THE RECONSTRUCTION OF THE LAKE CHAMPLAIN
SIDEWHEEL STEAMER CHAMPLAIN II

A Thesis
by
ELIZABETH ROBINSON BALDWIN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 1997

Major Subject: Anthropology
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Approved as to style and content by:

Frederick M. Hocker (Chair of Committee)

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ABSTRACT

The Reconstruction of the Lake Champlain Sidewheel Steamer *Champlain II*. (May 1997)
Elizabeth Robinson Baldwin, B.A., Hollins College
Chair of Advisory Committee: Dr. Frederick M. Hocker

The steamship *Champlain II*, *ex-Oakes Ames*, was built as a railroad car transfer ferry in 1868 at Marks Bay, Burlington, Vermont in the private shipyard of Napoleon B. Proctor. The vessel was later converted to a passenger line boat in 1873, but was in service only a few years before she was dramatically wrecked on the night of July 16, 1875.

*Champlain II* holds an important place in the development of steamships on Lake Champlain. This thesis examines the historical and economic background of *Champlain II*, *ex-Oakes Ames*. Attention is paid to the original construction of *Oakes Ames* and includes a discussion of the railroad car ferry as a specific vessel type. The narrative includes a detailed corporate and financial history of the vessel's owners, the Rutland Railroad, the Delaware and Hudson Company and the Champlain Transportation Company, and chronicles the changes in *Oakes Ames*' ownership and her subsequent refit as a passenger line boat. Particular attention is paid to the details of the wreck and the folklore that grew surrounding the event.

The thesis also includes a narrative of the two-year archaeological study of the vessel, undertaken in the summers of 1993 and 1994, which involved full documentation of the dimensions of the hull timbers by divers. The findings of the archaeological recording are presented in detail and discussed as part of the overall architecture of the hull.
The archaeological data and archival materials on 19th-century wooden steamship construction were combined to create a reconstruction of the *Champlain II*, ex-*Oakes Ames*. The reconstruction is graphically depicted in this thesis by lines, construction and propulsion plans of the vessel. The vessel is then compared to other archaeologically examined steamboat wrecks of Lake Champlain.

Analysis of *Champlain II*'s hull construction and comparison between it and contemporary vessels has led to the conclusion that *Champlain II*, although built for non-passenger, cross-lake traffic, had framing and longitudinal support systems that were quite typical for Lake Champlain passenger line steamers of the period.
ACKNOWLEDGMENTS

It must be noted that archaeological field work can not be attempted without the support and assistance of people who bring their own unique talents and experiences to each project. The Champlain II Project has been blessed from the beginning, as it has taken place under the guidance of three individuals whose special genius it is to gather together the seemingly disparate skills of professional and student archaeologists, mechanics, boat captains, historians, divemasters and sport diving enthusiasts necessary to ensure the success of the endeavor.

The primary impetus to undertake the study of the Champlain II came from Dr. Kevin J. Crisman of Texas A&M University, and his research partner Arthur Cohn, Director of the Lake Champlain Maritime Museum at Basin Harbor, Vermont. They have dedicated much of their careers to the study of the historical shipwrecks of Lake Champlain, and in doing so have gathered a knowledgable community of supporters for each project. The Champlain II project would not have succeeded without access to that community. Their expertise, assistance, encouragement, and guidance, not to mention emergency transportation, throughout the many phases of this project have been invaluable.

The study and reconstruction of the Champlain's hull owes much to the teaching and sound advice given by Dr. Frederick M. Hocker of Texas A&M, and the Chair of my thesis committee. Dr. Hocker's attention to detail and consistent guidance have made this a much better work than it would have otherwise been.

I would also like to thank the final member of my committee, Dr. John Canup of the Department of History at Texas A&M. His advice, his unfailing good cheer and his willingness to assist me, despite pressing personal concerns, have been greatly appreciated.
The support of several institutions has also made the successful completion of this project possible. The Lake Champlain Maritime Museum gave generously of both its staff and resources. The Basin Harbor Club let us base our operations from their docks, and allowed us to moor the project boats in their well protected harbor. The Vermont Division for Historic Preservation, through state archaeologist Giovanna Peebles, provided funding for the first season of fieldwork to determine the feasibility of including Champlain II in the historic underwater preserve system in Lake Champlain. Thanks are also due to Texas A&M University, for awarding me three semesters of support as one of the Cook Graduate Fellows in New World Archaeology. The fellowship was created and funded by the Institute of Nautical Archaeology at TAMU, under the Archaeological Direction of Dr. George Bass

The recording of the Champlain II was undertaken in two consecutive field seasons in 1993 and 1994, and owes much to the individuals who generously gave their time. First among those were J.C. Cozzi, simply known as Coz, and David "Indiana" Robinson who generously shared their experiences and insights on directing nautical archaeology projects, as well as their respective research on Lake Champlain shipbuilders and steam vessels. Special thanks are due to Dave for his indispensable comments on the first draft. Erick Tichonuk, staff member at the Lake Champlain Maritime Museum, also made many contributions to this work, in the form of research, drafting, photography, and a great sense of humor when faced with misspellings of his name.

I would like to thank all of the divers, who put in many long, very cold hours of work. The 1993 Field School included Pat Beck, John Bratten, Kevin Crisman, Coz, Eric Emery, Alan Flanigan, Peter Hitchcock, Fred Hocker, Elizabeth Keenan, Science Kilner, Scott McLaughlin, Scott Mulholland, Stephen Paris, Dave Robinson, Erick Tichonuk, and Nate Wells. Special thanks must be given to divemasters Pat Beck, Dave Robinson and Erick Tichonuk who had the added responsibility of keeping
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The McLaughlin Family of Jericho, Vermont, generously let me stay at their house during the 1994 field season. The McLaughlins have been special friends for many different Nautical Archaeology Program students, housing them during their stays in northern Vermont, and keeping lots of ice cream handy. Scott McLaughlin also did an enormous amount of legwork to assist in the completion of this thesis.

Archival research for this thesis was undertaken with the kind assistance of Bill Bennet and Angie Vandreer at the National Archives, Chandi Singer of the Mariner's Museum, Newport News, Virginia, the helpful staffs of the Rare Book Collection at TAMU, the Clayton Genealogical Library in Houston and the Special Collections of UVM's Bailey/Howe Library.

Special thanks are also due to my colleagues and fellow students at TAMU's Nautical Archaeology Program. While it is usually said that misery loves company, so too does academic endeavor. The encouragement, shared research and experiences of the following individuals can never be fully repaid: classmates Juan Vera and Brendan McDermott; friends, classmates and colleagues Roxani Margariti, Rahilla Abbas Shatto and Georgia Fox who generously shared their house with me during the preparation of this thesis; Michael Fitzgerald, who is surely the world's finest editor; and especially David Grant, Edward Rogers and Richard Wills whose unceasing encouragement and boundless fraternity are greatly appreciated.

Both the Robinson and Baldwin Families are thanked for their generous emotional, academic and financial support, especially Carol Robinson's expert editing skills. And last, but most certainly not least, I would like to thank my husband, Rob Baldwin, for his unending and enthusiastic support.
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CHAPTER I
INTRODUCTION

On the night of July 16, 1875 the opulent passenger steamboat Champlain II crashed violently onto the rocky western shore of Lake Champlain. Although no lives were lost in the accident, the vessel itself was a complete loss. The wreck of Champlain II signaled the end of an era in steamboat transportation on Lake Champlain and the greater industrialized world.

Champlain II holds an important place in the development of steamships on Lake Champlain. Although it was on the lake only from 1868 to 1875, the vessel had two distinct service careers. The steamer was originally built by a railroad company to complete cross-lake rail routes, before it was sold and converted into a passenger vessel. As a passenger vessel, Champlain II ran in direct competition with the region's growing number of railroad companies. The steamer's changing service illustrates well the intense competition between railroad companies and their insatiable quests for routes to new markets, as well as the struggles of inland steamboat companies to maintain market share and adapt to changes in transportation technology.

Throughout the 19th century the waters of Lake Champlain teemed with a variety of commercial watercraft. The history of marine steam navigation on Lake Champlain began with the building of the small steamer Vermont in 1809, the second successful steamboat in commercial operation in the world, and continued well into the 20th

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This thesis follows the format of the Nautical Archaeology Series of monographs published by Texas A&M University Press.

1 Champlain Transportation Company (CTC) Papers, Carton 8, Folder 21, Special Collections, Bailey/Howe Library, University of Vermont.

2 Enrollments of the S.S. Champlain ex-Oakes Ames. Official File No. 19281, Enrollments for the Port of Burlington, No. 7, September 1, 1868, No. 4, June 8, 1873 and No. 6, June 8, 1874, Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.

3 CTC Papers, Carton 9, Minutes of the Champlain Transportation Company Board of Directors, 1826-1910.
century until the steamer *Ticonderoga* was retired from service in 1954 to be displayed at the Shelburne Museum in Shelburne, Vermont.\textsuperscript{4} The first quarter of the 19th century was vital to the advancement and worldwide acceptance of steamship technology. It was during this period that steamships were able to correct and improve upon previous problems and inadequacies and present a serious commercial threat to sailing vessels.

Between 1810 and 1850 no fewer than five commercial steamboat companies operated on Lake Champlain, with varying degrees of success.\textsuperscript{5} Commercial traffic on the lake boomed with the completion of the Champlain Canal in 1823, which provided a direct connection between the Hudson River and Lake Champlain (Fig. 1-1).\textsuperscript{6} A further spur to steam transport on the lake was the Supreme Court decision of the Gibbons v. Ogden case, which made state-granted monopolies, like Fulton and Livingston's in New York, unconstitutional.\textsuperscript{7} With the proliferation of both steam and sailing craft, the port of Burlington, Vermont became the most important collection and distribution center on the lake.\textsuperscript{8} The new steamboat companies' vessels worked in competition with each other, and with a large fleet of sailing merchant vessels. From Burlington, the vast agricultural and natural resources of the Champlain Valley and surrounding areas could be shipped by water both southward to the American markets of New York and Boston, and also north via the Richelieu River to the Canadian markets of Montreal and Quebec City. The importance of Burlington as a port, and Lake Champlain as a transportation corridor for steam vessels was further aided by the completion of the Chambly Canal in 1843.\textsuperscript{9} This canal to the Richelieu River, which flows north out of Lake Champlain

\textsuperscript{5} Ogden Ross, *Steamboats of Lake Champlain*, pp. 41-47.
\textsuperscript{6} G. Cone, "Studies in the Development of Transportation in the Champlain Valley to 1876," (M.A. thesis, University of Vermont) p. 44.
\textsuperscript{9} Ibid.
toward the St. Lawrence River, made it possible to ship goods from New York City through to Montreal via Lake Champlain and Burlington. Burlington also served as a wholesale center for greater Vermont's of agricultural and raw materials. A variety of mineral resources such as iron, copper, marble and granite were transported from Burlington to both New York and Montreal, and beyond.

Fig. 1-1. Map of Lake Champlain showing the 19th-century canals at the north and south ends of the lake. (drawing by the author)
The second half of the 19th century can be characterized by a transportation and communication revolution in which fundamental changes were made to both the transportation of commodities and the transmission of information.\textsuperscript{10} New materials and methods of manufacture produced improvements in technology, pitting different modes of transportation in new competition. Where steam technology had earlier been pitted against sail and horsepower, improvements to railroad technologies now placed the steam-powered watercraft and railroads in direct competition. It was against this competitive backdrop that the two careers of \textit{Champlain II}, \textit{ex-Oakes Ames}, would unfold.

Railroad interests reached the Champlain Valley by 1849.\textsuperscript{11} Their business was then characterized by small, independent companies which ran a small number of tracks over a relatively small geographic area, or that concentrated on a single transportation corridor. The impetus for rail development was to gain access to northern markets. Coal, iron ore, marble and granite were important raw materials being mined in northern New England and New York. The raw materials were moved from the mines via rail lines and the rail companies wanted to expand their lines to complete the mine to market network. The major obstacle to the development and expansion of the rail lines was the difficult mountainous topography of northern New England and New York. Once technology improved enough to overcome these geological obstacles, the rail lines could provide an all-season route to markets. While the waterways were natural paths for ships, in the northern climate of New England they were open to traffic only seasonally. The navigation season usually lasted from April through December, when the lake was free of ice.

\textsuperscript{10} H.B. Schonberger, \textit{Transportation to the Seaboard}, p. xiii.
\textsuperscript{11} Orr, "Historical Geography of the Lakeport of Burlington, Vermont," p. 46.
By the 1830's, rail had already reached the Hudson Valley corridor and the southern end of Lake Champlain.\textsuperscript{12} The Mohawk and Hudson Railroad, which connected the cities of Albany, on the Hudson River, with Schenectady in the Mohawk Valley, was completed in 1831.\textsuperscript{13} In the same year, the Saratoga and Schenectady Railroad was incorporated to further connect the Mohawk Valley with the growing vacation destination of Saratoga Springs. From a business standpoint, these lines were at a distinct disadvantage. The Legislature of the State of New York sought to keep the bulk of freight traffic on its state-owned Champlain Canal, so they gave the new rail lines the right to carry passengers and their baggage only and prohibited the transportation of all freight. Even with this disadvantage, no city wanted to be left out of the new web of rail lines, and town fathers raced to raise the funds to incorporate new lines. One such city was Troy, New York, auspiciously located at the head of navigation on the Hudson River, and at the terminus for both the Erie and Champlain Canals. In 1832 the Trojans chartered the Rensselaer and Saratoga Railroad to carry passengers from Troy to Ballston Spa, near Saratoga.\textsuperscript{14} The Rensselaer & Saratoga quickly grew into the dominant line in the area, taking majority control of the Saratoga & Schenectady Railroad in 1835.\textsuperscript{15}

The first rail company to reach the Champlain Valley was the Vermont Central, which had been chartered in 1843.\textsuperscript{16} By 1849 the line ran from Windsor north to Burlington (Fig. 1-2). That same year the line expanded with the lease of the Vermont and Canada Railroad, which was then beginning construction, and was to run from Essex Junction, just northeast of Burlington, northward toward Rouse’s Point.

\textsuperscript{12} J. Shaughnessy, \textit{The Delaware and Hudson}, p. 89. Shaughnessy provides a comprehensive biography of the D&H and a thorough study of the development of railroads in the region.

\textsuperscript{13} Ibid.

\textsuperscript{14} Ibid., p. 91.

\textsuperscript{15} Ibid., p. 95.

\textsuperscript{16} H.V. Poor, \textit{History of the Railroads and Canals of the United States of America}, p. 69.
Fig. 1-2. Map of the primary rail lines in the Champlain Valley in the mid-1840's. (drawing by the author)

The Vermont Central’s chief rival was the Rutland and Burlington Railroad, also chartered in 1843.\textsuperscript{17} In its early years the Rutland & Burlington's business suffered from bad management and barely managed to keep its trains running. Making matters worse, the Vermont Central management used every means possible to aid their rival's decline.

\textsuperscript{17} Ibid., p. 74.
Despite the provisions of its charter, which required the Vermont & Canada Railroad, under Vermont Central management, to form a connection with the Rutland line, the Vermont & Canada steadfastly refused to do so.\textsuperscript{18} Although the bulk of traffic for both lines was to and from Burlington, where the junction between the Vermont Central and the Rutland & Burlington was located, their schedules were in constant opposition, resulting in lengthy delays that were a great inconvenience to passengers. By 1858, public resentment had reached both the Railroad Commissioner and the State legislature, which established connecting schedules for the two lines.\textsuperscript{19} While the fortunes of both lines improved slightly, they continued to exist in a state of jealous rivalry for some time, with no road gaining dominance.

The Rutland and Burlington Railroad made a slightly unorthodox attempt to expand its rail network by the addition of a steamboat connection across the lake. In 1852 the railroad bought the steamboat \textit{Boston}, built by the Champlain Transportation Company in 1851, and used to transfer passengers and freight between Burlington and Rouses Point (Fig. 1-3).\textsuperscript{20} This steamboat connection eliminated the need for passengers traveling north of Burlington to transfer to the rival Vermont & Canada line. The Rutland & Burlington found this arrangement suited their needs so well that they then contracted to buy all the vessels of the Champlain Transportation Company (CTC) to form a cross-lake line of steamers. The CTC retained only its charter, and sold the vessels \textit{United States, Francis Saltus, Burlington, Whitehall} and \textit{Montreal} to the railroad, which operated the line through 1854.\textsuperscript{21} Unfortunately the operation of a full line of vessels ultimately proved unsatisfactory for the Rutland & Burlington, and in the fall of 1854 the CTC bought back all its ships except \textit{Boston}.\textsuperscript{22} \textit{Boston} continued to

\begin{footnotes}
\footnote{18}{J. Shaughnessy, \textit{The Rutland Road}, p. 19.}
\footnote{19}{Ibid., p. 20.}
\footnote{20}{Ogden Ross, \textit{Steamboats of Lake Champlain}, p. 89.}
\footnote{21}{Ibid., p. 91.}
\footnote{22}{Ibid., p. 95.}
\end{footnotes}
make transfer runs for the Rutland & Burlington line between Burlington and Rouses Point until 1859 when the CTC bought controlling shares, and subsequently used the vessel only to carry freight.\textsuperscript{23}

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{pleasure_excursion.png}
\caption{The Steamboat \textit{Boston}, owned by the Rutland and Burlington Railroad. (courtesy of University of Vermont [UVM] Archives, Lake Champlain Transportation [LCT] Collection)}
\end{figure}

The fortunes of the Rutland & Burlington were ready for the change that occurred with the arrival of John Page, who joined the Board of Directors in 1863 (Fig. 1-4).\textsuperscript{24} Page was a man of large fortune and great influence in Vermont. His private

\textsuperscript{23} Ibid.
\textsuperscript{24} Shaughnessy, \textit{The Rutland Road}, p. 20.
business, the Howe Scale Company, was the largest shipper on the Rutland line, and his public duty, as Treasurer of the State of Vermont, was to ensure the survival of the railroads as vital communication, transportation, and commercial links to the rest of the country.

Fig. 1-4. John Page, resident of the Rutland Railroad and former Governor of Vermont. (courtesy of Vermont Historical Society)

Under Page's leadership the Rutland & Burlington Railroad reorganized its corporate structure, repaired sadly neglected rolling stock and tracks and forged alliances with other small rail lines throughout the state. Page also turned to the surrounding states for new ways to secure the financial well being of the Rutland Railroad. The company's first move to the west was to secure the lease of the profitable Rensselaer &
Saratoga line in New York in 1865.25 Passenger traffic to the fashionable spa at Saratoga Springs was at its height, and the line also offered connections further west to areas rich in natural resources.

By 1867 the line had a new name, The Rutland Railroad Company, and John Page was elected as its President.26 That same year, his personal power and influence for the line were further advanced by his election as Governor of the State of Vermont.27 As Governor, Page seems to have operated under the popular theory that the business of the government is business. Therefore, his strategies for increased profits and dominance over rival lines continued.

Page wanted the Rutland Railroad to be the dominant regional rail line, with little competition form the Vermont Central and Vermont & Canada, and even less from the small lines on the western side of Lake Champlain. To control the lines on both sides of the lake the Rutland Railroad needed to secure control of the lake itself, as they had once done with the steamer Boston. If the Rutland line was to be a true regional leader it would need lines and stock that worked not only both sides, but across the lake itself.

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25 Ibid.
26 Ibid., p. 23.
27 Ibid., p. 25.
CHAPTER II
THE OPPOSITION STEAMBOAT OAKES AMES

In the cold, blustery months of late 1867, small sheds and other outbuildings were erected at the small private shipyard of N.B. Proctor on Marks Bay, in South Burlington, Vermont (Fig. 2-1). There, two men, Captain Napoleon B. Proctor, an experienced lake captain and the agent for the mysterious owners of the new vessel, and Master Carpenter Orson S. Spear, a well known Lake Champlain shipbuilder and house carpenter, began to oversee the construction of a steamboat. Their yard was located on the east side of Shelburne Bay, across the water from the Champlain Transportation Company's shipyard on Shelburne Point. The yard appears on Beers Atlas of Chittenden County of 1869, along with Proctor's home, which is in the area now known as Red Rocks Park. References to Captain Proctor are still visible on maps of Lake Champlain. The shallow area of the lake just off Proctor's property is still referred to as "Proctor's Shoal" (Fig. 2-2).

Born in 1808, Orson Saxton Spear had been a well known mariner as well as ship carpenter. The son and nephew of contractors and builders, he learned his trade in his family's business. But the Shelburne, Vermont native also became a lake captain, sailing canal boats such as Richard M. Johnson for the Merchant's Line by 1841, and a master ship carpenter, rebuilding Boquet. The vessel had originally been constructed as an 80 foot (24.4 m) horse-powered ferry in 1847, and was converted into a 30

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1 Burlington Free Press, December 7, 1867, p. 3; R.S. Styles, A Descriptive and Historical Guide to the Valley of Lake Champlain, p. 42.
5 T. Canfield, "Discovery, Navigation and Navigators of Lake Champlain," Vermont Historical Gazetteer, vol. 1, A.M. Hemenway, ed., p. 707. Canfield's chapter can best be described as a folk history of navigation on Lake Champlain, because much of the information presented as factual does not agree with primary source material, such as enrollment documents.
horsepower steamboat by Spear. Spear lived near Proctor's yard, at the north end of the shipbuilding town of Shelburne, residing in the home of his brother from the time of his wife's untimely death in 1849 until his own death in 1890 (Fig. 2-3). Archaeological

6 R. Bellico, Sails and Steam in the Mountains, p. 269.
7 Federal Census of 1850, 1860 and 1870, State of Vermont, Chittenden County.
Fig. 2-2. Detail of Beers Atlas of 1868 showing "Proctor's Shoal." (courtesy of UVM)

and historical research of sailing canal boats on Lake Champlain has also revealed that Orson Spear was the designer and builder of several canal boats, as well as steamers,
such as *Oakes Ames*, and other sailing vessels on the lake. His design expertise was such that he created lines drawings of hull designs, which illustrated the shape of the hull as a guide for construction.

Fig. 2-3. Map from Beers Atlas of 1868 showing the location of the CTC Shipyards (top center) and Orson S. Spear's home (extreme right) in Shelburne, Vermont. (courtesy of UVM)

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Napoleon Bonaparte Proctor's official capacity seems to have been as superintendent of the construction, as well as agent for the owners. Born circa 1812, he had a long history of steamship experience on the lake, and had a respected reputation as an inventor, but had not been noted for any previous attempt at construction. Proctor began his career on the lake sometime before 1832, by which time he was a registered pilot of steam vessels. He became a captain of steam vessels in 1847, and worked in that capacity through 1872. Captain Proctor earned his earliest command around the year 1850, when he became captain of the steam packet Ethan Allen. The vessel was at that time owned by the Steam Tow-Boat Company, one of the smaller commercial steamboat businesses on the lake. Unfortunately, in the fall of 1851 the CTC steamer Burlington accidentally rammed and seriously damaged Ethan Allen, resulting in a lawsuit with the Steam Tow-Boat Company. As a result of the litigation Ethan Allen was subsequently sold to the Vermont Central Railroad to transport passengers and freight across the lake. Historical records do not indicate whether Proctor continued to serve on the vessel after its sale to the Vermont Central, but the incident appears to be his first professional involvement with the railroad companies of the area. That professional involvement appears to have dominated the rest of his successful career.

In 1856, Proctor applied for and received a United States Federal Patent for a "Floating Draw Bridge" (Plan 2-1). Proctor intended the mechanism as "a new and Improved Mode of Constructing Floating Draw Bridges Across Navigable and other Streams and Waters." Within the detailed description of the bridge, Proctor made it

9 Spear Family Papers, "Lines Drawings of the Steamer Grand Isle," Special Collections, Bailey/Howe Library, University of Vermont.
10 Federal Census of 1840, State of Vermont, Chittenden County; Canfield, Vermont Historical Gazetteer, vol. 1, p. 707.
11 Canfield, Vermont Historical Gazetteer, vol. 1, p. 706.
12 Ibid.
13 J. Ogden Ross, Steamboats of Lake Champlain, p. 89.
15 Ibid., p. 1.
clear that he intended the mechanism to be used in conjunction with railroads: "I will Proceed to describe its construction and operation when used as a railroad bridge."\textsuperscript{16}

Certainly by the year 1868, his involvement with the railroad companies had reached its peak with the building of the new steamboat

There is no clear designation regarding each man's contribution to the design or general construction features of the vessel. It seems likely that Proctor was the driving force behind the construction, as he had previously patented the docking mechanism for the vessel and had a greater knowledge of a steam vessel's applications for the railroads. Spear, on the other hand, was the only one of the two men with the practical design and construction expertise. His vast experience with the construction of many different types of boats, as well as with house carpentry, gave him a broad repertoire of methods from which to draw. Their respective roles in the construction could thus be summed up: Proctor the motivator and Spear the implementor.

From the beginning of the project, Proctor and Spear were dedicated to maintaining a tight veil of secrecy surrounding the vessel's owners and its intended use. Even within the community of Lake Champlain sailors and shipbuilders, information concerning the new boat was scant, yet some aspects of the design were obvious.

Captain E.L. Harris, of Caldwell, New York, wrote to his good friend and colleague Orson Spear in November 1867. "I have heard that there was a boat building at your yard, but did not know by whom, or the dimensions, or for what purpose. I hope you may not be disappointed in the good qualities of your new steamer."\textsuperscript{17}

The \textit{Burlington Free Press} began a series of articles on the construction of \textit{Oakes Ames} in December of 1867, indicating that Captain Proctor superintended the construction, which proceeded under the direction of Master Carpenter Spear. 

\textsuperscript{16} Ibid.
\textsuperscript{17} \textit{Spear Family Papers}, Carton 1, E.L. Harris to O.S. Spear, November 23, 1867, Special Collections, Bailey/Howe Library, University of Vermont.
keel of a steamer, of first class size for our lake, was laid; and the ribs, which shape out its proportions, are now rising daily."18 However secret Proctor and Spear's plans were, even the local press could accurately judge the purpose of the new steamer. The Burlington Free Press' editors surmised that the boat was intended "for an opposition to the Vermont & Canada Road, by carrying passengers and freight between the Rutland Road and Plattsburgh."19 The Free Press also noted that a new company, "The Burlington Steamboat Company," had just been granted a charter by the Vermont Legislature, and that the new owners of the vessel would be organizing under that name.

Enrollment documents indicate that Oakes Ames was indeed commissioned by the Burlington Steamboat Company, a wholly owned subsidiary of the Rutland Railroad Company.20 The Board of Directors for the steamboat company included some of the same names as those of the Rutland Railroad directorship, most notably John Page, President of the Rutland, and former Governor of Vermont, and Mr. Smith Weed of Plattsburgh, a prominent local businessman.21

The Free Press' subsequent visits to Proctor's shipyard revealed no new information about the builders, but did yield some important information about the construction of the vessel. "She is a large boat; larger than any upon the lake, [and] she appears to be a very thorough piece of work. The white oak, chestnut, and Georgia pine timber, of which she is built, is all of extraordinary clearness and excellence, and she is put together in the most thorough manner. The fine proportions of the boat are now fully apparent."22

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18 Burlington Free Press, Dec. 7, 1867, p. 3.
19 Ibid.
20 Transcriptions of all enrollment documents are included as Appendix A.
21 Burlington Free Press, August 22, 1868, p. 3.
The mystery ended on June 3, 1868, when the unfinished vessel named *Oakes Ames* was launched quietly, with John Page, the members of the Board of Directors of the Burlington Steamboat Company and a few interested onlookers attending.23

Once in the water *Oakes Ames* was towed from the yard at Mark's Bay, South Burlington to the Rutland Railroad wharf at Burlington. From there the vessel was subsequently towed to the southern end of Lake Champlain, where it was outfitted with machinery. *Oakes Ames* was powered by two independent "walking beam" engines, built by the Fletcher Harrison Company of Hoboken, New Jersey.24 This was a common type of engine that worked on a simple reciprocating principle; it was characterized by a heavy, diamond-shaped elevated lever that pivoted at its center and transmitted the drive force from a vertical piston rod to a connecting rod which in turn drove the paddlewheels (Fig. 2-4).25 Originally developed between 1810-15, the walking beam was reliable, economical and easy to maintain, making it the universal engine of the eastern packet steamers.26

*Oakes Ames*' new boilers were built by T.S. Sutherland and Company of Whitehall, New York.27 The two independent boilers were placed well out on the guards (the portion of the deck that extends beyond the sides of the hull), with the two beam engines placed at the inside edges of the paddlehousings. Up until the 1820's, boilers had typically been placed within a vessel's hold.28 Such a placement came to be recognized as dangerous because any boiler mishap or explosion would immediately place the entire vessel in jeopardy. The subsequent placement of boilers out on the

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23 *Burlington Free Press*, June 3, 1868, p. 3.
24 *Champlain Transportation Company (CTC) Papers*, Carton 8, Folder 59, Special Collections, Bailey/Howe Library, University of Vermont.
guards was heralded as a great improvement in vessel safety. After the machinery was installed the vessel was towed back to Burlington.

![Diagram of a typical "walking beam" engine. Note the wooden A-frame had many iron tie rods attached to distribute the force of the working engine. (drawing by the author, after Tredgold)](image)

*Fig. 2-4. Diagram of a typical "walking beam" engine. Note the wooden A-frame had many iron tie rods attached to distribute the force of the working engine. (drawing by the author, after Tredgold)*

*Oakes Ames' first "walk on the water" was heralded with only slightly more fanfare.* On Saturday, July 25, 1868 the still unfinished vessel's boilers, engines and paddle mechanism were tested for the first time. During these trials, Captain Proctor was in charge of the vessel, and Pilot Knowlton was at the wheel, while Mr. Andrew

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29 *Burlington Free Press*, July 27, 1868, p. 3.
Fletcher, of the firm Fletcher Harrison, oversaw the firing of the boilers. An interested "knot of gentlemen," including Governor Page, were on the forward deck of the vessel as it made a run to Port Kent and back. The vessel was given only twenty-five pounds of steam (1.7 bar) in one of the boilers, as the blower for the second boiler was not yet in working condition. The reported time for the 10 mile (16.1 km) run from Port Kent back to Burlington was thirty minutes. Such a speed was impressive for a vessel operating on only one boiler. From this performance the engineers estimated that with both boilers working properly the vessel's average speed would be approximately 20 miles per hour (32.3 km/hour). Accordingly, the Burlington Free Press gave a rapturous review of Oakes Ames' performance.

