NPS Form 10-900 (January 1992) Wisconsin Word Processing Format (Approved 1/92)

United States Department of Interior National Park Service

National Register of Historic Places Registration Form

RECEIVE

OMB No. 10024-0018

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 Kate Kelly Shipwreck other names/site number N/A

2. Location

street & number	Lake Michigan, 2 mi east of Wind Point	N	N/A	not for publication
city or town	Wind Point	Х	X	vicinity
state Wisconsin	code <u>WI</u> county Racine	code 10	01	zip code 53402

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, 1 hereby certify that this \underline{X} 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 \underline{X} meets _ does not meet the National Register criteria. I recommend that this property be considered significant _ nationally \underline{X} statewide _ locally. (_ See continuation sheet for additional comments.)

Miller 476

Signature of certifying official/Title

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

 $\frac{2}{2} \int \frac{9}{2} \frac{2}{2} \frac{1}{2} \frac{$

State or Federal agency and bureau

Date

Kate Kelly Shipwreck		Racine County	Wisconsin
Name of Property		County and State	
4. National Park Servi	ce Certification		
 Levely certify that the property is: See continuation al Register. See continuation sheet. determined eligible for the National Register. See continuation sheet. determined not eligible for the 	Casa	n /f. Beall	11.21.07
National Register.			
removed from the National	·	· · · · · · · · · · · · · · · · · · ·	
Register. other (explain:)	/		
	pr		
	U Signature of th	he Keeper	Date of Action
5. Classification			
Ownership of Property	Category of Property	Number of Resources withi	n Property
(check as many boxes as	(Check only one box)	(Do not include previously lis	sted resources
as apply) private	building(s)	contributing ponce	ntributing
public-local	district	build	ings
x public-State	structure	1 site	S
public-Federal	x site	stru	ctures
	object	obje	ects
·		l total	
Name of related multiple pr (Enter "N/A" if property not p	operty listing: part of a multiple property	Number of contributing res is previously listed in the Na	ources ational Register
Great Lakes Shipwree	cks of Wisconsin	0	
6. Function or Use			
Historic Functions		Current Functions	
TRANSPORTATION/ Wate	er-Related	VACANT/ NOT IN USE	
<u></u>			
7. Description			
Architactural Classificatio	n	Matarials	
AT UNICULUI AI CLASSINCALIO	/11	(Enter categories from instructions))
OTHER: Two-masted canal	ler	Foundation N/A	
		walls	
	··	<u>N/A</u>	
. <u> </u>		root N/A	
		other IN/A	

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

Racine County County and State

8. Statement of Significance

Kate Kelly Shipwreck

Name of Property

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.
- \underline{x} 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)

ARCHAEOLOGY / HISTORIC, NON-ABORIGINAL MARITIME HISTORY COMMERCE

Period of Significance

1867-1895

Significant Dates

1867

Significant Person (Complete if Criterion B is marked)

N/A

Cultural Affiliation

Euro-American

Architect/Builder

Martel, John

Narrative Statement of Significance

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

Racine County

Primary location of additional data:

X State Historic Preservation Office

Name of repository:

Other State Agency

Federal Agency

University

Other

Local government

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 #

10. Geographical Data

Acreage of Property less than one acre

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

1	16	0440682	4736425	3			
	Zone	Easting	Northing		Zone	Easting	Northing
2				4			
	Zone	Easting	Northing		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 organization	Tamara L. Thomsen, Keith N. M Wisconsin Historical Society	everden and Joh	nn O. Jenser	n date	01/30/07	
street & number	816 State Street			telephone	608-221-5909	
city or town	Madison	state	WI	zip code	53706	

Kate Kelly Shipwreck	Racine County	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 a	t the request of SHPO or FPO.)						
name/title	Bureau of Facilities and Lands						
organization	Wisconsin Department of Natural Re	esources		date	01/30/07		
street&number	P.O. Box 7921 telephone 608-267-2764						
city or town	Madison	state	WI	zip code	53707		

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 <u>et seq</u>.).

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.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section 7 P	Page <u>1</u>	Kate Kelly Shipwreck
		Lake Michigan, Racine County, Wisconsin

Summary

Located 2 miles east of Wind Point Lighthouse in Lake Michigan, the *Kate Kelly* rests in 55 feet of water, broken up, but with an array of hull structure and rigging represented. Built by shipwright John Martel in 1867 in Towanda, New York, the *Kate Kelly* was designed as a canaller. Canallers were built to transit the Welland Canal locks while carrying the maximum amount of cargo through the canal locks with only inches to spare. Grain was transported from ports on western Lake Michigan, collected from the newly settled farmlands of the Midwest, to eastern ports on Lakes Erie and Ontario (largely the cities of Buffalo and Oswego, New York, and Kingston, Ontario). Vessels returning to Lake Michigan were often loaded with coal, used for heating Midwestern cities and powering factories. The *Kate Kelly* provides historians and archaeologists the unique opportunity to study construction techniques of Great Lakes canallers and the grain trade. The *Kate Kelly* site has yielded significant information on canaller construction and as portions of her hull are yet to be located, she has the potential to yield further information.

Site Description and Investigation

The *Kate Kelly* lies in 55 feet of water, mostly broken up, but with large hull sections intact and associated gear remaining. Underwater archaeological fieldwork was conducted by Wisconsin Historical Society volunteers and by divers from the Great Lakes Shipwreck Research Foundation, Inc. during the 2002 and 2003 field seasons.

The *Kate Kelly* lies scattered over the lakebed in several large hull sections. The lower hull (bilge) is the largest hull section. Laying on a heading of 315 degrees, the keelson is 112 ft. in length and measures 14 in. molded by 12 in. sided. Two sister keelsons, and faying the sisters, two cousin keelsons, provide additional longitudinal hull support. The sister keelsons are 7-1/2 in. molded by 7 in. sided. The cousin keelsons are 7-1/2 in. molded by 9-1/2 in. sided. Both sister and cousin keelsons increase in sided dimensions adjacent to either side of the centerboard trunk. Here the sister's sided dimension increases to 11 in., and the cousin's sided dimension increases to 10 in. The sister keelsons begin 2 ft. 3 in. aft of the keelson's forward end. The cousin keelsons terminate 8 ft. 4 in. from the keelson's aft end. Timbers of both the sister and cousin keelsons are butt-scarphed.

The foremast step is located 15 ft. 4 in. from the bow. This mast step is 4 ft. long by 2 ft. wide, and is fastened to the keelson with iron bolts and clinch rings. The mainmast step is located 65 ft. 2 in. from the bow, but few structural components of the step remain intact. Two pumps shaft holes for the stern bilge pump are visible through the keelson 90 ft. from the bow.

