



288

**United States Department of Interior
National Park Service**

**National Register of Historic Places
Registration Form**

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900A). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Tennie and Laura Shipwreck
other names/site number _____

2. Location

street & number	9 miles southeast of Port Washington	N/A	not for publication
city or town	Port Washington (Lake Michigan)	X	vicinity
state Wisconsin	code WI	county Ozaukee	code 089
			zip code 53074

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets _ does not meet the National Register criteria. I recommend that this property be considered significant _ nationally, statewide _ locally. (See continuation sheet for additional comments.)

James H. Hager _____
Signature of certifying official/Title Date 2/20/08

Deputy State Historic Preservation Officer-WI

State or Federal agency and bureau

In my opinion, the property _ meets _ does not meet the National Register criteria.
(See continuation sheet for additional comments.)

Signature of commenting official/Title Date

State or Federal agency and bureau

Tennie and Laura Shipwreck

County Ozaukee

Wisconsin

Name of Property

County and State

4. National Park Service Certification

- I hereby certify that the property is:
 - entered in the National Register.
 - See continuation sheet.
 - determined eligible for the National Register.
 - See continuation sheet.
 - determined not eligible for the National Register.
 - See continuation sheet.
 - removed from the National Register.
 - other, (explain:)

Edson R. Ball

4.11.08

for

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property (check as many boxes as apply)

Category of Property (Check only one box)

Number of Resources within Property (Do not include previously listed resources in the count)

private	building(s)	contributing	noncontributing
public-local	district	1	buildings
X public-State	structure		sites
public-Federal	X site	1	structures
	object		objects
			0 total

Name of related multiple property listing: (Enter "N/A" if property not part of a multiple property listing.)

Great Lakes Shipwrecks of Wisconsin

Number of contributing resources is previously listed in the National Register

0

6. Function or Use

Historic Functions

Current Functions

TRANSPORTATION / Water Related

VACANT / Not in Use

7. Description

Architectural Classification OTHER: Scow Schooner

Materials (Enter categories from instructions)

Foundation N/A

walls N/A

roof N/A

other N/A

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Tennie and Laura Shipwreck
Name of Property

County Ozaukee
County and State

Wisconsin

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

ARCHEOLOGY / HISTORIC, NON-ABORIGINAL
MARITIME HISTORY
COMMERCE

Period of Significance

1876-1903

Significant Dates

1876

Significant Person

(Complete if Criterion B is marked)

N/A

Cultural Affiliation

Euro-American

Architect/Builder

Jorgensen, Gunder

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

Tennie and Laura Shipwreck
Name of Property

County Ozaukee
County and State

Wisconsin

9. Major Bibliographic References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous Documentation on File (National Park Service):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic landmark
- recorded by Historic American Buildings Survey #
- recorded by Historic American Engineering Record #

Primary location of additional data:

- X State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local government
- University
- Other

Name of repository:

10. Geographical Data

Acreeage of Property less than one acre

UTM References (Place additional UTM references on a continuation sheet.)

1 16 0440979 4789837
Zone Easting Northing

3 _____
Zone Easting Northing

2 _____
Zone Easting Northing

4 _____
Zone Easting Northing

See Continuation Sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet)

11. Form Prepared By

name/title	Keith Meverden and Tamara Thomsen	date	8/26/07
organization	Wisconsin Historical Society	telephone	608.221.5909
street & number	816 State Street	zip code	53706
city or town	Madison	state	WI

Tennie and Laura Shipwreck

County Ozaukee

Wisconsin

Name of Property

County and State

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs Representative black and white photographs of the property.