She 'leaves the water' beautifully, with a wake as smooth, almost, as a mill-pond; is remarkably stiff and steady, steers as easily as a skiff, and is, in short, to all appearances a complete success. That she will be the fastest boat ever known on Lake Champlain is evident from her performance on Saturday. The fastest time ever made on the lake was by the Sherman, whose best time was twenty-eight and a half minutes from Port Kent to Burlington. The Ames has almost equaled that at the start, and without crowding.30

By the time of the trials, it was officially revealed that the vessel had been constructed by the operating company for the specific purpose of transferring railroad cars between the Rutland Railroad lines at Burlington, and the Montreal and Plattsburgh Railroad lines at Plattsburgh, New York. The Montreal and Plattsburgh Railroad was also owned by the Rutland Railroad Company. In addition to serving the railroads, Oakes Ames was to carry local passenger traffic between Plattsburgh and Burlington, stopping at Port Kent, New York, along the way.

A comparison with descriptions of other railway steamers of the period from Lake Ontario shows that the railroad car ferry was a standard type of vessel, whose construction varied in response to both location and carrying capacity needs.31

30 Ibid.
31 D. Ashdown, Railway Steamships of Ontario, p. 87.
transfer ferries debuted in North America circa 1853 and completed rail connections across a variety of inland waters.\textsuperscript{32} The most successful, and profitable, steamer lines were those that crossed larger bodies of water, such as the Great Lakes, where the circuitous paths of the rail lines took too much valuable time. From the beginning of their inception, rail transfer steamers were built to carry passengers as well as freight. \textit{Great Western}, which worked on Lake Ontario, was built in the 1870's, and was owned and run, like \textit{Oakes Ames}, by railroad interests (Fig. 2-5).\textsuperscript{33} The central portion of the vessel was tunnel-like, surrounded by passenger and crew compartments along the guards of the vessel, and roofed over by an upper deck and pilot house. This layout would explain why, in a drawing completed in 1870, the profile of \textit{Oakes Ames} appears similar to contemporary passenger vessels (Fig. 2-6).

\begin{figure}
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{Railroad transfer ferry \textit{Great Western} on Lake Ontario. (courtesy of \textit{The Windsor Star}, Windsor, Ontario)}
\end{figure}

\textsuperscript{32} Ibid., p. 88.
\textsuperscript{33} Ibid., p. 101.
Oakes Ames was celebrated in its day for both strength and speed, which was further proved in an official trial on Thursday, August 20, 1868. Two hundred and fifty people, including "a large party of gentlemen from most of the New England and New York [rail]roads, prominent capitalists connected with leading business enterprises, and invited guests, both ladies and gentlemen" were assembled to witness the first rail connection between the Rutland road and the steamer. Among them was the new vessel’s namesake, Oakes Ames, a wealthy shovel manufacturer and Congressman from Massachusetts, who was a newly appointed Director of the Rutland Railroad and a shareholder of the Burlington Steamboat Company (Fig. 2-7). In an article alongside

34 Burlington Free Press, August 20, 1868, p. 4.
35 R. Althern, Union Pacific Country, p. 36.
the report of the vessel, the *Burlington Free Press* gave a favorable biography of the Congressman.

A member for two years of the State Executive Council, and a Member of Congress since 1862, he has proved his eminent fitness for public as well as private trust. One of the original projectors of the Union Pacific Railroad, he showed his confidence in the route by becoming one of its largest stockholders. As one of the firmest friends and strongest supporters of the plan for the extension of the Rutland R.R. line, they have honored themselves in naming their new boat after him.\textsuperscript{36}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure2-7.png}
\caption{Massachusetts Congressman Oakes Ames. (courtesy of National Archives, Brady Collection, No. III-B-1245)}
\end{figure}

\textsuperscript{36} *Burlington Free Press*, August 20, 1868, p. 4.
A "new and elegant coach car" carrying the various dignitaries was run onto the steamer. A band, specially imported from Keene, Massachusetts for the occasion, entertained on the Rutland Railroad wharf as the vessel steamed south out of Burlington on its inaugural lake cruise. The real action for the day had actually taken place earlier in the morning. As Oakes Ames was steaming up lake for the inaugural festivities it came upon the CTC's steamer Adirondack at Port Kent. A race immediately began between the two vessels. As they raced toward Burlington, an excited throng began to gather on the dock to witness the trial. Oakes Ames swept northward of the dock and swung around, crossing the bow of Adirondack. In doing so, Oakes Ames was able to reach the dock about three lengths ahead of the Champlain Transportation Company (CTC) boat, "blowing her whistle (which was courteously responded to by her unsuccessful rival), and bearing aloft on her forward flag staff a broom as a token of her success."

Two days later, further reports on the launching of Oakes Ames gave readers an account of the vessel's capabilities and a complete listing of the ship's register. The vessel was designed to carry twelve to fourteen fully laden railroad freight cars at a time on two tracks that ran the length of the main deck. A small "tank engine" pushed the freight cars across the draw bridge and onto the forward deck of the vessel. The engine would then back off, leaving only the freight car on board for the voyage. At Plattsburgh, a similar engine would cross onto the vessel, and then back the cars off onto the dock. During the trial, only two cars, the special coach and one freight car, had been loaded "to show all how readily the transfer may be made. The settling of the boat as the cars passed on to the bow, was wholly imperceptible, and amounts by measurement to but an inch or two [2.5 to 5.1 cm]."

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37 The Free Press report listed the band as from Massachusetts. However, current atlases list both New York and New Hampshire as having towns named Keene, but not Massachusetts.
38 Ibid.
39 Burlington Free Press, August 22, 1868, p. 3.
Along with the one hundred and fifty odd guests of the railroad, the "Register of the Oakes Ames on her trial trip" includes the primary crew. Captain N.B. Proctor was the master of the vessel and his efficiency was well noted. "Capt. Proctor was everywhere, attending quietly to every detail of the starting."\(^{40}\) He was assisted by Chief Engineer David Miller, his second Engineer George Caldwell, Pilot Moses Knowlton, and Steward Henry Proctor, the captain's 37-year-old son.\(^{41}\)

One observer, the publisher R.S. Styles, described the vessel's features at length.

The novel and peculiar construction of the Oakes Ames [sic] requires a brief notice. She is remarkable for her great strength, and a speed scarcely never impeded by any stress of weather, that enables her to make the distance (about twenty-four miles) between Burlington and Plattsburgh, in a run of one hour . . . Her peculiarity consists in being constructed and adapted by her arrangements to form a prolongation of the railroads, or makes her rather, a vast floating railroad bridge . . . This wholly original and most important gift to labor, by skill and practical science, was invented and patented by Capt. N.B. Proctor . . . and will excite the closest examination. The circumstances connected with this steamer probably have no parallel.\(^{42}\)

This "vast floating railroad bridge" required a special docking arrangement, built on the east side of the Rutland Railroad wharf.\(^{43}\) Captain Proctor, who had patented the design for this "Floating Draw Bridge" in 1856, twelve years before Oakes Ames was built, had now brought his plans to fruition. The patent described a floating dock with a berth for a large steam vessel on one side and a draw bridge equipped with railroad tracks at the other side.\(^{44}\) The draw bridge could be lowered to connect with railway tracks on shore. The steamboat would enter the berth bow first, and then the forward bulwarks were removed. Freight cars were then pushed across the "self-adjusting" bridge and dock,

\(^{40}\) *Burlington Free Press*, June 3, 1868, p. 3.

\(^{41}\) *Burlington Free Press*, August 20, 1868, p. 4. Henry Proctor, who served on two different Union Navy ships during the Civil War, continued to follow in his father's footsteps, becoming a "Second Steamer Captain" by the year 1870. (*Federal Census of 1870, State of Vermont, Chittenden County, Micro-copy No. T8, Roll 407, Clayton Genealogical Library, Houston, Texas; T. Peck, *Revised roster of Vermont Volunteers*, p. 704.)*

\(^{42}\) Styles, *A Descriptive and Historical Guide to the Valley of Lake Champlain*, pp. 42-43.

\(^{43}\) *Burlington Free Press*, July 27, 1868, p. 3.

over the bow of the vessel and onto the main deck of the steamer. Proctor's floating dock, with its connecting hinged bridge, was a familiar sight at the end of Maple Street in Burlington for many years after Oakes Ames was launched. This docking arrangement was very similar to that built for the Lake Ontario railroad car ferry International, constructed in about 1857. Like Oakes Ames, the vessel carried up to 14 freight cars and was considered the first successful railway car ferry to operate in the Great Lakes region. Drawings of this vessel show a bridge-like mechanism that was lowered onto its forward deck, allowing the railroad cars to be pushed onto the main deck (Fig. 2-8). It bears a striking resemblance to the mechanism designed by Captain Proctor (see Plan 2-1).

Fig. 2-8. Railroad transfer ferry International on Lake Ontario. (courtesy of Canadian National Photographic Library, Montreal)

45 Ashdown, Railway Steamships of Ontario, p. 100.
46 Ibid., p. 101.
The *Burlington Free Press*’s description of the interior furnishings revealed the opulent taste typical of the late Victorian period. "[T]he Brussels carpets [are] down in the Ladies Cabin and the sofas and mirrors are in place [with] a splendid pyramid of flowers. . . forming the chief adornment of the cabin."47

*Oakes Ames* was successful as a railroad car ferry, but only for a short time, operating from August 31, 1868, through March of 1873. During this period the Champlain Transportation Company (CTC), the major passenger steamship operator on the lake, engaged in a contractual agreement with the Rutland Railroad. The CTC made Plattsburgh the terminus for passenger line service, and coordinated steamer schedules with the railroad schedule.48 The agreement provided the Rutland Railroad with increased traffic for its rail service, and no appreciable decrease in traffic for *Oakes Ames*. This profitable period ended on March 1, 1873, however, when a consolidation of railroad property in the Champlain region by the Delaware and Hudson Company eliminated the need for the vessel's services.

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CHAPTER III
THE DELAWARE AND HUDSON RAILROAD

The railroad companies of the late 19th century were constantly searching for opportunities to expand. In order to expand the rail lines to reach new markets the company had to build new track. Or, it could lease large portions of track that linked the tracks it was building or already owned from other lines. The Delaware and Hudson Company was one such enterprise.

The Delaware and Hudson Company (D&H) was founded as a transportation company for moving coal. Their first venture was to create a canal linking the anthracite coal areas in New York and Pennsylvania to the markets of New York City, Philadelphia and Delaware. Their first canal, connecting the Delaware and Hudson rivers, was begun in 1824 and completed in 1827.\(^1\) Such private enterprise was also prudentially seen as benefiting the public good, and the legislature of the State of New York, at Governor DeWitt Clinton's urging, granted $500,000 in financial aid.\(^2\)

The company began building railroads as an extension of its canals in 1826. The D&H had been trying to move coal from its Carbondale, Pennsylvania beds over the Moosic Mountains. The projected expense of continuing the canal over the mountains was too costly, so the Pennsylvania legislature authorized the company to build a gravity rail line to connect with the canal. The D&H was at the very forefront of the rail transportation revolution in the United States. The first horse powered rail line in the U.S., at Quincy, Massachusetts, had also been constructed that same year.\(^3\) By 1830 the D&H's 16-mile long gravity railroad constituted the greater share of all rail line mileage in the country.\(^4\)

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2. Ibid.
3. Ibid.
4. Ibid., p. 59.
The capitalist businessmen at the D&H were quick to see the advantages of rail transportation. Railroads would permit the company to move coal continuously, regardless of the effect of winter, which shut down boat traffic on the canals. More important for profit, rail afforded the opportunity to reach areas of undeveloped markets as an outlet for the D&H's increasing output of anthracite. The company continued to grow, increasing production of coal and expanding its network of rail lines to meet transportation needs. The D&H benefited greatly throughout the Civil War period, when the demand for coal was greater than either their production or transportation capabilities, which resulted in inflated coal prices. In response to the increased demands for transportation, the D&H began to employ other commercial railroads for shipping coal, starting with the Erie Railroad in 1863.5 The use of other rail lines soon induced the D&H management to acquire control of railroad companies that served lands the D&H had acquired for coal production.

The D&H was again greatly aided in its pursuit of greater market share by the State of New York. As a "canal" company, the D&H had no general railroad rights under its 1823 charter.6 To remedy this costly oversight, the company petitioned the New York legislature in May 1867 to be awarded all the powers and privileges enjoyed by railroad companies incorporated under the general railroad Act of 1850.7 Once granted these privileges, the D&H embarked upon an ambitious program of railroad expansion and acquisition that would give the company an all-weather distribution system reaching into vast new markets.

The D&H made its first move toward the markets of northern New York, the Champlain Valley and Canada when, in 1870, the company gained a perpetual lease of the lines of the Albany and Susquehanna Railroad.8

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5 Ibid., p. 60.
6 Ibid., p. 61.
7 Ibid.
8 Ibid., p. 63.
Their next target of acquisition was the Rensselaer and Saratoga Railroad (Fig. 3-1). The property of the Rensselaer & Saratoga embraced the entire upper Hudson Valley and extended to the head of Lake Champlain at Whitehall, the entry port for rapid

Fig. 3-1. Map of the D&H's rail lines in the Champlain Valley during the 1870's. (drawing by the author)
transportation northward.\textsuperscript{9} The Rensselaer & Saratoga's northern empire also included interests in steamboat lines of the Lake George Transportation Company and the Champlain Transportation Company (CTC), and the company was well run and very profitable. A lease of the Rensselaer & Saratoga by the D&H would increase the D&H's available facilities and its ability to move more coal profitably, as well as increase its non-coal revenues. By having lines that ran from their mines at Carbondale all the way to the head of Lake Champlain at Whitehall, the D&H could move its product cheaply and take on other freight as profit-making cargo. Even though traffic on the Rensselaer & Saratoga lines would, in the words of one D&H manager, "yield an income greater than we propose to offer for its lease," the Rensselaer & Saratoga accepted the D&H's offer of a perpetual lease in 1871.\textsuperscript{10}

The D&H turned almost entirely to railroading in 1873, after research showed that coal moved along the canals did not turn a profit, unlike that moved by rail.\textsuperscript{11} Rail was more profitable because the D&H could have complete control of the northern areas served without fear of competition or winter weather, and thus could reach a larger market than their competitors. With this thought in mind, the D&H next began to focus on the mostly unserved western side of Lake Champlain.

The principal northern New York line serving the western side of the lake was the Whitehall & Plattsburgh Rail Road. Chartered in 1866, the company had set out to join Whitehall, at the southern tip of the lake, with Plattsburgh, the major shipping and manufacturing town serving the northwest portion of the lake.\textsuperscript{12} The line had been greatly aided by the discovery of iron ore in the mountains west of both Crown Point and

\textsuperscript{10} Ibid., p. 68.
\textsuperscript{11} No author, \textit{A Century of Progress, A History of the Delaware and Hudson Company 1823-1923}, p. 243.
\textsuperscript{12} Shaughnessy, \textit{The Delaware and Hudson}, p. 137.
Port Henry, New York, but the two small completed portions of the road remained widely separated and generally unprofitable.

The east side of the lake had long been served by rail, with the Rutland & Burlington Railroad and the Vermont Central Railroad, along with their allied line to Canada, the Plattsburgh & Montreal, forming an all-rail north-south route that bypassed the seasonal boat traffic on the lake. The Vermont businessmen had a profound interest in preventing further rail development along the west side of the lake, as such lines would undoubtedly reduce their traffic considerably. This was especially true for John B. Page, the former Governor, President of both the Montreal & Plattsburgh Railroad (the name changed from Plattsburgh & Montreal in 1868) and the Rutland Railroad. Wanting to prevent further expansion on the west side, Page and his companies took advantage of the Whitehall & Plattsburgh's financial weakness to secure a 20 year lease of its lines.\(^{13}\) When the Vermont Central finally negotiated its lease of the Rutland Railroad lines in 1871, the whole northern transportation network was in the control of Vermont businessmen and was secure from western competition.

Predictably, those on the western side of the lake were not well pleased with this arrangement. Most vocal in his dissatisfaction was Mr. Smith Weed, a businessman from Plattsburgh. In early 1872 Weed, acting as a spokesman for a consortium of Plattsburgh businessmen, approached the Delaware & Hudson to try to interest them in building a through line on the New York side of the lake.\(^{14}\) Together they incorporated the New York & Canada Railroad Company.\(^{15}\)

The New York & Canada Railroad did complete some new rail construction extending the D&H-controlled Rensselaer & Saratoga road by 1872. However, true to

\(^{13}\) *A Century of Progress*, p. 246.

\(^{14}\) Ibid. In the thoroughly capitalist style of the day, municipalities wishing to create or expand their infrastructure did not routinely grant corporate tax incentives or issue bonds. Instead prominent businessmen pooled their capital and chartered independent companies that would in time benefit not only their cities, but also their personal businesses and fortunes as well.

\(^{15}\) Ibid.
the D&H's successful management style, the main objective was to obtain the lease of
the Vermont Central-controlled Whitehall & Plattsburgh line. The Vermont Central
system, understanding that the huge financial power of the D&H would enable the new
NY & Canada line to build new tracks parallel to the existing Whitehall & Plattsburgh
lines regardless of their consent, agreed to the lease in January 1873.

The D&H took immediate control of all leases and property of the Rutland
Railroad, which, of course, included Oakes Ames. The D&H's consolidation also
included all of the rights, franchises and properties of all the railroads on the west side of
Lake Champlain previously controlled by the Vermont Central/Rutland Railroad
partnership. They were then free to complete the rail route to Montreal along the
western side of the lake. As the railroad company wanted no competition for the railroad
from steamers, Oakes Ames was "sold" in the same year to the CTC, a wholly owned
subsidiary of the Delaware and Hudson, for conversion into a passenger steamship.  

17 Ibid.; Champlain Transportation Company (CTC) Papers, Carton 9, Minutes of the Champlain
Transportation Company Board of Directors, 1826-1910, Special Collections, Bailey/Howe Library,
University of Vermont.
CHAPTER IV
SERVICE TO THE CHAMPLAIN TRANSPORTATION COMPANY

On March 17, 1873 the Board of Directors of the Champlain Transportation Company (CTC) voted unanimously to purchase Oakes Ames, together with its boats, anchors, cables, tackle, furniture and entire equipment from the Delaware and Hudson Company (D&H).\(^1\) The newly-acquired CTC was a wholly-owned subsidiary of the D&H, and paid its parent company the sum of $85,000 for the ferry.\(^2\)

The CTC had been chartered in 1826 by a group of Burlington businessmen.\(^3\) The company was formed to take advantage of the well established supremacy of steam technology on the lake. They intended to seize the lion's share of the increased passenger traffic on Lake Champlain caused by the opening of the Champlain Canal some 5 years earlier. The company built its first vessel in 1827, and made a policy of buying out its competition, acquiring the rival Lake Champlain Steam-boat Company in 1833.\(^4\) The Champlain Ferry Company and the St. Albans Steam Boat Company were similarly acquired in 1835.\(^5\) In time, the CTC established business connections with various railroads and other steamboat lines, which by 1849 resulted in a "North and South Through Line" system of transportation.\(^6\) Such progressive practices proved extremely profitable, as passengers could buy tickets in New York for the passage all the way to Montreal via Hudson River steamer, the Rensselaer & Saratoga and Saratoga & Washington Railroads, and the CTC's steamers.

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1 Champlain Transportation Company (CTC) Papers, Carton 9, Minutes of the Champlain Transportation Company Board of Directors, 1826-1910, Special Collections, Bailey/Howe Library, University of Vermont.
2 Ibid.
3 J. Ogden Ross, The Steamboats of Lake Champlain, p. 50.
4 Ibid., p. 56.
5 Ibid.
In the growing atmosphere of competition between the railroads and the lake steamers, the CTC was quick and ambitious in forging permanent relationships with the growing rail companies. In 1852, for the sum of $125,000 the CTC sold all of its assets, except its charter, to the Rutland and Burlington Railroad, forming a water link to the railway connections north and west from Rouses Point, New York. The arrangement, however, proved unsatisfactory for both parties, and the CTC bought back its steamers and the shipyard at Shelburne Harbor in 1854.

Connections with the railroads were reestablished in 1858, when Colonel LeGrand Cannon and Captain L. H. Tupper gained controlling interest in the CTC. Both men were major shareholders in the Rensselaer & Saratoga Railroad, and Cannon's brother-in-law, George H. Cramer, was soon elected president of that railroad. They set about improving both the physical and financial interests and assets of the steamer line, and continued its expansion. In 1867 the CTC loaned the Lake George Steamboat Company, a company with whom it had close ties and compatible schedules, the sum of $20,000 in exchange for 200 shares of stock. The CTC then purchased another 193 shares outright, giving it complete control of the Lake George operation. By 1868 the combined interests of Cannon and his brother-in-law in both the railroad and the steamer line led to the purchase of $350,000 worth of CTC stock by the railroad, a majority amount, which gave the Rensselaer & Saratoga Railroad controlling interest in the steamer line. Finally, in December of 1870 the Rensselaer & Saratoga Railroad Company negotiated and accepted an offer from the Delaware & Hudson Company for a permanent lease of all its property and holdings, including the Champlain Transportation Company and the Lake George Transportation Company.

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7 Ibid., p. 249.
8 Ogden Ross, *The Steamboats of Lake Champlain*, p. 113.
9 Ibid.
11 Ibid.
While the CTC continued to operate as an independent subsidiary company, the Delaware & Hudson's control of the railroads on both sides of the lake ended the usefulness of *Oakes Ames*’ cross-lake rail connection. The Delaware & Hudson could now concentrate on the development of through rail lines on the west side of the lake, thereby moving their anthracite coal from the Pennsylvania and New York mines directly to the northern and Canadian markets, while it also stimulated and profited from the nascent iron ore industry of the Champlain Valley.  

Upon the opening of service in the spring of 1873, *Oakes Ames* was listed as a CTC line boat, along with *Vermont* and *Adirondack*, in regular newspaper advertisements for the line.  

The vessel continued to make the twice daily passenger ferry run between Burlington and Plattsburgh as she had before the sale to the CTC, leaving Burlington at 9 a.m. and 3:30 pm.  

Vessel enrollment documents reflecting the sale of *Oakes Ames* to the CTC show that Captain Proctor was no longer the master of the vessel. The captain and present master was listed as Capt. Byron J. Holt, "an able and reliable officer," although no other members of the crew are mentioned. Other sources indicate that Captain Proctor retired from steamboat service in 1872, at the age of 60, possibly as a result of *Oakes Ames*’ sale to the CTC.  

As the Delaware & Hudson slowly expanded its lines up the west side of the lake, the company no longer wanted the "competition" of the cross-lake passenger ferry.

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12 Ibid., p. 144.
14 *Burlington Free Press & Times*, April 25, 1873, p. 3.
15 *Burlington Free Press & Times*, May 5, 1873, P. 1.
16 *Enrollment No. 4*, April 24, 1873, File 19281, Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.; R.S. Styles, *A Descriptive and Historical Guide to the Valley of Lake Champlain*, p. 43.
It was then no surprise that at the January 1874 Board Meeting the management of the CTC decided to "rebuild, refit and repair said Steamboat [Oakes Ames] and convert the same into a passenger Steamboat of the same class as the other steamers forming the line."\(^\text{18}\) The board also made the appointment of Captain George Rushlow as the master of the Oakes Ames, at a salary of $1,500 per annum, and presented raises to crew members Clerk Abijah North and Pilots E.B. Rockwell, Alex Markee and John Eldredge.\(^\text{19}\) Special bonuses were awarded to crew members Eldredge and Markee along with Freight Clerk V.G. Hunt for "past efficient services."\(^\text{20}\)

The Board also adopted the following preamble and resolution to change the name of the vessel.

**Whereas** - This Company has within the past year purchased the Steamer "Oakes Ames" formerly used as a railway car ferry Boat between the tracks of the Rutland Railroad Company at Burlington & the Montreal & Plattsburgh Rail Road Company at Plattsburgh, and **Whereas** - it is the intention of this Company to rebuild, refit & repair said Steamboat .... and **Whereas** - the Company's Steamers have always been distinguished by a system of nomenclature indicative of the geographical features of Lake Champlain and its neighbors.

**Therefore, Resolved** - That the Executive Committee be and are hereby authorized and directed to petition the Congress of the United States now in session at Washington for permission to change the name of said Steamer "Oakes Ames" to that of "Champlain" a name long and favorably known as that of a steamer of this Company in its early history.\(^\text{21}\)

While such a motivation was undoubtedly historically correct, it is more likely that the good gentlemen of the CTC found themselves embarrassed by the recent Credit Mobilier scandal involving the vessel's namesake, Congressman Oakes Ames.

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18 *CTC Papers*, Carton 9, Minutes, p. 400.
19 Ibid.
20 Ibid.
21 Ibid. The original *Champlain* had actually been favorably known for only a short period of time. Built as a passenger vessel in 1816, the vessel burned under suspicious circumstances at its dock in Whitehall, New York, only one year later (Ogden Ross, *The Steamboats of Lake Champlain*, p. 33.).
Credit Mobilier of America was a corporation owned by Ames and others, and established in 1865 to construct a portion of the Union Pacific Railroad.\textsuperscript{22} Ames was also an owner of the Union Pacific, and in his position as a trustee of that railroad, awarded inflated contracts to Credit Mobilier Corp. Its trustees received payments from the Union Pacific, usually in the form of stocks and bonds, paid the actual costs of construction, and distributed the healthy profits among the holders of Credit Mobilier stock. A public scandal began in 1867 when it was revealed that Oakes Ames had tried to win friends and buy influence in Washington for his two companies. He did so by selling shares of Credit Mobilier stock at discount prices to his colleagues in the House of Representatives. In the fullness of time, Ames had proved himself to be unfit for public trust by his conduct in the affair. While he continued to deny any wrongdoing, he was officially censured by a House investigative committee.\textsuperscript{23} Permission to change the name of the vessel was duly approved by Congress on June 9, 1874.\textsuperscript{24}

Meanwhile, the refitting of \textit{Champlain II} began in the winter and continued through spring of 1874. The company spent an estimated $24,000 for the conversion, including approximately $6,000 for the furniture alone.\textsuperscript{25} The summer season of 1874 opened officially on June 8, 1874, with \textit{Champlain II} listed as a line boat along with \textit{Vermont}, \textit{Adirondack}, and \textit{A. Williams}.\textsuperscript{26} The \textit{Burlington Free Press} gave an effusive review of the steamer's debut as a passenger vessel, providing details of its new furnishings and praising it as "one of the staunchest, fastest and most comfortable vessels that ploughs the lake."\textsuperscript{27}

\textsuperscript{22} C. Ames, \textit{Pioneering the Union Pacific}, p. 8.
\textsuperscript{23} R. Atchearn, \textit{Union Pacific Country}, p. 124. Ames fully admitted to selling his fellow representatives the discount shares, but maintained that there was nothing wrong in doing so.
\textsuperscript{24} \textit{Enrollment No. 4}, April 24, 1873, File 19281, CRD, Record Group 41, NA, Washington, D.C.
\textsuperscript{25} Ogden Ross, \textit{The Steamboats of Lake Champlain}, p. 123; \textit{CTC Papers}, Carton 9, Minutes of CTC Board of Directors Meeting, January 6, 1875.
\textsuperscript{26} \textit{Burlington Free Press & Times}, June 10, 1874, p. 1.
\textsuperscript{27} \textit{Burlington Free Press & Times}, June 20, 1874, p. 3.
The centerpiece of the newly appointed vessel was a "magnificent state room hall" that ran 162 feet (49.4 m) on the main deck (Fig. 4-1). Such space for opulence was available due to its original configuration as a railroad ferry, in which the vessel's engines had been positioned well out towards the guards to keep the main deck free for rail tracks. According to the Free Press' enthusiastic writer "[t]he finish of the hall is remarkably well done, the door and panels being of the best butternut and black walnut" and the floor "carpeted with rich Brussels."28 The new layout also boasted 41 staterooms, one of which was "larger than any other on the lake," and was furnished with black walnut furniture.29 In addition there were three family room suites, located next to the water and "making them exceedingly cool in the warmest weather."30

The lush Ladies' Saloon, located on the lower deck below the main stateroom hall, was furnished with a "gorgeous carpet, which was ordered expressly for the

28 Ibid.
29 Ibid.
30 Ibid.
company in England."31 The captain's cabin was located forward, to the right of the entrance to the ladies saloon, while the post office and barber shop were located aft, to the port and starboard sides respectively. On the upper deck was located the Dining room, designed to seat 115 persons comfortably, with 46 roomy berths along its walls.

The Burlington Free Press also had considerable praise for the newly appointed officers and crew of Champlain II. Most noted was "that popular commander, Capt. George Rushlow," a "model of good management" who, the Free Press predicted, could be relied on to "always look to the safety and comfort of his passengers."32 Other officers praised were the Clerk, C.P. Russell, V.G. Hunt, an experienced steward, and John Eldredge, "a veteran pilot [who] 'minds the helm'."33

One of Champlain II's first passages, on June 9, 1875, was in aid to A. Williams, which had broken down the day before.34 Champlain II took A. Williams' passengers to Port Kent and Plattsburgh instead. Champlain II's next passage was as a special excursion boat for Barnum's Circus Show playing in Burlington.35 The steamer made special trips to pick up passengers in the ports of Rouses Point, Plattsburgh and Port Kent on the morning of June 10, 1874, and arrived in Burlington at 11:00 am in time for the afternoon performance.