The hull is double framed with 52 frame sets extant to the turn of the bilge. Each futtock of the first two frame sets at the bow measure 9-1/2 in. molded by 5 in. sided, with a 20 in. space between the frame sets. Each futtock of all remaining frame sets measure 9-1/2 in. molded, and vary from 4 to 5 in. sided. Space between frame sets varies from 13-1/2 to 15 in. The aft most frame is 6 ft. 11 in. from the end of the keelson.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	7	Page	2	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

Limber boards measure 7-1/2 in. wide by 2 in. thick. Ceiling planking is 2 in. thick, and varies widely in length from 5 to 14 ft. Ceiling plank widths vary from 6 to 9 in. and are fastened with $\frac{3}{4}$ in. square nails, two nails per frame set. Bottom plank dimensions could not be recorded.

١

The centerboard trunk begins 32 ft. 10 in. from the bow. Overall dimensions are 26 ft. in length, 8 ft. 11 in. tall, and 11-1/2 in. wide. Two planks from the base of the trunk remain attached to the keelson, but the remaining trunk lies intact 12 ft. off the lower hull's port side. The trunk is planked with nine planks that vary in width from 8 to 13 in. Installed, the centerboard trunk would have risen 9 ft. 5 in. above the keelson, consistent with the *Kate Kelly*'s registered 10.5 ft. depth of hold.

A fragment of the centerboard is visible within the keelson's centerboard slot. The fragment is 8 ft. 4 in. long by 4 in. wide and retains an iron hanger on the fragment's forward end. The remainder of the centerboard lies adjacent to the lower hull's starboard side. This 10 ft. by 12 ft. fragment consists of 11 planks that vary from 10 to 13 in. wide. A 26 in. long by 3-1/2 in. wide iron strap wraps around the fragment's aft, upper corner. A clevis is attached to the strap and was used to raise and lower the centerboard within the trunk. The centerboard is broken cleanly in two, with the upper half lodged in the keelson and the lower half laying to starboard of the hull. This suggests that Captain Hatch had the centerboard fully deployed at the time of her loss, and was snapped off when the *Kate Kelly* came to rest on the bottom.

The *Kate Kelly*'s anchor chains remain entangled around the lower hull section's bow and stretch 46 ft. across the lakebed to the windlass. As the forward hull broke up the windlass spun 180 degrees to where it lies in its present location. The anchor chain still takes several turns about the windlass, which lies atop the port side bow. The windlass' port side carrick-bitt stands askew, and the starboard carrick-bitt has collapsed beneath the windlass. A pinion gear and hand lever remains secured to the windlass' purchase rim, indicating the windlass was steam powered. Despite steam power, the anchors could still be raised by hand in the traditional method if needed, and one of the hand levers for the windlass' crosshead lies nearby on the lower hull section.

From the windlass, the anchor chain continues through the dislodged port side hawse pipe, which was torn from the hull and lies beneath the windlass. From the hawse pipe, the anchor chain runs through the port hawse hole and beneath the wreckage into the sand. The starboard anchor chain runs aft of the windlass and through the starboard hawse pipe, which also has been torn from the hull and lies 20 ft. aft of the starboard bow. Both hawse pipes have a 1 ft. 6 in. diameter collar that abutted the outer hull planking; the pipe that extended through the hawsehole is 1 ft. 8 in. long and 8 in. in diameter.

The *Kate Kelly*'s port and starboard bow separated at the stem post and lay adjacent to one another off the lower hull's port side. The windlass lies atop the port side bow fragment, which lies ceiling up on the lakebed. The port bow retains the port side knighthead, four cant frames, seven square frames, as well as a section of railing and ceiling planking. Forward of the port side bow, a large tangle of wire rigging lies partially buried in

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	7	Page	3	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

the lakebed.

The starboard bow fragment lies just aft of the port bow, and lies ceiling down. There is no evidence of the bowsprit or figurehead. A stem iron, stem post, stem apron, and 12 frames remain attached to the starboard bow. Much of the outer hull planking is extant, with 25 planks remaining from the bulwarks to beneath the turn of the bilge. Outer hull plank width varies from 6 to 10 in. Four extant cant frames are 7 in. sided with a 10 in. space. Square frames vary from 8 to 9 in. sided, with spacing varying from 1ft. 3-5/8 in. to 1 ft. 6 in. A 1 in. thick stem iron protects the stempost's leading edge, and wraps around the foot of the bow to continue along the keel. The stem post / keel joint is reinforced by a curved iron brace that is 1 ft. 9 in. long by 3 in. wide, secured with five peened iron bolts that are ³/₄ in. in diameter. Remnants of the wire bobstays and their anchors remain attached to the stempost, as well as remnants of the forestays fastened to the outer hull planking.

Several pieces of the *Kate Kelly*'s deck gear lay in a debris field around the forward hull sections. A doubleacting, cast iron bilge pump lies in the sand 30 ft. forward of the lower hull section, obscured by a large colony of zebra mussels. Between the lower hull section and the port side bow is the donkey engine's winching drum. The drum is 16 ft. in length with a 5 in. diameter gypsy head on either end of the drum. Each gypsy head has a wide slot cut into the end; the slots on either end are parallel with one another. The drum's main gear is 3 ft. 4 in. in diameter with 1-1/2 in. square teeth on 3 in. centers. A smaller 10 in. diameter gear is centered on the drum shaft. A fragment of the donkey engine's boiler lies 14 ft. aft of the port side bow. A lumber port cover lies 15 ft. off the stern of the main wreckage.

A disarticulated hull section lies 17 ft. off the lower hull's port quarter, perpendicular to the lower hull. Consisting of a section of hull side from deck level down that lies ceiling up on the lakebed, it was impossible to determine whether the section is from the port or starboard side. Twenty-six frame sets are extant, spaced on 24 in. centers. Eight hanging knees are extant, several of which have been repaired with iron strapping. The hanging knees nearest the lower hull section are spaced on 4 ft. centers; those knees opposite the lower hull section are spaced on 3 ft. centers. All knees are 14 in. on the arm, 26 in. on the body, and 12 in. at the throat. Sided dimension is 9 in. at the heel, which tapers to 6 in. at the toe. The knees are fastened to the hull with iron bolts with clinch rings. Ceiling planking varies in width from 7 to 8 in. A 12 in. wide by 3 in. thick beam shelf is attached atop the knees.