Additional Items (Check with the SHPO or FPO for any additional items)

Property Owner

Complete this item at the request of SHPO or FPO.)

name/title	Bureau of Facilities and Lands	date	8/26/07
organization	Wisconsin Department of Natural Resources	telephone	608.267.2764
street&number	PO Box 7921	zip code	53707
city or town	Madison	state	WI

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects, (1024-0018), Washington, DC 20503

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Section 7 Page 1

Summary

Located nine miles southeast of Port Washington, Wisconsin, in Lake Michigan, the remains of the wreck of the scow schooner *Tennie and Laura* rest in 325 feet of water, upright and intact with a standing mast and rigging. Built in 1876 in Manitowoc, Wisconsin, by Gunder Jorgensen, the *Tennie and Laura* is one of the most intact scow schooners discovered to date. Capsized and sunk in a 1903 storm, nearly all of the small schooner's structural and cultural components remain in place. The *Tennie and Laura* allows historians and archaeologists the rare opportunity to study Great Lakes scow schooner construction and learn about this little-understood vessel type. The *Tennie and Laura* also represents a rare example of a once common class of vessels on Lake Michigan, the small lakeshoring schooner. Such vessels, averaging 75 feet in length, provided economic and cultural links between Lake Michigan's hinterland communities and larger metropolitan markets. Throughout the nineteenth century these small schooners occupied a special niche in the Lake Michigan region's economy.

Site Description and Investigation

The wreck of the scow schooner *Tennie and Laura* lies in 325 feet of water nine miles southeast of Port Washington, Wisconsin. The vessel was first discovered during the search for the lost fish tug *Linda E* in 1998, and was first viewed via a Remotely Operated Vehicle (ROV) deployed from the Coast Guard Cutter *Acacia* in January 1999. The Coast Guard's ROV survey identified a small wooden vessel carrying a cargo of cord or slab wood. The wreck sat upright on the lakebed at a heading of 070 degrees, sunk into the bottom to nearly to her load line. At least one mast was standing. The vessel's stern cabin was missing, but several of the cabin's items remained in their former location, including a small stove, a bucket of coal, and several small cooking utensils.

Archaeologists from the Wisconsin Historical Society (WHS) examined the wreck site via ROV over three days in August 2005 aboard the University of Wisconsin – Milwaukee Great Lakes WATER Institute's R/V *Neeskay*. This survey also discovered at least one mast standing, rising to a depth of 265 feet. No masts were recorded with the ROV, but evidence of at least one standing mast was recorded on the research vessel's color depth sounder as well as ROV-recorded images of suspended standing rigging. A large debris field lies off the bow and starboard beam that consists of a tangle of standing and running rigging. Wire rope lies in large tangles and a chain is visible on the bottom - either an anchor chain or a bobstay. Both the wire rope and chain exhibit varying amounts of corrosion with sporadic quagga mussel colonization. Lying on the lakebed near the chain is an iron stock anchor. Looking up from the bottom in this area, wire rigging is visible suspended above the lakebed, hanging from a standing mast. Off the hull's starboard side an intact wire shroud lies on the lakebed, most likely from the starboard foremast. The shroud is draped from the starboard gunwale and extends away from the hull. A sail boom lies on the bottom next to the shroud. Two pieces of white porcelain, one possibly a teacup, are visible protruding from the silt on the lakebed.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Tennie and Laura Shipwreck

Section 7 Page 2

Lake Michigan, Ozaukee County, Wisconsin

The large amount of rigging off the starboard side posed a serious entanglement hazard for the ROV, and exploration was moved to the port side, where little debris was discovered lying outside the hull. The ROV approached the port side of the hull at approximately amidships and slowly worked its way forward along the outside of the hull. The hull exhibits construction traits similar to the scow schooner *Ocean Wave*, which was documented by the WHS in July 2005 and listed on the National Register of Historic Places in July 2006. Longitudinal side planks were fastened with through bolts and clinch rings as was the *Ocean Wave*, most likely for bulwark stanchions. A heavy covering board was fastened atop the hull planks, and the bulwark was recessed from the outer hull by several inches. Remnants of white paint were still visible.

Moving forward, the foremast chainplates were visible, beneath which was at least one dislodged hull plank. Forward of the chainplates a large wire rope is draped over the bulwark, running directly over the port side name board. The ship's name was not legible. The hull is intact from the name board forward, as is the lower port side of the bow ramp. The bow ramp is cross planked, joined to the longitudinal side planking by framing timbers. The bow curves up sharply from the bottom.

The *Tennie and Laura* ROV project captured less underwater footage than hoped, but the captured footage fills many gaps from the ROV footage recorded aboard the USCG *Acacia*. The wreck's forward section is more intact than previously believed, at least on the port bow. The starboard bow was not documented on these dives, but the large amount of debris encountered off the starboard bow suggests it may have received at least some damage. Divers report the starboard bow is intact, but without supporting evidence.

