick and 0.18 feet wide. The end of the same frame set is wrapped with metal strapping. Just aft of this frame is a section of angle iron shaped into a 'W'. This too measures 0.02 feet thick and 0.18 feet wide.

Remnants of 1.0 feet wide iron strapping are located in between the keelson structure and ceiling planking at 76 feet on baseline. This strapping can be found on both the port and starboard sides curving upwards, indicating that they were once one solid piece. Similar



Figure 40. *J.M. Allmendinger's* keelson assembly, frames, and evidence of iron strapping

strapping remnants were found at various points along the entirety of the keelson. These straps may have been used to fasten and strengthen the keelson structure of the vessel.

The boiler is located 35.0 feet southwest of the *J.M. Allmendinger's* bow. The boiler lies on its starboard side on a 314-degree heading. It measures 14.0 feet long and 6.5 feet in diameter and is attached to a steam drum measuring 5.0 feet in length and 3.0 feet in diameter. The face of the boiler contains 55 steam tubes and an open hatchway measuring 2.1 feet wide and 1.1 feet high.

The hatch cover is no longer attached to the boiler nor could be located in the vicinity.

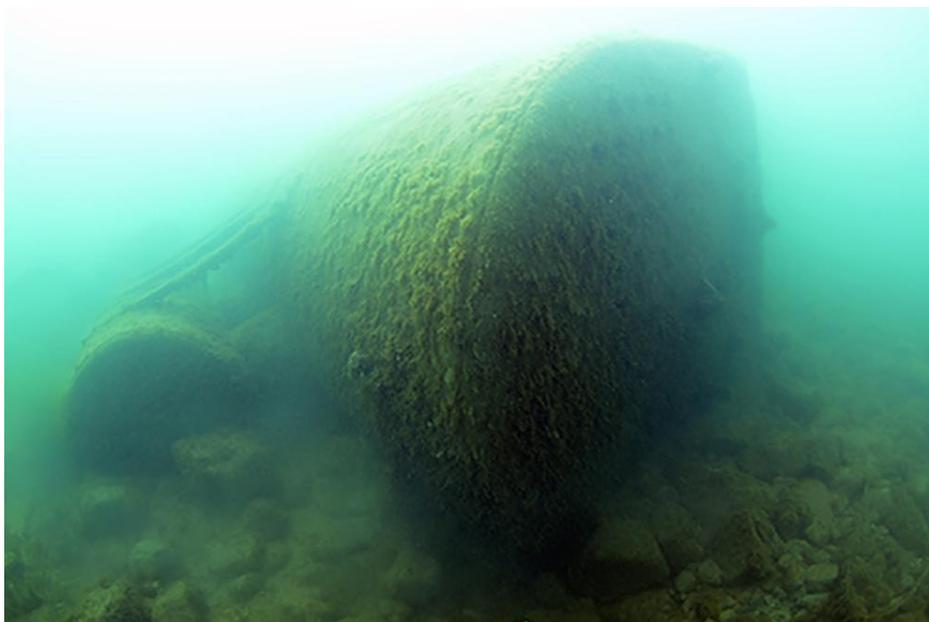


Figure 41. *J.M. Allmendinger's* boiler and steam drum

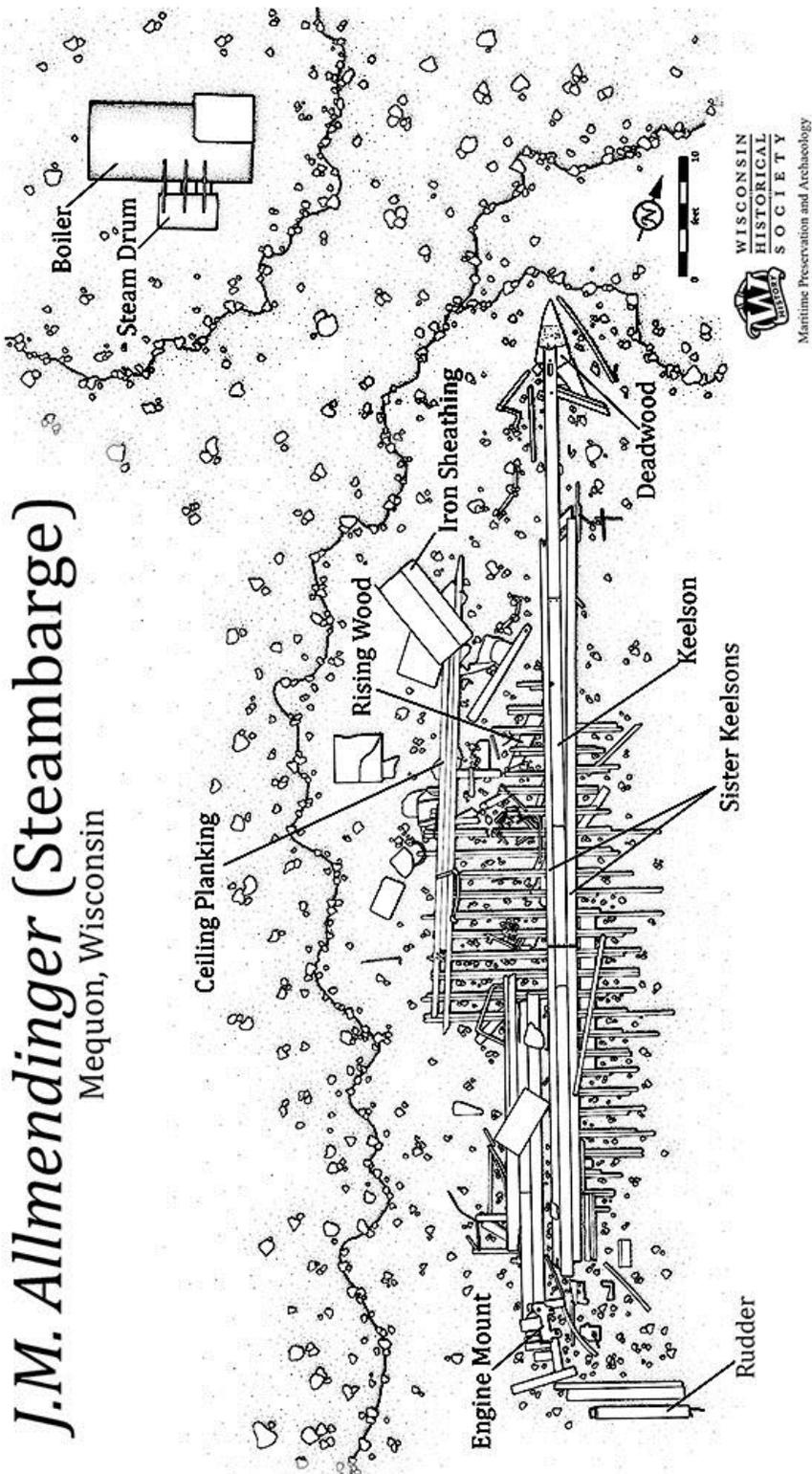


Figure 42. Site plan of the *J.M. Allmendinger* wreck site

CHAPTER SIX

SCHOONER BARGE ANTELOPE

Antelope was initially built as a propeller, constructed by Master Shipbuilder Jacob L. Wolverton and launched from his shipyard at Newport (Marine City), Michigan in early August 1861. Wolverton, born in Ohio in 1818, emigrated with his parents to Macomb County, Michigan shortly thereafter. Sometime in the mid-1840s, he established one of the region's earliest shipyards, specializing in the construction and repair of steam propellers at the Village of Newport, in St. Clair County, north of Detroit (Bureau of Navigation 1862; MacDonald & McAdams 2015).

Antelope was constructed for Eber Owens as a passenger packet to run in Eber B. Ward, Esq.'s Ward Line of steamers, plying between Milwaukee and Buffalo opposite the steamer *Montgomery*. The ship measured 186 feet in length, 31 feet in breadth, with an 11 foot depth of hold, and a capacity of 600 83/95 tons. It was described as having one deck, one mast, with a rounded stern and no figurehead. Considered a beautiful and superbly constructed boat with the most modern appointments, the ship was further described by the *Detroit Free Press* 1861a:

“She has heavy frames, which are set near together, of the best of white oak; her topsides, 28 inches thick, with diagonal ceiling. Her arch posts, which are of large size, extend down into the bilge of the hull. She has also 3 watertight bulkheads, built of solid pitch; bolts in the room of spikes, have been used throughout in her fastenings, which have been inwardly clinched. The iron work throughout is extensive.... Her engine, which is low pressure, is from C. Kellogg & Co.'s works in this city. Cylinder 50 inches and 40 feet stroke, together with pony engines, etc., etc. She has in all 9 pumps, which can be got in operation in 5 minutes notice.”

The ship's initial enrollment was entered at the Port of Detroit on 17 August 1861 by Eber Owens of St. Clair, Michigan. Captain Thomas G. Butlin of Milwaukee, Wisconsin was listed as her first Master; First Mate, John Robinson; Second Mate, Mr. Trambull; First Engineer, William Fitch; Second Engineer, William Grace; Clerk, Eber Owens. Newport was the ship's homeport. With the ship's stores stocked and outfit completed, they departed for Chicago on its maiden voyage on 24 August 1861. *Antelope* took on 19,400 bushels of wheat and 450 barrels of flour from the Kellogg & Strong elevator at Milwaukee, as well as a deck load of “rolling stock” for delivery at Buffalo. The ship continued on the Buffalo-Chicago-Milwaukee route through November of the year (*Buffalo Commercial Advertiser* 1861, 1861b, 1861c; *Buffalo Daily Courier* 1861; Bureau of Navigation 1861; *Cleveland Daily Leader* 1861; *Daily Milwaukee News* 1861; *Detroit Free Press* 1861a, 1861b).

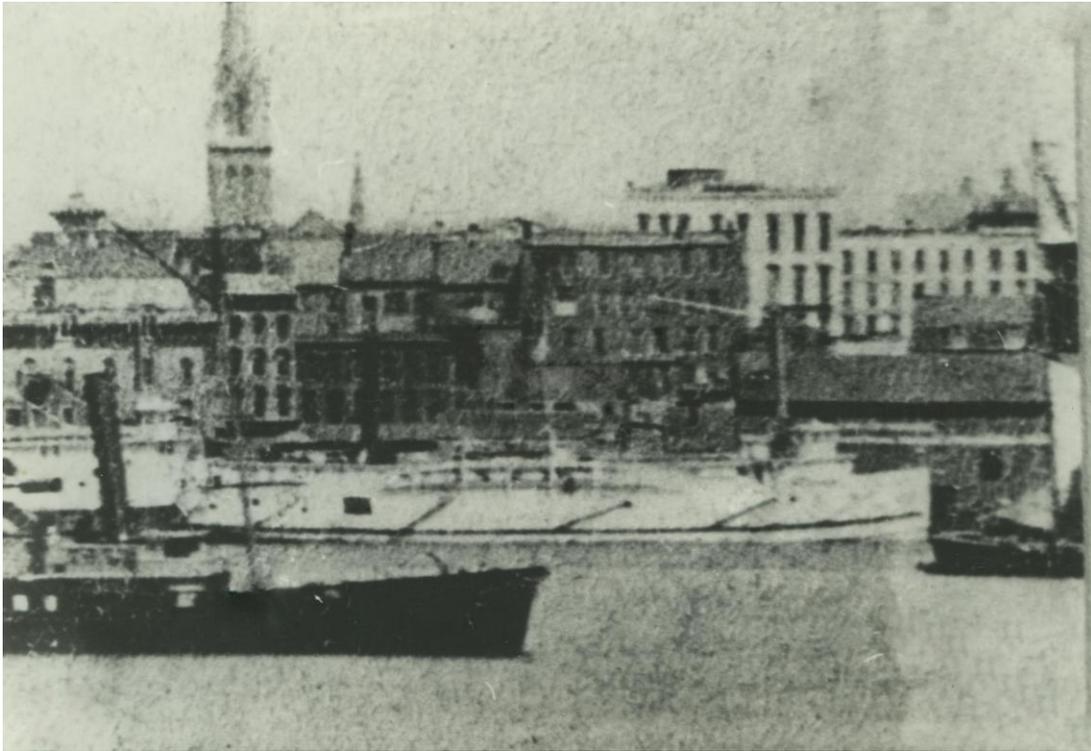


Figure 43. *Antelope* as a passenger steamer ca. 1862 (C. Patrick Labadie Collection)

Antelope came out of winter quarters in April the following year (1862), and added Toronto and Collingwood, Ontario to Buffalo, Chicago, and Milwaukee as ports of call. The ship's documents expired in August while out of its home district and Stephen Clement of Chicago, Illinois, acting as an agent for Eber Owens, had temporary enrollment papers issued while the vessel was at the port at Chicago (*Buffalo Daily Courier* 1862; Bureau of Navigation 1862; *Cleveland Daily Leader* 1862; *Daily Milwaukee News* 1862; *Detroit Free Press* 1862a, 1862b).

An advertisement was published in the *Daily British Whig* in March 1863 promoting an unnamed "new line of steamers" that would service Sarnia, Ontario and run to Chicago and Milwaukee. The line was comprised of the *B.F. Wade*, Captain Goldsmith; the *Antelope*, Captain Butlin; the *Montgomery*, Captain Gillespie; and the *Water Witch*, Captain Ryder. Cargoes carried during the season (where they were reported) included barrels of flour and pork, bushels of corn and oats, as well as sundries. The ship's documents again expired while the vessel was away from its home district. Captain Butlin, acting as the ship's husband on behalf of Eber Owens, took out a temporary enrollment on 14 September 1863 at Chicago. The new document described the vessel as possessing two decks and one mast (previously reported as one deck and one mast). The ship kept on its regular route through early December, clearing Milwaukee on 7 December for Chicago where it presumably took up winter quarters (Bureau of Navigation 1863; *Cleveland Daily Leader* 1863; *Daily British Whig* 1863; *Daily Milwaukee*

News 1863a, 1863b; *Detroit Free Press* 1863; *Semi-Weekly Wisconsin* 1863a, 1863b, 1863c, 1863d, 1863e).