Champlain II's work as a line boat proceeded smoothly until June 12, 1874. That afternoon, the lake schooner B. Noble was dismasted and its decks swept in a squall, somewhere between Port Kent and Burlington. The schooner was rescued and towed to safety by the screw propeller steamboat J. H. Hooker, but Captain Bullis of Noble complained to the Burlington Free Press that the "steamer Champlain went by without paying any attention to his signals of distress."36

31 Ibid.
32 Ibid.
33 Ibid.
34 Burlington Free Press & Times, June 9, 1874, p. 3.
35 Ibid.
36 Burlington Free Press & Times, June 13, 1874, p. 3.
In advertisements for the 1875 summer schedule the CTC did not list *Champlain II* as a line boat. The vessel was instead placed on special charter excursion service and on back-up duty for the line boats *Vermont*, *Adirondack* and *A. Williams*. The CTC offered special excursions for "the Glorious Fourth," that were to be three days of different trips to various points of interest along the lake, including grand celebrations at the Ausable Chasm. The steamers *Champlain II* and *A. Williams* were to take tourists to the Chasm, while *Vermont* and *Adirondack* would make trips to various towns around the lake.

On July 5th of that summer *Champlain II* made its last run as an excursion boat, carrying the Burlington baseball team, the Arctics, to a game in Plattsburgh. The hometown team happily trounced its rival across the lake, returning victorious aboard the line boat *Vermont* on the evening run. Yet later that same night, *Vermont* broke a piston and had to be taken out of service. *Champlain II* replaced *Vermont* on the night run from Ticonderoga to Plattsburgh, but had been on that duty a little over a week when the Pilot drove the vessel onto the rocks.

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38 *Burlington Free Press & Times*, July 1, 1875, p. 3.
39 *Burlington Free Press & Times*, July 6, 1875, p. 3.
40 Ibid.
CHAPTER V
THE WRECK

On the night of July 16, 1875, Champlain II was heading north on the lake from Ticonderoga, New York on the night line passenger run.1 The weather was fine, and the night was calm and clear with the moon almost full. Under the command of Captain George Rushlow, the steamer left Ticonderoga at about 9:30 pm and stopped at Westport, New York just before midnight to discharge passengers. No new passengers embarked, which left fifty-three paying passengers and several uncounted children.2 There, at about midnight, the pilots changed shifts. While the vessel was still at the Westport dock the first pilot, Ell Rockwell, becketed (strapped down) the wheel at the request of the relief pilot, John Eldredge.3 Rockwell thought Eldredge looked "gruff," and the two had a brief conversation. Rockwell later stated, "He usually said something like 'Well, you've got her along have ye' when he came into the pilot box, but that night when he came in, just as I was making the landing, he did not say anything to me and appeared glum."4 Eldredge made several attempts at lighting his pipe, and when Rockwell noted that he appeared "glum," he told Rockwell "I don't feel very well to-

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1 Champlain Transportation Company (CTC) Papers, Carton 8, Folder 21, Special Collections, Bailey/Howe Library, University of Vermont. The facts and details of the wreck are taken from the testimony of the crew as given in letters to the Directors of the CTC. See Appendix B for a full transcription of the statements. The CTC made these statements available to the local Steamboat Inspection Service officers, who also took testimony from the officers, crew and other interested parties. This testimony is transcribed in Appendix C. General facts stated that are not attributed to an individual's statement or testimony are the consensus of those testimonies and are thereby taken as facts.

2 Ibid., Statement of Abijah North, Clerk. It must be noted that Mr. North's statement is by far the most extensive of the officers. He relates not only his actions and those of fellow crew members, but also impressions, hearsay and opinions he considers relevant.

3 Ibid., Statement of John Eldredge, Pilot. Two spellings of Eldredge's name appear throughout testimony and press reports. "Eldredge" is used here instead of the alternate "Eldridge" as the first spelling appears in the statement given directly by Eldredge himself and is therefore considered to be correct.

4 Ibid., Statement of A. North. It must be noted that Pilot Rockwell's official letter to the Directors made no mention of this conversation. Clerk North's statement reported that Rockwell told the story to the other crew members after the events of the night had unfolded. Rockwell wrote a memoir of the event some years later (CTC Papers, Carton 8, Folder 21), but gave a slightly different narrative of the event.
night.\textsuperscript{5} There was a company rule that there should be two crew members in the Pilot House at all times when the vessel was under weigh, yet the second person, the young Wheelman Edwin Rockwell (cousin of Pilot E.B. Rockwell), was below taking his "lunch."\textsuperscript{6} Nevertheless Pilot Rockwell turned the wheel over to John Eldredge and retired to his room behind the Pilot House for the evening. Within minutes after Eldredge had taken the wheel, the steamer was rocked by a huge crash.

Although some crew feared that the rudder chain had broken or that they had run over another vessel on the lake, \textit{Champlain II} had actually been driven onto the rocky shoreline of Steam Mill Point, at the southern tip of Split Rock Mountain.\textsuperscript{7} As the powerful shocks and vibrations ended, Pilot Rockwell rushed back to the pilot house to find Eldredge standing at the wheel, simply staring into space. Rockwell asked if Eldredge had stopped the engines, and he said he had not, but Rockwell looked out and saw that the starboard engine had already stopped and that the port engine was in the process of stopping. When Rockwell questioned him, Eldredge turned to him and asked, "Can you account for my being on the mountain?"\textsuperscript{8} When the full import of the situation struck him, Eldredge was deeply shaken. "My God, how can it be, I was steering as I always steer, clear of the mountains."\textsuperscript{9} Third Pilot Alex Markee, who had to climb through the window of his cabin to exit, also went at once to the Pilot House. There he found Eldredge sitting on the settee, "swinging his hands up and down and mourning in a most pittifull [sic] manner."\textsuperscript{10}

\textsuperscript{5} Ibid., Statement of A. North.
\textsuperscript{6} Ibid., Statements of A. North and E.B. Rockwell, Pilot.
\textsuperscript{7} Ibid., Statements of A. North and G. Rushlow, Captain.
\textsuperscript{8} Ibid., Statement and Testimony of E.B. Rockwell, and The Story of the Wreck as told by Captain Ell Rockwell. The exact quotes are from Rockwell's testimony to the Local Inspectors, but are corroborated by the paraphrased account in the official statement, and similar quotes from the memoir. See Appendix B for a comparison.
\textsuperscript{9} Ibid., The Story of the Wreck as told by Captain Ell B. Rockwell.
\textsuperscript{10} Ibid., Statement of A. Markee, Pilot.
Captain Rushlow had been asleep only minutes when he was awakened by the crash. He went on deck at once, where he encountered the Wheelman Edwin Rockwell, who reported that the vessel had been run into the mountain. After inquiring who was at the wheel, and why Rockwell was not himself at his post in the Pilot House, the Captain went to the Port quarter to assess the situation. He found the vessel aground on the southern end of the Split Rock Mountain Range, at the north side of Rock Harbor, also called Steam Mill Bay. The vessel was listing to starboard, with the port guards and boiler hanging "over the mountain" and the deck broken approximately sixty feet abaft the stem (Fig. 5-1).

Rushlow knew immediately that *Champlain II* was a complete

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Fig. 5-1. *Champlain II* aground on the north side of Steam Mill Bay. (courtesy of UVM, LCT Collection)

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11 Ibid., Statement of E.B. Rockwell.
wreck. Captain Rushlow then observed the firemen shutting down the boilers on the starboard side, and further ordered all the fires under the port boiler put out, and the water blown from them. Many of the crew and passengers had been worried about the possibility of scalding steam escaping from broken pipes, but the engineers, Josefh Trombly and Peter Tarrent, had acted quickly and had opened all the safety values and blown off the steam.\(^{12}\)

Captain Rushlow immediately addressed the safety of his passengers. There was, understandably, a great deal of commotion among the passengers, especially in the larger public areas such as the stateroom hall. As the steamer settled rapidly and loudly at the stern, Captain Rushlow ordered all passengers to go forward quietly, as there was no immediate danger. Assured by his words, most took the time to dress and gather their belongings before going forward. While assessing the damage below decks, the Captain found Clerk North, Pilot Rockwell and the Mate Jerome Dumas. The cabin boys were hurrying above decks partly dressed, but the officers calmed them and bade them to return for their shoes and clothes. One of the boys said, "You can see the rock through the bottom."\(^{13}\)

Captain Rushlow then gave his officers their orders. The mate, Dumas, was to lower the life boats and bring them forward to the starboard gangway in readiness for transferring passengers to the approaching *Adirondack*. Passengers were put ashore by means of a gang plank laid out from the port rail by Pilot Markee and Dumas, while Pilot Rockwell was sent out in the small sail boat to hail *Adirondack* as it made its way south on the night run (Fig. 5-2). The clerk was ordered to assist the passengers onshore and then he was to see to his tickets and money. Once he was satisfied that things were proceeding in as orderly a fashion as possible, the captain went ashore to assist and check on the passengers. Jerome Dumas had gotten several lines from the vessel to the

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\(^{12}\) Ibid., Statements of A. North and G. Rushlow.

\(^{13}\) Ibid., Statement of A. North.
shore to "keep her up." Captain Rushlow gave further orders to Dumas to strengthen the
gangplank, had lanterns and fires lighted on the shore and inquired as to the condition of
the passengers. As no one was even seriously injured, he then assured them that they
would be transported by Adirondack and that all their baggage would be saved and
returned to them as soon as possible.

Fig. 5-2. The gangplank laid out from the port rail.
(courtesy of UVM, LCT Collection)
Meanwhile the clerk, North, had gone back into the staterooms looking for missing passengers. He was concerned about the family of the Honorable Smith M. Weed of Plattsburgh.\textsuperscript{14} It appeared that Mrs. Weed had been awakened by the shock of the crash, and her shriek had then awakened her husband. Mr. Weed went to his stateroom window, but upon seeing the clear night and noticing the ship was not in motion, told his wife, "They must have struck the dock in Westport pretty hard," and so went back to sleep.\textsuperscript{15} After seeing them safely on shore, North turned to his ticket receipts and money.

Crew member George Marney helped North get to the clerk's office below deck. The steamer was "listing over some and was settling away," making their task more difficult.\textsuperscript{16} By the time they got down near the Ladies cabin, it was nearly full of water, as was the Captain's room. They could see chairs and other furniture floating about the starboard side of the vessel. As Marney was already wet from earlier efforts, he waded in, climbed up on a settee, and got into the office. He then let North in by the window. The two took the various papers and money and transferred them to the Post Office, "there being a lock on the Post Office and it being all dry in there."\textsuperscript{17} After completing their task they returned to the main deck to wait for further orders.

By this time, some of the initial shock had passed and passengers were becoming more interested in their own worldly possessions. The crew had already gotten the greatest part of the baggage out of the "Barber's Lock-up," but some passengers were still unsatisfied. "One gentleman said 'I offered the Barber 5 dolls [dollars], if he would

\textsuperscript{14} Mr. Weed, as noted in the previous chapter, was an influential businessman from New York state, had been one of the directors of the Burlington Steamboat Co. which built the \textit{Oakes Ames}, and was also instrumental in assisting the Delaware & Hudson's ambitions on the west side of the lake. Clerk North was justifiably anxious regarding this 'V.I.P'.

\textsuperscript{15} \textit{CTC Papers}, Carton 8, Folder 21, Statement of A. North, Special Collections, Bailey/Howe Library, University of Vermont. The Weeds must have been sleeping in a starboard stateroom, or Mr. Weed would have seen the shore when he looked out.

\textsuperscript{16} Ibid.

\textsuperscript{17} Ibid.
get my satchel for me.' Captain said, 'Everything will be gotten off that can, without money sir!' Well says he, 'I left an umbrella on one of the settees, I wish I could get it.'\(^\text{18}\) Clerk North obligingly offered to fetch the umbrella, and so went below. He found the item in question in the bar. One of the crew, Mr. Bonds, was stationed there by orders of the Captain. The room, with its abundance of glassware, mirrors and etched pane glass, was in ruins.

At approximately 2:00 o'clock in the morning \textit{Adirondack} came alongside \textit{Champlain II}, having been successfully hailed by Pilot Rockwell. All the passengers and baggage were transferred onto \textit{Adirondack}. Captain Rushlow ordered Mr. North to accompany the passengers and see to their needs. As \textit{Adirondack} was obliged to stay on its appointed route to the south of the lake, it was not until noon the next day that the passengers from \textit{Champlain II} reached Burlington.

Just before dawn, the water in the wrecked \textit{Champlain II} had risen to the level of the promenade deck. At daylight, the Captain hailed the passing schooner \textit{J.G. Witherbee}. The vessel came alongside the wreck, and the remainder of \textit{Champlain II}'s freight was transferred onto the schooner. Freight Clerk Valentine "Valley" Hunt was sent with the schooner to deliver the cargo to Burlington.\(^\text{19}\) At about 7:00 o'clock in the morning, Pilot Rockwell hailed another schooner, \textit{Mary D. Craig}. At that point the crew began to remove the furniture and other furnishings from the vessel, beginning what would be an extensive salvage effort. Most of the crew remained on the wreck, assisting in the salvage, until the following evening. It was fortunate that they did.

While furniture was being transferred to \textit{Mary D. Craig}, the captain sent the steward back to Westport in a small boat in order to get some food for the crew. Portions of the galley and dining room of \textit{Champlain II} were under water, but the captain

\(^{18}\) Ibid. Emphasis original.
\(^{19}\) Ibid., Statement of G. Rushlow.
told Ell Rockwell that they could probably get some food and at least knives and forks if they could get to the upper end of the dining room. Rockwell took charge of the effort.

So, we cut a hole through the bulkhead and put a small waiter through, but he came back aflying and said there was a dead man in there. We cut a hold [sic] larger and I went in. There was a man lying on the berth. The side of the ship was stove in within two feet [61 cm] of his head. About four feet [1.2 m] of water was in the room and his shoes were floating in it. One corner of his berth was under water. I placed my hand on his arm and it felt warm. I shook him and he woke up. It appeared that he was a law student who had just passed his bar examination the day before and he had been celebrating and had slept through all the wreck.20

The young man in question later gave an interview to the Burlington Free Press where he claimed that, "[a]ll statements that insinuate the cause of my profound slumbers to have been anything else than hard work and previous interruption of sleep; or that attribute to me any unusual conduct on that occasion other than that of sleeping soundly, are false in every particular."21

During the commotion and landing of the passengers and salvaging of the cargo, no one had kept track of Pilot Eldredge. One of the crew or passengers who had gone ashore noticed that Eldredge left the ship about a half hour after the steamer struck the rocks, and disappeared into the woods. He was said to have wandered about in the woods for a couple days before he found the farmhouse of a Mr. See, who lived about two miles (3.2 km) from the wreck site. Eldredge did not know where he was and did not remember what had happened. He asked Mr. See to take him to Adams Ferry, near Westport, so he might cross the ferry to Panton 22 Pilot Eldredge returned to his own house in Colchester late on Sunday afternoon, July 18, 1875.23

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20 Ibid., The Story of the Wreck as told by Captain Ell B. Rockwell.
21 Burlington Free Press & Times, July 30, 1875, p. 3. Emphasis original.
22 CTC Papers, Carton 8, Folder 21, Testimony of E.B. Rockwell, Pilot, Special Collections, Bailey/Howe Library, University of Vermont.
23 Burlington Free Press & Times, July 19, 1875, p. 3.
Initially the wreck was treated as something of a miracle. That the vessel could be a complete loss without any accompanying loss of any life was indeed miraculous. True to the prophesy of the Burlington Free Press, Rushlow had indeed "looked to the safety and comfort of his passengers."\(^{24}\) No one was seriously injured, all the baggage was saved, and only a small part of the cargo was ruined. The situation must have been aided considerably by the fact that most passengers could clearly see that the vessel was aground and not in imminent danger of sinking.

Yet, the wreck of the newly refitted vessel rocked the financially troubled company, which along with local steamship inspectors, launched a thorough investigation into the incident. Early speculation was that the CTC had wrecked the seven year old vessel on purpose to collect the insurance money.\(^{25}\) However, it was quickly revealed that all of the CTC's vessels were insured only against fire and not for marine loss.\(^{26}\)

The entire crew was asked by LeGrand Cannon, president of the CTC, to submit written statements, and the local steamship inspectors took testimony from several of the key crew members, including the captain and Pilots Rockwell and Eldredge.\(^{27}\)

The investigation soon centered on the actions of Pilot Eldredge. Some of the crew initially came to Eldredge's defense, including Captain Rushlow, Pilot Rockwell and Clerk North. Rushlow stated that, "Previous to this [I] had considered Mr. Eldridge [sic] as good a Pilot as there was on the Lake."\(^{28}\) Rockwell also testified that, "He was a

\(^{24}\) Burlington Free Press & Times, June 20, 1874, p. 3.
\(^{26}\) Ibid. Steam vessels were required by maritime law to be insured against risks of launching and risk of fire. Any further insurance was optional. See F.G. Fassett, The Shipbuilding Business in the United States of America, p. 175.
\(^{27}\) CTC Papers, Carton 8, Folder 21, Special Collections, Bailey/Howe Library, University of Vermont.
\(^{28}\) Ibid., Statement of G. Rushlow.
first class Pilot in every sense of the word." It was the clerk, Abijah North, who spoke the most eloquently on Eldredge's behalf.

I labored with them, to put it in as charitable a light as possible - that it was no more than right in judging of him that we should try to place ourselves in his position, and see how we would like to remain there, and look those young men and boys in the face when he had endangered their lives in such a manner. It perhaps had never occurred to him so forcibly before how completely he had their lives in his hands, and it must have been an agony to him to remain.  

Even the newspaper reported in its initial coverage of the wreck on Friday, July 16, 1875, that "[h]e is considered one of the best pilots on the Lake." They also provided a probable cause for the accident. "[I]t is reported that a sudden break of the port engine threw the boat's head on the rocks before the starboard engine could be stopped and in spite of the efforts of the wheelman to keep her up." Such noble thoughts and sentiments, however, did not last long, as public opinion, spurred by rumors that Eldredge was a morphine user, quickly turned against him. The next report in the Burlington Free Press, on Saturday the 17th, began the innuendo. "The accident is a very strange one, and gives rise to many conjectures. Mr. Eldridge [sic] was one of the oldest pilots, and was considered one of the safest on the Lake. The most reasonable supposition is that in rounding the Point by some means he turned a little too soon, and the disastrous result followed." The Bennington Banner followed in a slightly more blunt, accusatory statement. "Why an old and life-long Champlain pilot should totally wreck his boat on a familiar shore is one of the inscrutable events that pass all comprehension and admit of no reasonable explanation, except constitutional carelessness, temporary hallucination or emotional insanity." Such articles were

29 Ibid., Testimony of E. Rockwell.
30 Ibid., Statement of A. North.
31 Burlington Free Press & Times, July 16, 1875, p. 3.
32 Ibid. It must be noted, however, that no "wheelman" was present to give his "best effort."
33 Burlington Free Press & Times, July 17, 1875, p. 3.
34 Burlington Free Press & Times, July 26, 1875, p. 3, reprinting a report from the Bennington Banner.
followed by more direct accusations. "There is a rumor afloat that he [Eldredge] was in the habit of taking opium, which, if true, would of course furnish a sufficient explanation."35

Rumors that had passed around the crew came to light in the statements and testimony given on July 24, 1875. Clerk North was told by others that Eldredge had been buying larger than normal quantities of a white powder thought to be morphine, at that time sold over the counter, from different druggists up and down the lake, and had even had friends, including Champlain II's baggage master, purchase some for him.36 The testimony of the Baggage Master, Theophile Roberts was pivotal to the investigation. As a lower level crew member, Roberts had not been required to submit a written statement regarding the wreck to the CTC. However, the prolix Clerk North related his revealing conversation with Roberts in his own statement. "I asked Theophile about it this morning - He said that 'he did get it for him in Whitehall.'"37 Upon questioning by the Local Inspectors, Mr. Roberts gave damning testimony.

About one year ago I purchased for him at Whitehall a bottle containing a white powder, price $1.00. About two months after, I purchased for him at Whitehall two bottles same as the first. I looked at the paper he gave me, that is, the order to purchase, and saw marked on the same two bottles of morphine. Mr. Eldridge told me he took the powder for a pain in his bowels, and that part of the supply was for the coming winter. I never saw him take any.38

The Local Inspectors produced no fewer than four druggists from the Champlain Valley who had sold the drug directly to Eldredge, but only one testified that he thought

35 Burlington Free Press & Times, July 22, 1875, p. 3.
36 CTC Papers, Carton 8, Folder 21, Statement of A. North, Special Collections, Bailey/Howe Library, University of Vermont. In the late 19th century morphine was not yet a controlled substance. It was sold over the counter, without any need for a doctor's prescription. The massive use of morphine during and following the Civil War helped make opiate drugs the anodyne of choice for Americans. See D.T. Courtwright, Dark Paradise, Opiate Addiction in America before 1940, pp. 35-55.
37 Ibid.
38 Ibid., Testimony of T. Roberts, Baggage Master.
Eldredge was a habitual user. Even Eldredge's house painter testified that he had seen him in trance-like states. Eldredge himself claimed that the drugs had been for the general use of his family, and that he had never taken any. However, his reputation was in tatters. People began to remember some of the low points of his career. Although Eldredge had been a pilot on the lake for over twenty years of distinguished experience, his career had not been without its darker moments.

Eldredge had been at the wheel of the CTC steamer *United States* during a fatal collision with the sloop-rigged canal boat *W.W. Wright*, several years earlier. Late on the evening of Thursday July 30, 1868, the steamer was heading south from Burlington, when it suddenly came upon *Wright*, which was sailing without running lights. Although Eldredge immediately sounded the alarm and stopped the engines, *Wright* struck portside of the steamer just in front of the forward gangway. *Wright* was turned under the guards of the steamer, and dragged underneath the paddlewheel. The captain of *Wright*, Charles Blair, was killed, and nearly cut in two by the wicked action of the wheel floats. The officers and crew of *United States* were officially "exonerated of any charge of blame or neglect," and were, in fact, praised for their "prompt action and coolness" in rescuing the survivors. Yet, in retrospect, the incident, and others, like that of *B. Noble*, the dismasted schooner that was passed by *Champlain II*, now came to light and cast doubts about Eldredge. Although there was no proof that Eldredge had been at the wheel at the time the steamer passed by the distressed *B. Noble*, or even a permanent member of the crew, that incident, too, now reflected badly on his character.

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39 Ibid., Testimony of I.M. Bellrose, Druggist. Eldredge's personal characteristics fit easily into profiles of typical late 19th-century addicts. While most were women, men who were addicts were usually white, middle to upper-class, middle aged and typically began their addiction using the drug for medicinal, rather than euphoric or experimental purposes. See D.T. Courtwright, *Dark Paradise, Opiate Addiction in America before 1940*, pp. 35-41.

40 Ibid., Testimony of J. Eldredge.

41 *Burlington Free Press*, July 31, 1868, p. 3.

42 Ibid. The fact that the canal boat was sailing without running lights was a direct violation of maritime law, as well as common sense! Ironically the collision with the *W.W. Wright* was reported directly above a reprint of the *Burlington Free Press* earlier article announcing the trial run for the *Oakes Ames*. 
In the end, the steamship inspectors concluded that Eldredge was addicted to morphine and had most likely lapsed into a drug-induced stupor while at the wheel. The lack of direct, conclusive evidence against Eldredge is surprising, but it must be remembered that this was a corporate proceeding and not a case within the court system. While most of the evidence would be dismissed today as hearsay, Eldredge had already been tried and found guilty in the court of public and corporate opinion. Abijah North, who had once spoken eloquently in his defense, gave an able expression of the public sentiment.

Now then, omens or no omens in black cats - morphine was the black cat that run us on those rocks - and if the truth ever became known I cannot but believe it will prove to be so - It seems to me that the law must have some hold on a man that will do as he must have been doing these past few years, and that too secretly, and deliberately. He must have known what risks he was taking in the use of it .... See what a cool way and deliberate [sic] he took advantage of the confidence the company had in him - and how careful he had kept it to himself - and now see where he has brought us - nothing but a merciful providence ever saved him from having those one hundred lives to account for. Providence that it happened to run upon the only place where it could hold. Providence that it happened to be a steamboat with two separate engines so that there were no steampipes across the center in which to break the connection and scald some, if not many persons to death, or perhaps worse scatter the fires and burn them - Providence that no one was hurt even, and lastly, Providence in having a Captain over him who could be thus wakened from a deep sleep and get his passengers and crew off without a panic, say nothing of the fact that it was almost noiselessly done. I can imagine, gentlemen, that it might not sound very well, to get out that a company had had such a man in their employ for several years and not know it but I can also [urge] that did they come out and expose such a man, and if it can be done, punish him to the extent of the law, making it an exemplary case to all future employees, that it would strengthen the confidence in them much more in the eyes of all good men, than the mere fact that a man had deceived them, would tend to weaken such confidence.\(^{43}\)

The Local Inspectors of Steam Vessels agreed. Their official report to the Steamboat Inspection Service stated, "from the testimony adduced, it was found that the pilot in

\(^{43}\) *CTC Papers*, Statement of A. North, Special Collections, Bailey/Howe Library, University of Vermont. Emphasis original.
charge of the boat at the time had been for some time past addicted to the habitual use of
morphine, and was either stupefied or asleep while standing at the wheel. "44 While the
Official Abstract of Water Reports from Life-Saving Stations neutrally stated only that
"Pilot mistook bearings," John Eldredge's license to pilot any vessel was summarily
revoked.45 His reply to the authorities was said to be "Gentlemen, wait until I ask you
for one."46

No other official action or censure was taken. Wheelman Edwin Rockwell, who
was conspicuously absent from his post, and whose presence might have averted the
disaster, was not even mentioned in the final judgment, and CTC records show that he
continued to be employed and promoted with the steamer line, eventually becoming a
captain.47

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44 *Records of the Bureau of Marine Inspection and Navigation, Reports of Casualties and Violations of Steamboat Laws,* Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.
46 This alleged quote is unattributable, but is part of the extensive folklore surrounding the wreck of
Champlain II. (Pers. comm. from Arthur Cohn of LCMM.) Eldredge's implication was that he had never
been granted a license in the first place. Beginning in 1852 steam pilots were required to have a United
States license to pilot steam vessels. See D.L. Stein, *American Maritime Documents 1776-1860,* p. 152,
and L.M. Short, *The Steamboat Inspection Service,* p. 110. Unfortunately, there is no central archive for
such documents, and efforts to determine whether a license had ever been issued to John Eldredge were
unsuccessful.
CHAPTER VI
TO PIECES ON THE ROCKS

Champlain II had been driven out of the water for one-third of the length of its keel, and had listed to starboard, away from shore. The "back" of the steamer, that is the longitudinal stiffening timbers, had broken in the crash and the vessel was declared a total loss.

The task of salvage began immediately, with the furniture and furnishings being taken off the steamer starting the morning after the wreck. The CTC anticipated that it would take at least a month to finish the task.1 Shortly thereafter the more valuable engine machinery was removed and taken to the CTC yard at Shelburne Harbor.2 The two vertical beam engines, boilers, pipes and metal fittings were all removed for either reuse or sale.3 The engines, numbered 55 and 56 in 1868 by the builder, the Fletcher Company, were subsequently put into two different steamers. Number 55 was put into Horicon on Lake George, while Number 56 was placed in City of Catskill on the Hudson River.4 Planking from the vessel was sold as loose lumber and individual parts of the steamer, such as staterooms, were both sold and given away as favors as CTC management saw fit. The Pilot House was given to Charles Hart, the son-in-law of CTC General Manager Elijah Root.5 Henry Higgison was given a large portion of the wooden veneer work from the main saloon, which he used to decorate the walls of the dining room of his summer house near Westport.6 And the Cuttingham family, also of the

1 Burlington Free Press & Times, July 19, 1875, p. 3.
2 Burlington Free Press & Times, July 26, 1875, p. 4.
3 Champlain Transportation Company (CTC) Papers, Carton 8, Folder 21A, letter of February 3, 1879 from the Director of the CTC to the Board of Directors of the Delaware & Hudson Company, Special Collections, Bailey/Howe Library, University of Vermont.
4 CTC Papers, Carton 8, Folder 59, p. D.
5 CTC Papers, Carton 8, Folder 59.
north shore of Westport, purchased some of the dishes, silverware and dish cupboards from the ship's dining room.\(^7\)

The wreck was well publicized and caused a sensation. Newspaper coverage was comprehensive, with each small development or event faithfully chronicled. To the delight of locals, the story was carried in papers as far away as New York City. Indeed some locals voiced "a distinct sense of wistful regret that the wreck has not been more shocking, so as to attract more attention in foreign parts, but we made the most of the story as it was."\(^8\) Thus, while the CTC carried out the important work of salvaging what they could from the vessel, they also took full advantage of the sensationalism of the event. Within a week of the wrecking, the CTC began to offer excursion tours to the wreck site (Fig. 6-1).

![Image of Champlain](image_url)

**Fig. 6-1.** Sightseers visiting the wreck. (courtesy of UVM, LCT Collection)

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\(^7\) Ibid.

On July 21, 1875, A. Williams advertised an evening excursion to the wreck at the modest price of $.50 per adult, with the guarantee that "ample time to see the wreck before dark will be afforded."\(^9\) A few days later, on July 26, 1875, two hundred people were taken to view Champlain II on A. Williams.\(^10\) "The evening was delightful, and all were highly pleased with the trip," which was made more agreeable by the thrilling narrative provided by CTC employee P.W. Barney, who was not present during the catastrophe, but no doubt was well informed of the details of the event by the company.\(^11\) The remains of Champlain II quickly became a preferred excursion destination for A. Williams. Even the Episcopal Society and Sunday School of St. Paul's Parish took their annual boat ride and picnic at the wreck site.\(^12\) A correspondent from the St. Albans Advertiser attended the picnic, and offered the following prose to mark the occasion.