The most exciting discovery was the port side name board. Unfortunately, no letters were discernable. Divers report that only a partial name board remained on the port bow with the word "Tennie" still legible (Polich 2004), suggesting the after end of the name board was damaged or absent. ROV footage revealed the aft end of the name board was intact with no visible lettering. The vessel is without question a scow schooner. Construction, viewed from the outside, appears similar to other documented scow schooners. The bottom is cross planked and the hull sides are longitudinally planked. Through bolts with clinch rings are visible along the outer hull planking on the port side. This vessel has a large covering board, through which the bulwarks stanchions likely pass, resulting in the bulwark being recessed from outer hull by several inches.

Summary Paragraph

Located nine miles southeast of Port Washington, Wisconsin, in Lake Michigan, the wreck known as the scow schooner *Tennie and Laura* remains upright and intact in 325 feet of water. Built in 1876 and lost in 1903, the *Tennie and Laura* is representative of a little-understood vessel type that was once common throughout the Great Lakes, the scow schooner. Little historical documentation exists on scow schooners' construction and operation. Much of our understanding of this vessel type, and the lakeshoring trade in which they operated, has come from archaeological data recovered from wreck sites. Well preserved, the *Tennie and Laura's* hull will allow the documentation of nearly all vessel components. The *Tennie and Laura* meets the registration requirements for Criterion D at the state level for the property type sailing vessel as described in the Multiple Property Documentation *Great Lakes Shipwrecks of Wisconsin* (Cooper and Kriesa 1992). The *Tennie and*

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Section 7 Page 3

Laura was discovered in 1999 and only lightly documented in 2005. Due to its extreme depth, the *Tennie and Laura* remains lightly visited by divers, protecting many associated artifacts from looting and damage from divers visiting the site. Due to the challenges of working in depths below 300 feet, the *Tennie and Laura* site has produced limited archaeological data on scow schooner construction, but possesses a vast potential to yield significantly more information on scow schooner construction and shipboard life aboard these small vessels.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 1

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Summary Paragraph

Built in 1876, the *Tennie and Laura* represents a rare example of a once common class of vessels on Lake Michigan, the small lakeshoring schooner. The *Tennie and Laura* was lost in an August storm in 1903 while hauling a cargo of slab wood from Muskegon, Michigan to Milwaukee, Wisconsin. Small sailing vessels like the *Tennie and Laura* provided economic and cultural links between Lake Michigan's hinterland communities and larger metropolitan markets. Throughout the nineteenth century these small schooners occupied a special niche in the Lake Michigan economy. The *Tennie and Laura* gives us a rare view into the nineteenth-century economy of the Great Lakes region. The *Tennie and Laura* wreck site was discovered in 1998, and as the vessel rests in 325 feet of water the wreck site is lightly visited by recreational divers, providing a unique opportunity to study scow schooner construction techniques and shipboard life aboard these poorly documented sailing craft.

Scow Schooners and the Lake Michigan Economy

Scow schooners were vital to many smaller Lake Michigan communities, connecting them with regional markets through the lakeshoring trade. As Great Lakes schooners grew in size in the last half of the nineteenth century, so too did their draft, making stops at small lakeshore communities with shallow harbors difficult or impossible. The flat-bottomed scows, however, were well-suited to shallow harbors. Inexpensive transportation, the scow schooner became the life-blood of many lakeshore communities and immigrant families, providing an entry point for many into the Great Lakes maritime trades as sailors, masters, and vessels owners.