A large disarticulated hull section lies 250 feet off the main hull's port quarter. This section lies ceiling down on the lakebed, and measures 45 ft. 3 in. long by 10 ft. 2 in. tall. Fourteen outer hull planks are extant, 2 in. thick and varying in width from 6 to 8 in. Frames are spaced on 24 in. centers. It was impossible to determine whether this section was from the port or starboard side. A section of pipe 3 ft. 6 in. long and 3 in. in diameter is wedged between the outer hull planks nearest the main hull section.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	_7_	Page	<u>4</u>	Kate Kelly Shipwreck
				Lake Michigan Racine County Wisconsin

Summary Paragraph

Located 2 miles east of Wind Point Lighthouse in Lake Michigan, the *Kate Kelly* rests in 55 feet of water. Built in 1867 and sunk in 1895, the *Kate Kelly* represents the canaller vessel class that traveled the longest routes of any Great Lake vessel while carrying Midwestern grain to eastern cities and returning with coal to fuel the Midwest. Little historical documentation exists on canaller construction and operation. Much of our understanding of this vessel type lies on the lakebed and comes from archaeological data recovered from wreck sites like the *Kate Kelly*. The *Kate Kelly* meets the registration requirements for Criteria 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 1989). The *Kate Kelly* wreck site was documented in 2003. Although little cultural artifacts remain, the *Kate Kelly*'s broken and opened hull has produced a wealth of archaeological knowledge on canaller construction and use. Several sections of *Kate Kelly*'s hull have not yet been located, making the *Kate Kelly* likely to continue to produce important archaeological data.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section _	8	Page	1	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

The Great Lakes Grain Trade

Discussion of Wisconsin's maritime economy often requires the inclusion of 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 regional economic universe. Separating Wisconsin from the eastern Great Lakes frequently results in a fragmented understanding of Wisconsin's maritime heritage as a whole.

Wisconsin's first encounter with a European sailing vessel occurred in 1679 when LaSalle's ill-fated *Le Griffon* landed on the Door County peninsula. LaSalle continued southward to explore the Mississippi valley. *Le Griffon*, loaded with furs bound for the European market, departed Washington Island on 18 September 1679, never to be seen again. Following *Le Griffon*, it was nearly 100 years before a sailing vessel again entered Lake Michigan. It is probable that ventures onto Lake Michigan were made by King George's Royal Navy in the 1760s, but the next confirmed sailing ship to enter the lake was John Askin's *Archange* in 1778, which sailed to Chicago and Green Bay in search of corn to supply Canadian fur traders (Quaife 1944:100). From the *Archange* to 1815, most sailing vessels on Lake Michigan supported military outposts such as Fort St. Joseph and Fort Dearborn (present day Chicago). In 1818, the *Walk-in-the-Water* was the first steamer constructed on the upper lakes. It entered Lake Michigan one year later to sail to Green Bay (Mansfield 1899:184, 596; Mills 1910:92).

By 1836, regularly scheduled steamship lines connected western Lake Michigan with eastern cities, and steam vessels were under construction at Milwaukee (Quaife 1944:150; *Milwaukee Advertiser* 1836). These steamers quickly pulled passenger traffic and high-dollar cargo from the schooners. On 21 May 1853 the Michigan Central Railway made the first rail connection with Chicago, and in 1855 the first all-rail connection between Buffalo and Chicago was established (Quaife 1944:155; Mills 1910:155). These railroads quickly stole the steamers' passenger and high-dollar cargo trade, resulting in even stiffer competition for sailing vessels. Unlike lake vessels, the rail lines could provide regularly scheduled shipments that were unaffected by weather, as well as year-round transportation unaffected by ice-covered water. Despite increasing competition, however, lake sail did not die easily. Sail's advantages were lower construction and operation costs, adaptability to many different trades, and the fact that sail technology was already at its zenith, having benefited from centuries of technological development. Sail required less capital investment, its propulsion cost nothing, and the smaller crews were inexpensive relative to steamers.

A unique vessel type developed on the Great Lakes that was designed to transit the Welland Canal locks while carrying the largest possible amount of cargo; these box-shaped vessels were called "canallers." Designed to carry the maximum amount of cargo through the canal locks with only inches to spare, canallers had bluff bows, flat bottoms and sterns, short bowsprits, and highly-canted jib booms. Some canallers were rigged with a hinged or shortened jib boom that could be folded, removed, or de-rigged for passage through the locks. The

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	8_	Page	2	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

mainmast (on two-masters) and mizzenmast (on three-masters) booms were typically shortened so they would not overhang the stern. Due to their boxy shape, there were claims that canallers were notoriously poor sailors in heavy weather, a claim supported by the fact that one particularly violent storm in October 1873 sent six Oswego canallers to the bottom with all hands (Karamanski 2000:32-34; *Oswego Daily Palladium* 1873).

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

With increases in grain traffic and vessel size, the small canal locks were soon obsolete. The Canadian government purchased the Welland Canal Company and expanded the canal in 1846, reducing the number of locks to 27 and cutting a more direct route. The new locks were expanded to allow vessels of 150 feet in length, 26.5 feet in beam, and 9 feet in depth. The canal's original wooden locks became control weirs for the new canal, reducing the physical labor of towing ships from lock to lock (Aitken 1997; Mansfield 1899:229-239; St. Lawrence Seaway Management Corporation 2003:2-5).

The large number of immigrants that arrived on Lake Michigan's western shore during the early nineteenth century soon began moving from the lakeshore to populate the rich Midwestern prairie lands. Under the industrious settlers' hands, the fertile Midwestern soil soon began producing a large surplus of grain that made its way to Lake Michigan's port cities for transport to eastern markets via the Great Lakes. The inland lake route greatly facilitated the grain trade's growth by providing cheap and ready transportation.

The brig John Kenzie carried the first Lake Michigan grain shipment from Grand River, Michigan, to Buffalo, New York, in 1836. Chicago followed suit two years later, sending 39 bags of wheat to Buffalo aboard the *Great Western* in 1838. In 1839 the brig *Osceola* carried Chicago's first bulk shipment of wheat, carrying 1,678 bushels from Chicago to Black Rock (Buffalo), New York (Mansfield 1899:529).

It was not until the 1840s, however, that the Great Lake grain trade began in earnest. Chicago grain exports between 1834 and 1840 totaled 13,765 bushels (Mills 1910:116). The year 1841 alone, however, saw 40,000 bushels exported from Chicago. By 1847, Chicago was shipping more than two million bushels yearly. Milwaukee achieved an equal volume by 1853, and surpassed Chicago in grain exports by 1862 (Karamanski 2000:60). Due to a lack of adequate harbor facilities and grain elevators elsewhere on Lake Michigan, Milwaukee and Chicago were the dominant grain ports.

Freight rates for grain were subject to supply and demand, dropping during summer months and peaking during the fall harvest time. Freight rates for the 1837-1838 seasons were eight cents a bushel, with an additional two

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section _	8	Page	3	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

cents per bushel surcharge for elevator service. During the 1850s, rates from Chicago to Buffalo remained steady between 10 and 15 cents per bushel, with steamers earning a fraction of cent more than steamers. During the 1860s, rates dropped to between 4 and 7 cents per bushel. From 1874 onward, rates began a constant decline, reaching 1.53 cents per bushel by 1898 (Cooper 1988:44; Mansfield 1899:535; Mills 1910:116).