How strangely amazing the spectacle and how our sense of the marvellous [sic] deepens when we attempt to follow up in our minds the cause of this disaster from the effect. But lo, what a sudden change in our thoughts upon withdrawing in our eyes from this scene to that on board. Instead of wild disorder and desolation we behold fair and picturesque groups and pairs of youth and maidens reclining here and there in the easy and artistic postures prompted by the action of the tender passion, and for the moment, at least, one might stake their all that that reputed turbulent current is running smoothly as the most fastidious could desire.\(^13\)

The wreck also became a favorite subject for photographers, especially Mr. Baldwin of Keeseville, whose stereoscopic views of the wreck site were touted by the Burlington Free Press as better than "any other yet made" (Fig. 6-2).\(^14\)

\(^9\) Burlington Free Press & Times, July 21, 1875, p. 3.
\(^10\) Burlington Free Press & Times, July 26, 1875, p. 4.
\(^11\) Ibid.
\(^12\) Burlington Free Press & Times, July 28, 1875, p. 3.
\(^13\) Burlington Free Press & Times, August 3, 1875, p. 3.
\(^14\) Burlington Free Press & Times, July 31, 1875, p. 4. Original stereoscopic prints of the wreck are in the Special Collections of the University of Vermont Bailey/Howe Library. Those stereoscopic views are the basis for the single view photographs of the wreck reproduced in this thesis.
The CTC also used the newspapers for "damage control," using the power of the press to reassure the public about the safety, comfort and efficiency of their line of steamers. The press was dutifully informed that Vermont was repaired and had resumed service as a line boat within five days. The CTC was careful to assure the public that the line would run "as before the wreck of the Champlain."\textsuperscript{15} The company also found it a good time to publish excerpts from a history of the Champlain Transportation Company written by Thomas Canfield for Abby Hemenway's compendium \textit{Vermont Historical}

\textsuperscript{15} \textit{Burlington Free Press & Times}, July 21, 1875, p. 3.
Gazetteer. The article covered the history of the company from its founding in 1826 through what was then the present day, making special reference to the overall safety record of the line.

In a period of nearly half a century the Champlain Transportation Company has controlled some twenty different steamers on Lake Champlain, and .... [t]he whole time of their use amounts in the aggregate to .... about 133 full years. In this long series of years various mishaps and accidents have befallen the boats. .... [A]nd now the Champlain has gone to pieces on the rocks; but in all the record of loss there were no human lives sacrificed. We think few companies have been so fortunate in preserving their steamers, and fewer still in securing the perfect safety of the millions who have taken passage in them!17

The full salvage of Champlain II was completed on August 28, 1875, and the newspapers reported that "the hulk is now to be sold, or failing that, to be burned."18

With the remains of the steamer gone, the incident and Champlain II began to slowly fade from memory.

16 While it has already been stated that Canfield's work must be regarded as a folk history, the CTC's use of the excerpt can only be seen as corporate propaganda.
17 Burlington Free Press & Times, August 16, 1875, p. 3, quoting an excerpt from Thomas Canfield, "Discovery, Navigation and Navigators of Lake Champlain." Emphasis original.
18 Burlington Free Press & Times, August 31, 1875, p. 3.
CHAPTER VII
THE CHAMPLAIN PROJECT

While the story of the wreck of Champlain II is widely known, we understand much less about its original construction as a railroad car ferry or about the structural changes made to the hull during the conversion to a passenger steamer. No lines drawings of the hull design for Oakes Ames have been located, and construction plans showing the original structural design have not been found. Nor is there any record of the structural changes made by shipwrights at the CTC yard in Shelburne, Vermont, besides the enthusiastic press descriptions of Champlain II's luxurious appointments.

The project of recording the remains of Champlain II began in the spring of 1993. The State of Vermont Division for Historic Preservation had for some time maintained an extremely successful Underwater Historic Preserve Program (Fig. 7-1).

Fig. 7-1. Diver utilizing the Vermont Historical Underwater Preserve on Lake Champlain. (courtesy of LCMM)
The state had opened several wreck sites beneath the waters of Lake Champlain to recreational divers by providing a safe mooring system for dive boats and making available literature about the historic and archaeological significance of the site. Although the lake is bordered by two states, New York and Vermont, the Vermont Division for Historic Preservation was alone in administering and funding the archaeological investigations of wreck sites in Lake Champlain. As *Champlain II* lies in New York waters, the Division hoped to involve the state of New York in the preserve system.

A brief preliminary study of the remains of *Champlain II* had been made in 1988. Local avocational divers William Breitigan and Dennis Guppy made a series of dives on the hull as part of a diving class, took some measurements and made drawings of the wreck site and the engine bedlog timbers (Fig. 7-2). The results of their study were reported to Arthur Cohn of the Lake Champlain Maritime Museum. While the drawings are simplistic, and lack archaeological detail, they do convey the general orientation of the wreck, its overall appearance and excellent state of preservation.

In 1993 the Lake Champlain Maritime Museum was awarded a contract to conduct a preliminary study of the wreck by the Vermont Division for Historic Preservation. Our mission was to conduct a general survey of the wreck and assess its condition and potential as an underwater preserve, and record as much of the hull structure as possible within a four week period. The Maritime Museum, under the direction of Arthur B. Cohn, has a long record of thorough archaeological investigations of the wrecks of Lake Champlain. The Museum has also co-sponsored several summer field schools with Dr. Kevin Crisman of Texas A&M University. Crisman and Cohn have investigated many different wrecks, from vessels of the French and Indian War to one of the earliest steamboats on Lake Champlain. The recording of the remains of

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Fig. 7-2. Site plan made by avocation divers Breitigan and Guppy. (courtesy of LCMM)
Champlain II was undertaken as part of the 1993 Texas A&M-University of Vermont archaeological field school.

The wreck site is located in northeastern New York within the central portion of Lake Champlain. The lake is situated between Vermont and New York states, and flows north into Quebec, Canada. Lake Champlain is 107 miles (172 kilometers) at its maximum length and has a maximum width of about 10 mi. (16.1 km.). The total area of the lake is 490 sq. mi. (789 km.). The open site is located at the southern end of the Split Rock Mountain Range, a part of the Adirondack Mountains that create the western boundary of the Champlain Valley. The site is near the boundary of the Adirondack-Canadian Shield and the Champlain Lowland geographical regions.

The remains of the vessel lie between two small coves now called Rock Harbor and Barn Rock Harbor. Rock Harbor is 3.2 miles (7.04 km) north by northeast of the town of Westport, New York, and 0.9 miles (1.98 km) west by northwest across the lake from Basin Harbor, Vermont (Fig. 7-3). Basin Harbor is now part of the extensive

![Map showing Rock Harbor, New York, Westport, New York and Basin Harbor, Vermont. (courtesy United States Geologic Survey)](image-url)
grounds of the Basin Harbor Club, a summer boating and recreation haven. The Lake Champlain Maritime Museum is located within the club's property. The club generously donated landing and mooring facilities for the duration of the project.

The site of the wreck was well documented in the 19th century. R.W. Stoddard's 1892 "Map of Lake Champlain" records the wreck with the words "Str. Champlain wrecked 1875" (Fig. 7-4). The map also shows that the southern end of Split Rock Mountain was renamed "Calamity Point" in local folklore as a result of the wreck.

![Map of Lake Champlain showing "Calamity Point".](image)

Fig. 7-4. Detail of Stoddard's map of 1892 showing "Calamity Point." (courtesy of LCMM)

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2 R.W. Stoddard, *Map of Lake Champlain*. 
The remains of *Champlain II* now lie in shallow water just south of Calamity Point. The adjacent New York shore is largely undeveloped and is characterized by thick mixed deciduous forest sloping down to steep, bare, rocky cliffs at the water (Fig. 7-5). Called the Palisades, the area is within the boundaries of the Adirondack Park System and is therefore protected by the park's stringent environmental codes.

Fig. 7-5. The rocky New York shore adjacent to the wreck site. (photo by K.J. Crisman)
The bottom sediments of the lake around the wreck site are made up of coarse metamorphic material with a moderate amount of fine silt and clay. Most of the material has eroded off the adjacent shore. The shipwreck sits on a narrow shelf along the shoreline. The maximum water depth in the immediate area of the wreck is 38 feet (11.6 m) at mean low water. Light does penetrate down to the site, but the bottom sediments are not nourishing enough to sustain aquatic plant life. The water temperature at the site varies from 35° to 75°F (1.7° to 23.9°C) over the course of the summer. The shipwreck provides protection and habitat for fish and other aquatic life, such as native mussels. Unfortunately, as of 1996, approximately ten percent of the wreck is currently covered by zebra mussels, an invading species.

The 1993 field school season began with a reconnaissance dive on the very cold, wet Sunday morning of June 6th. Kevin Crisman and I dove, while fellow Nautical Archaeology program graduate student Peter Hitchcock tended the inflatable boat. We were guided to the site by directions obtained from Arthur Cohn and quickly found the wreck. This first reconnaissance dive revealed a large well-preserved hull lying upright in 16 to 35 feet (4.8 to 10.6 m) of water. The starboard side of the hull's central portion was found standing intact. The port side had collapsed outward, just abaft amidships. The hull was open, with few obstructions for divers, and could be recorded without excavation. The site's conditions were ideal for the field school.

The first task of the project was to establish a temporary mooring system on the site that would be used for the duration of the project. A large mushroom anchor, marked by a buoy, was placed along the port side of the vessel at the approximate center of the remains. A short travel line attached to both the anchor and the collapsed port side directed divers to the hull. After the mooring was established, the site was cleared of

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3 US Geological Survey (USGS), Westport, New York-Vermont, 7.5 x 15 Minute Quadrangle, 1980.
4 A. Cohn, Zebra Mussels and Their Impact on Historic Shipwrecks, p. 9.
any potential hazards, including fish line, modern glass bottles, tree limbs and various other modern garbage.

After a series of orientation, history and dive safety lectures, the field school students were ready to begin recording the wreck. Operations were based out of the nearby Maritime Museum. Access to the lake and dock space was provided by the Basin Harbor Club. Divers loaded equipment into a 17 foot (5 m) Avon inflatable boat with a 55 horsepower motor at the Basin Harbor Club dock, and were ferried in shifts directly across the lake to the site at Rock Harbor, where the Avon served as the dive boat (Fig. 7-6). Our crew consisted of graduate students from Texas A&M and the University of

Fig. 7-6. Crew from the 1993 season work at the site. (photo by K.J. Crisman)
Vermont (UVM), undergraduates from UVM, and local volunteer divers. Divers made two dives per day. At the beginning of the project dives lasted between 20 and 45 minutes due to the low temperature of the water (40°F). Dive times were extended later in the project when the water had warmed to a "balmy" 50°F. Most divers were insulated from the cold water by drysuits, but a few hardy souls made do with neoprene wetsuits. All divers breathed compressed air from regulators on a single tank. A total of 78 dives were made over the four week period, amounting to over 93 hours of working bottom time.

The remains of Champlain II are oriented on a north-south axis, with the stern to the north, nearest to the New York shore at a depth of about 16 feet (4.8 m). From the stern the hull extends downward on a gradually-sloping bottom; the forward-most portion, the point where the keel broke and the remaining bow was cut away, lies under about 35 feet (10.6 m) of water. The entire preserved structure measures 162 feet, 11-1/2 inches (49.65 m) long. When Oakes Ames was officially enrolled (registered) at the Port of Burlington, the vessel measured 244 feet in length, 34 feet 7.7/10ths in breadth, and 9 feet 8.75/10ths in depth. A comparison between the recorded remains and enrollment measurements indicates that a significant portion of the forward end of the vessel is missing: approximately 80 feet (24.3 m), or a little over a third of the hull's total length.

The hull remains rest upright on the keel, and have settled firmly into the packed mud bottom. A considerable portion of the starboard side is standing and is intact up to the level of the main deck beams. Most of the port side has collapsed away from the hull abaft amidships, but the assembly remains more or less cohesive.

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5 The stern of the vessel points directly to magnetic north, which is @.14° off of due north.
6 Enrollment No. 7, File No. 19281, Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.
The *Champlain II* Project was carried out according to established national and local principles and standards.\(^7\) The hull was recorded using a basic system of offsets.\(^8\) In this system, the hull itself served as the reference grid for recording both the ship's timbers and any artifact finds. We began by laying a fiberglass tape measure down the length of the hull, with the zero mark at the forward-most extent of the keelson, and moving aft to the sternpost. Each of the floor timbers was tagged with a plastic label identifying the side of the ship, port or starboard, and the number of the frame. Again, the tagging began at the forward-most extent of the remains and proceeded numerically toward the stern. The positions of the frames, as well as their sided and moulded dimensions, were taken with reference to the center line tape. Other fiberglass tape measures were placed on the stringers located on both sides of the keelson, and frames were also located with reference to them. These measurements established the basic framework, or skeleton, of the vessel.

Once the basic pattern of framing and the overall size of the hull was established, specific areas of the vessel were recorded in detail. These areas included the sternpost and deadwood assembly and the two inboard engine bed timber assemblies. The positions of both assemblies were located within the hull relative to the keelson center line tape, the positions of the frames, and by triangulating from other areas of the hull. The moulded and sided dimensions of each timber, its relationship to others in the assembly and the positions of all fasteners were documented.

The curvature of the hull, as delineated by the standing starboard side of the vessel, was recorded in a different manner. The system employed a digital goniometer, consisting of a battery operated inclinometer held in a watertight Lucite housing.

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\(^7\) G. Peebles, *Vermont Division for Historic Preservation's Guidelines for Archaeological Studies; Department of the Interior, Recovery of Scientific, Prehistoric and Archaeological Data: Methods, Standards and Reporting Requirements; Secretary of the Interior, Standards and Guidelines.*

\(^8\) J.R. Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks,* p. 205. Steffy recommends this technique for intact or partially intact hulls such as the *Champlain II*s.
Designed by J. "Coz" Cozzi, the instrument is mounted on a 12-inch Lucite panel that allowed measurements of the changing of the hull's curvature to be measured in one foot (30.4 cm) increments. With this instrument, we were able to document a complete section of the hull, including both starboard and port sides, at the forward-most extent of the remains. We were unable to record further sections because thick layers of sediment between the floor timbers. These sediments proved to be too densely packed and too deep to be removed by hand fanning. Because our permit did not allow for excavation, mechanical dredging was not an option. Thus, the recording of the hull's curvature had to be postponed for a later season. All tape measures, frame tags and staples were removed from the site at the conclusion of the field work in July 1993. After the successful completion of the first season of fieldwork, the recorded data were analyzed and goals were established for another season of fieldwork.

The second season of fieldwork, conducted during August 1994, had several very specific recording missions. Again, the project crew were based out of the Lake Champlain Maritime Museum and the Basin Harbor Club (Fig. 7-7). The dive team for the 1994 season was comprised of local residents affiliated with the Lake Champlain Maritime Museum or Waterfront Divers, a Burlington, Vermont dive shop. Logistics for this season were more loosely structured than the first, because of the highly experienced dive team and the short list of specific tasks to be completed. One week of field work resulted in a total of 57 dives with bottom time of over 59 hours.

The primary goal of the 1994 season was to record a series of hull curvatures using the goniometer. In order to accomplish this task, the deep mud that had settled between the floor timbers was removed with a water dredge at four specific locations where the starboard side of the hull was intact: the midships frame, between floors 40

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Fig. 7-7. Crew from the short 1994 season prepare gear at Basin Harbor. (photo by K.J. Crisman)

and 41; between floors 80 and 81 where the spacing of the floor timbers changed and the hull begins to narrow toward the stern; between floors 90 and 91, halfway to the stern; and between floors 100 and 101, which was the last standing frame on the starboard side. These four sections were judged to be the most representative of the overall shape of the hull.

Consequent to the dredging at these locations, a number of different artifacts were revealed.\textsuperscript{10} Each individual artifact that was recovered from the site received a

\textsuperscript{10} Please see Appendix E for a complete catalogue of artifacts.
catalogue number, proceeded by the alphabetical identification SC for "Steamer Champlain." Each artifact was logged in the Artifact Catalogue, and its number, date, measurements and provenance were recorded on individual Artifact Sheets. Recovered artifacts included an assortment of iron fasteners in varying degrees of degradation, coal clinkers, wooden architectural moulding, a small decorative hook, ceramics and glassware. (Figs. 7-8, 7-9 and 7-10).

Fig. 7-8. A variety of architectural mouldings found on Champlain II. Such decorative mouldings would have graced the interior passenger areas. (drawing by the author)
Fig. 7-9. A decorative metal hook found on *Champlain II*. (drawing by the author)

Fig. 7-10. Glassware found on *Champlain II*. (drawing by the author)
To protect against losing artifacts during dredging operations a mesh fiber bag was secured over the end of the dredge exhaust hose. At the end of each day of diving and dredging the dredge spoil was carefully examined (Fig. 7-11). The dredge spoil rarely contained intact artifacts, but the bits and pieces collected from the bilges of the ship and beneath its floor timbers have helped to create a more complete picture of the everyday events in the life of the passengers and crew aboard Champlain II. The most conspicuous artifacts recovered from the dredge spoil were hundreds of glass shards, whose quantity warrants the conclusion that when the vessel hit the rocky shoreline the overwhelming sound must have been that of shattering glass. Other small finds gave clues to rarely documented, but essential construction techniques. These finds included the clipped-off ends of wooden treenails, bits of moulding from the architectural detailing of the well-appointed saloons and a wooden piece of decorative architectural border. One small piece of architectural moulding was found with a 45 degree mitered cut at one end, indicating that the finishing carpentry had been done in place in the vessel. Human hair clippings were also recovered from the bilges, indicating that Champlain II's Barber Shop was functioning. Once all the artifacts from Champlain II had been catalogued, measured, recorded and drawn they were inobtrusively redeposited at the site in two small boxes.\footnote{The artifacts were unavoidably disturbed during dredging and so were removed for their protection. As the scope of the archaeological permit did not extend to the permanent recovery of artifacts, and the Maritime Museum did not have sufficient funding for conservation, the artifacts were redeposited on the site.}

Other tasks slated for the 1994 season included taking check measurements to correct or verify those taken during the previous season, and more detailed recordings of various areas, such as the outboard starboard engine bed timbers, and the collapsed port side. Other construction details that were noted, but not recorded in 1993, were now studied. These included the remains of deck beams, the size, position and fastening of
the outer hull planking, the small chocks separating the ceiling from the bilge stringers, and a tension cable fastening lying on the port quarter.

Fig. 7-11. Museum Director Art Cohn and the author sift through the dredge spoil during the 1994 season. (photo by K.J. Crisman)

At the close of the 1994 field season a comprehensive survey was made of the lake bed surrounding the remains of Champlain II. Most folklore, news accounts and maps, including Stoddard's map of 1892, show Calamity Point, or the point of the vessel's impact with the shoreline to be the point to the north of the remains. Yet archaeological proof was lacking. Reconnaissance dives throughout the area between the vessel and the point to the north revealed no remains or debris from the crash. A reconnaissance survey of the area to the south of the wreck was more productive.

Divemaster Erick Tichonuk surveyed a series of transects which started at the shoreline and extended out from the starboard side of the vessel to the next point of land
to the south, the northern entrance to Rock Harbor. The distance from the vessel to the point was approximately 300 feet (91 m), and the transect interval was 10 feet (3 m). Along the stone ledge at the shoreline, the survey revealed three to five pieces of wood with the remains of iron fastenings. All were heavily eroded and corroded. Divers anticipated finding more debris from the wreck as the search pattern moved into deeper water. Previous dives made both by individuals associated with the project and local sport divers indicated that large iron turnbuckles and other iron fastenings had been located in this area. During our survey, however, the lake bed and any artifacts associated with the wreck were obscured from view by a thick layer of organic material. No further debris was found in deeper water.

Although these findings were not conclusive, they seemed to indicate that *Champlain II* had wrecked on the southern point, the north edge of Rock Harbor. Newspaper accounts of the salvage effort indicated that the portion of the vessel that remained unsalvageable would be "sold, or failing that, ... burned."\(^{12}\) *Champlain II*'s archaeological remains show no evidence of fire damage. Since the vessel has remained in the general vicinity of the crash site it is unlikely that it was sold to another salvage firm. Given the presence of additional wreckage south of the wreck, it appears more likely that the CTC simply abandoned the hulk to the vagaries of wind, ice and weather. The typically northern movement of ice along the lake during periods of thawing could easily have moved the remains to their present location.

The final task of the 1994 season which did not involve diving was to locate various parts of *Champlain II* which were reportedly salvaged from the wreck site during the fall and winter of 1875, and later used in the construction of various dwellings throughout the Champlain Valley.

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\(^{12}\) *Burlington Free Press & Times*, August 31, 1875, p. 3.
Fig. 7-12. The pilot house of the *Champlain II* in its present location as part of a summer house on the lake. (courtesy of LCMM)

The most fascinating of these features was the Pilot House, where John Eldredge had slipped into his allegedly drug-induced trance. Various documents dating to 1930 in the Champlain Transportation Company Papers indicate that, after the wreck, the pilot house was given to Charles Hart, son-in-law of Elijah Root, the General Manager of the CTC. Mr. Hart was also a charter member of a group called the Jolly Club, who had set up camps at what is now Cedar Beach in Charlotte, Vermont. Mr. Hart obtained the Pilot House, including the two rooms at the back of it which were originally occupied by the pilots, and took it across the frozen ice of Lake Champlain to Cedar

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13 *Champlain Transportation Company (CTC) Papers*, Carton 8, Folder 59, Special Collections, Bailey/Howe Library, University of Vermont.
Beach, a distance of some 7.2 miles (11.6 km). There he set up his camp and incorporated the pilot house and its components into the structure of the covered porch around the main camp house of his descendants, the Pease family, where it has remained to the present day (Figs. 7-12 and 7-13).

![Person standing in front of a building](image)

Fig. 7-13. Aft portion of the pilot house showing the doors to the pilot's rooms. (courtesy of LCMM)

The Pease family also came into possession of another important artifact from *Champlain II* during the 1920's. The huge steering wheel of *Champlain II* was removed from the vessel and stored by the CTC at the Shelburne Harbor facility until 1888 when it was transferred to the steamer *Chateaugay*. In 1925, the wheel was removed from *Chateaugay* and presented to Frederick S. Pease.\(^{15}\) Mr. Pease installed the artifact on his porch, in front of the pilot house (Fig. 7-14).

\(^{15}\) *CTC Papers*, Carton 8, Folder 59.
Fig. 7-14. Wheel from the *Champlain II* now placed in front of the pilot house on the porch of a summer camp. (courtesy of LCMM)

The small town of Essex, New York, located 8.8 miles (14.2 km) north of the wreck site, has had a long tradition of involvement in the nautical affairs of the lake and is the current home to at least two other important parts of *Champlain II*. The most well known of these is the rudder from the vessel, now housed at the *Bistro du Lac*, a small French restaurant on the lake shore. The large "barn door" rudder decorates the west interior wall of the restaurant and is held in place by a purpose-made set of bronze pintles and gudgeons. Measuring roughly 10 feet square (3.04 m), the rudder is composed of a series of 4 inch (10.1 cm) thick strakes. Portions of the rudder post that are still attached to the rudder itself clearly match the spaces cut out of the wreck's sternpost.
A possible architectural artifact from the vessel is a staircase now built into a house in Essex, New York. While no historical documents could be found to support the claim that the curving, double headed staircase came from Champlain II, there is similarly no evidence to refute it. The present owner of the home, Mr. Bradford Beers, also stated that he had been told that the gingerbread architectural moulding surmounting the walls of the front room was also salvaged from the vessel.

![Image](image-url)  

Fig. 7-15. The bell believed to have been salvaged from the Champlain II now in the collection of the Lake Champlain Maritime Museum. (courtesy of LCMM)

The Lake Champlain Maritime Museum is in possession of a final artifact reputed to have come from the salvaged Champlain II; the cast iron bell currently on display in the Preservation Building of the museum (Fig. 7-15). The bell, which is

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16 B. Beers, personal communication with the author, 1994. Arthur Cohn's extensive knowledge of the folklore surrounding the wreck led us to Mr. Beers.
mounted in a metal framework, measures 11 inches (27.9 cm) in height and 19 3/4 inches (50.1 cm) in diameter, and is inscribed, "Luck Company, Mackinac, Michigan." The Maritime Museum received the bell as a donation in memory of James L. Felio from his family. According to the family, the bell had once belonged to Garrett Thew, an antiques dealer, who had hung it on his porch. Mr. Thew claimed that the bell was salvaged from Champlain II shortly after the accident. When Garret's son, George, came into possession of the bell, he sold it to James Felio for $35.00. The Felio family donated the bell to the museum in 1994.

17 Acquisition No. 1994.22, Bell of Steamer Champlain II, LCMM. The file does not reference the date that Mr. Felio bought the bell.
CHAPTER VIII
THE CONSTRUCTION OF CHAMPLAIN II
BASED ON THE ARCHAEOLOGICAL REMAINS

The recorded dimensions of the remains of Champlain II were the basis for the Final Site Plan, which was based on measurements taken from the 1993-1994 seasons (Plan 8-1). The reader may find it helpful to refer to this illustration while reading this chapter.

The Backbone Timbers

The entire bow section of Champlain II is missing. The forward-most extremity of the hull remains marks the point at which the keel and other longitudinal members broke as a result of the crash. Saw marks visible there indicate where the original salvors cut across the hull, leaving the bow section on land to be broken up. This removal of the hull's forward section has provided a unique opportunity to study and document the hull in cross section. At Section 1, Frame 1 (F1), the oak keel is quite shallow, only 7 inches (17.78 cm) moulded by 11 inches (27.94 cm) sided (Plan 8-2). It is unclear if this is the keel's original dimension, or if portions broke off during the wrecking. Evidence of such damage is visible on the lower port side of the keel, where the corner is missing, and appears to have broken or cracked off along the grain (Fig. 8-1). There are also two small, raised, tenon-like areas at the butt end of the keel's face, which are most likely remnants of the uneven way the keel probably cracked and broke during the wrecking. Champlain II's keel runs the length of the remains, 162 feet, 11 1/2 inches (ca. 50 m[49.65 m]) and extends underneath the inner sternpost assembly before butting against the sternpost. The position of scarfs in the keel could not be determined due to inaccessibility. At Section 1 the keel is not rabbeted; the garboards butted directly against its moulded faces. The first evidence of a rabbet occurs at the aftermost intact
frame station, F107, where a shallow rabbet, approximately 1/2 to 3/4 inches (1.27 - 1.90 cm) deep, appears, indicating that the keel was rabbeted only toward the bow and stern, and not amidships.

Fig. 8-1. Sectional view of Champlain II's shallow keel. (drawing by the author)

On the upper face of the keel a shallow, curved channel, 3 inches wide by 1-1/4 inches deep (7.62 by 3.17 cm), has been carved and extends the length of the keel, approximately 143 feet, 7 inches (43.76 m), terminating immediately forward of the
stern deadwood. This limber groove is of standard size for a 19th-century wooden vessel. The groove allowed water to pass freely to the lowest point in the ship, the bilge, where it was pumped out of the hull. Within this limber, a partial piece of a large link chain was found. Nicknamed "limber floss" by its recorder, this chain would have been racked back and forth to dislodge any blockage in the limber hole, and was a standard article of 19th-century ships' outfitting. A large oak-shelled rectangular block, 1 foot, 8 inches (50.8 cm) long, 11-1/4 inches (28.5 cm) wide and 6 inches (15.24 cm) deep, was found next to some of the chain in the area just abaft the last frame station, F107, and resting atop the keel. Within it is an iron sheave, located slightly off center of the block. The block was not fastened into position above the keel. This block may have been used to move the limber chain.

The remains of the sternpost assembly are still standing on the after end of the keel. The sternpost assembly is comprised of two posts, the inner post, and the outer, or sternpost proper (Plan 8-3). Both were fashioned from oak. The inner post stands 11 feet, 1-1/2 inches (3.73 m) tall, and is moulded 8 inches (20.32 cm) and sided 10-1/2 inches (26.67 cm) at the top. The base of the inner post flares slightly to 1 foot, 7 inches sided (48.26 m), and is mortised into the lower of two keel deadwood timbers situated between the keel and the keelson. Typically referred to as fillets, these two longitudinal timbers fill the 16 inch (40.6 cm) space between the keel and the keelson that appears after the last floor (F107). The mortise-and-tenon joint that united the lowest deadwood timber and the sternpost is strengthened by the placement of the butt end of the keelson atop the flared base of the inner sternpost, and by six angled deadwood timbers. The deadwood is stacked at a 45 degree angle to the keel, and forms a triangle between the

2 Ibid.
3 See Appendix F, Artifact No. SC047 for information on dimensions, etc., and Plan 8-3 for its location in the remains.
horizontal keelson and the vertical sternpost. The deadwood extends 11 feet, 8 inches (3.55 m) forward of the sternpost, extends 6 feet, 2 inches (2.33 m) above the keelson, and is held in place by an estimated 12 iron drift bolts. The 1 inch (2.54 cm) diameter bolts protruded an average of 8 inches (20.32 cm) above the upper-most deadwood timber, indicating that there was originally at least one more deadwood timber present. The sternpost stands 12 feet, 9 inches (3.88 m) tall, and is approximately 8-1/2 inches (21.59 cm) moulded by 11-1/2 inches (29.21 cm) sided. Due to large gaps in the sternpost made by modern salvage divers who at some point cut off the entire rudder, including its pintles and gudgeons, and removed it from the site, the sternpost is in three distinct pieces. Traces of the sternpost rabbet are only visible on the lowest piece of the sternpost; no traces exist on either the upper pieces or on the inner post. A shallow notch, 8 inches by 8 inches by 1-1/2 inches (20.32 cm x 20.32 cm x 3.81 cm) deep has been cut into both the port and starboard faces of the lower portion of the outer post. Two holes that were bored through the post indicate the placement of fasteners that had attached the lower gudgeon plate. On the port face of the upper portion of the sternpost is a small, thin knee timber. The timber is 9 inches (22.86 cm) long, 8 inches (20.32 cm) wide and 4 inches (10.16 cm) deep, and is attached to the port face of the outer post by three iron bolts, 1 inch (2.54 cm) in diameter. This small knee-shaped piece may indicate the level of the deck at the sternpost.

The Framing

A total of 107 rectangular frames were preserved. The frames are located directly on top of the keel. They are unusual in three ways. First, they are single frames, 16 inches (40.64 cm) moulded by 4 inches (10.16 cm) sided. Typically, the frames of contemporary steamers were not as extremely rectangular in section as those of Champlain II, but more square in section.\(^5\)

The use of single frames along the entire length of the vessel may also be uncommon; typically wooden vessels of the period have double frames, especially amidships or under the engine. The American Shipmasters' Association's Rules for the Construction of Wooden Vessels recommended double frames, in a pattern called the "long and short floor" system. This system consisted of constructing a frame which was made up of a floor and futtock. The adjacent space, between the separate floors, was occupied by a "filling frame" which was made up of either long or short floors below the futtocks. The long and short members alternated throughout the length of the vessel to strengthen the floor system.