The scow schooner first appeared on the Great Lakes in the mid-1820s on Lake Ontario, Lake Erie, and New York's Finger Lakes. By the 1840s, scows were common throughout all of the Great Lakes, and survived well into the twentieth century and the last days of lake sail (Labadie and Herdendorf 2004:5; Martin 1991:4). The term "scow" refers to hull form rather than the rig type, and is defined as a vessel with a flat bottom, vertical sides, and a hard chine. Their hulls more closely resembled a barge than conventional sailing craft. There was a wide regional variation in scow construction techniques, and the term "scow" was used to describe a variety of vessels. One of the clearest contemporary definitions is found in Merchant Vessels of the United States (1885):

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

As illustrated by the above definition, there was often difficulty in differentiating conventional sailing craft from scows. Scow construction varied from hull to hull and included obvious features such as sheer lines, transoms, and bows, as well as less obvious features like cross or diagonal planking and longitudinal framing. Several bow variations are visible in historic photographs (Labadie and Herdendorf 2004:8).

It is open to debate whether the scow's development and popularity resulted from a need for vessels capable of

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 2

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

transiting shallow waters or because their unsophisticated hull form was more economical to build and maintain (Labadie and Herdendorf 2004:8; Inches and Partlow 1964:290). It is certain, however, that scows required the least complex construction techniques of any freight-carrying vessels. The great variation in construction and appearance is likely a combination of the shipbuilder's skill level, the type and quality of construction materials available, and available funding.

Scows were generally considered good sailors and were as fast, or faster, than conventional schooners, perhaps with the exception of sailing in heavy seas. Their shallow draft and flat bottoms created little water drag. Sailing to windward was their worst point of sail. The wide, flat bows took a beating in head seas and their shallow draft allowed considerable leeway in strong winds (Chapelle 1951:50; Inches and Partlow 1964:292; Kristiansen 1981:3; Olmsted 1988:19). Despite how seaworthy a scow may or may not have been, insurance companies held little faith in the scow's seaworthiness, and even less confidence in scows built with cross-planked bottoms and gunwale-built sides. Construction rules for 1866 note:

Frame built scows, well constructed and of good material, with fore-and-aft bottom planking, may be entitled to Class B1, [for] five years, but in no case will scows be entitled to the B1 grade if built with gunwale sides or athwartship bottom" (Board of Lake Underwriters 1866:14).

Vessels built according to underwriters' rules were given a classification rating that determined a vessel's insurance premium. Ratings of A1, A2, B1, B2, C1, C2, or "not insurable" were assigned, A1 being the highest rating with the lowest premium - a rating scow schooners never achieved. In 1876, the Board of Lake Underwriters (1876:74) categorized scows with barges and even described them as "of unseaworthy form."

Discussion of Wisconsin's maritime heritage is difficult without including the eastern Great Lakes of Huron, Erie, and Ontario. Many of Wisconsin's commodities were shipped beyond Lakes Michigan and Superior to eastern Great Lakes ports such as Buffalo, New York, and Kingston, Ontario. These distant ports returned goods, supplies, and immigrants to Wisconsin, creating a diverse economic universe. Separating Wisconsin from the eastern Great Lakes usually results in a fragmented understanding of Wisconsin's maritime heritage as a whole. There is evidence, however, that a more localized maritime trade developed that was confined to Lake Michigan with the lake's western shoreline at its core. This lakeshoring trade connected communities in Wisconsin, Illinois, Indiana, and Michigan in a discrete local economy, transporting cargo from one Lake Michigan port to another where it could be sold for profit. While only a fraction of Great Lakes tonnage, this trade was the lifeblood of many smaller communities, one in which the scow schooner played a vital role. Worked in no small part by immigrant Scandinavian sailors, Lake Michigan's lakeshoring trade was an entry point for many immigrants into Great Lakes maritime commerce, not only as sailors, but also as vessel owners and masters (Hirthe and Hirthe 1986:97; Gjerset 1928:11).

A simple, yet comprehensive, definition of lakeshoring is difficult. Contemporary authors of Great Lakes maritime commerce frequently glossed over sailing vessels, devoting most of their efforts to the new steam technology that was thought would make sail technology quickly obsolete. Defining lakeshoring today is an