The Lake Michigan grain trade consisted of mostly wheat until 1848, when corn began shipping in increasing quantities. Oats, barley, and rye were also shipped in small quantities (Cooper 1988:41). Buffalo and Oswego were early rivals for Lake Michigan grain, with Buffalo capturing a larger share of the trade during the early years. Oswego's disadvantage was that to reach Oswego from Lake Michigan, vessels were required to transit the Welland Canal and were charged a toll of six dollars per thousand bushels, a toll not required to reach Buffalo. By the 1870s, however, canal tolls from Buffalo to Syracuse equaled or exceeded the Welland Canal tolls, and with a shorter route from Oswego to eastern sea ports, Oswego's grain traffic swelled (*Oswego Daily Palladium* 1897). Vessels returning to Lake Michigan were often loaded with coal from ports on Lakes Erie and Ontario, used for heating Midwestern cities and powering steam-powered factories. Coal tonnage grew with transportation improvements between the mines to eastern lake shipping ports (Mansfield 1899:526).

Grain schooners made the Oswego-Chicago round trip in thirty to thirty-five days, and six to seven trips were completed seasonally (*Oswego Daily Palladium* 1897). The heyday of the canallers and the grain trade was short lived. By the late 1870s, the railroad was gaining ever-larger shares of Lake Michigan grain, and in 1880 rail tonnage finally exceeded lake tonnage (Mansfield 1899:530).

Vessel History

On a springtime day in 1867, shipbuilder John Martel looked on with pride as the schooner *Kate Kelly* slid into the water at Tonawanda, New York. Described by a contemporary newspaper as being "of medium size . . . good model and general build," the canaller possessed two masts, a square stern, a figurehead bow, and measured 126.3 feet in length, 25.8 feet in breadth, and 10.4 feet in depth (Bureau of Navigation 1867a; *Chicago Times* 1867). Martel designed the vessel to transit the Welland Canal - the narrow artificial river that connected distant Lake Ontario with the other Great Lakes below Niagara Falls. Her primary cargo would be grain, but the schooner could efficiently carry coal, iron ore, wood products, or any other low-cost bulk cargo.

Born to French immigrants in Quebec in 1832, John Martel moved to the United States in 1849 and eventually settled in Buffalo, New York - then the Great Lakes' most important shipbuilding center. By 1860, Martel was a mature ship carpenter and had married Mary Ellen, a young Irish woman, and had amassed \$300 of personal property (United State Census Bureau 1860).

The 1860s proved a busy decade for the Martels. A son named John was born in 1863, with a daughter Mary Ann arriving five years later. In 1867, at age 34, Martel had worked his way up through the ranks of competing artisans to emerge as an independent shipbuilder. The schooner *Kate Kelly* may have been his first vessel and was certainly one of his earliest. By 1870, the Martels owned real estate worth \$1,800 and personal property

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section 8	_ Page	je <u>4</u>	Kate Kelly Shipwreck
			Lake Michigan, Racine County, Wisconsin

worth \$400 (United States Census Bureau 1870).

By the time John Martel built the *Kate Kelly* in 1867, conditions for independent shipbuilders were on the decline on the eastern end of the Great Lakes. Two generations of shipbuilding and lumbering had taken its toll on accessible forests. In order to continue converting trees into money (the central job of the maritime frontier shipbuilder), many shipwrights moved westward to Michigan and Wisconsin. In the early 1870s, John Martel took part in this maritime migration and moved his operation and family to Saugatuck, Michigan, a picturesque small town on Lake Michigan's eastern shore. In 1873 and 1874, Martel launched at least four schooners at Saugatuck, including the *Marinette*, *Menekomee*, *F.B. Stockbridge*, and *L.B. Coats*.

The economic boom times did not last. A financial panic in the fall of 1873 ushered in a national depression that idled shipyards across the Great Lakes for several years. Martel, however, seems to have been more fortunate than many of his shipbuilding colleagues. He built two tugs in 1875 and another in 1877. Martel apparently understood that the days of building schooners were drawing to a close on the Great Lakes. When the region's maritime economy recovered at the end of the 1870s, Martel resumed building but focused on steamboats and became well known for his many tugs. Between 1880 and 1889, Martel launched forty-two vessels: five moderate sized package / passengers boats, one schooner, and thirty-six tugs (Heath 1930:79-81)

Little is known of Martel beyond the ships he constructed, but he was a stable and successful businessman of moderate means. After 1890, Martel's production slowed, but he continued to turn out the occasional tug and even a steam yacht during the 1890s. By 1900, Census records suggest that the now widower Martel had retired from active shipbuilding (Heath 1930; United States Census Bureau 1900).

During a career that spanned 28 years, the *Kate Kelly* had several owners, most of them associated with Lake Ontario trade. As a canaller, the *Kate Kelly* was one of hundreds of vessels built to fit through the locks of the second Welland Canal. Most of the canal locks were just 26.5 feet wide, 150 feet in length, and, originally, 9 feet in depth. This left the *Kate Kelly* with less than 4 inches of clearance on either side when transiting the canal. The vessel's sparred length is unknown, but would have been close to 150 feet. The *Kate Kelly's* career can be divided into four distinct periods. Her first year sailing out of Buffalo (1867-1868), the Captain Robert Hayes' Era (1868-1877), the McFarland / Goble partnership (1877- 1893), and her twilight years on Lake Michigan (1893-1895).

Lake vessels represented a quick, if volatile, investment. Entire vessels and vessel shares frequently changed hands and little is known about the *Kate Kelly*'s early owners. John Martel built the *Kate Kelly* for Lewis Ryerse, a Buffalo ship owner (Bureau of Navigation 1867a). Ryerse, however, only kept the vessel for a few months before selling it to Rumsen R. Brown and James M. Smith of Buffalo on 30 September 1867 (Bureau of Navigation 1867b). In early May 1868, the *Kate Kelly* again gained new owners: James Keller, Edward W. Parmalee, and Captain Robert Hayes. Hayes, who had only a 1/8 share in the vessel, took command, a post he would retain for nine years. The new owners changed the vessel's homeport from Buffalo to Oswego, the most

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section 8	_ Pag	ge _	5	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

important U.S. port on Lake Ontario (Bureau of Navigation 1868a, 1868b). The *Kate Kelly* would call Oswego home for the next twenty-five years (Bureau of Navigation 1868a, 1868b, 1870a, 1870b, 1870c, 1877, 1878, 1886).