The third irregularity is the spacing between the frames. Amidships the frames have an average spacing of 12 inches (30.48 cm) on center. Frame spacing changes toward the stern, and possibly toward the bow, and increases to an average of 24 to 28 inches (60.96 - 66.04 cm) on center. Most other contemporary wooden vessels that have been documented exhibit consistent spacing between the frames.

To allow the passage of water beneath the floors, the lower face of each floor timber is notched with three limber holes. A semi-circular channel carved into the center bottom of the floor corresponds to the channel of equal dimension carved into the upper face of the keel (3 inches wide by 1-1/4 inches deep (7.62 x 3.17 cm)). The two form a circular passageway for the limber chain described above. This center limber is flanked by rectangular notches 1 inch (2.54 cm) high and 2-3/4 inches (6.9 cm) long spaced 5-3/4 inches (14.6 cm) out from the sides of the keel.

All 107 frames are of equal dimensions, with the exception of F9. This frame shares the same moulded dimension as the others, but is only 2 inches (5.08 cm) sided. Interestingly, F9 is placed on the same spacing as the others (12 inch (30.48 cm)

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8 Ibid.
centers). It is assumed that this frame was purposely made thinner to maintain regular spacing. Like F40, the midships frame, F9 occurs in the central portion of the vessel, where the floors are spaced closer together and the shape of the vessel is characterized by long flat floors and sharply rising sides (Plan 8-4).

Each of Champlain II's frames is composed of three elements: a single floor timber and two futtocks, one on each side of the hull, that are laterally attached to the floors. Forward of the midships frame, futtocks are fastened to the after face of the floor timbers, and after the midships frame they are fastened to the forward face of the floors. The futtocks are secured to the floors with two large iron bolts, 2-1/2 inches (6.35 cm) in diameter. Amidships, the futtocks are joined to the floors at a distance of 9-1/2 feet (2.89 m) from the keel; the futtock heels are located directly beneath the engine bedtimber assembly. The futtock heel line gradually moves inboard as the vessel narrows toward the stern (Plans 8-5, 8-6 and 8-7). At F107, the last intact frame station, the futtocks and floor timbers are joined directly over the keel. The floor timbers taper from 16 inches (40.6 cm) moulded, over the keel, to 12 inches (30.48 cm) moulded at the futtocks' heels. The futtocks also taper in moulded dimension, from 12 inches (30.48 cm) at their heels, to 6 inches (15.24 cm) at their heads. The futtocks are uniformly sided 4 inches (10.16 cm).

No frames remaining attached to the stern deadwood. Based on the spacing of frames in the aft third of the hull, an estimated 8 half frames were positioned there. An equal number may be estimated for the now-missing bow area.

The Longitudinals

The interior of the hull's bottom is dominated visually and structurally by five massive longitudinal pine timbers that run the entire length of the remains. The large keelson, 14 inches (35.56 cm) moulded by 11 inches (27.94 cm) sided, is flanked by two pairs of large stringers, each 13 inches (33.02 cm) moulded by 9-1/2 inches (24.13 cm)
Plan 8-4. Transverse section of the hull at starboard Frame 40. View aft. (drawing by the author)
Plan 8-5. Transverse section of the hull at starboard Frame 80. View aft. (drawing by the author)
Plan 8-6. Transverse section of the hull at starboard Frame 90. View aft. (drawing by the author)
Plan 8-7. Transverse section of the hull at starboard Frame 100. View aft. (drawing by the author)
sided. The stringers curve inward toward the stern and butt against the side of the keelson at the stern, and provide the hull with integrated longitudinal reinforcement. These longitudinal timbers are sometimes called "sister" or "assistant" keelsons in archaeological and contemporary shipbuilding literature, but these terms correctly refer to longitudinal timbers directly fastened to the sides, or directly in contact with the keelson.\textsuperscript{10} Sources differ widely on the alternate use of the term stringer, but the most widely accepted modern definition is "[a]n inside longitudinal girder bridging the beams or the frames in the transverse framing system; depending on its location, may be called a \textit{bilge s.}, \textit{side s.} or \textit{bottom s.}"\textsuperscript{11} While Champlain \textit{II}'s longitudinal timbers do resemble the keelson in their general dimensions, position atop the frames, and in their function, they have no direct relationship to the keel, and are only attached to the keelson where they are fayed in near the sternpost. They will therefore be called bottom stringers and not keelsons. Presumably the stringers also curved inward in the now-missing bow.

The keelson is composed of three timbers flat scarfed together, and fastened with two 1 inch (2.54 cm) diameter iron bolts at each scarf. The keelson's preserved length measured 161 feet, 5 inches (49.19 m) from the forward-most extent of the remains to where it meets the lower, flared portion of the sternpost. The keelson is fastened to the floor timbers with iron bolts, 1 inch (2.54 cm) in diameter, staggered in a zigzag pattern over the length of the hull. The bolts are spaced apart at approximately 1 foot (30.38 cm) intervals on alternate sides of the keelson cap timber. Numerous smaller, randomly positioned 1/2 inch (1.27 cm) spikes were also present on the cap timber.

Two pairs of bottom stringers parallel the keelson for most of the length of the remains. The two inner stringers run parallel to the keelson from the forward-most extent of the remains to F80, where they meet the outer two stringers as the latter are

toward the keelson. The port and starboard inner stringers are fayed to feather ends at the sides of the outer pair, from F80 through F90, and are laterally fastened to them by 1 inch (2.54 cm) diameter iron bolts. The outer pair of stringers also begin at F1 and continue their gentle arc until they are finally fayed to feather ends at the sides of the keelson, between F103 and F107.

The keelson and stringers are each capped by thick planks of oak nailed into place. As with many different hull timbers, the terminology for this timber is quite varied. The term rider is used here as the timber "rides" on top of the keelson and is directly fastened to it, and it is "reduced" because it is of a thinner dimension than the keelson.\textsuperscript{12} This reduced rider keelson is 12 inches (30.48 cm) wide and 2 inches (5.08 cm) thick, and its outer edges are beveled to taper to the same sided dimension as the keelson and stringers. The heads of many seemingly randomly placed fasteners are visible on the top surfaces of the reduced rider keelson. However, surprisingly few mortises or other evidence of stanchions were present. This was unexpected, given the considerable amount of weight the original deck had to bear, i.e. 14 railroad cars, and that these longitudinal timbers would have provided a base for deck stanchions. In all, evidence for only two mortises was discovered. The first is located in the center of the reduced rider keelson, 30 feet 4-1/2 inches (9.25 m) from the bow and adjacent to F30 and F31. A rectangular mortise block is fastened atop the reduced rider keelson, and is 1 foot, 4 inches (40.64 cm) in length, 4-1/2 inches (11.43 cm) wide. This block has a 3 inch (7.62 cm) deep mortise cut into its center. The second occurs much farther aft, 108 feet, 8 inches (33.12 m) from the bow and adjacent to F93. Unlike the other mortise, which is raised, this mortise is cut into the reduced rider keelson, 1 foot, 5 inches (45.72 cm) long, 4 inches (10.16 cm) wide and 2 inches (5.08 cm) deep. Because no other evidence of mortises or stanchions was found, the reduced rider timbers may have been

\textsuperscript{12} Crothers, \textit{The American Built Clipper Ship}, p. 158-59.
installed during the 1873 refit, since there was less weight to support on deck after the refit, and the added space could be made available for storage. Therefore the reduced rider keelson was either replaced or added in 1873 to cover the keelson and stringers.

Another pair of stringers runs along the turn of the bilge on both sides of the hull. These timbers are smaller than the central longitudinal timbers, but they extend the entire length of the remains, and are fayed into feather ends at the sides of the keelson just forward of the stern deadwood. These bilge stringers measure 14 inches (35.56 cm) moulded amidships, where they pass between the inboard portion of the engine bedtimber assembly and the outer portion of the bedtimber assembly, and taper to 12 inches (30.48 cm) moulded at their extreme ends. The bilge stringers average 7 inches (17.78 cm) sided throughout. The bilge stringers are of pine and have no reinforcing cap timber as the other stringers do. Forward and abaft amidships the bilge stringers run directly over the floor to futtock joint, and give longitudinal reinforcement to strengthen this connection. Amidships the bilge stringers also form an integral part of the engine support structure.

The Planking

Planking was preserved in place on the more intact upright starboard side of the hull, but that of the collapsed port side had separated from the hull in many places and was generally in a deteriorated state. Surprisingly, the thickness of planking averaged only 1 inch (2.54 cm). This narrow dimension may be the result of the deterioration of the pine timbers over time. Planking widths were measured at each of the five stations where hull curvatures were recorded: F40, F81, F90 and F100, and also at the cut off bow area, F1. The widths of strakes at the bottom of the hull were measured from the interior of the vessel; side strakes were recorded from the exterior of the hull. Individual planking lengths were not recorded.
Planking widths were observed to narrow toward the stern, and presumably narrowed toward the bow as well. A total of 24 strakes were counted amidships (F40). The widest planks were in the bottom of the hull, the narrowest planks were found at the turn of the bilge and medium-width planks of uniform size were secured to the sides of the hull. The garboard strake measured 17-1/4 inches (43.8 cm) amidships, narrowing to 14-1/2 inches (36.8 cm) at F100. The garboard was followed by three smaller strakes, measuring an average of 13-3/4 inches (34.9 cm) wide. The fourth and widest hull strake measured 2 feet (60.9 cm) wide amidships and narrowed to 17-1/4 inches (43.8 cm) at F90.

The hull's three narrowest strakes measured 7 inches (17.7 cm) wide and are located at the turn of the bilge. They taper to approximately 6 inches (15.2 cm) each at F100. Above the turn of the bilge, 10 strakes comprise the vertical sides of the hull. The side planking is uniform in size, measuring 9 inches (22.8 cm) wide. The uppermost strake of planking consists of a wale, measuring 9 inches (22.8 cm) wide and 3-1/2 inches (8.8 cm) thick. The planking is fastened to the frames with two staggered 1/2 inch (1.27 cm) diameter iron nails per plank per frame, with the upper nail offset by an average of 3 inches (7.62 cm).

There is no ceiling planking over the floor timbers, but ceiling planks of three different thicknesses line the sides of the hull between the bilge stringers and the clamp. The bilge ceiling consists of four heavy strakes, each of which measured 9 inches (22.86 cm) wide by 5-1/2 inches (13.97 cm) thick. Above the bilge ceiling are four slightly thinner strakes, each measuring 9 inches (22.86 cm) wide by 2 inches (5.08 cm) thick. The uppermost of the ceiling strakes is the clamp. This timber measures 15 inches (38.1 cm) wide by 3 inches (7.6 cm) thick. The ceiling and clamp are both fastened to the futtocks with 1/2 inch (1.27 cm) diameter iron nails, in the same manner as the hull planking.
The Deck Structure

Portions of 30 deck beams, 18 on the collapsed port side and 12 on the standing starboard side, were recorded on the wreck. The beams average 4 inches (10.16 cm) moulded by 4 inches (10.16 cm) sided, and are spaced irregularly along the hull. Beam spacing ranged from 28 inches (71.1 cm) to 34 inches (86.3 cm), with an average spacing of 29-1/2 inches (74.9 cm). Originally, the deck beams extended outboard of the side of the hull to form the overhanging deck known as the guards. Only small portions of *Champlain II*’s deck beams remain attached to the clamp: they were presumably removed during salvage activities in 1875.

The overhanging deck of *Champlain II* was supported by a series of hanging knees secured to the exterior of the hull under the guards. Only one complete knee and seven partially intact knees now remain. The partially intact examples are located at F92 and F97 on the starboard side and at F84, F88, F91, F96 and F105 on the collapsed port side. The single intact knee is located at F101 on the port side (Fig. 8-2). The arm of the knee beneath the deck beam measures 2 feet, 1/2 inch (62.2 cm) long. The body, or vertical arm of the knee, extends down the side of the hull 2 feet, 7 inches (78.7 cm). It is assumed that all of the hanging knees supporting the guards were of the same approximate dimensions.

The Hogging Truss

An elaborate longitudinal strengthening system, consisting of a series of tension cables that ran the length of the vessel and passed over wooden stanchions positioned on the upper decks, were employed on *Champlain II* to prevent the ends of the vessel from drooping or "hogging" relative to the midships region. Photos and drawings of *Champlain II* clearly show this elaborate structure rising above the upper decks. At several places in the hull, remnants of *Champlain II*’s hogging truss were found. Several iron engine support anchors were recorded at the engine bedtimber assembly and an iron
trap eye fastened to the port hull planking between F88 and F89 was noted. The flat iron strap is 5 feet, 4 inches (1.62 m) in length and 4-1/4 inches (10.8 cm) wide. The eye at its top measures 5 inches (12.7 cm) in exterior diameter, with the eye itself 1 inch (2.54 cm) in diameter. Its iron fasteners passed directly from the exterior hull planking through to the clamp and not through any framing timbers. Because this strap was not fastened through a strength timber, and because of its close proximity to the engine bedtimbers, it probably served as an anchor for one of the A-frame tension rods.
Additional evidence of Champlain II's hogging truss was found with the planking at the port stern quarter, where an assembly composed of three timbers and a check-mark shaped iron strap lies flat against the lake bed (Fig. 8-3). The iron strap is mounted onto two large rectangular oak blocks that are oriented parallel with each other, perpendicular to the hull planking. Each of these blocks measured 2 feet, 5 inches (73.6 cm) long, 9-1/2 inches (24.1 cm) moulded and 3-1/2 inches (8.8 cm) sided and are spaced 11 inches (27.9 cm) apart. The iron strap is 1-3/4 inches (4.4 cm) thick, and runs parallel to the hull planking for 16-1/2 inches (41.9 cm) until it is fastened to the first timber. From that fastener the iron strap is angled and runs across at a 45 degree angle to the other
timber to which it is fastened. A smaller timber, measuring 8-1/2 inches (21.5 cm) in length, 9-1/2 inches (24.1 cm) moulded and 3-1/2 inches (8.8 cm) sided, supports the iron strap in between the two larger, main timbers. At the upper end of the iron strap is an eye, similar to the one located on the exterior of the port hull planking. The eye has a maximum diameter of 5 inches (12.7 cm) and an inner diameter of 2-1/2 inches (6.3 cm). Given its strong attachment to the hull through the two larger timbers, this iron strap must have been the terminus of the hogging truss cable, the truss "anchor," at the port stern quarter. The cable would have extended forward and outboard through a small hole in the planking to stanchions on the main deck of the vessel.

The Engine Bedtimbers

Amidships are the large support structures for the tall walking beam engines. The starboard engine bedtimber assembly was recorded in detail because of it was more complete than that on the port side. It is composed of the inner group of bedtimbers, the outer group of bedtimbers and two connecting buttresses. This longitudinal engine bedtimber assembly begins at F12 and continues, parallel to the keelson, until F81.

The base of the inner bedtimber assembly is fayed to the side of the bilge stringer, forward from F12 through F18 and aft from F75 through F81. The bedtimbers are fastened to the bilge stringers with iron bolts, 2-1/2 inches (6.35 cm) in diameter. Above the base bedtimber, the assembly resembles a wall, extending approximately 6-1/2 feet (1.98 m) above the top of the floor timbers (Plan 8-8). The assembly is constructed of five layers of timbers fastened together with large iron bolts. Thick pieces of pine alternate with two thinner layers of oak. Directly atop the floor timbers are two large, pine, base timbers, side by side. The inboard timber measures 14 inches (35.56 cm) moulded by 9-1/2 inches (24.13 cm) sided. This inboard timber is much shorter than the main base timber, and runs from F29 to F46, a distance of approximately 16 feet, 10 inches (5.13 m). The main base timber measures 13-1/2 inches (34.29 cm)
moulded by 11 inches (27.94 cm) sided, and serves as the base for the bedlog assembly. This timber begins at F12, where it is fayed to the bilge stringer, and runs aft to F81 where it is also fayed to the bilge stringer. The total length of the timber is 72 feet, 6 inches (22.09 m).

Directly above the base timbers is the second layer of the assembly, which is constructed of large pine blocks. At the extreme ends of this layer of the assembly are wooden blocks, 1 foot, 4 inches (40.64 cm) in height, and 3 feet (91.44 cm) to 3 feet, 6 inches (1.06 m) in length. Between them are approximately 18 smaller blocks of the same height, and with an average width of 1 foot, 3-1/2 inches (39.37 cm). These blocks are separated by gaps measuring from 1 inch (2.54 cm) to gaps of 1 foot, 2-1/4 inches (36.19 cm).

The next layer of the assembly is composed of two stout oak planks laid end to end. The forward-most plank is 11 inches wide, 5 inches (12.7 cm) thick and 3 feet, 3 inches (99.06 cm) in length. It is separated from the longer after-most plank by a small gap of 1-1/2 inches (3.81 cm). This second oak plank is of the same width and thickness, but is much longer, at 34 feet, 6 inches (10.51 m) in length. This layer of hardwood, although much smaller than the larger layers of pine, adds strength, durability and stiffness to the assembly.

The fourth layer of the assembly is again composed of a large pine timber. The dimensions of this single timber are similar to those of the first layer of pine and measure 1 foot, 1 inch (33.02 cm) moulded, 11 inches (27.94 cm) sided, and 33 feet, 9 inches (10.28 m) in length.

The final oak plank forms the top layer of the assembly and measures 11 inches (27.94 cm) wide, 4-1/2 inches (11.43 cm) thick and 33 feet, 9 inches (10.28 m) in length. The entire assembly is fastened by large iron through bolts, approximately 1 to 1-1/2 inches (2.54 - 3.81 cm) in diameter, and secured by 2 inch (5.08 cm) square iron nuts.
The bolt ends are spaced an average of 12 1/2 inches (31.75 cm) apart along the inboard side of the assembly.

Six of the original eight massive knees that supported the inboard A-frame of the walking beam engines are fastened on top of the inner bedtimber assembly. The extant knees support three of the four partially intact angled legs of the wooden A-frame. Three of the angled legs stand atop the bedlog assembly, while the forward-most leg is located on the lower inboard base timber. All are angled at approximately 60°. The placement of one leg of the A-frame at a lower level in the hull gave the assembly added stability. Three of the angled legs of the A-frame are flanked fore and aft by large oak knees. The knees measure an average of 3 feet, 9 inches (1.14 m) in height, 3 feet (91.44 cm) in length at the base and 7 1/2 inches (19.05 cm) wide. The knees are fastened both to the bedlog assembly and to the vertical A-frame beams by a series of five to six 1 inch (2.54 cm) diameter iron bolts held in place by 2 inch (5.08 cm) square nuts. The ends of the legs are also notched to fit into mortises in the top of the bedlog to resist outward thrust of the leg.

The outboard bedtimber assembly is as complex as the inboard assembly. It has no fewer than nine major components (Plan 8-9). The lowest component timber of this assembly is the bilge stringer. This stringer acts as a type of retaining wall for the bilge strakes and rider beams that are fastened to it. Sources differ as to the correct term for this timber. Typical 19th-century terminology used "bilge keelson" for the longitudinal timber at the turn of the bilge and "stringer" for the longitudinal timber providing a shelf for the foot of the lower deck hanging knees. The term bilge stringer is used here, as the timber is not fastened laterally to the keelson, but does provide a shelf for the bottom of the outer engine bedtimber assembly.

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13 The components of the two bedtimber assemblies can also be seen in sectional views in figures 8-5 through 8-8.
Four bilge strakes form the next portion of the outer assembly. The first such strake rests against the outboard face of the bilge stringer. The lowermost two strakes measured 10-1/2 to 12 inches (26.67 - 30.48 cm) wide and 5-1/2 inches (13.97 cm) thick. The third and fourth strakes have slightly smaller dimensions. The third strake measured 9-1/2 to 11 inches (24.13 - 27.94 cm) wide and 4-1/2 to 5-1/2 inches (11.43 - 13.97 cm) thick. The fourth, and uppermost, ceiling strake, located just under the outboard engine bedlog assembly, measured 8-1/2 to 9 inches (21.59 - 22.86 cm) wide and 4-1/2 inches (11.43 cm) thick. The ceiling planking is fastened to the frames with 1 inch (2.54 cm) diameter iron spikes.

Between the bilge stringer and the base of the outboard engine bedtimber assembly a series of riders are secured above the ceiling between F39 to F56. These curved beams have an average moulded dimension of 8 inches (20.32 cm) at the bilge stringer that tapers to 5-1/2 inches (13.97 cm) below the bedlogs. Their sided dimension was uniformly 4 inches (10.16 cm). The riders are fastened through the ceiling and into the frames by 3/4 inch (1.90 cm) diameter iron bolts held in place by 2 inch (5.08 cm) square iron nuts.

The alternating oak and pine construction of the upper portion of the outer bedtimber assembly is very similar to the inboard assembly. The lower oak plank measures 34 feet, 5-3/4 inches (10.5 m) in length, and is 4-1/2 inches (11.43 cm) thick and 14-1/4 inches (36.19 cm) wide. A large pine timber of the same length, but measuring 13-1/2 inches (34.29 cm) thick and 13-1/2 inches (34.29 cm) wide at the top is secured above this plank. The final timber of the outer assembly is another oak plank, 32 feet, 7-3/4 inches (9.95 m) in length, 4-1/2 inches (11.43 cm) thick and 14 inches (35.56 cm) wide. The timbers are fastened together by large iron bolts 1-1/2 inches (3.81 cm) in diameter. Some of the iron bolts are secured with 2-1/2 inch (6.35 cm) square iron nuts.
As on the inboard assembly, the outer engine bedlog assembly is topped by a series of standing knees and tall, angled A-frame timbers. The knees here are of the same average size as those of the inboard assembly, and are fastened in the same manner. Unlike the inboard assembly several large iron stabilizing rods still protrude from the outboard engine bedtimber assembly. These rods appear to have had two principle functions: to secure the large timbers of the assembly and to pre-stress and thus stiffen the A-frame. Six of the eight iron rods come up through the layers of the oak and pine base, knees and vertical timbers and are secured with large iron nuts, both a pentagonal lock nut of approximately 5 inches (12.7 cm) in diameter and a large square nut measuring from 7 to 9 inches (17.78 - 22.86 cm) on each side, and from 3 to 5 inches (7.62 - 12.7 cm) thick. These six iron rods were broken off between 7 feet, 2 inches (2.64 m) to 8 feet, 6 1/2 inches (2.60 m) in length, with a diameter of 3 inches (7.62 cm). These rods served to secure parts of engine machinery to the assembly. The remaining two iron rods, which pre-stressed and stiffened the A-frame, are mounted to the inboard face of the oak and pine timber assembly. The lower portion of each of these two iron rods has been flattened out to create a plate measuring approximately 6 inches (15.24 cm) wide by 2 feet (60.96 cm) long, through which four 2 inch (5.08 cm) square bolts attach the rod to the bedlog. These two iron rods are also broken off between 7 feet, 9 inches (2.36 m) and 8 feet, 3 1/4 inches (3.26 m), respectively, in length, and 3 inches (7.62 cm) in diameter. It must be noted that the iron rods have been subject to some surface degradation and encrustation that may have altered their dimensions slightly.

In order to stabilize this high engine platform, the inner and outer bedlog assemblies are bound together by tall support structures, two of which remain. The forward-most structure, between from F56 through F60, is a large arch piece (Plan 8-10). It is made up of two knees which are attached under two horizontal beams that brace the outboard side of the A-frame legs. The inboard vertical measures 8 feet, 11 inches (2.71
m) tall, 15 inches (38.1 cm) moulded and 11 inches (27.94 cm) sided. In contrast the outboard vertical member measures only 6 feet 2-1/2 inches (1.89 m) tall. However it measures 12 1/2 inches (31.75 cm) sided by 4 feet, 11 1/2 inches (1.51 m) moulded. As well as bracing the engine frames, this block helped to distribute the weight of the machinery, especially the connecting rod and paddleshaft, to the outer edges of the deck. The two horizontal components of the brace lie one atop the other, are moulded 10 inches (25.4 cm) and 5 inches (12.7 cm) respectively, and sided 15 inches (38.1 cm). To the underside of the horizontal beams are attached two large dagger knees, facing each other to form an arch. The knees extend down 5 feet, 11 inches (1.80 m), and span a distance of 3 feet, 11 inches (1.19 m) between the verticals.

The after-most connecting structure is comprised of two cross timbers, in the shape of an X, instead of knees (Plan 8-11). The center of the "X" assembly is further strengthened by a horizontal iron drift bolt 1-1/2 inches (3.81 cm) in diameter.

Two different, smaller facets of the construction of Champlain II were recorded in association with the engine bedtimber assemblies. One of these construction features is the through hull fitting for the water intake. Two through hull fittings were recorded. The first is located amidships, just at the bottom of the port side engine bedlog assembly between F41 and F42 (Fig. 8-4). The pipe is constructed of lead, and its opening is approximately 4 inches (10.1 cm) in diameter. The lead overlaps the edge of the opening by 3/4 of an inch (1.9 cm), forming a small flange over the surrounding wooden timbers. The pipe is held in place by a block of timber, through which it passes. The timber fits snugly between the floor timbers and is also fastened to the outer planking by four iron bolts. The pipe projects through the bottom of the hull at least 16 inches (40.6 cm) deep, as it begins at the level of the top face of the floor timbers. Faint traces of white and red paint circle the pipe's mouth. The white paint begins at the outer lip of the lead pipe and covers an area 7-1/4 inches (18.4 cm) in diameter. The white area is banded by a ring of
Plan 8-10. The forward-most engine support brace. View forward, with the outer hull of the ship to the right. (drawing by the author)
Plan 8-11. The after-most engine support brace. View forward, with the outer hull of the vessel to the right. (drawing by the author)
red paint 1-1/2 inches (3.8 cm) wide. The red and white paint served to mark this intake, and probably helped the engine room crew to identify its function.

Fig. 8-4. A through hull fitting, located at F40 on the port side of the vessel (drawing by the author)

Another through hull fitting was recorded between the rider beams of the starboard outer engine assembly. The through hull fitting was also made of lead and was located between the futtocks of F39 and F40. The pipe extended at an angle through the side of the hull below the waterline. This pipe was also used for intake, as exhausts were located above the waterline.

Another small construction feature of interest is a series of small, square chocks located on the outboard side of the bilge stringer. The chocks do not occur within the
engine bedlog assembly, but do occur both before and abaft the assembly. The chocks appear to fill the awkward angled space between the side of the bilge stringer and the ceiling. Instead of being absolutely square in section, the forward face of each chock is angled to fit snugly against the outer edge of the bilge stringer (Fig. 8-5). Each piece measures 3-5/8 inches (9 cm) moulded by 8-3/4 inches (22.2 cm) sided. The bottom face of the chock is 8-1/2 inches (21.5 cm) wide, while the top face is only 6-1/2 inches (16.5 cm) wide. The chocks are fastened to the frames on top of the curving floor/futtock joint by two 1/2 inch (1.27 cm) square iron nails, one in each frame timber. The angled lower face of the chock fits snugly against the outboard side of the bilge timber, while the thick ceiling planking sits squarely against the upper end of the block.

Fig. 8-5. Isometric projection of one of the small chocks located along the turn of the bilge. (drawing by the author)
When compared to typical construction of 19th-century wooden vessels, the construction of *Champlain II* appears unusual in many ways. The most important difference is the size and placement of the single floor timbers. While single floor timbers are typical of the shallow draft, sternwheel vessels used on western inland waterways, they are atypical of the more heavily constructed, deeper draft eastern vessels.\(^{15}\) Along with the use of single frames, the change in the spacing of the frames before and abaft midships, appears atypical of the period.\(^{16}\) Such construction irregularities may represent a local building style, or may reflect construction techniques specific to railroad car ferries.

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\(^{16}\) Ibid.
CHAPTER IX
RECONSTRUCTION OF THE CHAMPLAIN II

While the previous chapter described in detail the remaining construction features of Champlain II, those remains alone are not sufficient to complete our understanding of the vessel's overall design and construction. Much of the original hull is missing: the forward one third of the vessel, including the stem, is gone, as is all information regarding the construction of the vessel above the level of the fragmentary deck beams. As such, a complete "picture" of the vessel's construction must be achieved by reconstruction, a process of inference, selective choice and educated guesswork. Inferences as to the correct construction features can come from "holes" in the existing remains, such as mortises for stanchions above the keelson. Selective choices are made from known information from comparable archaeological sources, archival materials and pictorial images. While many different solutions to construction challenges exist within those sources, choices must be made as to the most appropriate "fit" for Champlain II. All other features of the reconstruction not covered by the previous descriptions falls necessarily into the realm of educated guesswork, where the simplest and most logical guess is usually the most productive.

The reconstruction of Champlain II must start with the creation of a set of "lines" for the hull (Plan 9-1). The lines drawing represents the three-dimensional shape of Champlain II's hull. A lines drawing is composed of three different but interrelated views of the vessel: the body plan, showing a "end-on" view of the ship from both the bow and stern; the sheer plan, which shows the profile of the vessel along its length; and the half-breadth, which views the hull of the vessel, as if looking down on it from above. Each view is characterized by two sets of straight lines and one set of curved lines. The curved lines represent the shape of the vessel shown in that particular view.
It must be understood that the lines drawings represent an ideal shape for the vessel. The builders, Captain Proctor and Master Carpenter Spear, would have endeavored to make the actual timbers that their workers were cutting as close as possible to the desired shape. Yet lines on paper cannot account for the vagaries of wood, with its individual knots and widths, or for the expertise of each individual worker, as they attempted to smooth the curves of the timbers with saws and adzes.