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 3

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

even greater challenge, as the sailing vessel's role changed dramatically during the nineteenth century. The beginning of the nineteenth century found a wilderness frontier populated by Native Americans and a handful of hardy European fur traders. By the century's close, however, Lake Michigan boasted one of the busiest shipping ports in the world (Karamanski 2000:69). Nineteenth-century Lake Michigan schooners were subjected to rapidly evolving trade patterns that required them to be highly adaptable to shifting markets and technologies. That the small lakeshoring schooner survived the entire nineteenth century and sailed well into the twentieth, despite increasing pressure from larger vessels, both sail and steam, suggests that these small craft were one of the most hardy and adaptable vessel types on the lake. This adaptability required these vessels to quickly change routes and cargoes that today makes a simple description of the lakeshoring trade difficult. Compounding this problem is the fact that lakeshoring was often neglected by contemporary maritime authors. These small vessels set no records for the fastest passage or for the largest tonnage carried. They were not the products of fierce competition between wealthy or powerful men. Typically well-used vessels, they were often owned and sailed by common men supporting small local economies. If lost, even with all hands, they were quickly forgotten. They operated alongside the more glamorous sail and steam vessels, but always in their shadows. This lack of recognition does not make the historian's job an easy one, and what we know of these small vessels is far from complete. Overlooked and underappreciated, much of how the lakeshorers operated is lost to us today. What little we know comes from occasional newspaper articles and the archaeological record, and from this information alone we can reconstruct the life and times of the small lakeshoring schooners. As more information is uncovered on this maritime subculture, particularly from archaeological sites such as the *Tennie and Laura*, we will increase our understanding of the lakeshoring trade and the scow schooner's role within it.

Vessel History

The scow schooner *Tennie and Laura*, official number 145115, was built in 1876 at Manitowoc, Wisconsin, by Gunder Jorgensen. Enrolled at the Port of Milwaukee on 14 July 1876, the *Tennie and Laura* had one deck, two masts, and measured 73 feet in length, 19 feet in beam, and 5.6 feet in depth. Her registered tonnage was 53.9 net and 56.69 gross. Owned in equal shares by Otto A. Bjorkgnist and Ole Osmondson of Port Washington, their home city was registered as the hailing port and Captain Osmondson as Master (Bureau of Navigation 1876; Gjerst 1928:161). Captains Bjorkgnist and Osmondson began a nine-year partnership with the *Tennie and Laura*, occasionally shifting roles and shares of ownership. The first shift came halfway through the second season. In 1877, Capt. Bjorkgnist bought out part of Capt. Osmondson's share, resulting in Bjorkgnist owning 11/16 and Osmondson owning 5/16. Re-enrolled at Milwaukee on 22 August 1877, Capt. Bjorkgnist became the new Master (Bureau of Navigation 1877). Two years later, on 24 July 1879, Capt. Osmondson bought back his original interest in the *Tennie and Laura*, and Bjorkgnist and Osmondson became equal owners once again, and Capt. Osmondson regained his position as master (Bureau of Navigation 1879). The following season, on 29 July 1880, Capt. Bjorkgnist and the *Tennie and Laura* moved to Milwaukee, but Capt. Osmondson retained his residence in Port Washington, as well as his half ownership and role as Master. In 1882, measurement rule changes deducted 2.83 tons from the *Tennie and Laura*, reducing her registered tonnage to 53.86 gross tons (Bureau of Navigation 1880).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 4

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

On 5 April 1885, the longstanding partnership ended when Capt. Osmondson bought out Capt. Bjorkgnist's share of the *Tennie and Laura*, reselling her the following day in equal shares to Lars and Rasmus Hansen of Manitowoc. The Hansens returned the *Tennie and Laura* to Manitowoc, and Lars Hansen became Master (Bureau of Navigation 1885a). Lars' and Rasmus' familial relationship is unknown, but Rasmus Hansen was typical of many Norwegians sailing the Great Lakes during the nineteenth century. Born at Fleekefjord, Norway, in 1850, Rasmus began sailing the oceans at the age of twelve. Often away from home for up to two years at a time, ocean sailing was difficult work with little pay. Rasmus sailed the oceans for eight years and achieved the position of Mate on a full rigged ship by age twenty, but the low wages and long years from home left little prospect for a happy life. The following year, in 1871, Rasmus emigrated to Chicago and became a lake sailor, enjoying the higher wages and frequent visits home. Rasmus quickly found Chicago's urban conditions unsatisfactory, however, and after one year moved north to Manitowoc where he earned the rank of Captain (Gjerset 1928:8, 139).