Hayes and his associates employed the *Kate Kelly* to carry grain from western Michigan ports, particularly Chicago, to Lake Ontario ports, most commonly Oswego and Kingston, Ontario. The vessel could hold 18,000 bushels of corn and over 19,000 bushels of wheat. While westbound from Lake Ontario, the schooner frequently carried coal, and occasionally picked up odd cargoes such as railroad iron. The schooner sometimes made the westbound trip light, and depended upon a good grain charter to make a profit.

The *Kate Kelly* suffered hard use while under the command of Captain Hayes. Newspapers, wreck lists, and admiralty court records report eight accidents and allude to others involving the *Kate Kelly* between 1869 and 1877. The schooner sustained major damage in at least two of these incidents (Hall 1870; National Archives 1877a). In 1869, the vessel grounded near Cheboygan, Michigan, and the schooner's entire cargo of wheat was reportedly lost (Hall 1870). The Classification of Lake Vessels and Barges insurance register noted that the *Kate Kelly* had undergone large repairs in 1870 and gave her just an A2 rating, an indication that the vessel was not in top condition for her age (Board of Marine Inspectors 1871). In April 1871, the vessel collided with the brig *Rosius* near the Eighteenth Street Bridge at Chicago (*Buffalo Commercial Adviser* 1871). In April 1874, she hit a dock at Oswego. Two months later, the battered vessel sprung a leak while transiting the Welland Canal. The vessel rounded out the year by grounding at Ford's Shoal on Lake Ontario in November (*Chicago Inter-Ocean* 1874). Collectively, the number and severity of the accidents call into question Captain Hayes' competence.

The year 1875 began better for Captain Hayes and the *Kate Kelly*. Research has turned up no reports of accidents for most of the season. This all changed, however, in late September when the vessel fetched up on shore about 100 feet outside of the East Pier at Oswego. The vessel had been running light on a trip from Kingston, Ontario, and a stiff northwest wind had built up a large sea. By the time the *Kate Kelly* attempted to enter the port, however, the wind had shifted to the southwest and nearly died out. Whether Hayes misjudged the wind direction or was surprised by its sudden moderation is unknown, but the vessel lost headway. Heavy seas carried the helpless schooner onto the beach and deposited her broadside onto a hard bottom. The crew abandoned the ship, leaving her to pound on the beach throughout the night. By morning, a local newspaper reported that the *Kate Kelly* had broken her back, sprung her decks, and had been holed (*Oswego Daily Palladium* 1875a).

Initially, saving the schooner seemed doubtful. Had the vessel grounded this severely on a more distant beach, it would have certainly proven a total loss. The *Kate Kelly*, however, was insured for \$12,000 and Oswego possessed first class ship salvage and repair capabilities. These factors encouraged salvaging the heavily damaged craft. Insurance inspector Captain Berriman hired the well-known shipbuilder George Goble to assist the salvagers in removing the vessel from the beach. Goble and his partner James D. McFarlane operated one of

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section <u>8</u> Page <u>6</u>	Kate Kelly Shipwreck
	Lake Michigan, Racine County, Wisconsin

the best-equipped shipyards on Lake Ontario. Using two powerful tugs, screw-jacks, and other implements, they released *Kate Kelly* from the beach. On 30 September 1875, the Goble-built tug *Alanson Sumner* managed to pull the schooner into the harbor where she immediately sank. Three days, three steam pumps, and two canal boats later, the *Kate Kelly* floated again. This time just long enough to move her to the entrance to the Ontario Dry Dock, home the Goble and McFarlane yard, where she sank a second time (*Buffalo Commercial Advertiser* 1875; *Oswego Daily Palladium* 1875b, 1875c, 1875d).

As earlier reports had indicated, the *Kate Kelly* had sustained substantial damage. The keelson was broken aft of the centerboard trunk, several floor timbers were broken, and the starboard side had so many holes it presented "the appearance of a sieve." At first, the insurance appraisers could not agree on an estimated cost for repairs. An early observer predicted more than \$6,000, while others suggested that the total bill, including salvage costs, would exceed the \$12,000 for which the vessel was insured. Ultimately, Goble and McFarlane installed floor timbers, a new keel, and replanked the starboard side's entire bottom and some of the port side. They installed some new ceiling planking, pocket pieces on the centerboard trunk, and a new deck. The yard also lengthened her bowsprit and added an additional jib. These additions to her headgear may have been intended to improve her handling. In any case, the vessel had only one more known collision after the yard altered her rig (*Oswego Daily Palladium* 1875e, 1875f, 1875g, 1875h). It is unclear who paid for the *Kate Kelly*'s repair, but Captain Hayes and his current partners retained their ownership (Bureau of Navigation 1873a, 1873b).

The *Kate Kelly*'s many accidents raise questions about her management, which was, to put it mildly, fluid during the Robert Hayes era. Charles Parker, who, according to the enrollments, owned the largest share of the vessel during the mid-1870s, died during the summer of 1874. The family's small shipbroker business fell into the hands of Parker's son. When the elder Parker died, the owners should have applied for a new enrollment for the *Kate Kelly*. They did not, an omission that suggests sloppy, if not dishonest, business practices.

Bad practices eventually caught up with the *Kate Kelly*'s owners. On 22 October 1877, William H. Wolf and Thomas Davidson, the operators of a large Milwaukee shipyard, filed a libel suit against the schooner for non-payment of debts. Wolf and Davidson contended that they were owed \$875 plus interest for repairs and supplies they provided to the vessel in October 1876. At the time of her arrest, the *Kate Kelly* was at Cleveland recovering from yet another mishap. On 13 October, the schooner was carrying 380 tons of iron ore from Ogdensburg to Cleveland and ran aground on a sandbar. To float the vessel free, the crew threw fifty tons of ore worth well over \$200 into lake. The procedure in this situation involved arresting the vessel and, if payment was not made, to sell it at a federal pubic auction popularly called a Marshal Sale. Captain Hayes, court records reveal, had left a long stack of unpaid bills in Milwaukee and Chicago. When notice of *Kate Kelly*'s arrest appeared in the newspapers, six other creditors presented bills. The sum total for action, including court costs, totaled \$5,580.10, a figure considerably more than schooner's current value. The largest claim against the vessel, \$3,735.35, came from Goble and McFarlane, the shipbuilders who had rebuilt *Kate Kelly* two years before. The Wolf and Davidson claim, including interest, came to \$927.09. Other bills presented came from

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	8	Page	7	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

ship chandleries, a butcher for groceries and supplies, for trimming (loading) a cargo of grain, and from the owners of the recently jettisoned iron ore. With pending bills far higher than the *Kate Kelly*'s value, her owners made no effort to pay off the creditors (National Archives 1877a).