Primary evidence for the lines comes from the recorded measurements of the hull curvature. Five sections of the hull curvature were recorded. The section at F1 was taken on the inside face of the hull planking, from the side of the keel outward toward the sides of the hull remains on both the port and starboard sides. However, the sides of Section F1 are intact only through the turn of the bilge and not up the sides of the hull. The other four sections were taken on the upright starboard side: F40, the midships frame; F81, where the spacing of the frames changes; F90 where the hull narrows towards the stern; and F100, the last standing frame and futtock combination (Fig. 9-1).

The curvature of the hull at F40 is complete up to the level of the deck beams and shows little to no distortion. It can be used in the reconstruction without fairing. The missing vertical sides of F1 were extended using the curvature recorded at the midships frame (F40) as the shape of the hull changes little amidships. Yet, the hull curvature measurements could only be a starting point for the lines drawings and not an exact blueprint. Even partially intact hulls, such as Champlain II, are subject to the warping and sagging that accompanies their eventual deterioration underwater. The goniometer measurements show this sagging quite readily, especially at F100, where the unsupported stern portion of the starboard side sags outward. Thus, the measurements needed to be faired, or smoothed out to produce fair, pleasing curves. Other sources which show the lines of similar steamers or steamer types were useful guides for fairing our goniometer measurements.
One particularly interesting source for completing lines of *Champlain II, ex-Oakes Ames* is a set of lines drawings attributed to Orson Spear. Spear designed many other different Lake Champlain vessels, but we know he designed at least two steamboats. One of those was the wooden screw propeller steamer *Grand Isle* built in Essex, New York in 1869.\(^1\) While the vessel was considerably smaller than *Champlain II, ex-Oakes Ames*, measuring only 103 feet, 2 inches (31.44 m) in length, 19 feet (5.79 m) wide and 7 feet (2.13 m) deep, there are basic similarities in design.\(^2\) Spear's

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1. *Burlington Free Press and Times*, May 19, 1890, p. 3.
2. *Enrollment No. 85230*, Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.
drawings, which depict only the sheer view and half-breadth, show a long, narrow, double-ended hull with symmetry in the water lines. Although *Champlain II*, ex-*Oakes Ames* was even longer and more narrow than the *Grand Isle*, this symmetry in the entry and exit of the water lines was sought in the reconstruction.

Another source of information for the body plan comes from Henry Hall's seminal 1884 survey of merchant shipbuilding. He recorded a typical body plan for an "Eastern River Steamboat" that closely resembles the nearly flat-bottomed hull form with sharply rising sides found on *Champlain II*. This source provides a useful comparison for fairing the warped sections recorded on *Champlain II*.

Construction drawings represent the architecture of the hull (Plans 9-2 and 9-3). Reconstruction of *Champlain II* can be very well substantiated from the keel up to the level of the deck beams, as the archaeological data has demonstrated how these timbers fit together and how they functioned together.

The reconstruction of the bow of *Champlain II* is more problematic, as no portion of the bow structure remained. Archaeological, historical and pictorial sources can help to fill in several of the missing features. Evidence for the missing floor timbers of the forward third of the vessel can be ascertained from the archaeological recording of the steamer *Adirondack*. Recorded in August 1994, the remains of *Adirondack* exhibit a framing pattern remarkably similar to that of *Champlain II*, with single floors throughout the bottom of the hull and a change in the amount of space between the frames. A considerable amount of *Adirondack*’s forward floors remain and exhibit the same more widely spaced floors forward and after the midships region. Consequently, it can be assumed that *Champlain II* should have the same more widely spaced frames in the forward third of the vessel.

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Plan 9-3. Transverse section of construction (drawing by the author)
An important historical source for information regarding the construction of the bow comes from Champlain II's enrollment documents, which indicate that through all phases of its career, the vessel had a "plain head and sharp stem:" the almost vertical, unadorned stem typical of late 19th-century inland steamers.\textsuperscript{4} Other information for the construction of the stem comes from such historical sources as Shipwright William Webb's designs for mid- and late-19th-century steam vessels.\textsuperscript{5} Webb was one of the most influential, and widely imitated shipwrights of his time. While most of Webb's steamships were designed for ocean travel, many details of construction can be gleaned from his drawings. An important secondary source for typical 19th-century ship design has been William Crother's 1997 book on clipper ship construction.\textsuperscript{6} Although clipper ships were sailing vessels, the information in Crother's book is widely applicable to American 19th-century wooden ship construction. These sources most often show the bow constructed with deadwood, stacked in the same manner as that at the Champlain II's stern. The steamer's stern construction probably had half frames from the forward-most extent of the deadwood aft toward the sternpost; the reconstruction shows 8 half frames at the stern. Half frames also seemed the most likely arrangement for the bow. The reconstruction also shows 8 half frames at the bow, with the forward-most 4 frames canted.

Reconstruction of the upper portions of the vessel rely more heavily on historical accounts and on pictorial evidence. Information regarding the layout of the interior space of Champlain II can be determined from newspaper articles describing the interior compartments and their furnishings. The Burlington Free Press and Times' review of

\textsuperscript{4} Enrollments of the S.S. Champlain, ex-Oakes Ames, Official File No. 19281, Enrollments for the Port of Burlington, No. 7, Sept. 1, 1868, No. 4, June 8, 1873 and No. 6, June 8, 1874, Civil Records Division (CRD), Record Group 41, National Archives (NA), Washington, D.C.

\textsuperscript{5} W.H. Webb, Plans of wooden vessels, New York, 1897. Rare Book on file Special Collections, Texas A&M University Library.

the CTC refit of *Champlain II* provides the evidence that the vessel had three deck levels. The lowest level was occupied by the ladies cabin, which would have occupied the aftermost area below the main deck, where the remains of port holes were recorded. These small circular windows can be seen in drawings of *Oakes Ames* (see Fig. 9.2). The captain’s cabin was located forward, to the right of the entrance to the ladies saloon, while the post office and barber shop were located aft, to the port and starboard sides respectively. Forward of the engine bedtimbers was the crew’s quarters. It was here that the young wheelmen would have gone to "take their lunch", and there that they reported seeing rocks through the bottom in the course of the wrecking.

Above these cabins was the main deck level. Here, the massive machinery of the engines and boilers occupied a considerable portion of the space amidships. After the engine area was the main stateroom hall. The *Free Press* article stated that the "magnificent" hall was 162 feet (49.4 m) long, and 41 stateroom lined its walls. The area at the rails, over the guards was for the most part kept free as walkways for promenading passengers. The Dining room was located on the upper deck, and was large enough to seat 115 people, and had 46 berths along its walls.

The most useful sources for information for the construction of the upper decks are the drawings and photographs of the vessel shown throughout this thesis. The most important pictorial image is a drawing of *Oakes Ames* from the Mariners' Museum in Newport News, Virginia (see fig. 9-2). This drawing is by well known 19th-century portraitist James Bard, who specialized in the depiction of steamships. Although Bard was considered the best in his field and often took great care in measuring the vessels which he painted, he was also know for ignoring consistency of scale and perspective.

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7 *Burlington Free Press & Times*, June 20, 1874, p. 3.
8 *Champlain Transportation Company (CTC) Papers*, Carton 8, Folder 21, Testimony of A. North, Special Collection, Bailey/Howe Library, University of Vermont.
9 *Burlington Free Press & Times*, June 20, 1874, p. 3.
Fig. 9-2 *Oakes Ames* by ship portrait painter James Bard. (courtesy of The Mariners' Museum, Newport News, Virginia)
However, the curatorial staff of the Mariners' Museum feels that this drawing, done as a preliminary sketch for an oil painting, was done to scale.\textsuperscript{11} Indeed, the overall size of the ship does scale closely to enrollment measurements, but the lack of consistent perspective can also be seen. Although Bard drew the ship in profile, the lack of strict perspective is illustrated by the fact that both steam stacks and both beam engines are in view, one in front of the other. Overall, the drawing can be seen as a portrait, an individual representation of the vessel taken from Bard's own observation and study of \textit{Oakes Ames}. Many details, such as the approximate size and number of circular portholes, the angle of the sponsons under the guards, the placement of the boilers forward of the engine and the overall shape of the Bishop's Arch hogging truss, could be accurately ascertained only from this pictorial image.

The synthesis of all of these sources has resulted in an accurate reconstruction of \textit{Champlain II} as a heavily-timbered, sidewheel passenger line boat for the Champlain Transportation Company.

CHAPTER X
CONCLUSION

A comparison with other steamboat remains in Lake Champlain is instructive in placing Champlain II in both a progression of design and construction techniques, and in a broader historical context. Because the history of steam navigation on Lake Champlain spanned over 144 years, nearly the entire history of steam navigation, and because the cold, dark waters of the lake help to ensure the preservation of many wooden vessels, the lake has become an ideal laboratory for the study of inland water transportation, and steam vessels in particular. Archaeological investigations of the submerged cultural resources of the lake have located and documented numerous steamboat wrecks, and three vessels, including Champlain II, have been the subject of more detailed study. Investigation of these wrecks, although a small sample, has demonstrated both the wide range of variation and several clear trends in steamboat design and construction.

The earliest steam vessel to ply Lake Champlain waters was Vermont, launched in 1809, only two years after Robert Fulton had gained fame with his successful Hudson River steam passenger service. The vessel, built by Burlington, Vermont businessman John Winans, was a flat-bottomed, flat-sided vessel, 120 feet (36.6 m) in length, 20 feet (6.1 m) in beam, with a 20 horsepower engine turning a pair of side paddlewheels, largely similar in shape and configuration to Fulton's North River. The vessel's side lever, bell crank engine was prone to breakdown, eventually causing its demise. Vermont sank in the Richelieu River, at the northern outlet of Lake Champlain, in October 1815, when the crankshaft violently disconnected, breaking through the bottom of the hull. The vessel filled and sank within minutes.

1 K. Crisman, Of Sailing Ships and Sidewheelers, p. 30.
The remains of the vessel were discovered and raised from the Richelieu River in 1953 by Lorenzo Hagglund, who had also raised the Revolutionary War gunboat *Philadelphi*a. His attempt to do something equally educational with the remains of *Vermont* as he had with *Philadelphi*a ended in failure. The remains, which were never conserved or cared for in any way, deteriorated over time. The vessel was eventually destroyed in 1973 to clear the land it had occupied for a new campsite. However, some details of construction can be gleaned from rudimentary plans of the wreck and photographs of the raised remains, which show relatively flat floor timbers, regular spacing of the single floors, iron fasteners and large longitudinal stiffening timbers (Figs. 10-1 and 10-2).

Fig. 10-1. The salvaged remains of *Vermont*. (courtesy K.J. Crisman)

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Fig. 10-2. Hagglund removing the remains of the *Vermont*. (courtesy K.J. Crisman)

The second successful commercial steamboat on the lake was also the subject of the first full scale underwater archaeological investigation of a wreck in Lake Champlain. *Phoenix* was built in Vergennes, Vermont in the spring of 1815 by the Lake Champlain Steamboat Company.\(^3\) The vessel measured 146 feet (44.5 m) in length, and was elegantly furnished for passenger travel up and down the length of the lake. The steamer met a violent end on the night of September 5th, 1819, when a fire broke out in the galley. The flames spread quickly, panicking both crew and passengers, and in the haste to abandon the vessel, the captain of *Phoenix* and several passengers were left aboard the flaming boat. The captain and four people were eventually found clinging to furniture tossed overboard for flotation, but six others drowned in the disaster. While the cause of the fire was officially attributed to a candle left burning in the galley by a crew member, there was ample speculation that the fire was deliberately set by bitter rival sailing interests. The vessel burned to the waterline after it became lodged on Colchester Reef.

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\(^3\) R. Davison (ed.), *The Phoenix Project*, p. i.
Divers discovered the remains of *Phoenix* in deep water off Colchester Point in 1978. The remains rest on a sloping bottom at depths between 60 to 110 feet (18 to 33 m). A team of divers from the Champlain Maritime Society (which later merged with the Lake Champlain Maritime Museum) recorded and mapped the bottom of the hull in 1980 (Fig. 10-3). The wreck subsequently became part of Lake Champlain's Underwater Historic Preserve System administered by the State of Vermont.

Fig. 10-3. The remains of *Phoenix*. (drawing by K.J. Crisman, courtesy of K.J. Crisman)

The study revealed that *Phoenix*’s hull was built entirely of oak and iron fastened throughout. The overall shape of the hull differed somewhat from that of *Vermont*. *Phoenix* had a rounded bottom and was proportionally broader, with a deeper draft. The proportions and structure of the hull had been designed to compensate for the weight of the vessel's heavy steeple engine. The builder had endeavored to make the hull as stiff as possible by bolting a 10 inch (25.4 cm) square longitudinal strengthening timber on each side of the 10 inch (25.4 cm) square keelson. Four shorter longitudinal timbers,

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4 Ibid.  
5 Bellico, *Sail and Steam in the Mountains*, p. 262.  
6 Ibid.
located slightly forward of amidships acted as engine mounts. Frames were constructed in a common 19th-century technique of pairs, called "double sawn" by American shipwrights. This technique allows the construction of curved frames out of straight pieces of wood.

The 1820's and 1830's were characterized by advances in steam technology and the development of new vessel types as a result of the rapid expansion of maritime commerce on the lake due to the opening of the Champlain Canal linking the Hudson River and Lake Champlain in 1823. Sailing canal boats, which could travel through the narrow confines of the lock and canal system as well as navigate the broad lake became a popular commercial freight carrier. While many steamers were also built on the lake during this period, only one has been the subject of an archaeological study.

Water Witch, built in 1832, was originally constructed as a steamboat, but was later converted to a schooner. The vessel was smaller than most of the lake steamers of its day, measuring only 80 feet (24.4 m) in length, 17 feet (5.1 m) in beam and no more than 8 feet (2.4 m) in depth of hold. Water Witch was built with a single (main) deck and was powered by a single 40 horsepower engine. The vessel worked both as a towboat and a line boat in opposition to rival companies' liners until 1835, the year the Champlain Transportation Company (CTC) finally gained supremacy in steam transportation on the lake. In order to consolidate its primacy the CTC bought out several rival transportation companies and their boats, among them Water Witch. The small Water Witch was then converted to a commercial schooner and sold.

The vessel had a lengthy career as a commercial sailor until 1866 when she went down in a squall off Diamond Island. At the time of its loss, the vessel was hauling iron ore between two lake ports for its owner Thomas Mock, who captained and lived aboard

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7 Davison, The Phoenix Project, p. 18.
9 Ogden Ross, The Steamboats of Lake Champlain: 1809 to 1930, p. 29.
with his wife and three children, including his infant daughter. A sudden storm on April 27 1866 swept Captain Mock, his family and crew from the deck into the lake's 40°F (4.4°C) water where they were later picked up by a passing sloop. Tragically, their infant daughter Roa perished in the disaster.

Fig. 10-4. The remains of *Water Witch*. (drawing by K.J. Crisman, courtesy of K.J. Crisman)

In September 1977 a group of Canadian divers exploring the lake in search of shipwrecks discovered the wreck of *Water Witch* in the deep waters just south of Diamond Island, to the west of the mouth of Otter Creek. The hull was examined by archaeologists from the Lake Champlain Maritime Museum in 1990 and again in 1993.\textsuperscript{10} They found that the hull was primarily iron-fastened, the conventional technique for inland vessels of the 19th century. The vessel measured 83 feet (25.3 m) in length and

18 feet (5.5 m) in breadth at its widest point (Fig. 10-4).\textsuperscript{11} Although Water Witch's hull displays some characteristics that are typical of lake steamers of the period, such as shallow draft and nearly vertical sides, its graceful shape, size and configuration differ little from other contemporary lake schooners of the day.\textsuperscript{12} Water Witch can be designated as an average sailing vessel, but an undersized and atypical steamer. Although the vessel was much smaller than the majority of lake steamers it is comparable in size to at least two contemporary steam vessels, MacDonough and Washington. The smaller size of these vessels can be explained by noting that all three of these steamers were built for cross-lake or ferry traffic, rather than the north-south route of the larger passenger line steamers.\textsuperscript{13} A construction and design pattern begins to emerge of small steamboats built for cross-lake traffic, while larger, more heavily constructed steam vessels were used for the longer north-south passage.

Some of the other, larger, more typical lake steamers of the second and third quarters of the 19th century now rest in a ship graveyard in the waters adjacent to the CTC shipyard on Shelburne Bay, south of Burlington. The shipyard was established by the company in 1820, and has remained in use until the present day.\textsuperscript{14} Traditionally when steamers were removed from service by the company they were taken to the shipyard, stripped of their valuable machinery, and dismantled. By the time steam technology passed from supremacy the waters near the yard were littered with the accumulated remains of decommissioned and dismantled vessels (Fig. 10-5).

In 1983, Champlain Maritime Society divers surveyed the western shore of the bay to locate 12 derelicts identified in an historic map (thought to date from the 1880's)

\textsuperscript{11} Ibid., p. 31.
\textsuperscript{12} Ibid., p. 52.
\textsuperscript{13} Ogden Ross, The Steamboats of Lake Champlain, p. 56.
\textsuperscript{14} Ibid., p.39.
of the shipyard's property. During this survey, the remains of four derelict steamers, designated Wrecks A through D, were located, measured and tentatively identified.

![Image of the graveyard of vessels](image)

Fig. 10-5. The graveyard of vessels in the shallow waters off the CTC's Shelburne Bay shipyard. The photo dates to circa 1853, when the CTC bought *R.W. Sherman*, shown being refitted in the background, and changed its name to *America*. (courtesy of K.J. Crisman)

Researchers believe Wreck B to be the remains of the steamer *Franklin* (Fig. 10-6). *Franklin* was built in 1827 and thus is of similar vintage as *Water Witch* but was much larger, measuring 162 feet (49.4 m) in length, 22 feet (6.7 m) in breadth, and 9 feet (2.7 m) depth of hold. The single-engined vessel also had the distinction of being the first built on Lake Champlain with the boilers located on the guards instead of in the

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16 Ibid., p.56.
17 Ogden Ross, *The Steamboats of Lake Champlain*, p. 53.
hold. This improvement reduced worry regarding "the danger which attends the explosion of a boiler within the boat."\textsuperscript{18}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{franklin-steamer.png}
\caption{The steamer \textit{Franklin}. (courtesy of UVM, LCT Collection)}
\end{figure}

The preserved length and breadth of the remains is 135 feet, 6 inches (41.3 m) long and 23 feet (7 m) wide.\textsuperscript{19} One very significant construction feature that was observed concerned the pattern of \textit{Franklin}'s frames. According to the survey report, Frames 1 through 18 on the wreck are single frames. The pattern then changes to pairs for Frames 19 through 36, and then back to single frames for the remainder of the wreck, Frames 37 through 86. Clearly the double frames are meant to provide added strength to the portion of the hull that bore the concentrated weight of the engine. While \textit{Champlain II} did not have double frames, the change in the pattern of framing is similar.

\textsuperscript{18} Ibid., p. 54.
\textsuperscript{19} Chase, "The Shelburne Bay Project," p. 56.
Wreck C is believed to be *Burlington* (Fig. 10-7).\textsuperscript{20} *Burlington* was built in 1837 and was retired from service in 1854.\textsuperscript{21} This vessel was the pride of the CTC's fleet for many years, serving as a passenger line boat. It measured 190 feet (57.9 m) in length, 25 feet (7.6 m) in beam and 9 feet (2.7 m) depth of hold and was repeatedly lauded for its elegant appointments.\textsuperscript{22} Its captain, Richard W. Sherman (who had also been the captain of *Phoenix*) was a celebrated figure on the lake.

The remains' paired frames, large keelson and six longitudinal timbers on the port side and four remaining on the starboard side provided the hull with ample strength. A portion of the sternpost and some deadwood also survive and were noted. These construction features represent the builders' method of strengthening the bottom and

\textsuperscript{20} Ibid., p. 58.
\textsuperscript{21} Ogden Ross, *The Steamboats of Lake Champlain*, p. 63.
\textsuperscript{22} Ibid.
providing longitudinal stiffness in the narrow, shallow hull. Like those in *Champlain II* the longitudinal stringers are not attached to the keelson, but run parallel to the keel and keelson over most of their length, through the central portion of the remains.

The third vessel surveyed at the Shelburne Shipyard site, Wreck D, is believed to be the CTC steamer *Canada* (Fig. 10-8). Built in 1853, *Canada's* original dimensions were 260 feet (79.3 m) in length, 33-1/2 feet (10.2 m) in breadth and 10 feet (3 m) depth of hold. The survey report of this wreck noted paired frames, a keelson flanked by large engine mount timbers, and two stringers on the starboard side and only one on the port side. Unlike the other steamboat wrecks, where the longitudinal timbers appear to have run parallel to each other, the longitudinal timbers on *Canada* appear to taper in toward the keelson at both the bow and stern. While this evidence that the ends of the

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24 Ogden Ross, *The Steamboats of Lake Champlain*, p. 93.
stringers were turned in to the keelson in a manner similar to those of Champlain II, the difference from the other steamboat wrecks may be explained by the longer length of the remains.

The identification of Wreck A proved to be the most problematic. The vessel is believed by researchers to be the remains of either Francis Saltus or A. Williams.25

Fig. 10-9 The steamer Francis Saltus. (courtesy of UVM, LCT Collection)

Francis Saltus was built in 1844, and measured 185 feet (56.4 m) in length, 26 feet (7.9 m) in breadth and 8-3/4 feet (2.7 m) depth of hold (Fig. 10-9).26 The vessel ran in opposition to the famed Burlington, with a loss of profitability to both, until 1848 when the CTC once again bought out its competition. In the midst of legal, and sometimes illegal, battles for its control, in 1856 the steamer was beached and stripped at the shipyard site. Another vessel was said to have been sunk directly behind Saltus to

26 Ogden Ross, The Steamboats of Lake Champlain, p. 75.
prevent its being removed from the harbor. Photographs of *Saltus* depict the vessel with a single walking beam engine situated in the center of the hull amidships. The vessel's two boilers were placed abaft the engine and on the guards.

*A. Williams* was built in 1870 and had a registered measurement of 132 feet (40.2 m) in length, 22 feet (6.7 m) in beam and 7-1/2 feet (2.3 m) depth of hold (Fig. 10-10).²⁸

Fig. 10-10 The steamer *A. Williams*. (courtesy of UVM, LCT Collection)

The vessel, which was much smaller than the typical CTC line boats, was purchased by the CTC shortly after its construction and for use as a ferry and for local service. *Williams* served for 20 years until it was retired to the shipyard in 1893. Like *Saltus*, *Williams* had a single walking beam engine, centrally placed slightly abaft amidships, but *Williams* also had only one boiler, centrally placed forward of the engine.

²⁷ Ibid., p. 98.
²⁸ Ibid., p. 135.
The archaeological survey revealed the remains of Wreck A measured 125 feet (38.1 m) in length. The vessel has a large keelson with two large stringers located to each side of the keelson. These three central longitudinal members formed the engine mount. Eight other, smaller longitudinal members were also recorded, five on the port side and three on the starboard. Fasteners for two more timbers were noted on the starboard side indicating that the vessel had a total of six stringers on each side of the keelson. This configuration is very similar to that of Champlain II.

The simple drawings from the survey show a random pattern of framing, with some paired and some single frames. Similarly the room and space appears to be somewhat erratic. This random pattern may be due to repairs to weak frames by the common method of pairing or sistering, or to the deteriorated condition of the remains or the fact that the investigations of the wrecks were intended only as a preliminary survey, and are imprecise.

Although mountings for a centrally located single steam engine were visible, no evidence of boiler placement was recorded. However, the remains are more likely to be those of the earlier vessel, Francis Saltus, as the construction of the vessel shows none of the progression of strengthening of the central portion of the hull, or of tapering of the stringers in toward the keelson. Also, the registered length of Williams is just 7 feet (2.1 m) longer than the recorded length of the remains, and it does not appear that the ends of the remains are close to being the end of the vessel. There was no evidence of cant frames or narrowing of timbers.
To establish a chronological progression in the sequence of construction features on Lake Champlain steamboats, the CTC steamer *Adirondack* was recorded by the author and Kevin J. Crisman during the summer of 1994. Built in 1867, like *Champlain II*, *Adirondack* was a night line passenger vessel for the CTC (Fig. 10-11).\(^{29}\)

*Adirondack’s* career was cut short by the completion of a railroad along the west side of the lake, whose all-season, all-weather route ended the need for night line steamers. The vessel was retired in 1875 and subsequently abandoned near the CTC’s Shelburne Shipyards. The remains of *Adirondack* now rest in shallow water just to the south of the shipyard, adjacent to the Lake Champlain Yacht Club.

With the exception of the centrally located engine mounts, the framing plan and longitudinal stiffening timbers on *Adirondack* follow the same pattern as those of

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\(^{29}\) Ibid., p. 111.
Champlain II, with close spaced single frames amidships under the engine mounts, and more widely spaced single frames toward the bow and stern (Plan 10-1). Like Champlain II, Adirondack's longitudinal timbers also taper inboard, toward the keelson as they approach the bow and the stern.

A final confirmation of this framing pattern as a standard Lake Champlain construction technique for large steamboats came from a brief survey of the steamer Reindeer (Fig. 10-12). Built for the Grand Isle Steamboat Company in 1882 for

![Reindeer](image_url)

Fig. 10-12 The steamer Reindeer. (courtesy of UVM, LCT Collection)

operation between Burlington and St. Albans, Vermont, Reindeer was one of the very few steamers not owned at one time or another by the CTC.30

Reindeer now lies in the shallow waters of South Bay, near Whitehall at the southern end of the lake. Due to extremely low water during the summer of 1995, the

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remains were partially exposed, and therefore accessible for survey (Figs. 10-13 and 10-14). Although the timbers were found to be in a deteriorated state, it was obvious that *Reindeer* had been framed along the same pattern as both *Champlain II* and *Adirondack*, with single frames spaced on 10 to 12 inch (25 to 31 cm) centers amidships, and 24 to 26 inches (61 to 66 cm) forward and aft.
Fig. 10-14 Archaeologists surveying the remains of *Reindeer* during the summer of 1995. (photo by K.J. Crisman)

Examination of the construction of these steamboat wrecks reveals a chronological progression in the design and construction of steam powered vessels on Lake Champlain. Examination of the archaeological record reveals a rapid increase in size from vessels of the early steam period and a continual effort to modify and improve longitudinal stiffness and strength. Such changes in hull design and construction sought
to accommodate the concentrated weight of increasingly larger machinery.

Significantly, three nearly contemporary vessels, Champlain II, Adirondack and Reindeer, all exhibit a framing pattern of closely-spaced framing amidships, with much greater spacing at the forward and after ends of the hull. It is perhaps a regional, or at least a local construction type.

In a broader context, these steamers also reflect the structure of the steam carrying trade on the lake, which from an early period was dominated by the CTC and concentrated on north-south traffic. Archaeological investigations have shown that early steam vessels were typically smaller and more lightly constructed than later ones, as were vessels that were built specifically for east to west, cross-lake traffic. The prevailing use of large, more heavily built vessels for north-south trade can be directly attributed to the importance of Lake Champlain as part of the transportation corridor between New York and Montreal, and the relative lack of importance of local trade.

The CTC's rise to prominence on the lake can be attributed to its recognition of the importance of this transportation corridor, and its policies of continual alliance with powerful and capital-rich rail transportation companies. The CTC's dominance was so complete that those vessels which were not built for the company were often produced to compete in direct opposition. Or, as may be the case with Water Witch, the builder intended to be enough of a threat to the CTC that the company was forced to buy the vessel to maintain its primacy in the steam trade of Lake Champlain.

When compared to the rest of Lake Champlain's steamers, Champlain II, ex-Oakes Ames was an oddity. It was a large, heavily timbered vessel built for short passage, cross-lake traffic. The timbers of Champlain II are larger than any of the other vessels the hull has been compared to. Both the floor timbers and the stringers were of greater dimension than those of Adirondack, the vessel that most closely resembles Champlain II, and which was built for longer, north-south voyages. The size of
Champlain II and its heavy construction can only be attributed to its original purpose, that of ferrying 12 to 14 fully laden railroad cars. Champlain II's conversion to passenger transport effected only the upper deck construction, including the removal of the rail tracks and rebuilding the upper decks for conventional passenger accommodations. We must assume that the lower portion of the hull received little major alteration during the refit, for passenger traffic could not have required more longitudinal stiffening than railroad cars. Thus, while Oakes Ames began as an independently produced, heavily-timbered oddity, Champlain II ended its career as a typical, if heavily-timbered, north-south passenger line boat for the Champlain Transportation Company.

The archaeological study of Champlain II and other steamboat wrecks in Lake Champlain has made possible these conclusions about the changing nature of inland transportation during the communication and transportation revolution of the 19th century. While historical sources have long noted the importance of Lake Champlain and its ports throughout the 18th and 19th centuries, only archaeological data could contribute such information about the exact nature of the steamboats themselves. The Champlain II Project has added valuable information about the diverse nature of the construction of late 19th-century steamboats. Research on steam vessels has typically been concentrated on the early development of steam ships and steam engines, and on the transition from wooden to metal hulls. Recording the remains of Champlain II has helped to create a more balanced perspective about the more recent but perhaps lesser-known period of wooden steamboat construction.
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Webb, W.H. *Plans of wooden vessels selected as types from one hundred and fifty of various kinds and descriptions: from a fishing smack to the largest clipper ships and vessels of war, both sail and steam, built by Wm. H. Webb, in the city of New York, from the year 1840 to the year 1869*. New York: n.p., 1897.