During winter lay-up following their first season aboard, Lars Hansen left the *Tennie and Laura*, selling his share to Hans Hansen of Manitowoc. Hans' and Rasmus' familial relationship is also unknown. Rasmus Hansen became Master, re-enrolling the vessel at Milwaukee on 21 January 1886 (Bureau of Navigation 1886). Late in the 1886 season Rasmus had his first mishap aboard the *Tennie and Laura*, running her ashore near Ludington, Michigan in early September. The *Tennie and Laura* was quickly pulled free, but was leaking badly (*Manitowoc Pilot* 1886:3).

Lars and Rasmus sailed the *Tennie and Laura* together for only one season. The following spring Rasmus moved from Manitowoc to Sheboygan, taking the *Tennie and Laura* with him. Hans Hansen sold his share to Ingebret Larsen of Sheboygan. Her new hailing port was officially entered on 7 July 1887, and Capt. Larsen became Master (Bureau of Navigation 1887).

Hansen and Larsen sailed the *Tennie and Laura* in the lumber trade for the remainder of the 1887 season (Gjerset 1928:151), but during winter lay-up they sold the *Tennie and Laura* across Lake Michigan to brothers Van Beethoven Ludwig and Herman M. Ludwig of Ludington, Michigan. Capt. Larsen, after selling his share of the *Tennie and Laura*, took over as Master of the schooner *Cynthia Gordon* for two years, and then in 1890 became part owner and master of the *Walaska*. Capt. Larsen eventually gave up the lake trade, however, and moved to California (Gjerset 1928:153).

The Ludwig brothers were born in Park, Michigan; Van was born in September 1856, and Herman was born in May 1857. Van and Herman had seven other brothers and one sister: John, Charles, Samuel, Franklin, Daniel, Lancaster, William, and Mary. During the 1860s, the Ludwig family moved from Park, Michigan, to South Haven, Michigan, where they established a family farm. During the 1870s the family moved once again to Bethany, Michigan, where they reestablished the farm. In 1880, Herman and his brother Daniel married and both returned to South Haven where they became sailors. Soon after Herman and Daniel moved to South Haven, brothers Lancaster and Franklin moved in with Herman, and John and Van moved in with Daniel; all became South Haven sailors (United States Census Bureau 1860:263, 1870:10, 1880a:2, 1880b:45). In 1887,

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 5

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Van and Herman joined in a partnership and purchased equal shares of the *Tennie and Laura*, and Herman Ludwig became Master. The *Tennie and Laura*'s hailing port was officially changed to Ludington on 26 March 1888 (Bureau of Navigation 1888).

The Ludwigs' partnership lasted for two years until Capt. Herman Ludwig bought out his brother's share to become sole owner and Master on 2 April 1890 (Bureau of Navigation 1890). Van Ludwig continued working as a sailor in Ludington, and married Eliza Harrison, the daughter of a Ludington pilot (United States Census Bureau 1900:22). Capt. Herman Ludwig sailed the *Tennie and Laura* for seven more years until he sold half the vessel to Captain Vasco Roberts of Ludington for \$200 (*Door County Advocate* 1897d:1). Capt. Roberts became the vessel's new Master and a new enrollment was entered 28 May 1897 (Bureau of Navigation 1897a). Of interest, enrollment No. 59 lists the *Tennie and Laura* as having a round stern, contrary to her other enrollments. This enrollment was quickly lost, however, and the *Tennie and Laura* received a replacement enrollment on 26 July 1897, with no other changes other than the stern description returning to "square" (Bureau of Navigation 1897b). At twenty one years of age, the *Tennie and Laura* was dry-docked and recaulked early in October 1897 (*Door County Advocate* 1897:1).

In 1899, Capt. Herman Ludwig moved to Benton Harbor, Michigan, taking the *Tennie and Laura* with him. Capt. Roberts sold his half share back to Capt. Ludwig, who once again became sole owner and master. Her new hailing port was officially entered on 5 June 1899 (Bureau of Navigation 1899). Capt. Ludwig only sailed the *Tennie and Laura* for one more year, selling her to his brother Captain Lancaster S. Ludwig, also of Benton Harbor, in 1900. Having sold the *Tennie and Laura*, Capt. Herman Ludwig became a pilot in Benton Harbor (United States Census Bureau 1900:13, 16).