Court records suggest that problems plagued the *Kate Kelly* partnership. The younger Parker, half owner, appears to have been insolvent by this time and Henry W. Green, owner of a quarter share of the schooner, indicated that "he might secure his own interest, but would do nothing to benefit Parker." For his part, Captain Hayes, who owned the final quarter of the vessel, admitted that the claims against the vessel were just and accurate but indicated that he was "unwilling and unable" to pay the creditors. The vessel went on the auction block on 6 November 1877 and sold to George Goble and James McFarlane for \$3,000 (National Archives 1877b).

The question arises as to why first-rate businessmen with excellent credit and good judgment purchased the benighted *Kate Kelly* during a tough period in the Great Lakes economy. The answer to this lies in the vagaries of Admiralty Law. By initiating the arrest of the *Kate Kelly*, Wolf and Davidson became the first parties in line for the disbursement of auction proceeds. They received their full claim, both principal and interest. After deductions for \$351.65 in court costs, the remaining six creditors had to split the remaining \$1,671.16, with each receiving just 39.5% of their original claims. Under these rules, Goble and McFarlane recovered \$1,475.46 of the \$3,000 purchase price. By putting up an additional \$1,524.54, the Goble and McFarlane prevented the irrecoverable loss of more than \$2200 on their \$3,735.35 claim against the *Kate Kelly* and gained possession of a fully serviceable schooner (National Archives 1877b).

The admiralty court files preserve many of the original documents submitted by the plaintiffs. Significant to historians of Great Lakes seafaring life are grocery bills. Sailor's lore praised the plentiful food and fresh water aboard Great Lakes ships. This seems to be born out on the Kate Kelly in the early winter of 1876. Prior to setting sail from Milwaukee with 15,500 bushels of wheat, the vessel took on \$83.53 worth of food. The crew appears to have subsisted on large quantities of salted and fresh meat. The ship left port with 55 pounds of salt pork, 153 pounds of corned beef, and 215 pounds of various cuts of fresh meats. This would have provided a typical crew of eight persons with well over two pounds of meat for each hand, every day, for a three-week period, a time span longer than the typical voyage between Milwaukee and Oswego or Kingston. Adding to the protein component were 10 pounds of salted mackerel. The cook also kept busy baking and the ship took on 30 pounds of sugar, 25 pounds of butter, 10 pounds of lard, ³/₄ barrel of flour, 6 dozen eggs, and 1 ¹/₂ bushels of apples. Other starches came from 2 bushels of potatoes and $\frac{1}{2}$ bushel each of turnips and beets. The only green vegetables in evidence were several cabbages. Small quantities of rice, beans, pickles, and crackers provided additional diversity to the diet. Spices and condiments were simple and few, just salt and mustard. Great Lakes coffee, a favorite sailor's beverage, must have been extremely watery. The ship only took on six pounds for the voyage. The ship purchased no other beverages, but fresh water was always plentiful. It is also possible that sailors supplemented this diet with their own provisions (National Archives 1877a).

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section 8	Page	8	Kate Kelly Shipwreck
			Lake Michigan, Racine County, Wisconsin

The *Kate Kelly*'s new owners George Goble and John McFarlane had little in common with Robert Hayes and his associates. The Ireland-born Goble was one of Lake Ontario's most respected shipbuilders and had been a fixture on the Oswego waterfront since the late 1830s, while McFarlane's father-in-law was F.G. Carrington, Oswego's most prosperous businessman (Alford 1957). The two successfully managed the *Kate Kelly* for more than fifteen years. During the 1880s and early 1890s, the *British Whig*, a Kingston newspaper, intermittently recorded the schooner's travels, cargoes, and occasional problems. During the Goble and McFarlane era, the *Kate Kelly* made frequent trips carrying grain (corn or wheat) between Chicago, Illinois and Kingston, Ontario. The vessel seems to have generally stayed busy, and when rates were high must have shown a tidy profit. For example, in August 1883, the vessel grossed \$1,000 for carrying 16,000 bushels of wheat from Chicago to Kingston. In the summer of 1888, the schooner was grossing about \$600 per trip on much shorter voyages carrying coal between Sandusky and Kingston (*British Whig* 1883a, 1883b, 1883c, 1883d, 1883e, 1888b, 1888c, 1888d, 1889).

Even under solid management, sailing ships on the Great Lakes faced constant dangers. As ships aged, the potential for problems multiplied. In September 1881, the *Kate Kelly* lost her fore boom during a storm (*British Whig* 1881). Five years later, in 1886, part of her foremast and her main topmast tore away during a June squall (*British Whig* 1886a). Later that summer, the aging vessel discharged 8,500 bushels of wet wheat, a sure sign of hull problems (*British Whig* 1886b). Major groundings, a frequent occurrence on the *Kate Kelly* under Captain Hayes, only appear to have happened once during the Goble and McFarlane years. On 13 November 1882 the vessel ran aground during a blow on Lake Ontario. A rescue party that included 30 men and a powerful tug lightered 5,000 bushels of wheat from the schooner and pulled her from the shore (*British Whig* 1882). The sailing life, however, was dangerous, and in 1890 James O'Hara, a forty-year-old sailor from Rochester, fell from the main boom on the *Kate Kelly* while furling a sail in Detroit and died (*British Whig* 1890).

Time catches up with all ships. By the early 1890s, large wooden and steel steam-powered vessels, many exceeding 300 feet in length, had taken over the majority of the Great Lakes' bulk cargo trade. Many schooners had their rigging cut down for use as tow barges (Karamanski 2000). Others continued to operate independently well into the twentieth century. It could be a hard existence, but one that some independent mariners preferred to other forms of work.

In March 1893, a new owner took possession of the *Kate Kelly*. Captain Hartley J. Hatch of Chicago had commanded sail and steam vessels on the Great Lakes for nearly twenty years. During the 1870s, Hatch took the Great Lakes schooner *Mary L. Higgie* across the Atlantic and into the Mediterranean Sea. In early 1893, Hatch commanded one of Alexander McDougal's whaleback steamers on a long voyage from the Great Lakes to Liverpool, England (*Detroit Free Press* 1895a). Well-connected in the shipping world and highly respected among his peers, Hatch seemed well suited to wring profits out of the old schooner. The question remains, however, why would Hatch, who clearly had other opportunities, invest in and operate the old schooner? It proved a fatal decision.

Despite its decline as a port city in the 1890s, Chicago remained, according to Karamanski (2000), the "schooner city." A growing industrial giant, Chicago's demand for raw materials including iron ore, coal, and

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	8	Page	9	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

wood products, and its importance as a grain port, supported a large-scale maritime trade. With his connections, Hatch may have been well positioned to get good charters for the old, but inexpensive to operate, *Kate Kelly*. Unfortunately, more research is needed to uncover Hatch's trading practices.