Contemporary newspapers showed *Antelope* making regular calls at Sarnia-Milwaukee-Chicago-Milwaukee-Sarnia, and making at least one if not two round trips monthly between May and December for much of the 1864 and 1865 seasons (*Chicago Tribune* 1864a, 1864b, 1864c, 1865a, 1865b, 1865c, 1865d, 1865e; *Daily Milwaukee News* 1864a, 1864b, 1864c, 1864d, 1864e, 1864f, 1864g, 1864h, 1864i, 1864j, 1864k, 1864l, 1864m, 1865a, 1865b, 1865c, 1865d, 1865e, 1865f, 1865g). On 20 September 1865, Captain Robert Nicholson took command of the vessel at Milwaukee. While entering the change in command into the government records, it was discovered that hospital fees for the vessel's crew were owed. The Milwaukee Customs House collected \$57.44 covering the bill in full (Bureau of Navigation 1863).

It is likely that *Antelope* laid up at Chicago over the 1865-66 winter. When she came into service at the opening of navigation, a new temporary enrollment was required following readmeasurement in conformity with the Congressional Act of 6 May 1864. Under the new rule the ship was measured on 30 April 1866 at 201 6/10 feet long, 31 2/10 feet in breadth with a twelve foot depth of hold (one foot deeper), and a total tonnage of 747.08 tons of which 478.80 tons was under the tonnage deck, and 318.28 tons capacity between the decks above the tonnage deck. Capacity of enclosures on the upper deck was not taken into consideration for the calculation. The vessel was described as having three decks and no mast (previously reported as two decks and one mast) with a round stern. The ship's owner and Master remained unchanged (Bureau of Navigation 1863, 1866a).

An advertisement was printed in the *Chicago Republican* in April 1866 that promoted the Grand Trunk Line servicing Port Huron, Michigan and Sarnia, Ontario and connecting to Chicago and Milwaukee. The line was comprised of the steamers *Antelope*, *Sun*, *Montgomery*, *B.F. Wade* (*Chicago Republican* 1866). On 24 June 1866 while en route to Milwaukee, *Antelope* picked up the schooner *Two Brothers* off Port Washington. The schooner *Twilight* had run into the *Two Brothers* and it became waterlogged requiring a tow into the port of Milwaukee (*Detroit Free Press* 1866a).

On 21 August 1866, a new enrollment was entered at Milwaukee for the *Antelope*. Unfortunately no information could be garnered from the document as it was reported as "lost". Throughout August and October newspapers reported command changes for *Antelope* between Captain Nicholson and Captain Hopkins. Likewise, these changes in Masters could not be checked with information in the vessel's lost enrollment document (Bureau of Navigation 1866b). The *Buffalo Commercial Advertiser* in their list of casualties for 1866 notes a collision that occurred in September between the propellers *Antelope* and *Omar Pasha* in the St. Clair River. *Omar Pasha* sustained \$500 in damages, but no damage amount was given for the *Antelope* (*Buffalo Commercial Advertiser* 1867a). Other information on this incident could not

be found. In October and November, the ship's route was changed to accommodate grain shipments between Milwaukee and Buffalo (Bureau of Navigation 1886b; *Daily Milwaukee News* 1866a, 1866b, 1866c, 1866d, 1866e, 1866f, 1866g, 1866h, 1866i, 1866j, 1866k; *Detroit Free Press* 1866a; *Semi-Weekly Wisconsin* 1866a, 1866b). The *Detroit Free Press* reported on 21 December 1866 that interests in the *Antelope* were sold by Eber Owens to Eber B. Ward for \$60,000. This change in ownership would have required a new enrollment document; however no change in ownership was recorded (*Detroit Free Press* 1866b). Other newspapers report that Eber B. Ward sold the vessel to Lathrop & Co., of Racine for \$50,000 (*Buffalo Commercial Advertiser* 1867a; *Daily News* 1867).

Logs of arrivals and departures indicated a change in Masters for the vessel upon the opening of the 1867-season; in command was Captain Starkweather. During the season, the ship called on Buffalo, Chicago, Milwaukee and Racine carrying cargoes of various grains and sundries. One trip from Buffalo to Milwaukee had onboard a cargo of sugar and iron (*Chicago Tribune* 1867a, 1867b, 1867c; *Daily Milwaukee News* 1867a, 1867b, 1867c, 1867d, 1867d, 1867e, 1867f; *Detroit Free Press* 1867a, 1867b, 1867c, 1867d; *Semi-Weekly Wisconsin* 1867a, 1867b). On 17 November 1867 (erroneously reported by several sources as 8 November or 10 November), with a cargo of 17,000 bushels of wheat and six hundred barrels of flour, *Antelope* caught fire around noon in front of the Reed Elevator (reported as Bennett Elevator in another source) in Buffalo and burned to its waterline. The fire originated near the ship's boiler and put the elevator and shipping operations in the vicinity of the burning vessel in great danger. The fire damaged all of the cargo and the grain was considered worthless "except for feeding". The flour on top of the wheat continued to burn into the next day. The vessel was insured for \$44,000 and her cargo was valued at \$100,000, and insured for \$50,000 (*Buffalo Commercial Advertiser* 1867b; *Daily Milwaukee News* 1868; *Daily News* 1867; *Detroit Free Press* 1867e, 1867f; *Erie Daily Dispatch* 1867a, 1867b; *Toledo Blade* 1867).

Negotiations took place the following spring for *Antelope*'s owners to rid themselves of the burnt hull. The *Chicago Tribune* reported by early August that Ballentine, Crawford & Co. purchased the hulk. On 23 August 1868 *Antelope* was towed to Clark's Dry Dock in Detroit by the tug *Winslow*, and construction got underway to convert the vessel to a steam lumber barge (*Buffalo Commercial Advertiser* 1868a, 1868b; *Buffalo Morning Express* 1869; *Chicago Tribune* 1868a, 1868b; *Detroit Free Press* 1868, 1881dd).

The ship returned to service 10 May 1869. Rebuilt and readmeasured, the new owners took out an enrollment at the port of Detroit. David Ballentine of Waukegan, Illinois owed 2/6 share, and James W. Ballentine of Detroit, H.A. Ballentine of Saginaw, E.L. Lawrence of Chicago and A. B. Moore of Geneva, Illinois each held 1/6 shares of the *Antelope*. The vessel's homeport was changed to Detroit and Captain Robert Ballentine was assigned as her new Master. The forty-three year old, Robert Ballentine worked on the lakes since boyhood on propellers and tugs, although *Antelope* may have been his first command. The ship's general dimensions remained

the same; however her tonnage increased to 915 19/100 tons of which 478.80 tons comprised the capacity under its tonnage deck, and 436.39 tons capacity was between decks above the tonnage deck. Her engine was of 600 horsepower. Additionally the vessel was described as now having one deck and one mast. With this enrollment, the Official Number 571 was assigned to the vessel (Bureau of Navigation 1869; *Detroit Free Press* 1881dd; U.S. Merchant Vessel List 1869).

For the remainder of the season *Antelope* carried lumber for Saginaw Valley Lumber and towed the barges *Baltic*, *Ketcham*, *Balton* and *Joseph*. The steambarge and consorts could haul upwards of 2,200,000 board feet of lumber. The last cargo of the year was coal to Detroit for J.E. Pittman delivered on 6 December 1869 (*Detroit Free Press* 1869a, 1869b, 1869c, 1869d, 1869e, 1869f, 1869g, 1869h, 1869i).

An advertisement was printed in the *Chicago Republican* for service between Green Bay, Wisconsin and Buffalo. Outside of this ad, the ship's route and cargoes went unreported in 1870 newsprint. The only arrival reported by contemporary papers was an arrival at Detroit from Buffalo on 6 December as the ship came in to take up winter quarters (*Chicago Republican* 1870; *Detroit Free Press* 1870).

Antelope was placed in dry dock at Buffalo in early March 1871 to have her arches strengthened, suggesting some working of the hull planking longitudinally under the weight of heavy cargos and increasing numbers of tow-barges; the cost of the work was reported at \$1,000. The ship was forced to return to the port after only two days, when a leak was discovered that could not be stopped. In July 1871 asbestos felting was added to its boiler and piping to act as a fire retardant at the Campbell, Owen & Company's Shipyard in Detroit. Additionally, within a compilation of marine casualties for 1871 there is a mention of two barges in the tow of *Antelope* breaking away while on Lake Huron. The barges were later recovered. It is not known, however, when during the season that this incident occurred, as other newsprint coverage was not located (*Buffalo Commercial Advertiser* 1871; *Detroit Free Press* 1871a, 1871b, 1871c, 1871d, 1871e, 1871f; Hall 1871).

Antelope's shipping route for 1872 included stops at the ports of Buffalo, Chicago and Bay City, Michigan carrying shipments of mostly lumber and some grains. *Antelope* regularly towed as many as eight barges creating more than a mile-long consort string of lumber laden vessels with more than 6,000,000 board feet of lumber. Captain Robert Ballantine proudly piloted a sting of eight vessels through a violent storm on Lake Erie in June of 1872 (*Buffalo Commercial Advertiser* 1872; *Chicago Tribune* 1872a, 1872b, 1872c, 1872d, 1872e; *Detroit Free Press* 1872a, 1872b, 1872c, 1872d, 1872e, 1872f, 1872g, 1872h; *Inter Ocean* 1872a, 1872b).

At the onset of the 1873-season a new Master, Captain Thomas Allen previously of the tug *Winslow*, was assigned to command the *Antelope*. This change in masters although reported in newspapers was not updated on the ship's enrollment. The steamer continued to service Buffalo, Chicago and ports on Lake Huron with lumber, grain and salt shipments. Captain Allen worked up to towing six barges by the end of August. In October *Antelope* and her barges came ashore at Sarnia Bay in the St. Clair River. All vessels were released after much expense and delay. Following a particularly violent early November storm, the consort was overdue into Chicago but eventually arrived safely (*Buffalo Commercial Advertiser* 1873; *Chicago Tribune* 1873a, 1873b, 1873c, 1873d; *Detroit Free Press* 1873a, 1873b, 1873c, 1873d, 1873e, 1873f, 1873g, 1873h, 1873i, 1873j, 1873k, 1873l, 1873m; *Inter Ocean* 1873a, 1873b, 1873c, 1873d).

With the wind fresh from the northeast and ice moving off the Lake Erie shore, on 9 April 1874 *Antelope* and her barges departed Port Colbourne, where she presumably wintered over, bound for Bay City on their first trip of the season. The ship primarily transported lumber barges between ports on Lake Huron and Buffalo for much the season. During a storm in early November, *Antelope* lost part of a tow of barges while on Lake Erie. Particulars of the loss are mostly unknown, however \$500 was claimed in damages for the incident. By 25 November, *Antelope* was reportedly heading into winter quarters at Chicago, but instead her captain moved the vessel to Saginaw, Michigan on 12 December for lay-up (*Chicago Daily Tribune* 1874a, 1874b; *Daily News* 1874; *Detroit Free Press* 1874a, 1874b, 1874c, 1874d; *Inter Ocean* 1874a, 1874b).

On 7 May 1875, a new enrollment was taken out for *Antelope* for change in owners. According to the document the new owner arrangement was: Alexander B. Moore of Bay City, Michigan, Managing Owner and Master, James W. Ballentine of Chicago, Henry A. Ballentine of East Saginaw and Edward F. Lawrence of Chicago each owning ¼ share in the vessel. The ship was described as having one deck and one mast with plain head and round stern. On 12 May Captain Daniel Brice took command of the vessel in lieu of Alexander Moore at the Port of Bay City, Michigan. The ship called on the ports of Chicago, Buffalo, Bay City and Saginaw throughout the season towing as many as five barges and carrying primarily lumber and salt. On 31 October, as the *Antelope* arrived into Chicago, her tow barge, the *Belle Slivens* was waterlogged with only a portion of the aft rail and cabin remaining above water. On the evening of 15 November 1875, *Antelope* struck a rock while towing ten barges up the Niagara River and was placed in dry dock at Mills & Co. at Buffalo to stop the leak. The vessel wintered over in Detroit (*Buffalo Commercial Advertiser* 1875; Bureau of Navigation 1875; *Chicago Tribune* 1875a, 1875b, 1875c; *Detroit Free Press* 1875a, 1875b, 1875c, 1875c, 1875e, 1875f, 1875g, 1875h, 1875i, 1875j, 1875k, 1875l, 1875m; *Inter Ocean* 1875a, 1875b, 1875c, 1875d, 1875e, 1875f).

At the opening of the 1876-season *Antelope*'s enrollment was surrendered for change of residence of the managing owner. Alexander Moore moved to Bangor, Michigan and in turn

changed *Antelope*'s homeport to that city (Bureau of Navigation 1876). The ship called on the ports of Buffalo, Tonawanda, Chicago, Bay City, and Detroit throughout the season. On 14 August *Antelope* with the barges *J.A. McDougall*, *W. Treat*, *Ajax*, *Northern Light*, *Joseph*, *St. Clair*, *C.P. Williams*, *Fostoria*, and *Harvest* and an aggregate of 4,004,000 feet of lumber comprised the largest tow previously on record departing Saginaw for Buffalo and Tonawanda, New York (*Buffalo Commercial Advertiser* 1876a; *Chicago Tribune* 1876a, 1876b, 1876c; *Detroit Free Press* 1876a, 1876b, 1876c; *Inter Ocean* 1876a, 1876b, 1876c). On 7 November, four of *Antelope*'s tow-barges stranded in Pigeon Bay on Lake Erie. Three of the barges were easily freed without assistance, but the barge *Ajax* required tugs to be dispatched from Detroit to render assistance. After ten days stranded, the tugs *Sweepstakes* and *Winslow* arrived on the scene and pulled it free. Once removed, it was discovered to be leaking badly and immediately sunk in 12 feet of water. *Ajax* was pumped out and taken to Detroit for repairs over the winter months (*Buffalo Commercial Advertiser* 1876b; *Chicago Tribune* 1876d; *Detroit Free Press* 1876d).