Capt. Lancaster Ludwig became the *Tennie and Laura*'s sole owner and Master on 26 March 1900 and sailed the *Tennie and Laura* for one and a half seasons (Bureau of Navigation 1900). On 20 August 1901 John Sather of North Muskegon, Michigan, purchased the *Tennie and Laura* for about \$1,000 to become her sole owner and Master, and changed her hailing port to his hometown (Bureau of Navigation 1901; *Milwaukee Sentinel* 1903:1). Captain Sather sailed the *Tennie and Laura* in the Lake Michigan lumber trade for the next two years, making weekly trips from Muskegon to Milwaukee, buying and selling his own cargos.

The *Tennie and Laura* was twenty-seven years old at the start of the 1903 season and valued around \$500. Anticipating a good season, Capt. Sather purchased a new set of sails for the *Tennie and Laura*, but neglected to purchase insurance. On Saturday, 1 August 1903, Capt. Sather and the *Tennie and Laura* were loaded with a \$500 cargo of slab wood in Muskegon, Michigan, consigned to Milwaukee. The *Tennie and Laura* usually carried a crew of three, but Capt. Sather's son John, who usually shipped as cook, asked for leave of the Milwaukee trip and was granted it by his father. Though shorthanded, the fall gales were still two months away, and the weather was especially pleasant that late summer day. Capt. Sather, with only mate Charles Nordbach aboard, decided to sail for Milwaukee, and they departed Muskegon at ten o'clock that morning (*Milwaukee Sentinel* 1903:1).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 6

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

At six o'clock that evening the sky began darkening. An hour later the seas were building under gale force winds. The *Tennie and Laura* was taking a beating in the heavy seas, and soon began leaking. Sather and Nordbach took turns between the pumps and the wheel, but the water level in the hold kept creeping upward. As the night wore on, so too did the seas and heavy rains. Sather and Nordbach were blinded in the downpour, making it nearly impossible to keep the waves on the *Tennie and Laura's* port quarter as they ran before the storm. If turned broadside to the seas the vessel would quickly swamp. They continued taking turns throughout the night, but the men grew weary and the water continued to rise. At three o'clock in the morning the *Tennie and Laura* began listing, and a large wave swept half her deck load overboard. Righting herself with a lurch, the remaining deck cargo washed over the opposite side and carried away the hatch covers and some of the deck planks. The *Tennie and Laura* was mortally wounded. Each successive wave dumped tons of water into the vessel, and her cargo began to slosh around, battering her hull with each roll (*Milwaukee Journal* 1903:3; *Milwaukee Sentinel* 1903:1).

Despite their precarious position, Sather and Nordbach kept the *Tennie and Laura* afloat until five o'clock in the morning when they were ten miles northeast of Milwaukee. Thrown broadside before a large wave, the *Tennie and Laura* capsized. Sather and Nordbach climbed aboard their yawl, which remained attached by its painter to the *Tennie and Laura's* stern. Inverted, the *Tennie and Laura* did not sink but was carried before the winds with Sather and Nordbach helplessly pulled along in the yawl. They drifted until six-thirty that morning when they were sighted by the passing steamer *Mark B. Covell*, bound for Milwaukee with a load of wood. The *Covell* approached as closely as possible in the heavy seas and a line was thrown to Nordbach, who was sitting in the bow of the yawl. Nordbach caught the line, but became a bit too excited at their imminent rescue. Standing up, Nordbach capsized the yawl, spilling himself and Sather into the water. Nordbach lost the line, but Sather picked it up, taking several turns around his arm to make sure he was secure. A life preserver was thrown to Nordbach, but he made no effort to retrieve it. The *Covell's* Mate, Henry Erbe, threw a second line to Nordbach, dropping it directly in front of him. Exhausted, Nordbach made no attempt to grab the second line and sank from sight. Sather was pulled aboard the *Covell*, and the *Tennie and Laura* was left floating on the lake (*Milwaukee Journal* 1903:3; *Milwaukee Sentinel* 1903:1).