APPENDIX A
ENROLLMENT DOCUMENTS

Copy of Enrollment # 7: Oakes Ames

On reverse (cover) side:

District of Vermont  
- Copy -  
Enrollment No. 7  
Steamer  
Oakes Ames of Burlington  
1 September 1868
Enrollment:

Form E

Permanent

ENROLLMENT No. 7

In Conformity to an Act of the CONGRESS of the UNITED STATES OF AMERICA entitled "An Act for Enrolling and Licensing Ships or Vessel, &c.," passed the 18th February 1793, and "An Act to Regulate the Foreign and Coasting Trade on the Northern, Northeastern, and Northwestern Frontiers of the United States, and for other purposes," passed the 17th June, 1864, and the Acts of the 7th July, 1838, 29th July, 1850, and 6th May, 1864,

John B. Page of Rutland Vermont

President of the

"Burlington Steamboat Company"

having taken the oaths required by the said Acts, and having Sworn that the "Burlington Steamboat Company" - a Corporation chartered by the Legislature of the State of Vermont A.D. 1867.- and that the property of said Company is owned by different persons in Shares and that said persons are each and every one Citizens of the United States sole owner of the Steamboat or Vessel called the "Oakes Ames" of Burlington whereof Napoleon B. Proctor is at present Master, and as he hath Sworn is a citizen of the United States, and that the said Steamboat or vessel was built at Burlington Vt in the year 1868, as appears by Certificate of Robert J. White Admeasuring Clerk for the District of Vermont And said Certificate having certified that the said Steamer or Vessel has two decks and no mast and that her length is two hundred and forty four -- feet,

her breadth Thirty four and 7 1/2 feet

her depth Nine and 8 3/4 feet
he [sic] height feet

and that she measures Twelve hundred & forty five tons and eighty four hundredths,

Capacity under tonnage deck 462.48

Capacity between decks above tonnage deck 783.36

Capacity of enclosures on upper deck

Total tonnage 1,245.84

that she is a Side wheel or paddle Steamer has Two independent Engines, Sharp Bow and Stern and plain head

And the said John B. Page having agreed to the description and admeasurement above specified, and sufficient security having bee [sic] given in conformity with the terms of the said Acts, the said Steamer has been duly Enrolled at the Port of Burlington District of Vermont.

Given under my hand and Seal at the Port of Burlington Vt this first day of September in the year one thousand eight hundred and sixty-Eight

Jn. Antony

Depy. Collector
Enrollment No. 4
On reverse (cover) side:

(N., N.E., and N.W. FRONTIERS)

Enrollment No. 4

OF THE

Steamboat

CALLED THE

"Oakes Ames"

of Burlington

1245 84/100 tons.

ISSUED AT THE PORT OF

Burlington

DISTRICT OF

Vermont

24 April, 1873

William Wells, Collector.

________________________________________

DATE OF SURRENDER:

8 June, 1874

WHERE SURRENDERED:

Burlington, Vermont

CAUSE OF SURRENDER:

Name changed by Act of Congress

approved 9 June 1874 from "Oakes Ames"

to "Champlain"
Enrollment:

Permanent
ENROLLMENT
No. Four 4
OFFICIAL NUMBER:
19281


A.L. Inman of Burlington Vermont" General Superintendent of the "Champlain Transportation Company" having taken or subscribed the oath required by the said acts, and having sworn that he, together with the "Champlain Transportation Company" a Corporation chartered under the laws of the State of Vermont in AD 1826 whereby the property of said Company is owned by various persons in equal Shares; - and that the said persons are each and every one citizens of the United States, and Said Co. is sole owner of the Steamboat or vessel called the "Oakes Ames" of Burlington whereof Byron J. Holt is at present Master, and as he hath sworn is a citizen of the United States, and that the said Steamboat or vessel was built at Burlington, State of Vermont in the year 1868, as appears by Enrollment No. 7 issued at the Port of Burlington Vermont, and dated 1 September 1868 - this day surrendered on account of change of ownership. - And said Enrollment having certified that the said Steamer or vessel has Two decks and Four Stay masts, and that her length is Two hundred and Forty four feet
her breadth Thirty four and 7 1/2 feet
her depth Nine " 8 3/4 feet
her height feet

and that she measures Twelve hundred and Forty five tons;
and Eighty four hundredths.

Capacity under tonnage deck 462.48
Capacity between decks above tonnage decks 783.36
Capacity of inclosures on upper deck, viz:

Total Tonnage: 1245.84

that she is a Side-wheel Steamboat has a Plain head and Two independent Engines and Sharp Bow and stern.

And the said A.L. Inman having agreed to the description and admeasurement above specified, and sufficient security having been given, inconformity with the terms of the said acts, the said Steamer "Oakes Ames" has been duly enrolled at the Port of Burlington, - District of Vermont.

GIVEN under my hand and seal of the Port of Burlington in the District of Vermont this Twenty Fourth day of April, in the year one thousand eight hundred and Seventy Three.

J.A. Antony, Deputy Collector
Enrollment No.6

On reverse (cover) side:

(N., N.E., and N.W. FRONTIERS)

Enrollment No. 6

OF THE

Sidewheel Steamboat

CALLED THE

"Champlain"

of Burlington

973 05/100 tons.

ISSUED AT THE PORT OF

Burlington

DISTRICT OF

Vermont

9 June, 1874

William Wells, Collector.

______________________________

DATE OF SURRENDER:

24 December 1875 July 16 1875

WHERE SURRENDERED:

'Burlington, Vermont

CAUSE OF SURRENDER:

wrecked 16th July 1875
dismantled and broken up
Enrollment:

Permanent

ENROLLMENT

No. Six 6

OFFICIAL NUMBER:

19281


A.L. Inman of Burlington Vermont - Gen Supt and Secy of the Champlain Transportation Co. having taken or subscribed the oath required by the said acts, and having sworn that he, [together with][crossed out] the "Champlain Transportation Company" incorporated under the laws of the State of Vermont in AD 1826 and that the property of said Company is owned by various persons in equal Shares; - and that the said persons are each and every one citizens of the United States, and Said Co. is sole owner of the Steamboat or vessel called the "Champlain" of Burlington whereof George Rushlow is at present Master, and as he hath sworn is a citizen of the United States, and that the said Steamboat or vessel was built at Burlington, Vermont, and named "Oakes Ames" in the year 1868, as appears by Enrollment No. 4 dated 24 April 1873, this day surrendered for the reason that said Steamboat was re-built at Shelburne Vt. in the year 1874, and the name changed to "Champlain" by Act of Congress approved 9 June 1874.
And the tonnage Admeasurement Certificate dated June 1874 by Robert White

Admeasuring Clerk having certified that the said Steamboat or vessel has Three decks and No masts, and that

her length is Two hundred and Forty four feet

her breadth Thirty four and 7 1/2 feet

her depth Nine " 8 3/4 feet

her height feet

and that she measures Nine hundred and Seventy three tons;

and five hundredths.

Capacity under tonnage deck 462.488

Capacity between decks above tonnage decks 501.560

Capacity of inclosures on upper deck, viz:

Total Tonnage: 973.05

that she is a Side-wheel or paddle Steamer has a Plain head and Sharp stern and Two independent Engines

And the said A.L. Inman having agreed to the description and admeasurement above specified, and sufficient security having been given, inconformity with the terms of the said acts, the said Steamboat "Champlain" has been duly enrolled at the Port of Burlington Vermont.

GIVEN under my hand and seal of the Port of Burlington in the District of Vermont this Ninth day of June in the year one thousand eight hundred and Seventy Four.

J.A. Antony, Deputy Collector
APPENDIX B
INDIVIDUAL WRITTEN TESTIMONIES OF WRECK, TAKEN BY ORDER OF
PRESIDENT LEGRAND B. CANNON

1. Statement of Abijah North, Clerk

Ticonderoga, July 25, 1875

To the Directors of the Champlain Transportation Company,

Gentlemen,

Captain Rushlow informed me day before yesterday - that you desired each of the officers, and each of the crew as could, to send in a written statement of their individual connection with the "Champlain disaster" - where they were when she struck, - what they did, what they saw others do, and how it all appeared to them, as near as they can remember, that you may be able to "sift out the chaff and to save every grain" that may be of assistance to you in the accomplishment of "your desire."

The Steamer Champlain left Ticonderoga on the evening of the 15th July - at 9:30 - the usual time - with upwards of sixty paying passengers on board, the crew numbering forty-seven, and forty-five tons of freight. The weather was pleasant - and the moon being up - passengers did not retire as early as ordinary - Mr. Jacob Cole and family were on board, and as his yacht "The Dream" was to have a race the next day, Captain Rushlow remained up talking with him for some time after leaving Port Henry (time there usually eleven o'clock) where he usually retires. There were seventeen passengers came aboard at Port Henry, the larger portion of them going to attend the regatta at Burlington. At Westport twenty-three passengers went ashore and several

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1 Champlain Transportation Company Papers, Bailey Howe Library, University of Vermont Archives, Carton 8, Folder 21.
children leaving on board fifty-three passengers and a number of children not "counted" as they paid no fare.

No one came aboard at Westport - I looked at the time, while we were landing the freight there, and it was 12 o'clock. We had but little freight for Westport, so that by the time we had reached Steam Mill Bay I think it must have been between 15 & 20 minutes past twelve Friday morning - It was still a beautiful night, but not taking particular notice I cannot tell whether the atmosphere was perfectly clear, and that there were no clouds, or not, my impression is that the first time I looked out after the accident had happened - which could not have been more than 20 seconds - that although I could distinguish things quite plainly - still I remember that they did not appear to me as clearly defined as they naturally would in a bright moon-light night - this may have been owing to the fact that I had been reading in the office under a bright light - and too - being on the starboard quarter - the steamer's shadow may have had something to do with it - There were no fares to collect, and everything seeming to be moving regularly. I was in the office deeply interested in a novel, the door was open, the office window - and the side window - There were a number of passengers in the recess and gangways.

Among them Mr. Adyack of Port Kent, Mr. Reynolds of Alburg, Mr. Wolcott of Port Henry (I think), Capt. Geo. Conn was aboard but I think he had just gone down to take a berth - There were two women in the recess, one with a family of children - she was sitting on the starboard side near the Captain's room. We were running at the rate of not less (I think) than sixteen miles an hour. My first impression when she struck was that, as we were just "making the turn" coming out of the bay, we had collided with a canal boat of some kind, and the effect produced on the part of the vessel I was in, seemed to me to
favor that conclusion, for it seemed to one as though she had mounted partly onto something large, and was shoving it down into the water causing, from the resistance thus offered to the momentum of the Steamer - the great commotion she was making herself in the water - and I looked out of the window, the first thing expecting to see a part of a canal boat pass by, but the shocks and vibrations were so powerful - before she got still, I thought I must be mistaken. I closed the door and windows - and hurried to see what had happened - and there within fifteen feet of the larboard quarter were the shore rocks.

I immediately said out loud "The rudder chain must have broken," as I could not believe it possible such a thing should have happened "under the circumstances" - except through an accident of that nature - Seeing that the vessel must have been fearfully injured - it flashed through my mind that "The boilers might have been weakened and that we might get a fire if they should burst in any way" - and I started back immediately to go and see if I could ascertain the condition - meeting the 2 ladies in the recess - who by that time had become very much excited - I took hold of them and almost ordered them to "keep quiet, not to get excited as there seemed to be no immediate danger." At this they quieted down and commenced getting their trunks together. I cant [sic] remember what I said or what was said to me on going "forward" - of course they were all startled, but the confusion was not such however that they did not use sense - and as I saw no fire I started to go below - Before going forward though Geo. Marney (the watchman) said to me - was talking to the ladies - "Hadn't I better call the Captain" & of course I said "Yes" - and he did so - although I was satisfied in my own mind that he should make his appearance as soon as he possibly could - On going below I met the Captain and Mr. Rockwell - and it surprised me because it did not seem as though they
had time to get there, all dressed - I don't think it had been more than a minute and a half to two minutes from the time she was on - Edwin Rockwell & Walter [sic] Hedding were at a lunch table and it had upset completely - and some one said "You can see the rock through the bottom." The cabin boys were hurrying up on deck partly dressed - but I believe they went back mostly and got their clothes - I think Mr. Rockwell said while we were down there, "Hadn't they better get what things they could up out of here." The Captain came up and went forward and returned and gave orders for "all to go forward, passengers and crew and take all their things with them that they could." In the stateroom-hall there was a considerable commotion - but as soon as they received the orders and they learned from the Captain that there was no immediate danger, most of them took time to dress themselves and get their things - Mr. I.M. Weed and family were on board, and as they were nowhere to be seen the Captain and myself happening to notice it at the same time spoke together and asked "Where is Mr. Weed?," - Says I "I will call him." It appears that Mrs. Weed had awoke, with a shriek from the shock, and then startled Mr. Weed, but on going to the window and looking out, it was all still, and such a fine night. Mr. Weed said "They must have struck Westport dock pretty hard," and they went to bed again.

When I went out to assist in getting the passengers ashore, I had all my money with me except about $20.00 dolls. in nickels that I had left in the safe with the books - I cannot now recall at just what time I went and got it. The steamer had listed over some and was settling away. Captain asked me then if "I had attended to my things, money, tickets, etc." and I told that "I had my money with me, but the other things were in the office" - He told me "I had better go and get them out as fast as I could" - Geo. Marney came with me to
help - when we got back to the recess, the ladies cabin was nearly full of water and the Captain's room too - chairs etc. were floating around the starboard side of the recess - George's feet were wet so he took my keys, got up on a settee and opened the office door - and let me in to the outside window - We had to take everything out that way - and got them out in good order as fast as possible - There being a lock on the Post Office - and it being all dry in there, I transferred them into that till "further orders." When I went forward again the passengers were all on shore and many of the crew - Mr. Rockwell had gone to meet the Adirondack - Mr. Markee was assisting in making a bridge with the planks and small boats for the passengers to cross on to the Adirondack - Jerome had been putting out lines to the shore to keep her "up" if possible - also they had been around to the Barber's lock-up endeavoring to get out what hand baggage they could - all the other luggage had been taken ashore - One gentleman said "I offered the Barber $5.00 dolls. if he would get my satchel for me." Captain said "Everything will be gotten off that can without money sir!" Well says he "I left an umbrella one of the settees, I wish I could get." Says I "I'll get it for you sir," and did so. The bar was badly used up. Mr. Bonds was watching it - I overheard him say 'The Captain told me to watch it.' While the Adirondack - after she had gotten opposite to us - was coming up across to Vergennes. I took up their checks and returned them their fare from W.H. [Whitehall] to Burl. Most of the other passengers remained on board - When we started to return at noon - I went around and took up my landing checks and supplied the Champlain's passengers with corresponding ones of Capt. Mayo's - I wanted to supply them with meals and telegraphed Mr. Inman if I should so, but never received an answer - though he told me afterwards that he ordered "yes" to be sent. Two gentlemen seemed to feel that they were not being
treated just right so I gave them a dollar each on my own responsibility for their dinners - On arriving at Ticonderoga that morning I had gotten up a despatch giving the particulars in as concise a form as possible - but on showing it to Mr. J.W. Baker - he said he would telegraph so I said nothing more, although I felt as though it belonged to my province, as much as any one, without it was Captain Rushlow of course. On arriving in Burlington on the afternoon I gave my money to Mr. Noyes as he said it was not best to leave it in the safe on the dock - and after putting the other things in Mr. Harrington's lock-up - I reported to Mr. Inman, who was at the harbor.

Egotism I abominate next to dishonesty and I feel constrained to say that I hope you will not impute it to me after reading this, as it is almost impossible to write any thing of the kind without giving its author an appearance of being egotistical.

As regards Captain Rushlow, I must say that he is, in my humble opinion, a very remarkable man. In every day life, in business or matters of a social nature he surpasses many men in capacity, ability, and judgement [sic] and when trial does come, I tell you, he is "not wanting" - Then it is that it seems to me he excels - for when he issues an order it seems to be the very best thing that could be done about that which it is issued - or wherever an exposition of his judgement [sic] is made, there seems to be no getting back of it, and the great beauty of it is, it is prompt and on the spot, and several times during the night fairly started me with surprise. Much credit is due Mr. E.B. Rockwell, I think, for the avidity with which he endeavored to carry out the captain's wishes, and the interest manifested in having everything done that was for the best - so far as I now recall, I think the crew generally were as attentive to the interests of the passengers as possibly could be expected - In regard to Mr.
Edwin Rockwell (wheelsman) I must say - that while I myself did not know that it was a regulation to have two in the pilot box all the time while in motion, still, nights whenever I have been up there, he was generally there, in fact I cannot recall any time when he was not. I have often seen him down between [Port Henry] & Wstpt. to lunch but supposed it was customary and all correct that he should be - This much gentlemen I respectfully submit to you as being that which you may have wished me to write - As regards how it happened, and under the circumstances which I underscored above, also some evidence that is very reliable, but also it seems to me of a very grave nature, which has come to my knowledge during the last twenty four hours. I shall mention in the following. It has made me tremble more than once before to-day in thinking of it. Captain Rushlow and Mr. Inman both will tell you gentlemen, that while Mr. Bigelow was interviewing them on Saturday the 17th, when Mr. Eldridge's name was being considered in connection with the affair - and that the fact that he left early the next morning ought to show that he felt guilty. I labored with them, to put it in as charitable a light as possible - that it was no more than right in judging of him that we should try to place ourselves in his position, and see how we would like to remain there, and look those young men and boys in the face when we had endangered their lives in such a manner, It perhaps had never occurred to him so forcibly before how completely he had their lives in his hands, and it must have been an agony to him to remain. And I tried to impress upon the minds of those with whom I came in contact while away, these same sentiments, because they seemed to me nothing more than right - so delicate a subject did it seem to me to broach, that night, that I did not even ask myself the very material question - "who did it" but waited for it to come out itself - fearing - although I am an under officer - that it might cause unnecessary pain.
Last evening I was talking with Valley Hunt, and spoke of what the papers had said concerning Mr. Eldridge using morphine - that I didn't take much stock in it - He said "it is so though - the baggage -master told me that he unwittingly had bought him five bottles, last year." Thinking that Valley might have stretched it a little, I asked Theophile about it this morning - He said that "he did get it for him in Whitehall." I seems Mr. E. gave him a slip of paper to hand to the druggist and that he brought back a small bottle of white powder - Late in the fall he brought back two or three for him - that time he tells me he looked to see what was on the paper - and found out - Then he says he remembered that the doctor had given him some when he had his sore leg, and he thought probably Mr. Eldridge was taking a little for his "rheumatism" - and did not know himself (Roberts) that there might be such consequences to follow from the use of it. It seems though he had told Theophile not to say anything about it, and said when he took it "this is my private supply" and Theophile said something about getting it in Burlington and he told him that he could get it there. Later that evening in the Barber's -shop Mr. Rockwell told us how Mr. Eldridge appeared when he came on tower that night at Westport. He said that "most every morning when we get to Port Kent (where Mr. Eldridge is relieved by Mr. Marks) he would come in and wake me up and say "Now go to sleep again you'll sleep better," or something of that kind - "and he usually said something like "Well you've got her along have ye" when he came into the pilot box, but that night when he came in, just as I was making the landing, he did not say anything to me and appeared glum. He tried several times to light his pipe - I turned the wheel over for him and said to him, you can wake me up when we get to Port Kent in the morning - I'm getting so that I like it now." Mr. Eldridge answered, "I don't know whether I will or not, I
don't feel very well to-night" - but he didn't think any thing strange of it as Mr. Eldridge was a peculiar man anyway - Now then, omens or no omens in black cats - **morphine** was the black cat that run us on those rocks - and if the truth ever became known I cannot but believe it will prove to be so - It seems to me that the law **must** have **some hold** on a man that will do as he must have been doing these past few years, and that too secretly, and **deliberately**. He must have known what risks he was taking in the use of it and still **Capt. Anson** who was with him every day last season and **didn't** find out that he was taking morphine. See what a cool way and deliberate he took advantage of the **confidence** the company had in him - and how careful he had kept it to himself - and now see where he has brought us - nothing but a merciful providence ever saved him from having those one hundred lives to account for. Providence that it happened to run upon the **only place** where it could **hold**. Providence that it happened to be a steamboat with **two separate** engines so that there were no **steampipes across the center** in which to break the connection and scald some, if not many persons to death, or perhaps worse scatter the fires and burn them - Providence that no one was hurt even, and lastly, Providence in having a **Captain over him who could be thus wakened from a deep sleep and get his passengers and crew off without a panic, say nothing of the fact that it was almost noiselessly done**. I can imagine, gentlemen, that it might not sound very well, to **get out** that a company had had such a man in their employ for several years and not **know if** but I can also [urge] that did they come out and expose such a man, and if it can be done, punish him to the extent of the law, making it an **exemplary case** to all future employees, that it would strengthen the confidence in them **much more** in the eyes of all **good men**, than the mere fact that a man **had** deceived them, would tend to **weaken** such confidence.
I am gentlemen, Very Respectfully Yours, Abijah North.

2. Statement of John Eldredge, Pilot

Burlington, July 19, 1875

Statement of Pilot John Eldridge to the disaster to the steamer "Champlain" the morning of July 16th near Westport.

I went on watch at Westport. -

Relieved E.B. Rockwell. -

No one in the pilot house with me after I went into it. -

I knew of the order respecting two persons being always in the pilot house when the vessel was under weigh. -

Night bright and clear, no shade from the land. -

Was not conscious of being sleepy. -

Rockwell lashed wheel over at Westport before I took it. -

I recollect of letting go the wheel and steering out of the Bay as usual. -

I have no recollection of vessel being out of course & was not aware of it until she struck.-

E.B. Rockwell came into the Pilot House after she struck but I do not recall the conversation with him. -

The wheelsman whose duty was to have been there was not there. -

I smoked after leaving Westport but was not smoking at the time of the accident. -

Passengers have been in the habit of frequenting the Pilot House more or less on trip.

I was so much overcome after the accident that I rendered no assistance after the occurrence, but went ashore. -
I never drink & had not drunk that night.
I have never been subject to dizziness & my eyesight is good - can read without glasses. -
It is always customary in bad weather to turn out both pilots. -
I have been in Company service about 18 years. -
I am 61 years of age and am the spare pilot on the Lake.

3. Statement of George Rushlow, Captain
Steamer Vermont July 22nd, 1875
A.L. Inman, Esq.
Gen'l Spt. C.T.C.

Dear Sir

Enclosed please find Statement of facts connected with wreck of Steamer Champlain on night of July 15th. Champlain left Ticonderoga 9:30 P.M. with sixty-three passengers and about fifty-tons of freight. Weather fine - night - a light one being about full moon - Landed at Ticonderoga, Larabee's Point, Crown Pt. and Pt. Henry. Remaind [sic] on deck until we arrived at Barber's Point, then turned in. Had been asleep but a few minutes when I was awakened by a crash, by the sound knew the steamer had run into something. At first thought it was a Sail Vessel. Came on deck at once. As I came out of my room I met Edwin Rockwell the wheelman. Asked him what was the trouble, he said the boat had run into the Mountain. Asked him who was at the wheel. He said Mr. Eldridge. Asked him what he was doing here. Said he was taking lunch. Went out on Port Quarter and from there forward to observe situation, found the Boat had run into Spilt Rock Mountain, North side of Steam Mill Bay and
was a total wreck. Also saw that the passengers could be landed from the Steamer to the shore by plank. Saw steam escaping from the Port Blower Room and observed the Fireman hauling fires on the starboard side. Ordered fires to be hauled and water blown out of the Boilers - Previous to this the Safety valves had been opened and steam blown off. Went aft in Recep. and State Room Hall and ordered passengers forward. Noticed the steamer settled fast by the stern accompanied with loud crashes - Told passengers there was no danger, they could land in safety by going forward. In mean time met Mr. North, Clerk, Rockwell, Pilot and Jerome Dumas, Mate, To who issued orders - and of them received valuable advice. Jerome Dumas lowered life boats and brought them forward in Starboard gangway. I being satisfied they would be of no use to disembark passengers, on coming forward the second time found Gangway on shore, had it changed and made more secure, them proceeded to disembark passengers and baggage - Had lights taken on shore and placed among bushes so that passengers could see where they were going to, an attempt was made by some to lower themselves over the Rail forward. On being informed where the stair was they went forward and all landed in good order on their part and with out confusion. At this time in answer to some person who asked me if there was a farm house near, Said to passengers if they would remain a few minutes - where they were the "Adirondack" would be along bound south and I would call her in and put them on board. Sent Pilot Rockwell to get sail boat - and to intercept the "Adirondack", Which he did. "Adirondack" came along sid [sic] about one hour and thirty minutes after the Champlain struck. The Adirondack came along side about two o'clock a.m.. Embarked passengers and baggage. Mr. North, Clerk accompanied them. During the time the passengers were on shore went among them an [sic]
inquired if any was hurt or could I do anything for them. The reply was no - we are all right. By this time the water was on Promenade deck. Put freight on Schooner J.G. Witherbee and sent freight Clerk V.G. Hunt to deliver it. Some freight was slightly damaged. Did not see Pilot Eldridge after the accident. After passengers had gone inquired for him and learned he had gone over the mountain through the woods. The fault was with Mr. Eldridge the Pilot who was on watch at the time, who must have been unconscious - as no conscious person would run a steamer ashore on such a night. Previous to this had considered Mr. Eldridge as good a Pilot as there was on the Lake and as he relieved Mr. Rockwell at Westport and had been on watch but fifteen minutes - cannot account for his condition. The crew all behaved well. The following I think deserve special mention: A. North, Clerk, E.B. Rockwell and Alex Markee, Pilots, Jerome Dumas, Mate, Josefeh Trombly, Peter Tarrent, Engineers. Among other passengers on board were Jacob Cole and family, Brooklyn, Hon S.M. Weed and family, Plattsburgh, Judge Peter Palmer, Plattsburgh, W. L. Jilson, Whitehall. The above are facts that came under my observation, all which is most respectfully submitted. Respt. yours, George Rushlow.

4. Statement of Alex Markee, Pilot

Dear Sir, I submit the following statement for your inspection.

At the time the Champlain struck the rocks on the morning of July 16th, I was in my stateroom asleep on the side that the boat struck. The shock awakened me at once. I hurriedly [sic] dressed myself and tried to make my escape through the door but found it fast. I then went through the window which was by the side of the Pilot House Stairs and went directly to the Pilot
House forward. Eldridge sitting on the settee and swinging his hands up and down and mourning in a pittifull [sic] manner. I did not speak to him as he was feeling so badly. I at once went blow [sic - should be below] to the main deck where I saw the Capt. and a number of passengers; I hurd [sic] the Capt give the first mate orders to have the small boats lowerd [sic] and brought where they could be used if necessary, which order was obeyed at once. Capt also ordered a gang plank put out to enable the passengers to git [sic] ashore: about the same time I saw Rockwell and some men with a small boat going to hail the Adirondack. Shortly after the Adirondack came along side the Champlain and the passengers was [sic] assisted from the Champlain to the Adirondack in a very quite [sic - should be quiet] manner, at daylight the Capt hailed a passing schooner and she came alongside and we at once commenced to transfer the freight. Another Schooner was sent for by the Capt which arrived about seven o'clock in the morning and we commenced to remove the furniture etc. on the Schooner. I remained on the wreck until the Monday evening assisting [sic] in removing every thing of value. I saw nothing of Eldridge after I went up to the Pilot House immediately after the boat struck. No confusion to speak of was precipitable amongst the passengers or the crew and all the passengers went ashore nearly as quietly as if the boat had made her landing at the dock.

A. Markee
5. Statement of E.B. Rockwell, Pilot

A.L. Inman, Gen'l Super
Champlain Tran Co-

Sir -

The following is a correct statement of my connection with the loss of Str Champlain.

Left Fort Ti on the night of 15th of July a clear beautiful night. The outline of the shore was as distinctly marked as in daylight. Arrived at Westport at 12 o'clock. Was relieved by John Eldridge. Remained in Wheel House some little time after steamer left Westport and then went to my own room. Not fully asleep when I was startled by the crash of the steamer on the rocks. Sprang out of bed and went to the Pilot House. Saw Eldridge at the Wheel. Inquired of him if he had stopped the engines. He Said he had not - looked aft - saw the starboard engine had stopped and the port engine stopping. Mr. Eldridge then turned to me and asked if I could account for his being on the rocks. I replied that he must have been asleep. He said it could not be as he was steering useful course to clear the mountains. He appeared dazed. Str. struck the rock north east side Steam Mill Bay three miles out of Westport. I went below and found Port Bow nearly out of water - deck breaking sixty feet aft of stem. Guard and port boiler hanging over mountain. Met Engineer Peter Tarrant and Trombly - told them to put out fires blow boiler and steam from the Boilers. Captain Rushlow ordered plank out to land the passengers on the mountain which was done. Capt and crew assisting the passengers ashore. I then suggested to the Capt that the crew be sent below to save furniture and etc. as the Str appeared to be Breaking up. He replied that the baggage and effects of the Passengers should receive the first attention. Lights were placed on the
mountain, the small boats lowered and brought forward. I then asked permission of Capt to take boat and crew and to go after Schooner to take off our cargo. He directed me to hail Str Adirondack, and ask them to come to his assistance which I did. The Str came, took off the passengers & baggage. Took my boat in tow pursuit of light Schooner. We passed off Barbers Point, got the Schooner Mary D. Craig and returned to the wreck and remained there until the Tuesday eve following.

Great praise is due Capt Rushlow for his judgement [sic], coolness and presence of mind and in the example he set before the officers & men. Discipline kept the crew and passengers in their place, the crew all did well among those who showed the greatest presence of mind was Mr. A. North, P. Tarrant, J. Trombly, A. Markee, Jerome and his mate.

And now a word about the wheelsman, he was employed by Capt. Flagg to remain in wheelhouse with Pilots all knights [sic] & to assist at the dinner table, the bal. of time was for rest, he has been on my watch in the house all the time except to get his lunch, if there is blame for this then I am to blame and not the boy.

Yours with respect
July 23rd 1875
E.B. Rockwell
APPENDIX C

[OFFICIAL] TESTIMONY IN RELATION TO THE WRECKING OF THE
STEAMER CHAMPLAIN TAKEN BY S.S. WHITE, E. ROOT,
U.S. LOCAL INSPECTORS OF STEAM VESSELS.

1. Testimony of Captain George Rushlow

Shelburne Harbor, July 21st 1875

George Rushlow sworn.