Antelope began another season of towing lumber laden barges in early May 1877, but on 23 June the ship broke down while towing six barges on Lake Erie. The tug *I.U. Masters* was dispatched from Buffalo to bring them back to that port for repairs (*Chicago Tribune* 1877a; *Detroit Free Press* 1877a, 1877b, 1877c; *Inter Ocean* 1877a, 1877b).

On 11 July *Chicago Tribune* reported on "The Saginaw Compact" in which the owners of eighteen propellers and forty tow-barges and schooners homeported in the Saginaw Valley agreed to lay up their vessels and discontinue freights to Lake Erie ports in an attempt to improve lumber rates. In addition to the *Antelope*, the vessels included the steamers *Coffinberry*, *Bay City*, *N. Mills*, *Mary Mills*, *Salina*, *Alleghany*, *Araxes*, *Oakland*, *George King*, *Jarvis Lord*, *E.E. Thompson*, *Belle Cross*, *Elmira*, *Dover*, *Mary Pringle*, *Arizona*, and *D.F. Rose*, and barges *Buckeye State*, *F. W. Bissell*, *Yankee*, *Georger*, *Harvest*, *M. Barter*, *George Kelley*, *Hanford*, *Newcomb*, *Stockton*, *Rhoda Stewart*, *J. A. McDougall*, *Keepsake*, *C. H. Weeks*, *Joseph*, *Light Guard*, *L.B. Crocker*, *Danube*, *N.M. Standardt*, *Kenosha*, *D.K. Clint*, *Leader*, *H.C. Potter*, *Fostoria*, *Little Jake*, *Orontes*, *Northern Light*, *C.G. King*, *Jupiter*, *Gardner*, *Reindeer*, *Ajax*, *C.L. Young*, *Dictator*, *Clement*, *R. Martini*, *St. Clair*, *R.J. Carney*, *William Treat*, and *Marine City*. It is unclear if the compact affected transportation rates, however *Antelope* showed arrivals and clearings on Lake Erie in July, August and September (*Chicago Tribune* 1877b, 1877c; *Inter Ocean* 1877c, 1877d).

On 7 September 1877, *Antelope* collided with the schooner *Robert Gaskins* off Mohawk Island on Lake Erie. The captain of the schooner claimed to have seen *Antelope*'s red light off his port bow about a mile off and attempted to shift his course to give the steamer a wide berth. He did not see a green light on the *Antelope*, and reportedly saw none even after they collided. Damages to the vessels were not reported (*British Whig* 1877; *Chicago Tribune* 1877d, 1877e;

Inter Ocean 1877e). On 16 October *Antelope* with six barges in tow stranded briefly on a shoal in the Detroit River opposite the “Alexander House”. On 19 November *Antelope* assisted the dismasted schooner *Gawn*, taking the vessel in tow on Lake Huron from Forestville to Detroit. *Antelope* went into winter quarters at Saginaw in early December. With the *Antelope* put to bed for the winter, owners of the steamer *Cuyahoga* appealed to Captain Brice and chief engineer Cavanaugh, to travel to Chicago to bring *Cuyahoga* back to Saginaw for the season. *Cuyahoga*’s captain Millard was not willing to risk the boat and crew in uncertain winter condition. Brice and Cavanaugh volunteered and brought the vessel from Chicago to the Saginaw River in sixty-four hours (*Chicago Tribune* 1877f, 1877g, 1877h; *Detroit Free Press* 1877d, 1877e; *Inter Ocean* 1877f, 1877g, 1877h).

In March 1878, the *Buffalo Morning Express* announced the sale of *Antelope* to William T. Baker & Co., dealers of wholesale and commercial paper in Chicago (*Buffalo Morning Express* 1878; King 1880). The ship’s enrollment was surrendered on 20 April at Port Huron, Michigan and a temporary document was taken out for the change in ownership in order to move the vessel to her new homeport. The temporary enrollment defined shares of the vessel; William T. Baker owned 3/5 share, and Walter F. Cobb and Gordon G. Moore each owned 1/5 share. All owners resided in Chicago and Chicago became *Antelope*’s new homeport. Captain Daniel Brice remained as the vessel’s Master. A permanent enrollment was issued at Chicago on 30 April 1878 as the vessel had arrived home and the ship was taken to Miller Brothers Dry Dock to repair her stern, bearings and to be recaulked. It was thereafter announced that the steamer would tow the schooner *Rutherford B. Hayes* for the season (*Buffalo Morning Express* 1878; Bureau of Navigation 1878a, 1878b; *Chicago Tribune* 1878a, 1878b; *Inter Ocean* 1878a, 1878c).

The vessel and consort cleared Chicago on 6 May with a cargo of oats bound for Buffalo stopping en route only to take on coal at Detroit. The ship and consort cleared Buffalo on 11 May with a “Nebraska joiner” and 1,000 barrels of cement onboard; they continued on to Erie to load coal bound for Milwaukee (*Chicago Tribune* 1878c, 1878d, 1878e, 1878f; *Detroit Free Press* 1878a, 1878b; *Inter Ocean* 1878b, 1878d, 1878e). The ship and consort’s primary cargos and routes for the season were corn and oats sent from Chicago to Buffalo; then the ships would clear light from Buffalo and travel to Erie to pick up coal often consigned to the Chicago & Pacific Railroad Company. The ship hauled coal to Marquette, Michigan once during the season. For one trip west in June, *Antelope* towed the coal laden barges *C.C. Barnes*, *Cuba*, *Philadelphia*, *Newburgh* in addition to the *Rutherford B. Hayes* (*Chicago Tribune* 1878g, 1878h, 1878i, 1878j, 1878k, 1878l, 1878n, 1878o, 1878p, 1878q; *Detroit Free Press* 1878c, 1878d, 1878e, 1878f, 1878g, 1878l; *Inter Ocean* 1878f, 1878g, 1878h, 1878j, 1878k, 1878l, 1878m, 1878n, 1878o, 1878p, 1878q)

At the end of June, reports indicated that the schooner *James D. Sawyer* would be assigned as a second permanent consort to the *Antelope*, but on 5 July the schooner exploded in flames while

at Chicago before the transfer occurred (*Chicago Tribune* 1878m; *Detroit Post & Tribune* 1878; *Inter Ocean* 1878i). In October *Antelope* towed the schooner *Masten* in addition to the *Rutherford B. Hayes* for one trip with corn from Chicago to Buffalo (*Detroit Free Press* 1878h). In mid-October it was noted that corn cargos loaded at Chicago bound to Buffalo aboard *Antelope* and *Rutherford B. Hayes* were shorted by twenty-eight bushels and sixty bushels respectively. Regional papers made quite a hullabaloo about the miscalculations on these and several other vessels (*Detroit Free Press* 1878i, 1878k). On a down bound trip on 25 October *Rutherford B. Hayes* ran hard aground in the Straits of Mackinaw. The stranding delayed *Antelope* and consort by several hours working to free the schooner (*Chicago Tribune* 1878r; *Detroit Free Press* 1878j).

In November 1878 *Antelope* and *Rutherford B. Hayes* were chartered for several trips to fetch cargoes of lumber from Menominee, Michigan for Kirby, Carpenter & Co., of Chicago. The arrangement to move to the lumber trade was made by Captain John Prindiville acting as agent for the vessels. He arranged for a rate of \$1.75 which was outside the “card rate” agreement that set the minimum price that was paid for service established by the members of the Lumber Vessel Owners Association. On 7 December, *Antelope* went to Miller Brothers Dry Dock for minor repairs and by 10 December was laid up amongst Chicago’s winter fleet (*Chicago Tribune* 1878s, 1878t; *Detroit Free Press* 1878m, 1878n; *Inter Ocean* 1878r, 1878s, 1878t).

On 26 April 1879 *Antelope* and the schooner *Rutherford B. Hayes* finished fitting out for the season and took on 25,685 bushels and 50,832 bushels of corn, respectively, bound for Buffalo. Additionally the schooner *Sunrise* was loaded with 28,000 bushels and taken in tow. Upon their departure, *Rutherford B. Hayes* became stuck in the mud, grounding opposite the Goodrich Steamship Dock. The tugs *McLane*, *Tom Brown*, and *Union* worked on the schooner for an hour and a half but were only successful in moving her down to the Peshtigo Company’s dock, where she stuck fast. It took the efforts of the three tugs and the *Antelope* to free the vessel. After another two hours of work they moved the *Rutherford B. Hayes* to the mouth of the Chicago River where it was taken in tow of the *Antelope* for her trip east. The three vessels made it as far as Detroit where they were required to wait for the harbor at Buffalo to open from ice, delaying them for several days (*Chicago Tribune* 1879a, 1879b, 1879c, 1879d, 1879e, 1879f).

In May *Antelope*, *Rutherford B. Hayes* and *Sunrise* made several trips from Chicago to Buffalo with corn returning with coal from Erie. By June *Sunrise* was used elsewhere and the schooner *Lizzie A. Law* was taken in tow intermittently. Other grains including wheat, rye and oats were taken to Buffalo throughout the season, always returning with coal from Erie (*Chicago Tribune* 1879g, 1879h, 1879i, 1879j, 1879k, 1879l, 1879m, 1879n, 1879o, 1879p, 1879q, 1879r, 1879s, 1879t, 1879u; *Daily Milwaukee News* 1879a, 1879b; *Detroit Free Press* 1879; *Inter Ocean* 1879a, 1879b, 1879c, 1879d, 1879e, 1879f, 1879g, 1879h, 1879i, 1879j). On 17 September, *Antelope* entered the Miller Brothers Dry Dock for an overhauling. Three days later she was

loaded with grain and departed for Buffalo with *Rutherford B. Hayes* in tow. Grain/coal shipments continued through the end of September (*Chicago Tribune* 1879v, 1879w; *Inter Ocean* 1879k, 1879l).

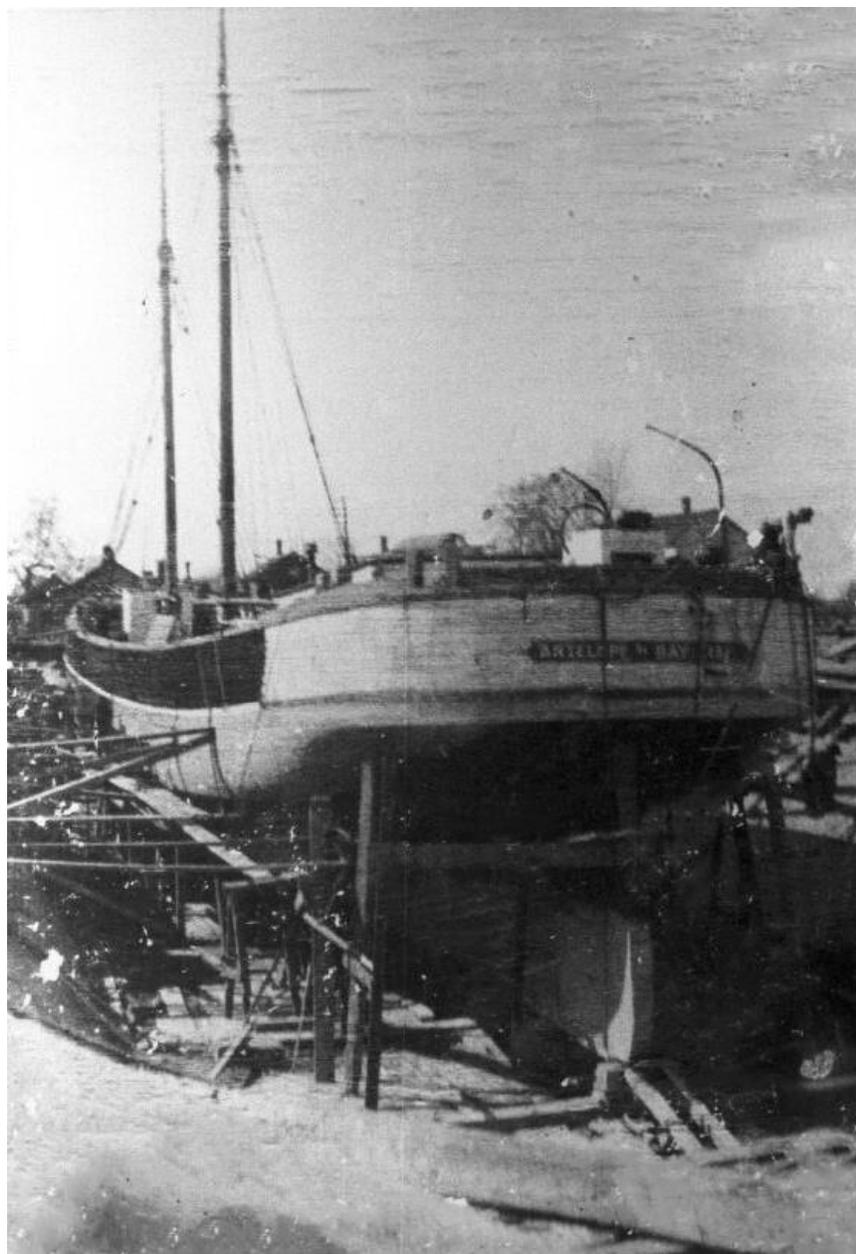


Figure 44. The stern of the *Antelope* as it sits in dry dock (Kenneth Thro Collection, University of Wisconsin-Superior)

On 9 October, *Antelope* arrived at Chicago from Saginaw with lumber, but was put back on the Chicago-Buffalo grain route with *Rutherford B. Hayes*, and either the barge *Empire State* or the schooner *G.E. Russell* for the remainder of the season. Outside of coal, the ships would return to Chicago on occasion with sundries. On 4 December *Antelope* arrived at Chicago with a final

load of lumber from Saginaw before going into winter quarters on 6 December 1879 (*Chicago Tribune* 1879x, 1879y, 1879z, 1879aa, 1879bb, 1879cc, 1879dd; *Detroit Free Press* 1879a, 1879b; *Detroit Post & Tribune* 1879; *Inter Ocean* 1879m, 1879n, 1879o, 1879p, 1879q, 1879r, 1879s, 1880a).