On 28 October 1893, a Wisconsin newspaper reported that that *Kate Kelly* had run ashore on Spider Island, one of the many barriers that made the Death's Door Passage between Green Bay and Lake Michigan so hazardous. At the time, the vessel was carrying a heavy cargo of grindstones from Grindstone City, Michigan, to Milwaukee and suffered significant damage. The *Door County Advocate* marine reporter noted that the vessel's cargo, worth \$10,000, was "far too valuable to risk out in an old leaky vessel at this season of the year" (*Door County Advocate* 1893).

Old schooners remained a suitable conveyance for wood, a cargo not easily damaged by exposure to water. Furthermore, it was thought that soft woods could provide positive buoyancy sufficient to keep a flooded schooner afloat. Carrying wood, however, did not save the *Kate Kelly*. In May 1895, she left Alpena, Michigan, with a load of hemlock railroad ties and perhaps other wood products. The schooner stopped at Sheboygan, Wisconsin, before proceeding down the lake for Chicago.

On Monday morning, 13 May 1895, a vicious spring storm exploded across Lake Michigan, catching the Kate Kelly and sinking her. It is not known what specifically caused her loss; however, local farmers reported observing a schooner capsize near where the Kate Kelly was later found. The storm was particularly severe; several vessels went down and many others suffered significant damage. On Tuesday, 14 May 1895, a Kenosha-based tug brought in wreckage that clearly confirmed that the Kate Kelly had gone down. The following day, the local U.S. Lifesaving Service crew spied a mast protruding several feet from the water. Resting in 10 fathoms of water, the wreck ultimately proved to be the Kate Kelly. On 9 June 1895 diver John Harms explored parts of the wreck and reported that the jib boom and bowsprit were intact. The foremast was gone (its broken remains may have been removed by early salvors to reduce the wreck's threat to other vessels), one anchor had been cast overboard, and the mizzenmast was enveloped in a tangle of rigging. Harms found no bodies, but brought up a large section of a flag that had been placed at half-mast in the forward rigging, perhaps a last futile attempt at a distress signal. Given the eyewitness account, the distress flag, and the reported condition of the wreck, it seems likely that the Kate Kelly battled the weather for some time. The end, however, came quickly with the vessel either capsizing or plunging to bottom after a large sea or set of seas swept the deck with enough force to tear off the cabin, yawl boat, monkey rails, and anchor (Detroit Free Press 1895a, 1895b, 1895c).

Archaeological Significance

The *Kate Kelly*'s wreckage lies widely scattered over the lakebed two miles east of the Racine's Wind Point Lighthouse. Although broken up, large hull sections remain, providing insights into early Great Lakes schooner construction, specifically that of canallers. The *Kate Kelly* was a well-worn schooner at the time of her loss, having survived twenty-eight hard years on the Great Lakes. She was also a bit of an anomaly. Not only was she still operating as a self-propelled schooner at a time when many had been converted to schooner barges and

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	8	Page	_10_	Kate Kelly Shipwreck	
				Lake Michigan, Racine County, Wisconsin	

were towed behind steamers, but she remained a two-masted schooner when nearly every other sailing vessel of her size on the Great Lakes had been converted to three masts. The popularity of converting from two to three masts was a result of the fierce competition between sail and steam as the nineteenth century progressed.

A two-masted schooner carried almost an equal amount of canvas as a three-masted schooner of equal size. On the two-masted, however, each sail was of such a large size that it required several crewmen to handle them. These large sails required a large amount of effort to raise, lower, reef, and trim. By converting to three masts, total canvas area could be retained while reducing the size of individual sails. These smaller sails were easier to handle, and required fewer deck hands, which in turn cut the schooner's operating costs. By reducing operating costs, schooners were able to remain profitable despite falling freight rates.

Competition grew increasingly fierce as the nineteenth century drew to a close. Schooners needed to take every possible advantage to remain profitable. Sail technology had developed for centuries and there was little room left to improve upon the rig itself. Ironically, the schooners took advantage of the same technology that was causing their extinction – steam power. By incorporating steam power into sail handling, even fewer crew were required, trimming operating costs to the slimmest possible margin.

Donkey engines became a common sight on schooners - self-propelled and barges alike - during the last years of the nineteenth century. Donkey engines were small steam-powered engines used to assist in heavy shipboard work. Located near the vessel's bow, the donkey engine was powered by a small upright boiler and was attached to a winch drum that provided a mechanical advantage for raising or lowering sails, loading and unloading cargo, weighing anchors, warping along a pier, or any other task that required heavy lifting or pulling.

The *Kate Kelly*'s donkey engine illustrates how modern technology reshaped old-world occupations. For centuries, a sailor's brute strength was responsible for handling the many hard tasks necessary aboard a sailing vessel. Handling cargo, raising sail, and weighing anchor were all back-breaking tasks that had been completed by man-power alone. With advances in steam technology, however, the traditional sailor's role rapidly changed. Steam technology not only made commercial sail obsolete, but also helped commercial sail to remain a profitable form of transportation for several years longer than it would have without steam technology. One of the schooner's largest overhead costs was paying and feeding crew members. By incorporating steam power aboard schooners to handle heavy labor, crew size could be further reduced in order to squeeze as much profit as possible out of the highly adaptable schooner. The donkey engine and steam-powered windlass are powerful reminders of the strong competition of the nineteenth century Great Lakes shipping trade, as well as how modern technology began reshaping traditional occupations.

Several major sections of the *Kate Kelly*'s hull have not been accounted for. It is possible that these missing hull sections lie nearby on the lakebed but have not yet been discovered. The surrounding lakebed was searched by divers, but it is possible that the missing hull sections have traveled a considerable distance during the

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	8	Page	<u>11</u>		Kate Kelly Shipwreck		
				:	Lake Michigan, Racine County, Wisconsin		

sometimes violent storms that sweep the area. It is also possible that smaller artifacts and hull assemblages are obscured by shifting sands and may become uncovered in future years as sand migrates about the site. The site should be monitored in future years to document any new artifacts or hull assemblies that should appear.

Canallers are a vessel type unique to the Great Lakes, and are not well documented. As a well-preserved example of a nineteenth-century canaller, the *Kate Kelly* site is eligible for listing on the National Register of Historic Places. Study of the *Kate Kelly* wreck site has provided a wealth of information on how these specialized vessels were constructed and operated on the Great Lakes, and has the potential to provide even more data on this little-known vessel class.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior

National Park Service

National Register of Historic Places Continuation Sheet

Section _	9	Page	1	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

REFERENCES

Aitken, H. G.

1997 The Welland Canal Company: A Study in Canadian Enterprise. Canadian Canal Society. St. Catharines, Ontario.

Alford, Harold D.

1957 Shipbuilding Days in Old Oswego. Inland Seas, 13(2):88-94. Cleveland, OH.

Board of Marine Inspectors

1871 Classification of Lake Vessels and Barges. Warren, Johnson & Co., Buffalo, NY. http://www.hhpl.on.ca/GreatLakes/scripts/Bib.asp?PubID=18>

British Whig [Kingston, Ontario] 1881 British Whig. 13 September.