Q. What is your age?
A. 42 years.

Q. What has been your occupation?
A. Sailor.

Q. How many years have you been Pilot or Master of Steam Vessels?
A. 18 or 19 years.

Q. Was [sic] you Master of the Steamer Champlain at the time she was wrecked?
A. I was.

Q. Upon what day was she wrecked?
A. The morning of July 16th.

Q. At what time in the morning did the accident occur?
A. By my time when I got up it was 12 o'clock a.m.

Q. Where was the Steamer from and where bound?
A. From Ticonderoga to Rouses Point.

Q. Do you know from personal knowledge who if anyone was at the wheel at the
time of the accident?
A. I do not.

Q. Was [sic] you up at the time?
A. No Sir.
Q. State how things appeared to you when you first got up.
A. I was awakened by the crash. The first thing I did was to ascertain what was the cause of the crashing. My first impression being that we had run over some vessel. We were about 1 1/2 miles from Basin Harbor and near Steam Mill Bay. I met as I stepped from my room, Mr. Edwin Rockwell the wheelsman, and asked him who was at the wheel. His reply was John Eldridge. I said to him what are you doing down here. He replied I was down to lunch. I then went forward to take in the situation. I noticed a slight escape of steam from the port blower room, and also that the fires were being hauled on the starboard side, and gave orders to put out all fires and blow the water from the boilers. As I went forward I met numbers of passengers coming aft, who said they had been ordered to do so. I told them to go forward again. I went through the Hall also to get passengers forward. In the meantime a plank had been run on shore, and assisted by my crew, transferred passengers and baggage to the shore. The boats were lowered and men sent to intercept the Steamer Adirondack, also to procure the assistance of a sail vessel near by. I had lights hung on shore for the convenience of passengers, and ascertained by inquiring that no one was hurt. I also satisfied myself by personal examination that all the passengers were on shore. There were no berths given out below, aft of the kitchen. There were 55 names on passenger list, but there were 63 passengers on board. The crew behaved well, the engineers remaining at their posts until all danger was passed. The Steamer Adirondack arrived at the wreck in about 1 1/2 hours, when passengers and baggage were put on board of her.

Q. Did you notice any thing in the conduct of Pilot Eldridge out of the way, before the accident?
A. I did not.

Q. How did he appear after the accident.
A. I have not seen him since the accident.

Q. Do you know where Mr. Eldridge went to.

A. I do not from personal knowledge but after the passengers had left, I inquired for him, and was told he had gone off into the woods.

Q. Did it become necessary to use the small boats?

A. It did not, except to intercept the Steamer Adirondack.

Q. How far did the vessel raise on the shore above her natural position?

A. (No answer appears on the handwritten copy of the transcript in the CTC Papers files.)

Q. So far as you know was any passenger or person injured by the accident.

A. I found upon inquiring that but 2 or 3 were slightly injured, being cut by broken glass.

Q. So far as you know was any passengers baggage, or freight lost?

A. There was none lost.
2. Testimony of Pilot E.B. Rockwell

Shelburne Harbor, July 21st 1875

E.B. Rockwell sworn.

Q. What is your age.
A. 45 years.

Q. Where do you reside.
A. Albright, Vt.

Q. What is your occupation
A. Pilot on Lake Champlain.

Q. How long have you been engaged as Pilot.
A. 18 years.

Q. Was [sic] you on board of the Steamer Champlain on the morning of July 16th when she was run on shore on Split Rock Mountain?
A. I was.

Q. Who was at the wheel at the time she was run on shore.
A. John Eldridge.

Q. Who was at the wheel when you left Ticonderoga.
A. I was.

Q. How long did you remain at the wheel.
A. Until 12 o'clock, and until we arrived at Westport.

Q. Who relieved you.
A. John Eldridge.

Q. How long did you remain in the Wheel House after being relieved.
A. 15 minutes, or about 15 minutes after we left Westport Dock.

Q. Where did you go after being relieved.
A. Directly to my bed which was in a room adjoining the Pilot House.

Q. How long after you turned in did you get up again.
A. Not to exceed 12 minutes.
Q. What made you get up so quick.
A. The breaking up of the Steamer.
Q. What did you do when you got up.
A. I went directly to the Pilot House.
Q. Who was at the wheel when you got there.
A. Mr. Eldridge.
Q. What did you say to him.
A. I asked him if he had stopped the engines.
Q. What was his reply.
A. He said he had not.
Q. How did he appear. Or did he appear as if anything was the matter with him.
A. He appeared to be dazed and astonished.
Q. Where was Mr. Eldridge during the debarkation of the passengers.
A. In the Pilot House.
Q. What remarks did he make to you.
A. He asked me if I could account for the Steamer being on the rocks. I said to him he must have been asleep. His reply was, My God how can it be - I was steering as I always steer clear of the mountain.
Q. Did Mr. Eldridge assist in the debarkation of the passengers.
A. He did not.
Q. Did any other conversation take place.
A. None.
Q. Did he go ashore soon after the vessel struck.
A. He did not until 1/2 hour or more after the accident.
Q. Do you know where he went when he did go on shore.
A. Of my own knowledge I do not know, but suppose from what I heard said that he wandered about in the woods until the next day at noon. At which time, I was told by Mr. See who resides about 2 miles from the wreck, Mr. Eldridge came to his place and appeared to be bewildered and not to know where he was, and also asked some question about the wrecked Steamer. He requested to be carried to Adams ferry for the purpose of crossing the Lake to Panton, and since that I have learned he has arrived at his house.

Q. What kind of a night to navigate a vessel was it.

A. It was a good night, the outlines of the shore being nearly as distinct as they would be in the day time.

Q. Have you formed an opinion as to the cause of the disaster.

A. I have. I think the Pilot must have been asleep, or stupefied for a time.

Q. What is your opinion as to Mr. Eldridge's skill and liability as a Pilot up to the time of this accident.

A. He was a first class Pilot in every sense of the word.

Q. What were his habits as to temperance.

A. I have not known of his drinking a glass of liquor in five years.

Q. Have you any knowledge of his using drugs as a stimulant.

A. Not until since the accident, and none now except hearsay.
Ticonderoga, NY
July 27th 1875
Mr. E.B. Rockwell sworn and reexamined.

Q. Does Mr. Eldridge drop asleep easily.
A. He does. He will drop asleep often upon sitting down and while conversing and
his pipe drop from his mouth upon which he would pick up the pipe and remark
that he was not asleep.

Q. What were his habits in regards to being active.
A. He was a man that took but very little exercise.

Q. What were his habits in regard to smoking.
A. He was the most inveterate smoker I ever knew.

Q. In your opinion would it injure a man to smoke as much as he did.
A. I think it would.

Q. Was he usually in bed when off watch.
A. No sir, He did not sleep much daytimes except as he slept in his chair.

Q. Did he exercise much.
A. The least of any man I ever knew.

Q. Was he in the habit of sitting down when steering.
A. Not very much, only occasionally.

Q. What sort of a pipe did he use.
A. A pretty large briar root pipe. He lit his pipe just before I left the Pilot House.

Q. Have you an opinion now as to how Mr. Eldridge run [sic] the Champlain on
shore.
A. My opinion is that he was stupefied by the use of drugs.
3. Testimony of Pilot John Eldredge

Burlington, July 24th 1875

John Eldridge [sic] Sworn.

Q. What is your age.
A. 61 years.

Q. What is your occupation.
A. Sailor.

Q. How long have you been engaged as Pilot.
A. 18 years for the Champlain Transportation Co. 23 years in all.

Q. Was [sic] you acting as Pilot on board the Champlain Transportation Co.'s Steamer Champlain on the morning of the 16th of July.
A. I was.

Q. Where was the vessel bound.
A. Rouses Point.

Q. What time did she leave Ticonderoga.
A. I think about 9 1/2 o'clock.

Q. When did your watch commence.
A. When we arrived at Westport.

Q. Did the boat land at Westport.
A. She did.

Q. What time was it when she landed at Westport.
A. About 12 o'clock.

Q. You relieved some other Pilot when you took the wheel - who was it.
A. E.B. Rockwell.

Q. Did you take the wheel before you left the dock at Westport.
A. Yes, Sir.

Q. Did the vessel appear to be going at her usual rate of speed.
A. She did.

Q. Was the boat in good order so far as you could see or knew.
A. She was.

Q. Was it a good night, or a bad night to navigate a vessel.
A. A good night.

Q. Did she run on to the rocks at Steam Mill Point.
A. She run on to the rocks east of Steam Mill Point.

Q. Was she going at her usual rate of speed when she run on the rocks.
A. She was.

Q. Did you have charge of the wheel and was you steering the boat when she run on the rocks.
A. I had hold of the wheel.

Q. Did you ring bells to slow or stop the engines when you saw she was going on to the rocks.
A. Not until after she struck.

Q. What reason can you give for not ringing the stopping bells.
A. I can give none.

Q. About how far was the boat out of her usual course when she was run on the rocks.
A. We very often go within 20 rods of the place where she run on.

Q. Were the engines stopped without any bells being rung.
A. I cannot tell.

Q. What excuse have you for running the boat in the manner you did.
A. None. Something came over me, but I had hold of the wheel when she struck.

Q. Did you assist in getting the passengers on shore.
A. I did not.
Q. Did you look at the vessel to see what condition she was in after she run on the rocks.

A. I saw she was on the rocks.

Q. What did you do.

A. I went on shore.

Q. Have you been in the habit of taking opium or morphine.

A. No sir.

Q. Had you taken any on the 15th or 16th of July.

A. No sir.

Q. Did you see your situation before the vessel struck.

A. I saw my situation about a minute or a minute and a half before she struck, then she was all right.

Q. Was the Steamer Champlain any more apt to get a sheer on you than a single engine boat.

A. She was.

Q. In the time between when you observed her situation and the time she struck did you make any attempt to turn her course.

A. The last I remember before she struck the vessel was on her proper course.

Q. If you make no use of morphine what to you buy it for.

A. For the use of my family.

Q. Was you thoroughly awakened at Westport.

A. I was.

Q. Who was the first man you saw after the accident.

A. Mr. Rockwell.

Q. What did he say to you.

A. I cannot remember.
Q. Would you now consider yourself a fit man to take charge of the wheel of a passenger steamer.
A. I would.
4. Testimony of Baggage Master Theophile Roberts

Ticonderoga, NY, July 27th 1875

Mr. T. Roberts sworn.

Q. What is your age.
A. 25 years.

Q. Where do you reside.
A. St. Artanaise P2.

Q. What is your occupation.
A. Baggage Master on Steamer Vermont.

Q. Have you been employed on boats with Mr. John Eldridge.
A. I have for four years.

Q. Was Mr. Eldridge Pilot at the time.
A. He was.

Q. Did you ever purchase morphine for Mr. Eldridge.
A. About one year ago I purchased for him at Whitehall a bottle containing a white powder, price $1.00. About two months after, I purchased for him at Whitehall two bottles same as the first. I looked at the paper he gave me, that is, the order to purchase, and saw marked on the same two bottles of morphine. Mr. Eldridge told me he took the powder for a pain in his bowels, and that part of the supply was for the coming winter. I never saw him take any.
5. Testimony of Druggist Wagner

Statement of Mr. Wagner, Druggist made to S.S. White and E. Root, U.S. Steamboat
Inspectors at Rouses Point, NY, July 29th 1875.

When I was at the old store I used to sell Mr. Eldridge morphine occasionally. He said he used it for rheumatic pains. I have sold him but one bottle this year. I asked him if he used it now, he replied a little. It was about four or five weeks ago that I sold him the bottle.

6. Testimony of Druggist Stearns

Burlington, VT, August 2nd 1875. Statement of Mr. R.B. Stearns, Druggist.

Q. Have you been in the habit of selling morphine to Mr. John Eldridge, if so when.

A. I used to sell it to him, but have not for 18 months until the night he returned from the wreck, at which time he purchased 3 bottles, for which he paid me $2.50. Each bottle contains 1/8 of an ounce. I had no idea that he used it himself, as he had no appearance of having used it habitually.

7. Testimony of Druggist Burrett

Burlington, VT, August 2nd 1875. Statement of Mr. E.W. Burrett, Druggist.

Some three or four years ago Mr. Eldridge purchased morphine of me some three or four times, but for the last two or three years have sold him none. My impression is that he purchased one bottle at a time.

8. Testimony of Druggist Bellrose

Burlington, VT, August 2nd 1875. State of Mr. I.M. Bellrose, Druggist.

I think I know John Eldridge. A large bull faced man with a sailor cap and blue coat on, has since within two or three weeks preceding the wrecking of the
Steamer Champlain, purchased of me two or three bottles of morphine. The bottles were bought within about one weeks of each other. I am sure the man that bought the morphine is in the habit of taking it.

9. Testimony of House Painter J. S. Spaulding


Q. Where do you reside.
A. Burlington, Vt.

Q. Do you know John Eldridge.
A. I do.

Q. Was you ever in his employ.
A. I worked for him one week painting his house, a year ago last May.

Q. While you were at work for Mr. Eldridge did you take notice of any of his habits.
A. I noticed that he dropped asleep very easily upon sitting down, sometimes waking up himself, and sometimes his wife waking him.

Q. Have you ever noticed anything singular in his appearance while he was sitting in his chair.
A. I have noticed him sitting apparently in a deep study, sometimes with his eyes open, and the appearing to rouse or awaken as if from unconsciousness. I noticed this perhaps half a dozen times.

Q. Did he smoke much.
A. He smoked a great deal, most of the time when he was about the house.

Q. Did you know of his using opium.
A. Not of my own knowledge. My wife says some of her friends told her that he used morphine considerably.
10. The undersigned U.S. Local Inspectors of Steam Vessels for the District of Burlington Vt. having investigated in relation to the wrecking of the Steam Champlain, make the following statement.

We find that the Champlain, a passenger steamer about 100 tons burden and belonging to the Champlain Transportation Co. while on her trip down the Lake with 63 passengers and about 50 tons of freight on board, at 12 1/2 o'clock a.m. July 16th and shortly after leaving Westport, ran on to a rocky spur of Split Rock Mountain, the vessel at the time she struck going at her usual rate of speed. No lives were lost, and no person seriously injured, baggage and freight all saved in good condition, but the vessel becoming a complete wreck. The Pilot in charge of the wheel at the time, Mr. John Eldridge, is unable to account for the accident, saying that he supposed he was on his course until the steamer struck the rocks. There appears to be a blank in his memory covering a space of about a minute or a minute and a half preceding the accident. The night being a good one for navigation, and the vessel in perfect condition, we can only account for the accident on the supposition that the Pilot was asleep or otherwise unconscious during the time above mentioned. The testimony we have taken strongly supports this theory, as it was shown that Mr. Eldridge was an excessive smoker and also used morphine to some extent, also that he dropped asleep when off duty very easily, often while conversing. Mr. Eldridge has been Pilot on Lake Champlain for 23 years, has been licensed by us for 15 years, and as a Pilot has heretofore ranked high, having the confidence of all boatmen, his employers, the public, and ourselves as inspectors.

In consequence of the accident, and also judging from the testimony taken by us that the habits of Mr. Eldridge render him an unsafe person to act as Pilot on Steam Vessels, we have revoked his license as such.

S.S. White and E. Root, Local Inspectors
APPENDIX D
STEAMBOAT INSPECTION SERVICE DOCUMENTS

Official entries on the wreck: Records of the Bureau of Marine Inspection and Navigation, Reports of Casualties and Violations of Steamboat Laws. (National Archives, Record group 41)

S.I.G. No.

REPORT OF CASUALTIES AND VIOLATIONS OF STEAMBOAT LAWS

Name of vessel,  
Passenger steamer CHAMPLAIN

Gross tonnage,

Name of officer

Local district, Buffalo, New York.

Date of report,

Date of casualty or violation, July 15, 1875.

Nature of casualty or violation, Grounding.

Action taken, Investigated.

Number of lives lost, None.

Form 924 A

DEPARTMENT OF COMMERCE
STEAMBOAT-INSPECTION SERVICE

REMARKS

On the night of July 15, 1875, the passenger steamer CHAMPLAIN was run ashore near Westport, N.Y. No lives lost. The machinery of the boat was saved. Loss of Hull, $75,000. Case investigated, and from the testimony adduced, it was found that
the pilot in charge of the boat at the time had been for some time past addicted to the habitual use of morphine, and was either stupefied or asleep while standing at the wheel, thus being responsible for the disaster. His license was revoked.

ABSTRACTS OF WATER REPORTS FROM LIFE-SAVING STATIONS (National Archives, Record Group 26, 10E2, 36/5/B, Volume 2, p.4)

Estimated Value of Vessel. 100,000
Estimated Value of Cargo. -
Nature of Cargo. Gen'l Mdse.
Estimated Loss or Damage to Vessel. 80,000
Estimated Loss or Damage to Cargo. -
Amount of Insurance on Vessel. -
Amount of Insurance on Cargo. -
Locality of Casualty. Near Steam Mill Pt., Westport, N.Y.
Nature of Casualty. Stranded.
Cause of Casualty. Pilot mistook bearings.
### APPENDIX E

#### 1994 FIELD SEASON

**ARTIFACT CATALOGUE**

<table>
<thead>
<tr>
<th>Date</th>
<th>Catalogue Number</th>
<th>Artifact Description</th>
<th>Provenience</th>
<th>Excavator</th>
<th>Measurements (centimeters)</th>
<th>Condition</th>
<th>Associations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8/94</td>
<td>SC001</td>
<td>Metal decorative plate</td>
<td>keel @ F106</td>
<td>Tichonuk</td>
<td>Length: 7.4 cm Width: 2.3 cm Depth: 0.4 cm</td>
<td>top is bent surface corrosion</td>
<td>w/ SC002</td>
<td>Wall plate for decorative hook</td>
</tr>
<tr>
<td>8/8/94</td>
<td>SC002</td>
<td>Metal decorative hook</td>
<td>keel @ F106</td>
<td>Tichonuk</td>
<td>L: 3.8 W: 2.3 D: 2.0</td>
<td>slight surface corrosion</td>
<td>w/ SC001</td>
<td>Prince of Wales feather design</td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC003</td>
<td>Glass fragment</td>
<td>F40</td>
<td>Cohn</td>
<td>L: 6.5 W: 4.8 D: 2.0</td>
<td>not weeping</td>
<td>all SF40 finds</td>
<td>Very thick, broken by impact w/ object</td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC004</td>
<td>Glass wine goblet - clear</td>
<td>F40</td>
<td>Cohn</td>
<td>L: 11.5 Rim Diam: 8.8 D of cup: 9.0</td>
<td>not weeping</td>
<td>all SF40 finds</td>
<td>broken at stem, for dining room service</td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC005</td>
<td>Iron nail</td>
<td>F40</td>
<td>Cohn</td>
<td>L: 7.3 W: 0.5 D: 0.3</td>
<td>corroded</td>
<td>all SF40 finds</td>
<td></td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC006</td>
<td>White ware body sherds</td>
<td>F40</td>
<td>Cohn</td>
<td>L: 6.6 W: 5.2 Thickness: 0.5</td>
<td>glaze cracked</td>
<td>all SF40 finds</td>
<td>granite ware or ironstone, no markings</td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC007</td>
<td>Iron bolt w/sq. nut</td>
<td>F40</td>
<td>Cohn</td>
<td>L: 14.3 Diam: 1.0</td>
<td>surface corrosion</td>
<td>all SF40 finds</td>
<td></td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC008</td>
<td>Iron washer (1)</td>
<td>F40</td>
<td>Cohn</td>
<td>Outer diam: 3.8 Inner diam: 1.2 T: 0.2</td>
<td>slight surface corrosion</td>
<td>all SF40 finds</td>
<td></td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC009</td>
<td>Iron washer (1)</td>
<td>F40</td>
<td>Cohn</td>
<td>Outer diam: 3.5 Inner diam: 1.1 T: 0.2</td>
<td>slight surface corrosion</td>
<td>all SF40 finds</td>
<td></td>
</tr>
<tr>
<td>8/10/94</td>
<td>SC010</td>
<td>Iron washer (1)</td>
<td>F40</td>
<td>Cohn</td>
<td>Outer diam: 2.7 Inner diam: 1.4 T: 0.15</td>
<td>slight surface corrosion</td>
<td>all SF40 finds</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Code</td>
<td>Description</td>
<td>Site</td>
<td>Measurements</td>
<td>Notes</td>
<td>Location</td>
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<tr>
<td>8/10/94</td>
<td>SC011</td>
<td>White ware cup handle</td>
<td>F40</td>
<td>L: 6.3 cm, W: 3.4 cm, D: 1.1 cm</td>
<td>good</td>
<td>all SF40 finds</td>
<td></td>
<td></td>
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<tr>
<td>8/10/94</td>
<td>SC012</td>
<td>White ware rim/base sherd</td>
<td>F40 w/SC013</td>
<td>Height: 7.0 cm, W: 7.9 cm, T: 0.5 cm</td>
<td>glazed crackled</td>
<td>all SF40 finds and SC013</td>
<td></td>
<td></td>
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<tr>
<td>8/10/94</td>
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<td>White ware base sherd</td>
<td>F40 w/SC012</td>
<td>L: 7.1 cm, W: 2.5 cm, H: 2.3 cm, T: 0.5 cm</td>
<td>glazed crackled</td>
<td>all SF40 finds and SC012</td>
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<td>8/10/94</td>
<td>SC014</td>
<td>Wooden moulding w/paint</td>
<td>F40</td>
<td>L: 25.4 cm, W: 4.8 cm, T: 2.1 cm</td>
<td>spongy</td>
<td>all SF40 finds traces of white paint on surface</td>
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<tr>
<td>8/10/94</td>
<td>SC015</td>
<td>White ware soup cup</td>
<td>F40</td>
<td>H: 8.1 cm, Rim diam: 9.2 cm, Base diam: 5.3 cm, D of cup: 6.7 cm</td>
<td>slight crackling</td>
<td>all SF40 finds</td>
<td></td>
<td></td>
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<tr>
<td>8/10/94</td>
<td>SC016</td>
<td>White ware plate rim sherd</td>
<td>F40 w/SC017</td>
<td>L: 6.2 cm, W: 4.15 cm, T: 0.5 cm</td>
<td>glazed crackled</td>
<td>w/ SC017</td>
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<tr>
<td>8/10/94</td>
<td>SC017</td>
<td>White ware plate rim sherd</td>
<td>F40 w/SC016</td>
<td>L: 5.7 cm, W: 3.9 cm, T: 0.5 cm</td>
<td>glazed crackled</td>
<td>w/ SC016</td>
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<td>8/10/94</td>
<td>SC018</td>
<td>Wooden moulding</td>
<td>Dredge @F40</td>
<td>L: 4.9 cm, W: 5.85 cm, T: 0.5 cm</td>
<td>spongy</td>
<td>same profile as SC023</td>
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<td>8/10/94</td>
<td>SC019</td>
<td>Wooden moulding</td>
<td>Dredge @F81-90</td>
<td>L: 1.9 cm, W: 2.1 cm, T: 0.1 cm</td>
<td>spongy</td>
<td>all SF81-90 finds</td>
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<tr>
<td>8/10/94</td>
<td>SC020</td>
<td>Metal sheet fragment</td>
<td>Dredge @F81-90</td>
<td>L: 2.4 cm, W: 1.7 cm, D: 0.05 cm</td>
<td>mostly corrosion product</td>
<td>all SF81-90 finds</td>
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<td>8/10/94</td>
<td>SC021</td>
<td>Wooden Half Round moulding</td>
<td>Dredge @F81-90</td>
<td>L: 7.9 cm, W: 2.3 cm, T: 0.5 cm</td>
<td>saturated w/ iron corrosion</td>
<td>all SF81-90 finds</td>
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<tr>
<td>8/10/94</td>
<td>SC022</td>
<td>Wooden moulding-painted</td>
<td>Dredge @F40</td>
<td>L: 1.3 cm, W: 2.0 cm, T: 0.5 cm</td>
<td>spongy</td>
<td>all SF40 finds</td>
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<tr>
<td>Date</td>
<td>Code</td>
<td>Description</td>
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<td>Remarks</td>
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<td>F39</td>
<td>Cohn</td>
<td>L: 3.1, W: 2.7, D: 0.9</td>
<td>all SF39 finds</td>
<td>orig. surrounded pipe or screw</td>
</tr>
<tr>
<td>8/11/94</td>
<td>SC043</td>
<td>Wooden moulding (chair rail)</td>
<td>F39</td>
<td>Cohn</td>
<td>L: 7.4, W: 1.9, D: 1.8</td>
<td>slightly spongy</td>
<td>all SF39 finds, surface has traces of white paint</td>
</tr>
<tr>
<td>8/11/94</td>
<td>SC044</td>
<td>Iron spike</td>
<td>F39</td>
<td>Cohn</td>
<td>L: 13.2, W: 0.7, Dia of head: 1.5</td>
<td>very slight corrosion</td>
<td>all SF39 finds, measures 6 inches</td>
</tr>
<tr>
<td>8/11/94</td>
<td>SC045</td>
<td>Iron spike (frag)</td>
<td>F39</td>
<td>Cohn</td>
<td>L: 10.7, W: 0.8, D:</td>
<td>very corroded</td>
<td>all SF39 finds</td>
</tr>
<tr>
<td>8/11/94</td>
<td>SC046</td>
<td>Iron pike head w/ 2 spikes</td>
<td>F39</td>
<td>Cohn</td>
<td>L: 22.3, W: 12.6, D: 1.4</td>
<td>good</td>
<td>all SF39 finds</td>
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<tr>
<td>8/9/94</td>
<td>SC047</td>
<td>Rectangular oak block</td>
<td>F107</td>
<td>Tichonuk</td>
<td>L: , W: , D:</td>
<td>slight corrosion on metal</td>
<td>above keel @ F107</td>
</tr>
<tr>
<td>Date</td>
<td>Catalogue #</td>
<td>Description of Organic Material</td>
<td>Number</td>
<td>Provenience</td>
<td>Excavator</td>
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</tr>
<tr>
<td>8/10/94</td>
<td>S001</td>
<td>Peanut Shells</td>
<td>2</td>
<td>Dredge @F40</td>
<td>Cohn</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Walnut shell</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Acorn shell</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>Butternut shell</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
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<td>Watermelon seeds</td>
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</table>

**Lots:** Non-Diagnostic

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<tr>
<th>Date</th>
<th>Catalogue #</th>
<th>Artifact Description</th>
<th>Number</th>
<th>Provenience</th>
<th>Excavator</th>
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</thead>
<tbody>
<tr>
<td>8/8/94</td>
<td>L001</td>
<td>Plate glass - clear</td>
<td>2</td>
<td>keel @ F106</td>
<td>Tichonuk</td>
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<tr>
<td></td>
<td></td>
<td>Bottle glass-brown</td>
<td>4</td>
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<tr>
<td>8/10/94</td>
<td>L002</td>
<td>Wooden bungs</td>
<td>4</td>
<td>Dredge @F40</td>
<td>Cohn</td>
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<td></td>
<td>Plate glass-clear</td>
<td>5</td>
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<td>Rubber sheet</td>
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<td>Coal lumps</td>
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<td>8/10/94</td>
<td>L003</td>
<td>Wooden bungs</td>
<td>4</td>
<td>Dredge @F81-90</td>
<td>Andrews</td>
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<td>Plate glass w/red coating</td>
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<td>Coal</td>
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<tr>
<td>8/10/94</td>
<td>L004</td>
<td>Wooden bungs</td>
<td>11</td>
<td>Dredge @F40</td>
<td>Cohn</td>
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<td></td>
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<td>Wooden 1/2 inch plug</td>
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<td>Coal</td>
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<td>Glass frags -clear</td>
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<td>Rubber sheet -triangular</td>
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<tr>
<td></td>
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<td>Small rubber disks (1 inch)</td>
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<td></td>
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<td>Rubber plug</td>
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<tr>
<td>8/11/94</td>
<td>L005</td>
<td>Glass - bottle - clear</td>
<td></td>
<td>Dredge @F39</td>
<td>Cohn</td>
</tr>
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<td>Glass - plate - clear</td>
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<tr>
<td></td>
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<td>Wooden bungs</td>
<td>11</td>
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<tr>
<td></td>
<td></td>
<td>Rust pimples</td>
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<td>Coal clinker</td>
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<td>Coal</td>
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DISCUSSION

Each individual artifact that was recovered from the site received a catalogue number, proceeded by the alphabetical identification SC for "Steamer Champlain." Each artifact was logged in the Artifact Catalogue, and its number, date, measurements and provenance were recorded on individual Artifact Sheets. Recovered artifacts included an assortment of iron fasteners in varying degrees of degradation, coal clinkers, wooden architectural moulding, a small decorative hook, ceramics and glassware.

The ceramics are a type of white earthenware typically called "white granite" during the Victorian era.\(^1\) Referred to as "ironstone" in England, white granite ware is characterized by a pure white body and a clear, hard glaze. It was admired for its hardness, evenness of surface and durability of glaze, which made it resistant to breakage and quite suitable for the stresses of steam travel. None of the ceramics found on Champlain II bore any markings or designs. This absence of decoration points to an American manufacture. The public preferred imported wares, so American manufacturers very generally and intentionally omitted to mark most of their products.\(^2\) Press accounts of the outfitting of Champlain II give no indication of the suppliers of the ceramics. However, earlier press accounts of the inaugural voyage of the CTC steamer Adirondack reported that its crockery was supplied by W.F. Daily & Co. of New York.\(^3\) It must be noted that Adirondack's crockery, described as "tasteful and costly," was decorated with either the name of the vessel or its initial.\(^4\)

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\(^3\) *Burlington Free Press*, August 2, 1867, p. 4.
\(^4\) Ibid.
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Education:


1990 Graduate Student-At-Large, University of Chicago. (non-matriculating program)


1981-1982 School of Irish Studies, Dublin, Ireland

Archaeological Experience:

1993-1994 Archaeological Director, Steamboat Champlain II Project (1868), Lake Champlain, Vermont.

1994 Volunteer Training Coordinator and Staff Archaeologist, Monte Cristi Shipwreck Project (c. 1652), Dominican Republic. Director: Jerome Lynn Hall, Pan-American Institute of Maritime Archaeology (PIMA).

1992-1993 Archaeological Assistant, North Beach Sailing Canalboat Project (c.1850), Lake Champlain. Director: Joseph Cozzi


1993 Conservation Assistant, Mount Independence Artifact Collection, Lake Champlain. Head Conservator: John Bratten.

1992 Archaeological Assistant, Burlington Bay Horse-powered Ferryboat Project (c.1830), Lake Champlain. Director: Dr. Kevin Crisman.


1990 Archaeological Assistant, Kampsveille Archaeology Project.