Before the opening of navigation for the 1880-season, *Antelope* was sold to Charles B. Curtis and John Lindsay of South Bay City, Michigan. On 2 March 1880 a temporary enrollment was issued at Chicago indicating that the two were equal partners in the vessel. The ship's homeport was changed to Bay City. Captain Daniel Brice remained at the helm (Bureau of Navigation 1880a). At the beginning of April, the ship was chartered to carry corn and oats from Chicago to Buffalo for her first trip of the season along with her consorts the schooners *George D. Russell*, *Empire State* and *William Crosthwaite* (*Chicago Tribune* 1880a, 1880b, 1880c, 1880d).

While en route, the following telegram was received by the ship's freight agent Captain John Prindiville:

“East Tawas, Mich., April 15.—Capt. John Prindiville: Antelope here for fuel. Badly shook up on Lake Michigan. Hole stove in bows in the Straits. Jettisoned 3,000 bushels. Leave here this afternoon. Daniel Brice.”

George D. Russell had onboard 41,423 bushels of oats, a portion of which was carried on deck. The schooner suffered damage in the ice in the Straits that caused her to leak, and her crew was forced to throw the deck load into the lake. The *Antelope* also had a hole knocked in her bow by the ice, was leaking considerably and needed to locate the nearest dry dock. Fortunately, only a small portion of the *Antelope*'s cargo was wet. Additionally *Empire State* broke her windlass and *William Crosthwaite* was leaking. A later telegram was sent announcing that *Antelope* with the *Empire State* and *William S. Crosthwaite* were continuing on to Buffalo, but there was no report to the whereabouts of the *George D. Russell*. It was surmised that the schooner was put into some port for shelter. *Antelope* and consorts came in to Detroit the next day to file an insurance claim on the cargo, which was shipped by John B. Lyon & Co., of Chicago insured for \$15,000; \$5,500 in the Manhattan; \$3,750 in the Buffalo, \$3,750 in the Lamar and \$2,000 in the Orient. A few days later, it came to light that the *George D. Russell* was set adrift once through the Straits. When *Antelope* overtook *George D. Russell*, the captain of the schooner was told “to take care of himself”. The schooner sailed in to Thunder Bay where it was picked up by the tug *Masters* and towed to Detroit. The vessel was leaking at the rate of six inches per hour and was in need of a patch. Once the repair was completed it continued on to Buffalo in tow of the *Egyptian* (*Chicago Tribune* 1880e, 1880f, 1880g; *Detroit Free Press* 1880a; *Inter Ocean* 1880b, 1880c).

On their next up bound trip, *Antelope* and consorts encountered yet another storm and icy conditions while crossing Saginaw Bay. The steambarge began to leak again. The leak was so bad that the crew was forced to throw 20,000 car sills overboard consigned to the Pullman Car Company (*Chicago Tribune* 1880h, 1880i; *Detroit Free Press* 1880a; *Inter Ocean* 1880d). Upon *Antelope*'s next trip down bound the vessel put in to Port Huron on 1 May 1880, where the ship's permanent enrollment was entered (Bureau of Navigation 1880b; *Chicago Tribune* 1880j). For the remainder of the season, *Antelope* with the barges *Newburgh* and *Nashua*, and as many as seven consorts in total, were marked passing Detroit two to three times per month. The vessel called on the ports of Cleveland, Black River (Sandusky), Toledo, Bay City, Tonawanda, and Milwaukee, carrying cargos of coal and lumber (*Chicago Tribune* 1880k, 1880l, 1880m, 1880n, 1880o, 1880p, 1880q, 1880r, 1880s, 1880t, 1880u, 1880v, 1880w, 1880x, 1880y, 1880z, 1880aa, 1880bb, 1880cc, 1880dd, 1880ee, 1880ff, 1880gg, 1880hh, 1880ii; *Detroit Free Press* 1880b, 1880c, 1880d, 1880e, 1880f, 1880g, 1880h; *Inter Ocean* 1880d, 1880e, 1880f, 1880g, 1880h, 1880i, 1880j, 1880k, 1880l, 1880m, 1880n).

On 24 April 1881, *Antelope* cleared the port of Cleveland with the schooners *Fayette Brown* (also reported as the *Harry H. Brown*), *McGregor*, and *Selkirk* in tow, bound for Marblehead, Ohio. *Antelope* continued on to Detroit and arrived at dry dock there with her foremast shifted from forward of the pilot house to abaft. After three days of what was described as general repairs, the ship and consorts continued to Port Huron. The vessel called on Bay City and Tonawanda before returning to her homeport of Port Huron on 12 May 1881. Upon their return, a new enrollment was taken out for a reduction in tonnage- indicating that the ship's recent time in dry dock may likely have been for a rebuild. It was noted that during the past four years *Antelope* had received more than \$14,000 in repairs. The ship's total tonnage was recalculated at 750.05 tons with 478.80 tons capacity under the tonnage deck, and 271.25 tons capacity between decks above the tonnage deck (Bureau of Navigation 1881; *Chicago Tribune* 1881a, 1881b; *Detroit Free Press* 1881a, 1881b).

Antelope and as many as eleven barges are noted passing Detroit several times each month as they made their regular Bay City-Buffalo-Erie route (*Chicago Tribune* 1881c, 1881d, 1881e, 1881f, 1881g, 1881h, 1881i, 1881j, 1881k, 1881l, 1881m, 1881n, 1881o, 1881p, 1881q; *Detroit Free Press* 1881c, 1881d, 1881e, 1881f, 1881g, 1881h, 1881i, 1881j, 1881k, 1881l, 1881m, 1881n, 1881o, 1881p, 1881q, 1881r, 1881s, 1881t, 1881u, 1881v; *Inter Ocean* 1881a, 1881b, 1881c, 1881d, 1881e, 1881f, 1881g, 1881h, 1881i, 1881j, 1881k, 1881l, 1881m, 1881n, 1881o, 1881p, 1881q, 1881r).

At 2 a.m. on 25 September 1881, *Antelope* and three barges ran aground on Colchester Reef. Only eleven days prior, the lightship marking the obstruction was taken off the reef for repairs, as the hoisting gear broke and the light could not be seen from the deck. *Antelope* was the second ship to strand there since its removal. The steambarge struck the machinery of the sunken tug *Mayflower*, which went to pieces there a short time prior. Hung up, the *Antelope* was

pounding and straining so heavily in the seas, that Captain Brice gave the order to scuttle the ship. The Canada Wrecking Company's tug *Jessie* was sent to collect the barges and brought them in to Amherstburg, Ontario. The tug then return to the *Antelope* with two steam pumps, the renowned diver Frank Dwyer, and the lighter *Argo* to collect the 190 tons of coal aboard for fuel (mostly on her deck). With a storm continuing on Lake Erie, two days later, the captain of the propeller *Dean Richmond* reported as he passed Colchester Reef that the stranded *Antelope* was lying over on her beam ends with the tug *Jessie* and the lighter *Argo* alongside. It was feared the *Antelope* would go to pieces. All of the coal outside the bunkers was collected, but the ship needed to be pumped out before the coal inside could be accessed. At 3 p.m., on 29 September the *Antelope* was finally released after eighty tons of coal was lightered. It required the work of two steam pumps and the efforts of both of the Canada Wrecking Company's tugs *Jessie* and *Prince Alfred* to pull the ship free. A diver was sent down to put a temporary patch on her holes in order to move the vessel to Springwells' Dry Dock in Detroit for repairs. Repairs were estimated at \$1,500. Upon further examination of *Antelope*'s hull, it was discovered that there was considerably damage where she rested on the machinery of the tug *Mayflower*. A portion of her keel needed to be replaced, as well as a general recaulking. The ship departed the dry dock one week later (*Chicago Tribune* 1881r, 1881s, 1881t, 1881u, 1881v; *Cleveland Herald* 1881a, 1881b; *Detroit Free Press* 1881w, 1881x, 1881y, 1881z, 1881aa, 1881bb; *Inter Ocean* 1881s, 1881t, 1881u).

Back on the Bay City-Buffalo-Erie route, *Antelope* towed as many as five barges -- only one named in newsprint, *Queen of the West*. *Antelope* and consorts sought shelter in the St. Clair River off Port Huron on 13 October. On the night of 25 November the *Antelope*, with barges, grounded off Tawas Point. The vessels were freed the following morning without any serious damage (*Chicago Tribune* 1881w; *Detroit Free Press* 1881cc, 1881ee, 1881ff, 1881gg, 1881hh, 1881iii; *Inter Ocean* 1881v, 1881w, 1881x, 1881y, 1881z, 1881aa, 1881bb).

Over the winter, Charles B. Curtis bought out his partner, John Lindsay, to become sole owner of the vessel and on 13 April 1882, a new enrollment was entered at Port Huron. The big schooner *S.V.R. Watson* was purchased to serve as lumber-barge consort of the *Antelope* (Bureau of Navigation 1882; *Chicago Tribune* 1882a).

Antelope continued on her normal route with multiple trips each month noted as the ship and consorts passed Detroit. Throughout the 1882-season *Antelope* towed up to six barges each trip. Barges named in tow of *Antelope* included *Handy*, *Young America*, *L.A. Law*, *U.S. Bibbs*, *Grace Murray*, *W.L. Peck* and *Manitowoc*. In late October 1882 while in tow of the *Antelope*, the barge *W.L. Peck* lost her rudder in Lake Erie and was towed to Springwells' Dry Dock to receive a replacement (*Chicago Tribune* 1882b, 1882c, 1882d, 1882e, 1882f, 1882g, 1882h, 1882i, 1882j, 1882k, 1882l, 1882m, 1882n, 1882o, 1882p, 1882q; *Detroit Free Press* 1882a, 1882b, 1882c, 1882d, 1882e, 1882f, 1882g, 1882h, 1882i, 1882j, 1882k, 1882l, 1882m, 1882n,

1882o, 1882p, 1882q, 1882r, 1882s; *Inter Ocean* 1882a, 1882b, 1882c, 1882d, 1882e, 1882f, 1882g, 1882h).

On the evening of 22 November 1882, *Antelope* with the coal-laden schooner *Manitowoc* in tow departed Erie bound for Chicago. The *Antelope* was running light. On the morning of 23 November, a storm arose and the ships set anchor under Long Point on Lake Erie. As the *Antelope* was without cargo, she sat high in the water, creating significant windage in the sixty-mile-per-hour gale. Her anchors could not hold. *Antelope* was forced to run into the high seas from Long Point to Buffalo. As a result, both of her arches were broken, her port arch and her smokestack were carried away and her galley (stove, furniture, and dishes) were thrown into a heap. *Manitowoc* was left at anchor for the remainder of the storm and the vessel sailed to Amherstburg, Ontario on 28 November. *Antelope* was laid up in Buffalo for the winter (*Chicago Tribune* 1882r; *Detroit Free Press* 1882t, 1882u, 1882v; *Inter Ocean* 1882i, 1882j, 1882k, 1882l).

On 7 April 1883 the *Chicago Tribune* reported on the extent of *Antelope*'s damages. The steambarge required new keelsons, a new deck shelf, decks and hatches, and to be recaulked, for an estimated total of \$9,000. As a result Charles B. Curtis decided that the ship would be converted to a tow-barge (*Chicago Tribune* 1883a). *Antelope*'s machinery was removed and sold to Wheeler and Crane's shipyard at West Bay City where it was installed in 1885 on the new steambarge *Alex Folsom*, built for Mitchell and Boutell (*Port Huron Daily Times* 1885)

On 22 May 1883, a temporary enrollment document was taken out in Buffalo by Clifford Lennox of Detroit, Michigan who acted as the ship's husband and Master. The previous enrollment was surrendered as the ship was altered to a barge and readmeasured. *Antelope* was described as barge with one deck, two masts, a plain head and round stern. She measured 186 8/10 feet long, 32 feet in breadth with 12 feet depth of hold. Her tonnage was calculated as 496 62/100 tons under the tonnage deck, 26.86 tons capacity of enclosures on the upper deck for a gross tonnage of 523.48 tons. Deductions taken under the Congressional Act of 2 August 1882 of 26.86 tons gave a net tonnage of 496 62/100 tons. At time of surrender of the previous document it was discovered that the vessel had hospital taxes due and the amount of \$48.04 for twelve months and three days for a total average number of sixteen officers and crew was collected. The ship was moved to Port Huron and on 8 June a permanent enrollment was entered. Captain Clifford Lennox remained *Antelope*'s Master (Bureau of Navigation 1883a, 1883b).

At this point it becomes difficult to track the movements of the ship. In 1883 five vessels on the Great Lakes carried the name "*Antelope*" (Directory of the Marine Interests of the Great Lakes 1884):

1. Barge (discussed in this document);
2. 319-ton schooner built and homeported at Port Dalhousie by A. Muir in 1873;

3. 8-ton propeller built at Rocky River, Ohio in 1877 and homeported in Sault Ste. Marie;
4. 180-ton schooner built at Port Dalhousie in 1854 and homeported in Sarnia, Ontario;
5. 30-ton schooner built at Muskegon, Michigan in 1878 and homeported in Chicago.

Every effort has been made to report on the *Antelope* that was built in 1861 in its various forms in this document through close examination of vessels that are associated as tugs and steam barges, cargos, captains, owners, etc.