1882 British Whig. 13 November.

1883a British Whig. 1 September.

1883b British Whig. 21 August.

1883c British Whig. 28 July.

1883d British Whig. 26 July.

1883e British Whig. 16 June.

1886a British Whig. 25 June.

1886b British Whig. 16 October.

1888a British Whig. 27 September.

1888b British Whig. 6 June.

1888c British Whig. 1 June.

1888d British Whig. 28 May.

1889 British Whig. 19 June.

1890 British Whig. October 16.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section	0	Dage	2	
Section	9	Page	2	

Kate Kelly Shipwreck Lake Michigan, Racine County, Wisconsin

Buffalo Commercial Advisor

1871 Buffalo Commercial Advisor. 10 August.

1875 Buffalo Commercial Advertiser. 1 October.

Bureau of Navigation

1867a *Kate Kelly* Certificate of Enrollment No. 126 (Permanent), Port of Buffalo, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1867b Kate Kelly Certificate of Enrollment No. 302 (Permanent), Port of Buffalo, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1868a Kate Kelly Certificate of Enrollment No. 18 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1868b Kate Kelly Certificate of Enrollment No. 19 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1870a Kate Kelly Certificate of Enrollment (Temporary), Detroit Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1870b *Kate Kelly* Certificate of Enrollment No. 38 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1870c *Kate Kelly* Certificate of Enrollment No. 43 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1873a *Kate Kelly* Certificate of Enrollment No. 105 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1873b *Kate Kelly* Certificate of Enrollment No. 130 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1877 *Kate Kelly* Certificate of Enrollment No. 5 (Temporary), Port of Cleveland, Cuyahoga Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1878 *Kate Kelly* Certificate of Enrollment No. 20 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

1886 *Kate Kelly* Certificate of Enrollment No. 8 (Permanent), Port of Oswego, New York Customs District, Record Group 41, U.S. National Archives, Washington, DC.

Chicago Inter-Ocean

1874 Chicago Inter-Ocean. 25 December.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior

National Park Service

National Register of Historic Places Continuation Sheet

Section	9	Page	3	Kate Kelly Shipwreck
				Lake Michigan Racine County Wisconsin

Chicago Times 1867 Chicago Times. 17 September.

Cooper, David J.

1988 1986-1987 Archaeological Survey of the Schooner *Fleetwing* Site, 47 DR168, Garrett Bay, Wisconsin. East Carolina University, *Program in Maritime Studies Research Report No. 6.* Greenville, NC.

Cooper, David J. and Paul Kriesa

1989 Great Lakes Shipwrecks of Wisconsin. National Park Service, National Register of Historic Places Multiple Property Documentation Form. Unpublished manuscript on file, Division of Historic Preservation, Wisconsin Historical Society, Madison.

Detroit Free Press 1895a Detroit Free Press. 15 May.

1895b Detroit Free Press. 16 May.

1895c Detroit Free Press. 12 June.

Door County Advocate [Sturgeon Bay] 1893 Door County Advocate. 28 October.

Hall, J. W.

1870 Marine Disasters on the Western Lakes During 1869. Detroit, MI. http://www.hhpl.on.ca/GreatLakes/Documents/ShipLists/Halls1869/default.asp

Heath, May Francis

1930 Early Memories of Saugatuck, Michigan, 1830-1930. Wm. B. Eerdmans Publishing, Grand Rapids, MI.

Karamanski, Theodore J.

2000 Schooner Passage: Sailing Ships and the Lake Michigan Frontier. Wayne State Press. Detroit, MI.

Mansfield, J. H.

1899 History of the Great Lakes. Vol. 1. J. H. Beers & Co, Chicago, IL. Reprinted 1972, Freshwater Press, Cleveland, OH.

Mills, James Cook

1910 Our Inland Seas: Their Shipping & Commerce for Three Centuries. A. C. McClurg and Company, Chicago, Il. Reprinted 1976, Freshwater Press, Inc., Cleveland, OH.

Milwaukee Advertiser

1836 Milwaukee Advertiser, 20 October.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior

National Park Service

National Register of Historic Places Continuation Sheet

Section	9	Page	4	Kate Kelly Shipwreck
				Lake Michigan, Racine County, Wisconsin

National Archives

1877a Admiralty Court Records, North District of Ohio, Case No. 1532. National Archives, Great Lakes Region, Chicago, IL.

1877b Admiralty Court Records, North District of Ohio, Case No. 1515. National Archives, Great Lakes Region, Chicago, IL.

Oswego Daily Palladium

1873 Oswego Daily Palladium. 6 November.

1875a Oswego Daily Palladium 27 September.

1875b Oswego Daily Palladium. 29 September.

1875c Oswego Daily Palladium. 30 September.

1875d Oswego Daily Palladium. 4 October.

1875e Oswego Daily Palladium. 6 October.

1875f Oswego Daily Palladium. 9 October.

1875g Oswego Daily Palladium.12 October.

1875h Oswego Daily Palladium. 25 October.

1897 Oswego Daily Palladium. 26 March.

Quaife, Milo M.

1944 Lake Michigan: The American Lake Series. Bobbs - Merrill Company, Indianapolis, IN.

St. Lawrence Seaway Management Corporation

2003 The Welland Canal Section of the St. Lawrence Seaway. http://www.greatlakes-seaway.com

United States Census Bureau

1860 New York and Saugatuck Township Population Schedule, Erie County, Michigan. U.S. Department of the Interior, Government Printing Office, Washington DC.

1870 New York Township Population Schedule, Erie County, Michigan. U.S. Department of the Interior, Government Printing Office, Washington DC.

1900 Saugatuck Township Population Schedule, Allegan County, Michigan. U.S. Department of the Interior, Government Printing Office, Washington DC.

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior

National Park Service

National Register of Historic Places Continuation Sheet

Section	10	Page	1

Kate Kelly Shipwreck Lake Michigan, Racine County, Wisconsin

Boundary Description

The area included in the site is a circle with a 500 foot diameter centered on the UTM coordinates 0440682 Easting, 4736425 Northing, Zone 16.

Boundary Justification

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

Wisconsin Word Processing Format (Approved 1/92)

United States Department of the Interior National Park Service

National Register of Historic Places Continuation Sheet

Section photos	Page 1	
----------------	--------	--

Kate Kelly Shipwreck Lake Michigan, Racine County, Wisconsin

Photo #1 of 1 Kate Kelly Shipwreck Wind Point vicinity, Racine County, Wisconsin Photo by Tamara Thomsen 21 August 2003 Negative at the Wisconsin Historical Society Windlass