The experience was quite traumatic for Capt. Sather, who was forty-two years old at the time. He told the *Milwaukee Sentinel* that "[he] was going to give up the lakes now. An experience like this is too much for me, and I am going to work my little farm." Capt. Skeels of the *Covell* had nothing but respect for Sather, indicating that "Captain Sather is the coolest man I ever saw. He gave Morbach [sic] every chance to be saved first, waiting patiently and calmly for his turn..." Nordbach, who was forty years old, left a wife and five children (*Milwaukee Sentinel* 1903:1). The *Tennie and Laura's* last enrollment was surrendered on 5 August 1903 (Bureau of Navigation 1901).

On 11 December 1998, the Port Washington fishing tug *Linda E* disappeared with three crew on a clear day while raising her nets southeast of Port Washington. Subsequent searches discovered a small object lying on the lakebed in 325 feet of water, and on 20 January 1999 the USCG *Acacia* lowered a Remotely Operated Vehicle (ROV) to the lakebed to identify the object. To their surprise and disappointment, what they

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Section 8 Page 7

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

discovered was not the *Linda E*, but a nineteenth century schooner (Jones 1999). The *Acacia* explored the wreck for 22 minutes in the unsuccessful attempt of making an identification. The ROV did record an upright vessel that was wire rigged with deadeyes, with remnants of white paint visible on the hull. One mast remained standing, and the cargo hold was loaded with wood. The cabin was missing, but in its place was a small woodstove and associated cooking utensils. It appeared the hull's entire forward half was missing (Baillod 1999; Garza 1999). The ROV surveyed the vessel's starboard side but did not venture to the port side. The ROV footage left many questions unanswered and there was much speculation as to the vessel's identity. Local maritime historians initially suggested several possible identifications, but settled on the *Tennie and Laura* as the most likely candidate (Smith 2003). Beginning in 2003, technical divers began visiting the vessel in an attempt to confirm the *Tennie and Laura* identification, and reported that she was completely intact with both masts standing. Most interesting was the report of a partially intact name board on the port bow with the word "Tennie" lightly visible (Polich 2004:65). Unfortunately, there are no photographs or video to document the diver's findings.

Archaeological Significance

The *Tennie and Laura* meets the registration requirements for Criterion D at the state level, as established in the Multiple Property Documentation *Great Lakes Shipwrecks of Wisconsin* (Cooper and Kriesa 1992). The *Tennie and Laura* is a rare example of a vessel type that was vital to Wisconsin's economic and transportation infrastructure prior to the development of road and rail networks. Scow schooners like the *Tennie and Laura* were an important link for small Lake Michigan communities, connecting them economically and culturally with the wider regional markets through the lakeshoring trade. The *Tennie and Laura* wreck site retains excellent archaeological integrity and is representative of the scow schooner vessel type, a vessel that was often crudely built by carpenters rather than skilled shipwrights. Scow schooners were not built to any plans, and there was a large amount of variation in construction between hulls. No historical record of their construction exists today, making archaeological examples particularly significant. The techniques employed in their construction and the economic rationale behind their design and operation are not fully understood. The *Tennie and Laura* is one of the best-preserved examples of a scow schooner discovered to date anywhere on the Great Lakes. Information gathered from the *Tennie and Laura* site has filled gaps in the scow schooner's incomplete historical documentation and has increased our understanding of scow schooner construction and use on the Great Lakes. The *Tennie and Laura* site retains vast potential to yield even greater insight into this rare vessel type as undocumented hull sections are documented in future years.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Section 9 Page 1

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 2

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Section 9 Page 3

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 4

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

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**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Section 10 Page 1

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Boundary Description

The area included in the site is a circle with a 500 foot diameter centered on the UTM coordinates 0440979 Easting, 4789837 Northing, Zone 16.

Boundary Justification

The boundary was drawn to encompass the extent of the shipwreck and associated debris field.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Section photos Page 1

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin

Tennie and Laura Shipwreck
Lake Michigan, Ozaukee County, Wisconsin
Photographer Unknown
Date: ca. 1900
Original negative located at Bowling Green State University, Bowling Green, Ohio

Port Side View
Photo 1 of 1