It is likely the barge *Antelope* was towed by the steam barge *Oswegatchie* to haul stone from Marblehead, Ohio to Bay City in June of 1883. In October the barge was towed by the propeller *Sanilac* from Georgian Bay with timber. The pair put in to East Tawas, Michigan for supplies and to wait out a storm (*Inter Ocean* 1883; *Marine Record* 1883).

On 14 July 1884 the barge *Antelope* was loaded with 680,000 feet of lumber and cleared Bay City for Buffalo. On 8 September the vessel carried 720,000 feet of lumber from Bay City to Buffalo. In both cases it is not known which steam barge towed the vessel. On 24 October steam barge *Birckhead* and barges *Antelope*, *Minnie Orton*, and *Edwards*, anchored off East Tawas to wait out a strong southwest gale and associated snowstorm. On November 8 *Antelope's* arrival at Bay City from Tonawanda was noted. The ship was put in winter quarters at Bay City by 7 December 1884 (*Detroit Free Press* 1884; *Inter Ocean* 1884a, 1884b, 1884c, 1884d).

On 13 July 1885 the steam barge *Benton* and barge *Antelope* were loaded with lumber and departed Bay City for Tonawanda. The barge was reported arriving back at Bay City light on 24 September. Information on other trips and cargos between July and September is unknown. On 17 October *Antelope* arrived light and cleared the same day with a cargo of lumber bound for Tonawanda. Her tow vessel is not known. Another light arrival at Bay City was reported on 4 November. By 19 November, *Antelope* was listed amongst a fleet of fifteen vessels in winter quarters in the Saginaw River. As a note, the *Cleveland Daily Leader* reported in a yearend synopsis of losses on the lakes that on 4 July 1885 the barge *Antelope* burned at Saginaw and was declared a total loss. They state that at the time of the fire, the vessel was without cargo and the value of the lost hull was \$10,000. No other report of this incident could be located and since arrivals and clearings are reported for the ship in September, October and November, it is likely false. A schooner named *Antelope* burned while at anchor off the harbor at Toronto in September 1885. It is uncertain if this incident was the stem of the misreported note in the newspaper (*Cleveland Daily Leader* 1885; *Inter Ocean* 1885a, 1885b, 1885c, 1885d; *Marine Record* 1885).

On 13 May 1886, *Antelope* arrived at Bay City from Buffalo. The ship was loaded with lumber and departed the same day along with the barges *Marine City* and *Alice Richards*, bound for Tonawanda. The name of the steam barge is not known. On 30 July, 23 October and 6

November 1886, and 30 May and 27 June 1887, *Antelope's* arrival at Bay City from Buffalo was recorded. In all cases, the ship loaded with lumber and departed for Tonawanda the same day; and in all cases the steambarge towing it was unreported (*Marine Record* 1886; *Inter Ocean* 1886a, 1886b, 1886c, 1886d, 1887a, 1887b).

On 3 October 1887, the propeller *D.F. Rose* with the barges *Marine City*, *Boscobel* and *Antelope* were caught up in a severe storm on Lake Erie where winds reached fifty-two miles per hour. The storm was so strong that the *D.F. Rose* came in to Buffalo and dropped off *Marine City* and *Boscobel* inside the breakwater. *D.F. Rose* took the *Antelope* in tow attempting to make Tonawanda. After three hours struggling in the seas, *D.F. Rose* returned to Buffalo with a severe list. *Antelope's* deck load of lumber was washed overboard. A tug was needed to assist the barge inside the harbor. *Antelope* wintered over at Bay City (*Detroit Free Press* 1887a, 1887b; *Inter Ocean* 1887c).

Little information could be located to illuminate *Antelope's* 1888, 1889 or 1890-seasons in the way of reports of arrivals and clearings. On 31 July 1888 an article in the *Detroit Free Press* (1888) relates a story told by Captain George McKay. McKay was captain of the *Antelope* although the vessel's enrollment documents did not show this change in command:

“Capt. George McKay, of the barge *Antelope*, claims to be under special care of Providence, and gives some good reasons for thinking so. I'm the luckiest man on the lakes,” he said the other day. He had just come up from Tonawanda and could give fresh evidence of his luck. He is towing with the propeller *S.C. Clarke*, and during the storm of July 11th the tow tried to pass down the river. The wind was too strong for the towboat and four of the five barges went ashore. But Capt. McKay and the *Antelope* stuck to the steamer and went safely into port. “It was just an accident we had up at the Limekilns near Detroit that helped me out,” said Capt. McKay. “While passing through them my tow-line parted, but there was a new one ready, and so instead of going ashore I got ready to escape net time, for the old line would hardly have held all the way down.”

While in tow of the steambarge *Glasgow*, *Antelope* and the barges *A.W. Wright*, *Taylor*, and *Wend the Waves* went ashore on Point Pelee on eastern Lake Erie. All were safely removed (*Detroit Free Press* 1889). The barge *Antelope* was otherwise reported at East Tawas on 13 October 1888, at Bay City on 6 May 1889, and at Buffalo on 14 May and 9 November 1890 (*Chicago Tribune* 1888, 1890a, 1890b; *Inter Ocean* 1889).

On the night of 26 October 189,1 the steambarge *Alpena* and consorts *Antelope*, *City of the Straits*, and *Potter*, had collected a cargo of lumber from Marquette, Michigan and were bound for ports on Lake Erie. The barges were set on anchor below Lake St. Clair when the

steambarge was destroyed by fire. *Alpena* was owned by J.W. Westcott, of Detroit and was valued at \$24,000 (*Port Huron Daily Times* 1891; *Green Bay Weekly Gazette* 1891).

On 8 June 1892, a vessel jam occurred abreast of the Cyclone Grain Elevator in Buffalo Harbor. The barge *Antelope* while in tow of a tug, struck the schooner *Churchill*, carrying away its cathead. The *Antelope*'s bulwarks were smashed. The *Antelope* then struck a canal boat and the pile up blocked the channel for an hour. Otherwise, the *Antelope* was listed among vessels wintering in the Saginaw River on 4 December 1892 (*Chicago Tribune* 1892a, 1892b).

The *Antelope*'s enrollment was surrendered on 11 April 1893 at Port Huron for change in owners. Lorenzo S. Boutell, Fred E. Boutell and William H. Boutell of Bay City, Michigan became equal 1/3 owners of the ship. Over the winter months, the ship's rig was changed to that of a schooner and the ship was described as having one deck and three masts. All other measurements and tonnage was the same as the previous enrollment. Bay City remained the ship's homeport and Lorenzo S. Boutell became her new Master (Bureau of Navigation 1893). The ship was to work for Boutell Transportation Company, a division of Boutell Bros. & Co., to trade on Lake Superior. Boutell Bros. & Co. was located at 1215 N. Water St., Bay City, Michigan, Boutell Transportation Co. listed at the same address, had a capital investment of \$150,000- president and Manager was Benjamin Boutell (Polk 1897). Arrivals and clearings illuminate the ship's new route between the Lake Erie ports of Buffalo, Erie, Cleveland and Lake Superior (*Chicago Tribune* 1893b; *Detroit Free Press* 1893a, 1893b, 1893c, 1893e; *Inter Ocean* 1893).

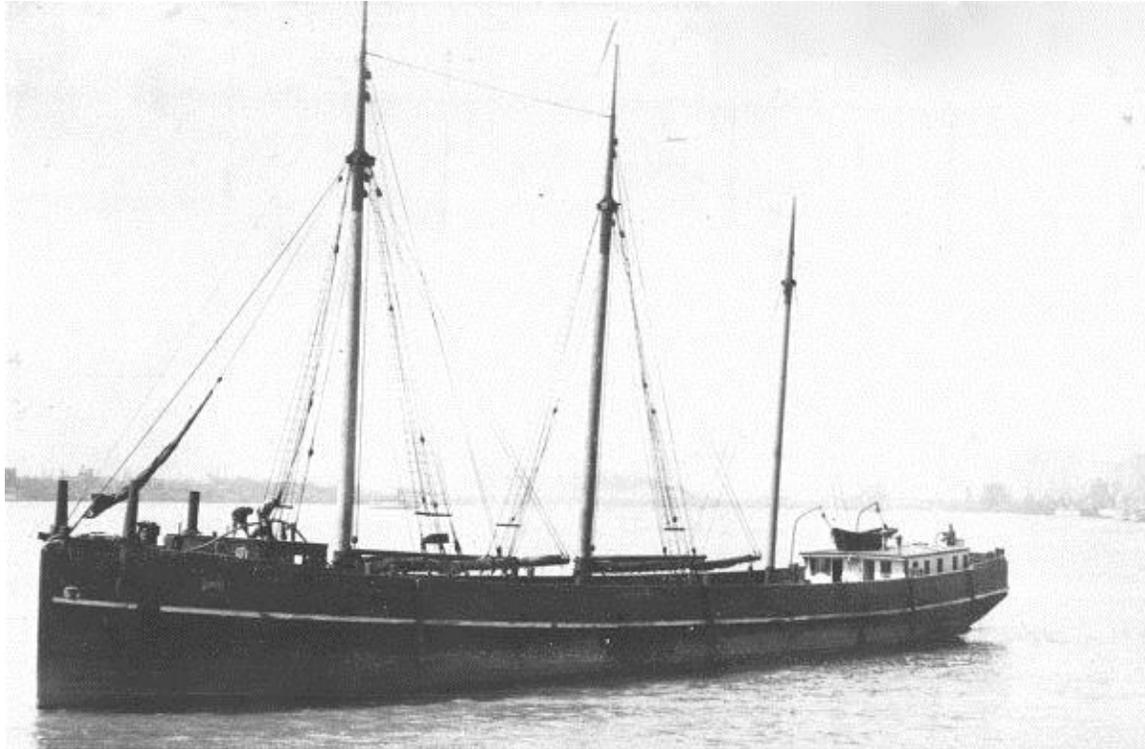


Figure 45. *Antelope* as a schooner barge ca 1894 (Kenneth Thro Collection, University of Wisconsin-Superior)

The tug *Pathfinder* of the Smith-Fee Company, a new towing company at Duluth, was towing the schooner *Antelope* on 10 August 1893 and allowed the vessel to crash into the dock. Damaged caused to the dock was estimated at \$400 and the vessel was only slightly injured (*Chicago Tribune* 1893a; *Detroit Free Press* 1893d). The ship wintered over at Bay City (*Chicago Tribune* 1893b).

On 26 April and again on July 26 1894, *Antelope* loaded 1,000 tons of coal at the Wehrle Coal Company's docks at Sandusky, Ohio. Upon arrival at Boutell's dock at Bay City, much controversy was caused when barge was unloaded by non-union men. A lawyer for the longshoremen advised his men not to interfere with the workmen (*Detroit Free Press* 1894; *Sandusky Register* 1894a, 1894b, 1894c). *Antelope* also took coal from Cleveland to Port Huron during the season (*Inter Ocean* 1894).

During the 1895-season, *Antelope* carried coal from Cleveland to Detour, Michigan, and from Buffalo to Superior, Wisconsin. Additionally coal was delivered to Oscoda, Michigan. During the 1896-season *Antelope* carried coal from Buffalo to Duluth, and called on the port of Manitowoc, Wisconsin (*Chicago Tribune* 1895a, 1895b, 1895c, 1896; *Detroit Free Press* 1895a, 1895b, 1895c, 1895d, 1896a, 1896b; *Inter Ocean* 1895a, 1895b).

Antelope carried coal from Cleveland to Duluth, Superior and Ashland during the 1897-season. Several trips are marked by the ship's passing of Sault Ste. Marie and Marquette. The ship would return to Lake Erie light. During one trip in July, the vessel sheltered from a gale off East Tawas (*Detroit Free Press* 1897a, 1897b, 1897c; *Inter Ocean* 1897).

On 7 October 1897, *Antelope* was bound up with a cargo of coal to be dropped off at the Ashland Coal Company dock in Ashland, in tow of the steamer *Hiram W. Sibley*. *Hiram W. Sibley's* captain was towing the schooner too fast in the choppy sea and the thirty-six year old *Antelope's* seams opened. The pumps were started, but water came in faster than it could be pumped out and it was soon realized that the ship could not be saved. The *Antelope's* crew transferred to the *Sibley* and was taken to Duluth. Wreckage of the *Antelope*, including the cabin and other loose material, was sighted by the crew of the schooner *Gawn* off Michigan Island. The vessel and cargo was valued at \$13,500 (*Detroit Free Press* 1897d, *Door County Advocate* 1897a, 1897b; *Marine News* 1897). The ship's enrollment was surrendered at Port Huron on 17 November 1897.

The location of the wreck was discovered in September 2016 by Ken Merryman, Kraig Smith and Jerry Eliason after a six year search for the vessel. Investigation by ROV from Crossmon Consulting, LLC and Wisconsin Historical Society was conducted in October 2016.

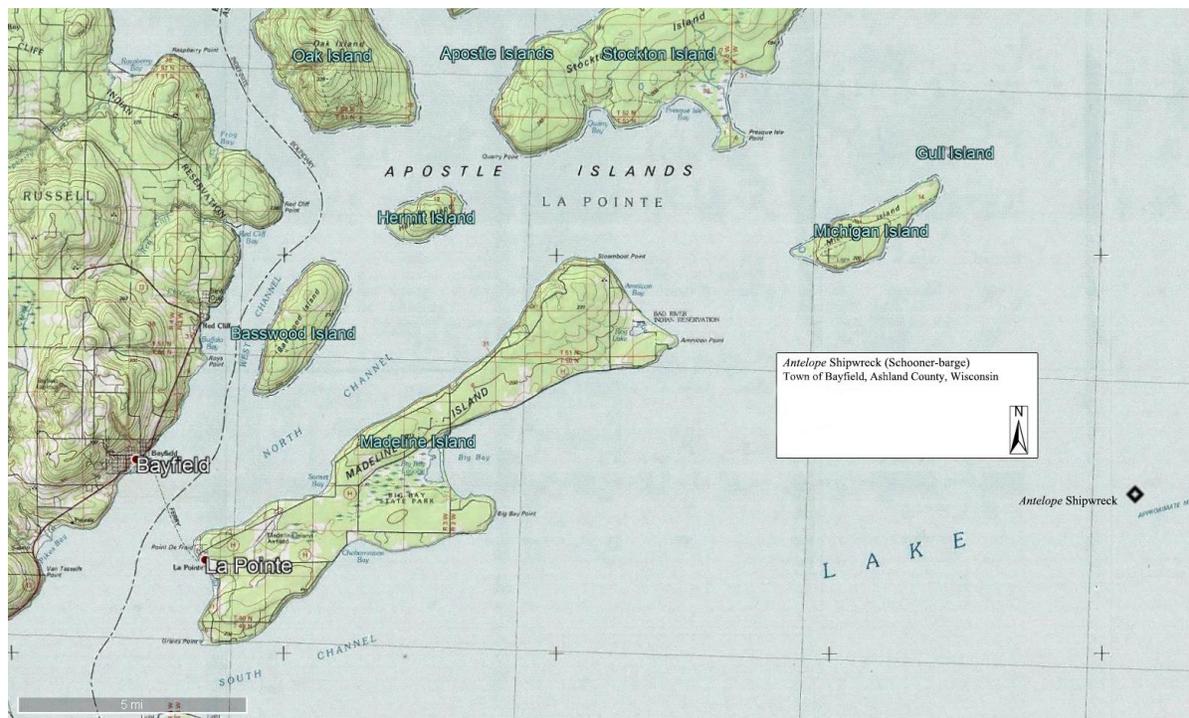


Figure 46. Map of *Antelope's* location

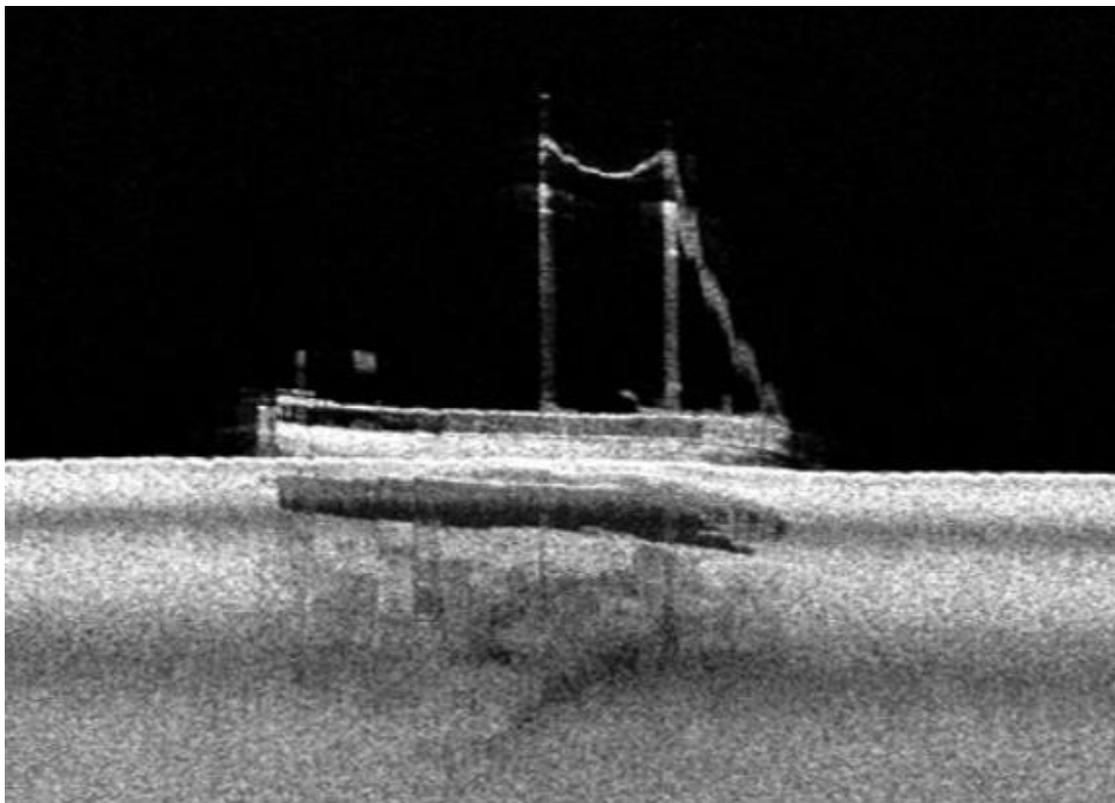


Figure 47. Side-scan sonar of *Antelope*'s starboard side (Jerry Eliason)

Site Description

The remains of *Antelope* lie upright, 300 feet below the surface of Lake Superior, on a heading of 93 degrees, 7.5 miles southeast of Michigan Island. Following its sinking in 1897, the site remained unknown until its discovery by shipwreck hunters, Ken Merryman, Kraig Smith and Jerry Eliason, in 2016. Since then, only one crew of archaeologists and volunteers has visited the site using a Remotely Operated Vehicle (ROV) and multibeam sonar. With no visitation from divers and no invasive mussel populations, the site has retained remarkable structural and archaeological integrity. All of the vessel's components remain intact on the site, excluding its stern cabin which was found floating near Michigan Island just after the vessel's sinking.

A Phase II archaeological survey was conducted on *Antelope* in October of 2016 by maritime archaeologists at the Wisconsin Historical Society, volunteers from Great Lakes Shipwreck Preservation Society and Crossmon Consulting LLC. Due to the site's great depth, a Remotely Operated Vehicle (ROV) equipped with multibeam sonar was used to conduct all survey data, including gathering imagery, video, and measurements. All measurements were taken from the multibeam sonar imagery using BlueView, open source multibeam sonar software. The overall length of *Antelope* wreckage as it sits on the bottom of Lake Superior, from stempost to rudder post, is 194.05 feet in length while the overall beam of the vessel is 31.06 feet. Although the vessel's transom has broken and now lies at an angle off the stern quarter of the vessel, the cold,

clear waters of Lake Superior have preserved the vessel's paint, and the words "*Antelope* of Bay City" can clearly be seen in ROV footage. The cargo of coal remains within the vessel's hull, save for a few scattered pieces on the deck and the lake bottom around the site. Given the wreck dimensions, construction details, location, and the remaining paint on the transom and starboard bulwark, the vessel remains were positively identified as those of the converted schooner-barge *Antelope*. Although strong currents have been identified in this area, the site remains intact and largely unchanged from its 1897 sinking.

Antelope's upright stempost measures 0.9 feet molded and 1.2 feet sided with 17.4 feet exposed above the sand. It is completely intact to the bow railing from where it rabbets into the keel. *Antelope*'s false stem also remains extant, forward of the stempost, tapering to 0.3 feet. A metal cutwater is fastened to the leading edge of the false stem. This measures 0.4 feet wide and is 0.05 feet thick, running the entire height of the false stem. Roman numeral draft markings are distinctly carved into both sides of the false stem. One of the vessel's knightheads remains attached on the starboard side of the vessel. The port side knighthead no longer remains in place. The vessel's bow railing also remains intact at the bow extending from the aft edge of the weather deck, and ending 13.2 feet aft of the stempost. Green paint is visible on the railings and knightheads. The vessel's head rigging remains attached to the bow, and extends to the top of the standing foremast. *Antelope* was not equipped with a bowsprit or jibboom at the time of its sinking. A fish net lies entangled across parts of the vessel's bow.

Just aft of the stempost, beneath the main rail, a 51.4 foot long section of the port side hull has broken away from the vessel. Its forwardmost section extends from just below the bow railing to a foot below the vessel's whalestrake, measuring 8.3 feet wide. Aft of the weather deck, the piece includes the rail and foremast chainplates, and extends to 0.5 feet below the whalestrake, measuring 4.9 feet wide. This is a single piece, although its forward section lies on the clay next to the vessel's bow, while the aft section of the piece remains propped against the port side hull at an angle. A single scupper can be seen forward of the foremast chainplates. Unlike at many wreck sites, the hull did not separate outward and expose the ceiling planking; instead, the section remains with the outer hull planking facing upward. The port side anchor chain remains attached to the anchor, threaded through the hawsepipe located within the broken piece of hull, and extends back to the windlass drum, still located beneath the weather deck. Above the whalestrake, green paint remains extant, while below the whalestrake, white paint was observed.

Both the port and starboard anchors remain in place attached to their respective catheads and rest on *Antelope*'s railing. The anchors measure 7.5 feet from stock to crown (height), and 4.7 feet from fluke to fluke (width), and are wooden stock anchors with the wooden stocks painted green. The catheads to which they are attached are made up of single timbers and measure 4.5 feet in length, and 0.6 feet square. The word "*ANTELOPE*" was observed painted in yellow on the exterior of the starboard side bulwarks.



Figure 48. Starboard bow name plate reading *Antelope* (Crossmon Consulting LCC).

Where the port side hull has pulled away, the windlass deck is clearly visible. A wooden-handled shovel remains balanced at the broken hull section, held up by the anchor chain. Additionally, a grinding wheel (whetting stone) lies on its side near the starboard side ceiling planking. The ceiling planking is painted white. The port side windlass gypsy head, windlass, and samson post were observed at the aft end of the space. The windlass is painted white. The top of the carrick bitts are notched into the deck beams above. Large standard knees support the back side of the carrick bitts, and carrick bitt cheeks are visible. Iron bands reinforce the carrick bitt-knee assembly. Purchase rims connected to purchase rods are located on both sides of the samson post, and extend through the deck. Two wraps of chain remain around the windlass and coal is scattered across the floor. The samson post itself, sits forward of the windlass, 13.8 feet aft of the stempost, and measures 1.9 feet square. *Antelope's* capstan sits forward of the samson post, 11.7 feet aft of the stempost, and measures 2.0 feet in diameter. Additionally, a barrel rests in the clay next to the broken port side hull section. No contents were seen inside.

Antelope's weather deck extends 14.5 feet aft of the stempost along the vessel's centerline. Its aft facing edge is curved, with the port and starboard extent of the deck continuing further aft than along the centerline of the vessel. Near the aft most extent of the weather deck, a single bitt is attached to the bulwark on both the port and starboard sides of the vessel. Each bitt is worn heavily by ropes and clearly indicates heavy use.

Aft of the weather deck, is *Antelope's* intact forward cabin. The cabin is painted white and measures 10.2 feet long and 16.9 feet wide. The cabin wall planks are butt-scarphed at the level of the window and below, but at the window and above, the cabin has lapstrake planking. The starboard side cabin wall has fallen away and now lies propped against the starboard bulwark. The aft facing cabin wall has completely fallen away, revealing some of the interior of the cabin. The port side and forward walls remain upright and intact. The roof remains on most of the cabin, save for a 1.8 foot wide section that likely blew away during the sinking. The roof

beams stretch athwardship. There is a single window, on the port side of the cabin. The cabin is divided into two rooms. The door to the port side of the cabin remains intact, but has fallen into the cabin and now rests propped on the base of a small stove or heater. The door is equipped with a porcelain door knob. A white porcelain bathtub remains extant in the front of the cabin, just under the forward facing window. No glass remains in the window. The starboard side cabin room contains the vessel's donkey boiler. The boiler door remains open, and the knobs and dials on the face of the boiler can clearly be seen. A single smokestack extends through the cabin roof, near the forward starboard corner. It measures 0.7 feet in diameter. Additionally, a steam whistle remains intact above the boiler, near the aft edge of the cabin. It connects directly to the donkey boiler below.

A 69.3 foot long section of the port side bulwark remains attached to the hull and intact until the next break. Aft of this break, the port side bulwarks are broken at the main deck level and are no longer attached to the vessel. This section of bulwarks now lies in the clay off the vessel's port side. This section measures 42.58 feet long and 5.5 feet in height, indicating that the bulwarks were 5.5 feet in height throughout the ship. Tall bulwarks, such as these, were common on vessels that operated in the lumber trade, and are likely a remnant of *Antelope's* time as a lumber steamer, before its machinery was removed, and the vessel was converted to a tow barge. At this break, it is possible to see *Antelope's* framing pattern. The vessel is double framed, with each individual futtock measuring 0.4 feet sided and 0.8 feet molded, with the frame set measuring 0.9 feet sided overall. The frames are spaced 1.2 feet apart.

The starboard side bulwarks remain completely intact from the bow to the transom. The vessel's hogging arch was observed on the inside of the bulwarks along the starboard side. It is made of metal and measures 1.0 feet wide and approximately 0.5 feet thick. *Antelope* was equipped with two hogging arches following its conversion to a lumber steamer, but due to various wrecking events and collisions, *Antelope's* hogging arches experienced fractures. As the vessel was converted into a tow barge and then into a schooner-barge, historic records indicate that its hogging arches were "strengthened". Although there were no specifications on how these arches were strengthened, it seems as though thick iron arches were installed to add additional longitudinal strength and support to the ship.

Antelope was equipped with a rounded stern which dates back to its years as a passenger packet and lumber steamer. When the vessel was converted into a barge, it maintained this rounded stern. The rounded transom now lays broken, hanging at an angle off the stern of the ship. The starboard side of the transom remains partially attached to the vessel, while the port side extends down to the clay. White paint is visible on the transom and the words "ANTELOPE of BAY CITY" which are painted in yellow across the transom's width. The taffrail and main rail are painted green, similar to the rest of the vessel. A set of bitts was located at the port and starboard stern quarters of the vessel. One of the starboard side bitts remains attached to the starboard bulwarks, while the other bitt remains attached to the broken transom. The port side bitts both remain attached to the transom and rest in the clay.

Antelope's rudderpost protrudes through the deck and rises approximately 4.0 feet above the deck. It measures 0.9 feet in diameter. The rudderpost is circular, with a square top, where the steering quadrant would have been attached. The rudderpost deck clamp is painted red. Just forward of the rudderpost is a circular scupper. The metal cover for the scupper has dislodged, and now lies next to the rudder post. The vessel's wheel and steering quadrant lie off the stern of the vessel atop the fallen transom. The wheel sits very close to the rudder's starboard side, and remains attached to the worm gear. The wheel is completely intact and has brass caps on the wheel handles. The rudder itself has broken its rudder chains and preventers, and now sits at an extreme angle, hard to port. The rudder chains are entangled in the wheel.

The main deck of *Antelope* is longitudinally planked, and fully intact. This indicates that the vessel's keel likely remains unbroken. Four cargo hatches extend down the centerline of *Antelope*'s main deck, each measuring 8.1 feet long and 12.1 feet wide. The forwardmost hatch and the aftmost hatch retain their hatch covers. The hatch covers are flat and are secured by an iron strap that runs from the forward edge of the hatch to the aft edge. Additionally, dogs are located on the port and starboard sides of the hatch covers. The hatch covers for the two middle hatches blew off in the sinking and the hatches remain open, revealing a full cargo of coal. Some coal escaped the cargo hold during the sinking and now lies strewn across the deck.

Located 13.75 feet forward of the stern are the remains of *Antelope*'s aft cabin. While *Antelope* did have a full aft cabin, during the sinking, it blew off as air was escaping the vessel and was found floating near Michigan Island. All that remains of the aft cabin is a combing, and four metal poles measuring 0.5 feet in diameter that were used to secure the corners of the cabin. Unlike many other schooner barges and sailing vessels, *Antelope*'s cabin was not set into the main deck, but was instead placed on top of the main deck and held in place by the corner poles. This was likely completed after its conversion to a tow barge. From the remaining combing and poles, the cabin footprint was determined to be 14.5 feet long and 18.4 feet wide. A single valve extends through the deck on the starboard side of the cabin footprint, near its front wall.

On either side of the cabin footprint are two single bitts, set inboard from the bulwark by just over a foot, and located 28.3 feet forward of the stern. These show signs of rope wear near their tops and are painted white, measuring 1.25 feet square. Each is supported by a standard knee on the aft side of the bitts, measuring 4.7 feet in length. Two davits hang over the starboard side of the vessel near the stern, 16.7 feet apart. These rotating davits are painted white, and would have raised and lowered the vessel's yawl, or workboat. Both davits are made of iron and are attached to the inside of the starboard bulwark. Iron rings hang at the end of each davit. These would have been attached to a block and tackle which would have lowered the yawl to the water. The position of the davits, with their ends hanging over the side of the vessel, indicates that the yawl boat was deployed prior to sinking. This is corroborated by historical accounts which indicate that *Antelope*'s crew was able to use the yawl to reach the *Hiram W. Sibley* when *Antelope* was abandoned. A pair of bitts, painted white, are located 0.8 feet aft of the davits, and a single bitt is located just forward of the two davits.

Antelope was originally equipped with two masts following its 1883 conversion from a lumber steamer to a tow barge. In 1893, when the vessel was converted into a schooner-barge, a third mast, the mizzenmast, was added. Two of *Antelope*'s three masts remain standing and fully intact, with the shrouds and ratlines still extending down the port and starboard sides of the masts. The masts themselves are painted white and measure 2.6 feet in diameter near the main deck. Both masts have mast tables which are also intact, and are painted green. The masts are topped with metal caps. The ratlines are connected to the trestletrees above, but they no longer attach to the chainplates, except for a single ratline which remains connected to the foremast chainplates. The foremast and mainmast both have three chainplates associated with them on either side of the vessel. The chainplates themselves measure 0.3 feet wide and are spaced 1.9 feet apart. All of the mainmast chainplates remain intact along the bulwarks, as do the foremast chainplates on the starboard side. The foremast chainplates, however, remain attached to the broken section of the port hull and have bent outward, away from the outer hull planking. The shrouds for each mast have blocks attached to them and deadeyes remain attached to the chainplates. Two belaying pin racks were located during the 2016 survey, located on the interior of the starboard side bulwark, near the foremast chainplates and mainmast chainplates. All belaying pins are extant in the forward rack, while only one belaying pin remains in the mainmast rack.



Figure 49. *Antelope*'s starboard chainplates (Crossman Consulting LLC)

The foremast measures 68.3 feet tall. Two forestays remain connected to the foremast trestletree 52.9 feet above the deck, and three mast shrouds come off either side. One additional forestay is attached to the topmast. A cable mast stay connects the top of the foremast with the top of the mainmast. This cable is rarely seen on wreck sites, as it is usually one of the first lines to break during the sinking. A double sheave block is fastened to the foretopmast. The foremast boom and gaff remain on the site, although no longer attached to the mast. Both lay across the starboard bulwark 49.0 feet aft of the bow. The mainmast gaff lies atop the boom at a perpendicular angle. The boom measures 34.5 feet long and has a metal cap on its end. Two eye bolts remain attached to the boom, near its end. The boom extends across the second hatch. The foremast gaff measures 26.0 feet long and is also equipped with a metal band at its end. Two blocks are attached to the gaff on one side, while eyebolts are attached to the other side. The eyebolts would have attached to the reef cringles at the top of the sail and were used to haul out the sail when it was reefed. The blocks would have been attached to lines running up the foremast, and would have allowed the gaff to be raised when the sails were needed. Both the gaff and boom are painted white, as are their associated blocks. At least five mast hoops remain around the base of the foremast.

The mainmast measures 71.6 feet tall and has a metal band around its top. A single sheave block hangs from the maintopmast on its aft facing side. The mainmast trestletree remains intact with a slot box on its aft facing edge for the mastlight. The light is no longer extant. Three blocks hang on chains from the trestle tree at varying lengths. The blocks on the port and starboard sides of the mast hang the furthest down, while the middle block, remains hanging above. Three cable shrouds extend down to the deck from both the port and starboard sides of the trestletree. The mainmast boom and gaff lie just aft of the mainmast, across the second cargo hatch. Two disarticulated double sheave blocks lie on deck at the base of the mainmast. At least six mast hoops remain at the base of the mainmast.

Historic images of *Antelope* as a schooner-barge show the vessel equipped with a mizzenmast, with no trestletree or topmast. Today, all that remains of the mizzenmast is its base, and partners. The mizzenmast appears to have been cut down, as the top of the remaining mast is a smooth cut. If the mast had broken off during the sinking, the break would appear jagged, and would have possibly pulled out the partners. Additionally, *Antelope*'s mizzenmast was not stayed. No chainplates are associated with the mizzenmast; instead two iron eyelets are located on the railing on both the port and starboard sides, in line with the location of the mizzenmast. Historic photographs indicate that the mizzenmast was held in place by two thin shrouds that were attached to these iron eyelets. It is likely that at some point, late in the vessel's career, the mizzenmast was removed, although there is no indication of this in the historical record.

Just forward of the mizzenmast a single block remains attached to an iron traveler amidships. A large wooden cleat is located just aft of this bar. The block would have originally been attached to the mainmast boom, and would have been used to secure the boom in place when it was not being used. The cleat would have helped secure the lines while the sail was stowed. Although it

was not located during this survey, a similar traveler and block likely sit amidships just forward of the mainmast, associated with the foremast boom.

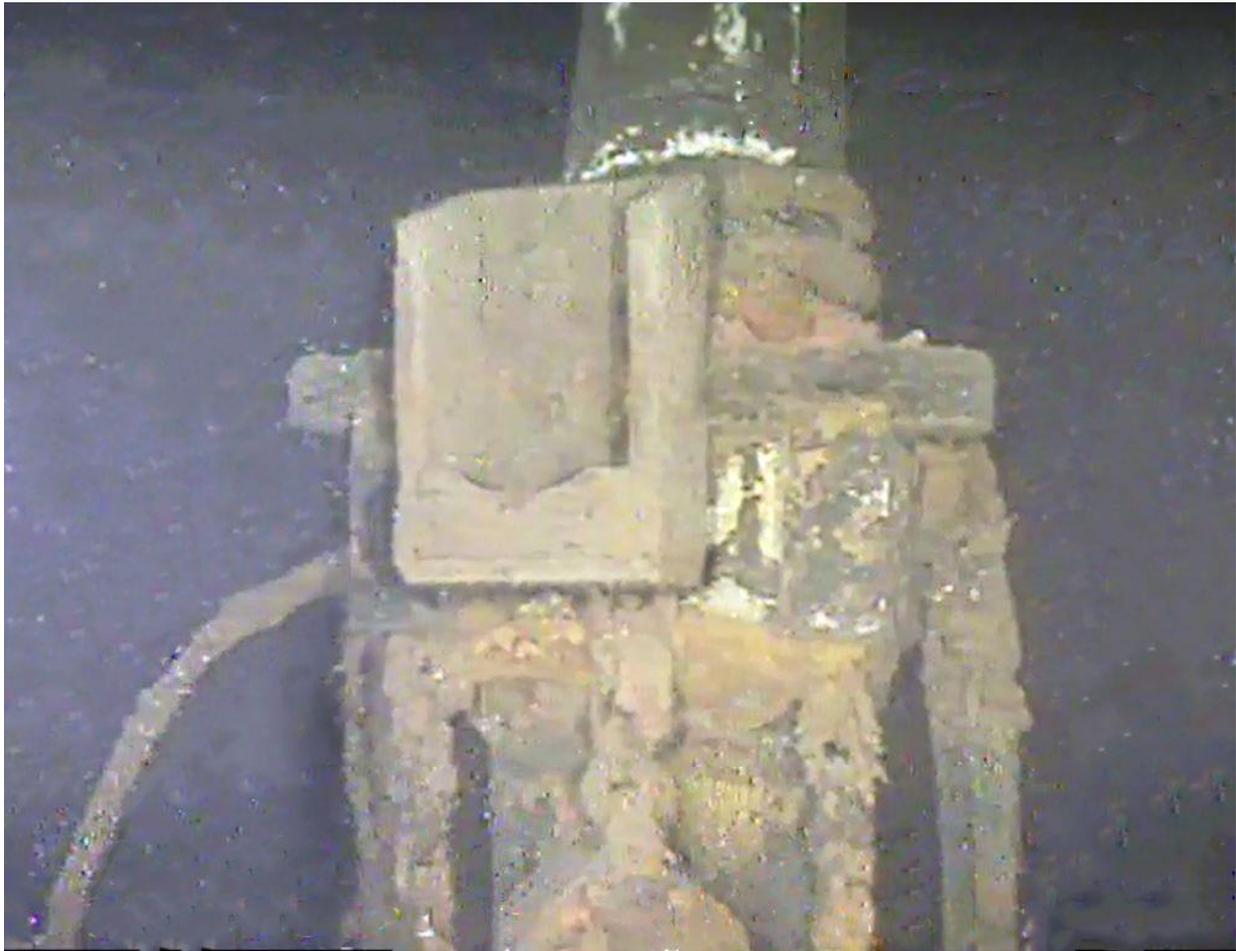


Figure 50. *Antelope*'s slot box for the mainmast light (Crossman Consulting LLC)

Additional machinery remains located on *Antelope*'s deck. A single winch is located near the foremast on the starboard side. This was likely used to assist in hoisting the sails when needed. Although it was not located during this survey, it is possible that a similar winch is located near the mainmast as well. The vessel's double acting bilge pump remains on deck, 5.5 feet aft of the fourth cargo hatch, and in front of the aft cabin combing, measuring 2.0 feet wide. The pump's wooden handle lies across the top of the pump, and is not inserted into the pump's arms, as it would be if the pump had been in use just before the sinking. This reveals that even though *Antelope*'s seams had burst and it was filling with water, once the pump could no longer keep up, the crew removed the handle and laid it where it rests today. Near *Antelope*'s rudderpost an additional piece of navigational equipment lies on its side near the starboard bulwark. It has a flange and a circular glass inset. It was not possible to positively identify the type of equipment at the time, but it is probable that it is either part of a compass, or a similar device.

A debris field lies off the stern of the vessel, and includes a broken grey ceramic jug, a white porcelain cup or bowl, a stove base and bottom with broken glass near it, a porcelain goblet and plate, and an intact ceramic jug with a single handle. The jug has a design on its exterior which indicates a 2 gallon capacity of the vessel. Various other artifacts remain scattered on deck. A large white, enamel pot with a thin handle lies to the starboard of the mizzenmast stump. An iron bowl also remains near the starboard side bulwark, at the fourth cargo hatch; a large piece of coal sits inside the bowl. Due to the extreme depth of this site, and the limitations of water clarity, it is likely that more debris lies in the clay around the site. Additional items will likely be revealed with further archaeological investigations.

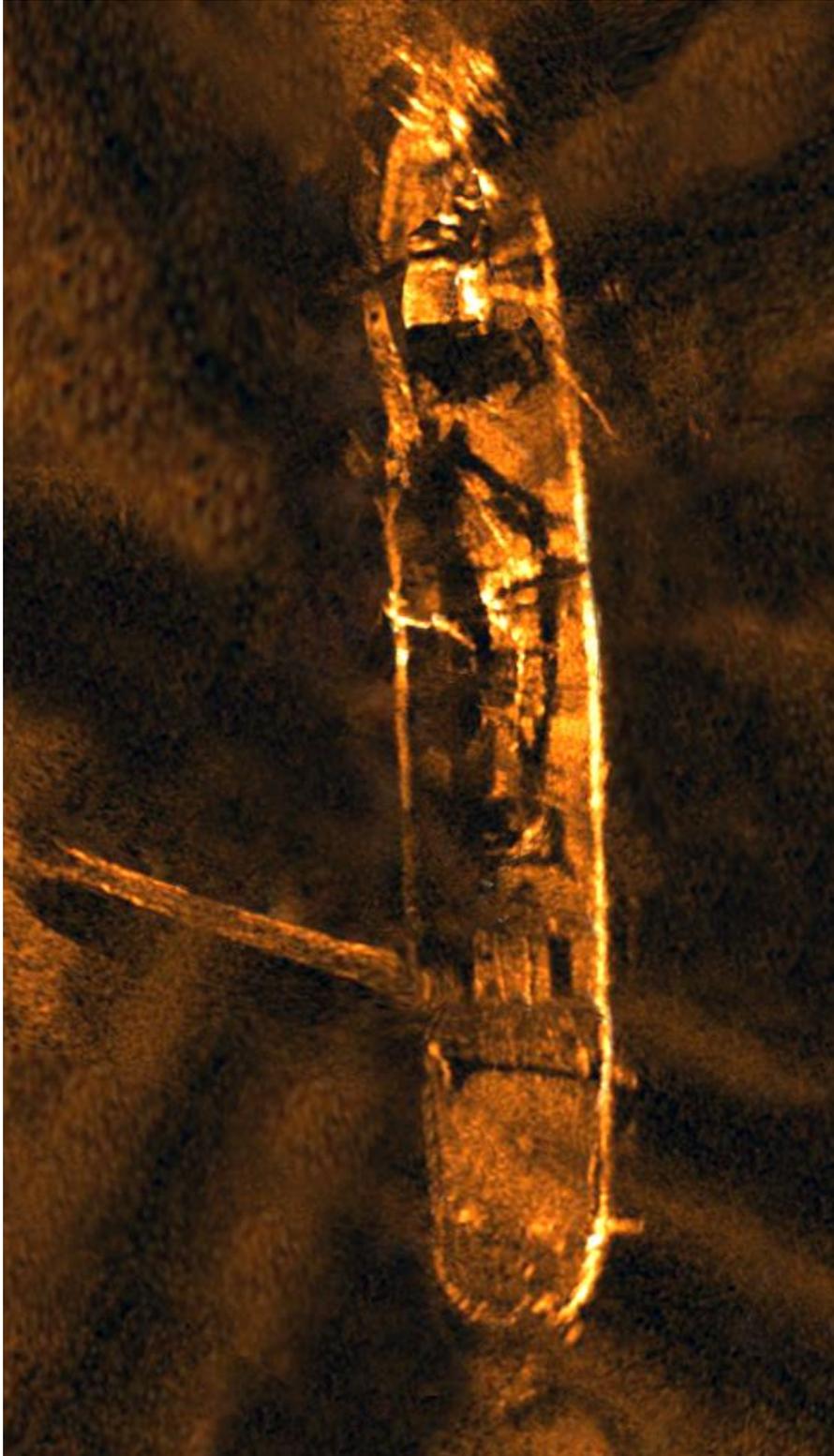


Figure 51. Photo mosaic of *Antelope* shipwreck (Crossman Consulting LLC)

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

This field report is a component of the ongoing research and contributes to the ever-increasing body of knowledge to document and interpret Wisconsin's collections of historic shipwrecks and submerged cultural sites. Archaeological surveys conducted by the Wisconsin Historical Society are designed to document sites according to the standards and guidelines established by the National Park Service for submerged cultural resources. One of the primary goals of the surveys is to evaluate a site to determine its eligibility for listing on the National Register of Historic Places. A National Register of Historic Places nomination has been submitted at the state level for all of the four shipwreck sites described within this report. Two of the sites at the time of publication were listed on the State Register of Historic Places and one listed on the National Register of Historic Places.

Atlanta

As an early twentieth century passenger and packet freighter, the *Atlanta* survey was designed to document Great Lakes passenger steamer construction and provide positive identification through identifying marks or artifacts

The first objective, to provide positive vessel identification through identifying marks or artifacts, was achieved. The location of the *Atlanta* site has been known since its sinking. Residents have inhabited the area by the Cedar Grove coast near the site since the early nineteenth hundreds and divers have frequented the site through the years, taking artifacts and disturbing the site. A complete archaeological documentation of the *Atlanta* site will be a continuing process for years to come and the information gathered during the 2016 survey should serve as a baseline for monitoring the *Atlanta* site for changes caused by environmental affects as well as increased visitation by divers.

The second objective was achieved, and *Atlanta* was listed on the State Register of Historic Places in November 2016 and listed on the National Register of Historic Places in November 2017.

Site interpretation and public outreach for *Atlanta* have been achieved through the update of the Wisconsin Shipwrecks website and through various public presentations. Because the site is located in shallow water close to shore, the site has been incorporated into a paddlers trail with other shallow wreck sites in the region. Waterproof interpretive slates have been created for these wreck sites to facilitate site visitation by both divers and paddlers.

Although fire, salvage, and looting over the years has destroyed the upper decks, machinery, and remaining cargo, the stem, stern, and most of the structure below the vessel's waterline retains structural integrity while various artifacts, metal support components, and machine elements remain inside the structure. To many divers, a shallow, somewhat broken hull such as

Atlanta's holds less appeal compared to more intact, deeper vessels. To an analytical eye, however, the *Atlanta* site presents a prime opportunity to study and learn about wooden vessel construction. Although warped from the fire, the metal cross-bracing and hogging trusses of the *Atlanta* are visible and can give archaeologists insight into the structural reinforcements used in building large wooden vessels used for year-round service. The *Atlanta* is one of the few passenger and packet steamers found in Wisconsin waters and offers the opportunity for further study.

The *Atlanta* site is easily accessible by snorkelers, divers and kayakers from shore or by boat, and is within recreational diving limits, 1.02 miles north northeast of Amsterdam Park's boat launch in the Town of Cedar Grove, Wisconsin. Due to its shallow depth and its location in the surf zone, visibility at the site is oftentimes very good, although weather patterns and currents, on occasion, reduce visibility. A mooring buoy on site would greatly facilitate diving and kayaking activities, and would protect the wreck from anchor damage. The *Atlanta* can be reached from shore, but is located off of private land, so a mooring buoy will facilitate the location and access to the wreck site without interfering with landowner rights. Information gathered during the survey has been used for website updates, public outreach, and educational materials for the proposed Wisconsin-Lake Michigan National Marine Sanctuary, Sheboygan County, and the surrounding communities.

Arctic

As an early harbor tug, the *Arctic* survey was designed to document Great Lakes harbor tug construction and provide positive identification through identifying marks or artifacts

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. A complete archaeological documentation of the *Arctic* site will be a continuing process for years to come and the information gathered during the 2017 survey should serve as a baseline for monitoring the *Arctic* site for changes caused by environmental affects as well as increased visitation by divers and paddlers.

The second objective was achieved, and *Arctic* was listed on the State Register of Historic Places in December 2017. Its nomination has been forwarded to the National Park Service for consideration for listing on the National Register of Historic Places.

Site interpretation and public outreach for *Arctic* have been achieved through the update of the Wisconsin Shipwrecks website and through various public presentations. Because *Arctic* is located in shallow water close to shore, the site has been incorporated into a paddlers trail with other shallow wreck sites in the region. Waterproof interpretive slates have been created for these wreck sites to facilitate site visitation by both divers and paddlers.

Arctic is one of a few tugs located in Wisconsin waters. Although broken and scattered, the hull components available provide archaeologists a wealth of knowledge about this vessel type. The

long and varied career of the *Arctic* for the Goodrich Line has given researchers a glimpse of the career and service of this vessel type.

Historical research also indicates that Goodrich abandoned two other vessels in the same location as the *Arctic*. These vessels were sidewheel steamers that outlived their usefulness, were towed into the area north of Manitowoc harbor (by the *Arctic*), beached, and burned to the waterline. Future survey of this area may lead to the location of these vessels. Once found and documented these vessels, along with the tug *Arctic* make up a maritime landscape that could provide knowledge of abandonment behavior of the Goodrich Transit Company.

The *Arctic* site is easily accessible by snorkelers, divers and kayakers from shore or by boat, and is within recreational diving limits, located 1.5 miles northeast of the Manitowoc Breakwater Light in Manitowoc, Wisconsin. Due to its shallow depth and its location in the surf zone, visibility at the site is oftentimes very good, though weather patterns and currents, on occasion, reduce visibility. Sand movement is apparent at the site which covers and reveals various parts of the site at various times. A mooring buoy on site would greatly facilitate diving and kayaking activities, and would protect the wreck from anchor damage. Information gathered during the survey has been used for website updates, public outreach, and educational materials for the proposed Wisconsin-Lake Michigan National Marine Sanctuary, Manitowoc County, and the surrounding communities.

J.M. Allmendinger

As a small-sized steambarge, the *J.M. Allmendinger* survey was designed to document Great Lakes steambarge construction and provide positive identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. A complete archaeological documentation of the *J.M. Allmendinger* site will be a continuing process for years to come and the information gathered during the 2017 survey should serve as a baseline for monitoring the *J.M. Allmendinger* site for changes caused by environmental affects as well as increased visitation by divers.

The second objective was achieved, and *J.M. Allmendinger* is under review for listing on the State Register of Historic Places. Its nomination will then be forwarded to the National Park Service for consideration for listing on the National Register of Historic Places.

Site interpretation and public outreach for *J.M. Allmendinger* have been achieved through the update of the Wisconsin Shipwrecks website and through various public presentations. Because *J.M. Allmendinger* is located in shallow water close to shore, the site has been incorporated into a paddlers trail with other shallow wreck sites in the region. Waterproof interpretive slates have been created for these wreck sites to facilitate site visitation by both divers and paddlers.

As one of only a few small steam barges in Wisconsin waters, the *J.M. Allmendinger* provides historians and archaeologists the rare chance to study the construction of the vessel, and adaptation for lumber transported throughout the Great Lakes. *J.M. Allmendinger* was one of only two vessels known to have been built by shipwright Albert Burgoine. Some aspects of the vessel's construction are unusual in American ship construction; further analysis of the hull construction could shed some light on Burgoine's methodology and the small construction variations that occur in primitive shipbuilding facilities.

The *J.M. Allmendinger* site is easily accessible by snorkelers, divers and kayakers from shore or by boat, and is within recreational diving limits, located on a rocky bottom 2.5 miles south-southeast of Concordia University, in the city of Mequon, Wisconsin. Due to its shallow depth and its location in the surf zone, visibility at the site is oftentimes very good, although weather patterns and currents, on occasion, reduce visibility. A mooring buoy on site would greatly facilitate diving and kayaking activities, and would protect the wreck from anchor damage. Information gathered during the survey will be used for website updates, public outreach, and educational materials for the proposed Wisconsin-Lake Michigan National Marine Sanctuary, Ozaukee County, and the surrounding communities.

Antelope

As a converted schooner-barge, the *Antelope* survey was designed to document Great Lakes vessel conversion and schooner-barge construction and provide positive identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was achieved as the word "ANTELOPE" was observed painted in yellow on the exterior of the starboard side bulwarks as well as across the transom. A complete archaeological documentation of the *Antelope* site will be a continuing process for years to come and the information gathered during the 2016 survey should serve as a baseline for monitoring the *Antelope* site for changes caused by environmental affects as well as increased visitation by divers.

The second objective was achieved, and *Antelope* is under review for listing on the State Register of Historic Places. Its nomination will then be forwarded to the National Park Service for consideration for listing on the National Register of Historic Places.

Site interpretation and public outreach for *Antelope* have been achieved through the update of the Wisconsin Shipwrecks website and through various public presentations. Since the vessel's deep water location limits site visitation, the information provided through these avenues facilitates the visitation of the wreck site that would be otherwise inaccessible.

Antelope represents multiple eras of ship construction and use on the Great Lakes, beginning as a triple-decked wooden passenger steamer in 1861, converted to a single-decked wooden

lumber steamer in 1869, converted once again into a single-decked tow barge in 1883 for use in the grain and coal trades, and finally, was re-rigged as a schooner-barge in 1893. The *Antelope* is an excellent example of the tradition of converting old wooden vessels into barges for use in trades vital to Wisconsin's economy and the economy of the Midwest through maritime bulk cargo transportation, and infrastructure prior to the development of widespread road and rail networks. The *Antelope* wreck site has yielded significant information on early wooden steamer construction, converted barge construction and its adaptations for use in the passenger, grain, lumber, and coal trades of the Great Lakes during its thirty-three year service history. The site also has great potential to yield further archaeological information in future years as additional technology for deep water analysis becomes available.

Antelope site is deep, and considered beyond recreational diving depths. As technical diving and use of Remotely Operated Vehicles (ROVs) increases in popularity, the site will only become more accessible to an increasing number of visitors. The site lies 7.5 miles southeast of Michigan Island in Lake Superior, although easily reached by boat, diving the wreck should only be attempted in the best of conditions without risk of being caught out in weather that can blow up on the lake during the summer months. Because of the depth and the distance from shore, it is not recommended for a State-sponsored mooring buoy. Information gathered during the survey has been used for website updates, public outreach, and educational materials for Ashland County and the surrounding communities.

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1873b *Inter Ocean*. September 15.
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1873d *Inter Ocean*. November 10.
1874a *Inter Ocean*. December 12.
1874b *Inter Ocean*. December 25.
1875a *Inter Ocean*. May 24.
1875b *Inter Ocean*. August 12.
1875c *Inter Ocean*. October 5.
1875d *Inter Ocean*. October 13.
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1875f *Inter Ocean*. November 17.
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1881aa *Inter Ocean*. November 25.
1881bb *Inter Ocean*. December 9.
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1883 *Inter Ocean*. October 30.
1884a *Inter Ocean*. July 15.
1884b *Inter Ocean*. September 9.
1884c *Inter Ocean*. October 25.
1884d *Inter Ocean*. November 9.
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1886d *Inter Ocean*. Nov. 7.
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